The Bank of New York Mellon Corporation
240 Greenwich Street
New York, New York 10286

Prospectus for the employees of the European Economic Area ("EEA") (direct or indirect) subsidiaries of The Bank of New York Mellon Corporation in relation to The Bank of New York Mellon Corporation's equity incentive plans

Pursuant to Article 23 of the Law of June 16, 2006 on the public offerings of securities and the admission to trading of securities on a regulated market, the Belgian Financial Services and Markets Authority has approved this prospectus on March 12, 2019. This prospectus was established by the issuer and the issuer is responsible for this prospectus. The prospectus has been approved in connection with the operations proposed to the investors. The approval represents neither an assessment of the transaction's opportunity or quality nor the authentication of the financial and accounting information presented or more generally the issuer's position, by the Belgian Financial Services and Markets Authority.

This prospectus was drafted in accordance with Exhibits I and III of the Commission Regulation 809/2004 of April 29, 2004, as amended. This prospectus will be made available to the respective employees of the (direct or indirect) subsidiaries of The Bank of New York Mellon Corporation located in the EEA jurisdictions in which offerings under the respective equity incentive plans are considered public offerings. At the time of approval of this prospectus, these jurisdictions are Belgium, Ireland, Luxembourg, the Netherlands, and the United Kingdom. This prospectus will be notified to the competent authorities of these EEA jurisdictions in accordance to Article 18 of Directive 2003/71/EC of November 4, 2003, as amended. This prospectus will be made available on the intranet of The Bank of New York Mellon Corporation and free paper copies will be available to the employees upon request by contacting the Human Resources Department of their employer.

An investment in the shares as described in this prospectus is subject to risks. An investor faces the risk of losing a part or all of his invested capital. Before participating in the equity incentive plans of The Bank of New York Mellon Corporation, prospective investors should carefully read the entire prospectus, containing a description of the offer and the risk factors, with special attention to the risk factors (see Part I (Summary), p. 11 and Part II (Risk Factors), p. 22). Their decision should solely be based on the information contained in the prospectus.

Note to the prospectus

This prospectus was established in accordance with the principles laid down in the Belgian Law of June 16, 2006 on the public offerings of securities and the admission to trading of securities on a regulated market, as amended, in Directive 2003/71/EC of November 4, 2003, as amended, and in the Commission Regulation 809/2004 of April 29, 2004, as amended.

This prospectus contains, among other things, a summary conveying the essential characteristics of, and risks associated with, the issuer and the offered securities. More detailed information concerning the issuer and the securities to be offered is reflected in the exhibits attached to this prospectus. The documents referred to in the relevant chapters are also attached as exhibits to this prospectus.

Company responsible for the prospectus

The responsibility for this prospectus is assumed by The Bank of New York Mellon Corporation, a company incorporated and existing under the laws of the State of Delaware, U.S.A., with its principal executive offices at 240 Greenwich Street, New York, New York 10286, U.S.A., represented by its Board of Directors. The Bank of New York Mellon Corporation ensures, having taken all reasonable care, that the information contained in this prospectus is, to the best of its knowledge, in accordance with the facts and that the prospectus does not contain omissions likely to affect the import of this prospectus.

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I. Summary

Summaries are made up of disclosure requirements known as "Elements." These Elements are numbered in Sections A – E (A.1 – E.7).

This summary contains all the Elements required to be included in a summary for this type of securities and Issuer. Because some Elements are not required to be addressed, there may be gaps in the numbering sequence of the Elements.

Even though an Element may be required to be inserted in the summary because of the type of securities and Issuer, it is possible that no relevant information can be given regarding the Element. In this case a short description of the Element is included in the summary with the mention of "not applicable."

SECTION A — INTRODUCTION AND WARNINGS		
A.1	**Warning to the reader**	This summary should be read as an introduction to the prospectus. Any decision to invest in the securities should be based on consideration of the prospectus as a whole by the investor. Where a claim relating to the information contained in the prospectus is brought before a court, the plaintiff investor might, under the national legislation of the Member States of the European Union or States party to the European Economic Area Agreement, have to bear the costs of translating the prospectus before the legal proceedings are initiated. Civil liability attaches to those persons who have presented the summary including any translation thereof, and applied for its notification, but only if the summary is misleading, inaccurate or inconsistent when read together with the other parts of the prospectus or it does not provide, when read together with the other parts of the prospectus, key information in order to aid investors when considering whether to invest in such securities.

SECTION B — ISSUER		
B.1	**Legal and commercial name of the issuer**	The Bank of New York Mellon Corporation (the "Company" or "BNY Mellon").
B.2	**Domicile and legal form of BNY Mellon, the legislation under which the issuer operates and its country of incorporation**	BNY Mellon is a corporation incorporated under the laws of the State of Delaware, U.S.A., with its principle executive offices at 240 Greenwich Street, New York, New York 10286, U.S.A.
B.3	**Description of the nature of BNY Mellon's current operations and its principal activities**	
BNY Mellon is a global investments company dedicated to helping its clients manage and service their financial assets throughout the investment lifecycle. It provides financial services for institutions, corporations and individual investors, delivering investment management and investment services in 35 countries. BNY Mellon can act as a single point of contact for clients looking to create, trade, hold, manage, service or restructure investments.		
B.4a	**Recent trends**	In June 2017, in connection with the Federal Reserve's non-objection to the Company's 2017 capital plan, the Company announced a share repurchase plan providing for the repurchase of up to $2.6 billion of common stock. The 2017 capital plan began in the third quarter of 2017 and continued through the second quarter of 2018. In June 2018, in connection with the Federal Reserve's non-objection to the Company's 2018 capital plan, the Company announced a share repurchase plan providing for the repurchase of up to $2.4 billion of common stock starting in the third quarter of 2018 and continuing through the second quarter of 2019. This new share repurchase plan replaces all previously authorized share repurchase plans. In December 2018, the Company announced that the Federal Reserve approved the repurchase of $830 million of additional common stock. The Company's Board of Directors approved the additional share repurchases, which were completed in the fourth quarter of 2018. These repurchases were in addition to the Company's repurchase of $2.4 billion of common stock previously approved by the Board and announced in June 2018. Share repurchases may be executed through open market repurchases, in privately negotiated transactions or by other means, including through repurchase plans designed to comply with Rule 10b5-1 and other derivative, accelerated share repurchase and other structured transactions. In 2018, the Company repurchased 63.7 million common shares at an average price of $51.29 per common share for a total of

		$3.3 billion. At December 31, 2018, the maximum dollar value of shares that may yet be purchased under the June 2018 program, including employee benefit plan repurchases, totaled $1.3 billion.
B.5	**Organizational structure**	BNY Mellon is the parent company of the BNY Mellon group. BNY Mellon generally holds, directly or indirectly, the capital and voting rights of each of its subsidiaries.
B.6	**Interests in BNY Mellon's capital**	Not applicable. Pursuant to its Q&A, ESMA considers that Item 18 of Annex I of the Commission Regulation 809/2004 of April 29, 2004 (the "Prospectus Regulation") is generally not pertinent for offers of shares to employees and can thus be omitted from the prospectus in accordance with Article 23.4 of the Prospectus Regulation.
B.7	**Financial information concerning BNY Mellon for the fiscal years ended December 31, 2018, December 31, 2017 and December 31, 2016**	

(dollar amounts in millions, except per common share amounts and unless otherwise noted)	**2018**	2017	2016
Selected income statement information:			
Fee and other revenue	**$ 12,794**	$ 12,165	$ 12,073
(Loss) income from consolidated investment management funds	**(13)**	70	26
Net interest revenue	**3,611**	3,308	3,138
Total revenue	**16,392**	15,543	15,237
Provision for credit losses	**(11)**	(24)	(11))
Noninterest expense	**11,211**	10,957	10,523
Income before income taxes	**5,192**	4,610	4,725
Provision for income taxes	**938**	496	1,177
Net income	**4,254**	4,114	3,548
Net loss (income) attributable to noncontrolling interests *(a)*	**12**	(24)	(1))
Net income applicable to shareholders of The Bank of New York Mellon Corporation	**4,266**	4,090	3,547
Preferred stock dividends	**(169)**	(175)	(122))
Net income applicable to common shareholders of The Bank of New York Mellon Corporation	**$ 4,097**	$ 3,915	$ 3,425
Earnings per share applicable to common shareholders of The Bank of New York Mellon Corporation:			
Basic	**$ 4.06**	$ 3.74	$ 3.16
Diluted	**$ 4.04**	$ 3.72	$ 3.15
Average common shares and equivalents outstanding of The Bank of New York Mellon Corporation *(in thousands)* **:**			
Basic	**1,002,922**	1,034,281	1,066,286
Diluted	**1,007,141**	1,040,290	1,072,013
Selected balance sheet information (at period-end):			
Interest-earning assets	**$ 308,749**	$ 316,261	$ 280,332
Total assets	**362,873**	371,758	333,469
Deposits	**238,778**	244,322	221,490
Long-term debt	**29,163**	27,979	24,463
Preferred stock	**3,542**	3,542	3,542
Total The Bank of New York Mellon Corporation common shareholders' equity	**37,096**	37,709	35,269

At Dec. 31				
Assets under custody and/or administration *(in trillions) (b)*	**$ 33.1**	$ 33.3	$ 29.9	
Assets under management *(in billions) (c)*	**1,722**	1,893	1,648	
Market value of securities on loan *(in billions) (d)*	**373**	408	296	
Selected ratios:				
Return on common equity	**10.8%**	10.8%	9.6%	%
Return on tangible common equity – Non-GAAP *(e)*	**22.5**	23.9	21.2	
Return on average assets	**1.19**	1.14	0.96	
Pre-tax operating margin	**32**	30	31	
Fee revenue as a percentage of total revenue	**78**	78	79	
Percentage of non-U.S. total revenue	**37**	36	34	
Net interest margin	**1.25**	1.14	1.03	

(a) Primarily attributable to noncontrolling interests related to consolidated investment management funds.
(b) Includes the assets under custody and/or administration of CIBC Mellon Global Securities Services Company ("CIBC Mellon"), a joint venture with the Canadian Imperial Bank of Commerce, of $1.2 trillion at Dec. 31, 2018, $1.3 trillion at Dec. 31, 2017 and $1.2 trillion at Dec. 31, 2016.
(c) Excludes securities lending cash management assets and assets managed in the Investment Services business.
(d) Represents the total amount of securities on loan in the Company's agency securities lending program managed by the Investment Services business. Excludes securities for which BNY Mellon acts as an agent on behalf of CIBC Mellon clients, which totaled $58 billion at Dec. 31, 2018, $71 billion at Dec. 31, 2017 and $63 billion at Dec. 31, 2016.
(e) Return on tangible common equity, a Non-GAAP measure, excludes goodwill and intangible assets, net of deferred tax liabilities.

Financial Summary (continued)

(dollar amounts in millions, except per common share amounts and unless otherwise noted)	**2018**	2017	2016	
Cash dividends per common share	**$ 1.04**	$ 0.86	$ 0.72	
Common dividend payout ratio	**26%**	23%	23%	%
Common dividend yield	**2.2%**	1.6%	1.5%	%
Closing stock price per common share	**$ 47.07**	$ 53.86	$ 47.38	
Market capitalization *(in billions)*	**$ 45.2**	$ 54.6	$ 49.6	
Book value per common share	**$ 38.63**	$ 37.21	$ 33.67	
Tangible book value per common share – Non-GAAP *(a)*	**$ 19.04**	$ 18.24	$ 16.19	
Full-time employees	**51,300**	52,500	52,000	
Year-end common shares outstanding *(in thousands)*	**960,426**	1,013,442	1,047,488	
Average total equity to average total assets	**12.1%**	11.7%	10.7%	%
Capital ratios (at period-end):				
Consolidated regulatory capital ratios - fully phased-in basis: *(b)(c)*				
Advanced:				
CET1 ratio	**10.7%**	10.3%	9.7%	%
Tier 1 capital ratio	**12.8**	12.3	11.8	
Total (Tier 1 plus Tier 2) capital ratio	**13.6**	13.0	12.1	
Standardized:				
CET1 ratio	**11.7**	11.5	11.3	
Tier 1 capital ratio	**14.1**	13.7	13.6	
Total (Tier 1 plus Tier 2) capital ratio	**15.1**	14.7	14.2	
Tier 1 leverage ratio	**6.6**	6.4	N/A	
Supplementary leverage ratio ("SLR")	**6.0**	5.9	5.6	
Consolidated regulatory capital ratios - transitional basis: *(b)(d)*				
Advanced:				
CET1 ratio	**N/A**	10.7%	10.6%	%

Tier 1 capital ratio	**N/A**	12.7	12.6
Total (Tier 1 plus Tier 2) capital ratio	**N/A**	13.4	13.0
Tier 1 leverage ratio	**N/A**	6.6	6.6
SLR	**N/A**	6.1	6.0
BNY Mellon shareholders' equity to total assets ratio	**11.2%**	11.1%	11.6% %
BNY Mellon common shareholders' equity to total assets ratio	**10.2**	10.1	10.6

(a) Tangible book value per common share – Non-GAAP excludes goodwill and intangible assets, net of deferred tax liabilities.
(b) Risk-based capital ratios at Dec. 31, 2014 do not reflect the adoption of accounting guidance related to Consolidations in Accounting Standards Update ("ASU") 2015-02.
(c) For our Common Equity Tier 1 ("CET1"), Tier 1 and Total capital ratios, our effective capital ratios under U.S. capital rules are the lower of the ratios as calculated under the Standardized and Advanced Approaches. Beginning Jan. 1, 2018, consolidated regulatory ratios are fully phased-in. The consolidated regulatory ratios for all prior periods are presented on an estimated fully phased-in basis.
(d) Reflects transitional adjustments to CET1, Tier 1 capital and Tier 2 capital required in period periods under U.S. capital rules.

B.8	**Pro forma financial information**	Not applicable. There are no significant gross changes as defined in Item 20.2 of Annex I of the Prospectus Regulation.
B.9	**Profit forecast**	Not applicable. This prospectus does not contain any profit forecast nor profit estimates.
B.10	**Qualifications in the audit report on the historical financial information**	Not applicable. There are no qualifications in the auditors' report.
B.11	**Working capital statement**	Not applicable. BNY Mellon's working capital is sufficient for its present requirements.

SECTION C — SECURITIES

C.1	**Type and class of the securities being offered, including the security identification code**	The shares of BNY Mellon common stock having a par value of US$ 0.01 per share (the "Shares") offered pursuant to this prospectus can be either authorized but unissued Shares or treasury Shares, and are or will be, after their issuance, listed on the New York Stock Exchange (the "NYSE"). The ticker symbol for the Company's Shares is "BK." The ISIN Code of the Company's Shares is US0640581007.
C.2	**Currency of the securities issue**	The United States Dollar is the currency of the securities issue.
C.3	**Number of shares issued**	As of January 31, 2019, 954,548,741 shares of the registrant's common stock, $0.01 par value per share, were outstanding.
C.4	**Rights attached to the securities**	A participant shall have no rights as a shareholder by virtue of his or her participation in the offer until the date of the issuance of the Shares acquired under the offer (as evidenced by the appropriate entry on the

		books of the Company or of a duly authorized transfer agent of the Company). Once the Shares are issued an employee participating in the offer will have the rights of a normal shareholder, including dividend and voting rights.
C.5	**Transferability restrictions**	Employees eligible to participate in the offer are also subject to BNY Mellon's Personal Securities Trading Policy (Exhibit VI), a copy of which they have received. Additional copies can be obtained through the Company's intranet site. In addition, during identified restricted periods, a limited group of employees may not engage in transactions in Company stock or may not be permitted to change their contributions to The Bank of New York Mellon Corporation Employee Stock Purchase Plan (the "ESPP"). The employees concerned will receive separate communications by e-mail if these restrictions apply to them. Finally, certain employees identified as material risk takers may be subject to additional holding periods after they vest in their restricted stock units or other awards received under The Bank of New York Mellon Corporation Long-Term Incentive Plan, as Amended and Restated through February 24, 2014 (the "LTIP").
C.6	**Admission to trading on a regulated market**	As noted in Element C.1 above, the Shares are listed on the NYSE.
C.7	**Dividend policy**	Subject to approval of the Board of Directors of BNY Mellon, dividends are typically paid on BNY Mellon's common stock quarterly in February, May, August and November.

SECTION D — RISKS		
D.1	**Key risks related to the Company or its industry**	The risks related to the Company's business can be summarized as follows: • a communications or technology disruption or failure that results in a loss of information, delays the Company's ability to access information or impacts its ability to provide services to the Company's clients may materially adversely affect its business, financial condition and results of operations; • a cybersecurity incident, or a failure to protect the Company's computer systems, networks and information and the Company's clients' information against cybersecurity threats, could result in the theft, loss, unauthorized access to, disclosure, use or alteration of information, system or network failures, or loss of access to information; any such

		incident or failure could adversely impact the Company's ability to conduct the Company's businesses, damage the Company's reputation and cause losses; • the Company's business may be materially adversely affected by operational risk; • the Company's risk management framework may not be effective in mitigating risk and reducing the potential for losses; • the Company is subject to extensive government rulemaking, regulation and supervision; these rules and regulations have, and in the future may, compel the Company to change how the Company manages its businesses, which could have a material adverse effect on its business, financial condition and results of operations; in addition, these rules and regulations have increased its compliance and operational risk and costs; • regulatory or enforcement actions or litigation could materially adversely affect the Company's results of operations or harm the Company's businesses or reputation; • the Company's businesses may be negatively affected by adverse events, publicity, government scrutiny or other reputational harm; • failure to satisfy regulatory standards, including "well capitalized" and "well managed" status or capital adequacy and liquidity rules more generally, could result in limitations on the Company's activities and adversely affect its business and financial condition; • a failure or circumvention of the Company's controls and procedures could have a material adverse effect on the Company's business, reputation, results of operations and financial condition; • the application of the Company's Title I preferred resolution strategy or resolution under the Title II orderly liquidation authority could adversely affect the Company's liquidity and financial condition and the Company's security holders; • if the Company's resolution plan is determined not to be credible or not to facilitate an orderly resolution under the U.S. Bankruptcy Code, its business, reputation, results of operations and financial condition could be materially negatively impacted; • acts of terrorism, impacts from climate change, natural disasters, pandemics, global conflicts and other geopolitical events may have a negative impact on the Company's business and operations; • the Company is dependent on fee-based business for a substantial majority of its revenue and the Company's fee-based

		revenues could be adversely affected by slowing in market activity, weak financial markets, underperformance and/or negative trends in savings rates or in investment preferences; • weakness and volatility in financial markets and the economy generally may materially adversely affect the Company's business, results of operations and financial condition; • transitions away from, or changes in the calculation of, LIBOR and other benchmark rates could adversely impact the Company's business and results of operations; • the United Kingdom's referendum decision to leave the EU (commonly referred to as "Brexit") has had and may continue to have negative effects on global economic conditions, global financial markets, and the Company's business and results of operations; • changes in interest rates and yield curves could have a material adverse effect on the Company's profitability; • the Company may experience write-downs of securities that the Company owns and other losses related to volatile and illiquid market conditions, reducing the Company's earnings and impacting the Company's financial condition; • the Company's FX revenue may be adversely affected by decreases in market volatility and the cross-border investment activity of its clients; • the failure or perceived weakness of any of the Company's significant counterparties, many of whom are major financial institutions and sovereign entities, and the Company's assumption of credit and counterparty risk, could expose the Company to loss and adversely affect its business; • the Company's business, financial condition and results of operations could be adversely affected if the Company does not effectively manage its liquidity; • the Company could incur losses if its allowance for credit losses, including loan and lending-related commitments reserves, is inadequate; • any material reduction in the Company's credit ratings or the credit ratings of the Company's principal bank subsidiaries, The Bank of New York Mellon or BNY Mellon, N.A., could increase the cost of funding and borrowing to the Company and its rated subsidiaries and have a material adverse effect on its results of operations and financial condition and on the value of the securities the Company issues;

		• new lines of business, new products and services or transformational or strategic project initiatives may subject the Company to additional risks, and the failure to implement these initiatives could affect the Company's results of operations; • the Company is subject to competition in all aspects of the Company's business, which could negatively affect its ability to maintain or increase the Company's profitability; • the Company's business may be adversely affected if it is unable to attract and retain employees; • the Company's strategic transactions present risks and uncertainties and could have an adverse effect on its business, results of operations and financial condition; • tax law changes or challenges to the Company's tax positions with respect to historical transactions may adversely affect its net income, effective tax rate and the Company's overall results of operations and financial condition; • the Company's ability to return capital to shareholders is subject to the discretion of its Board of Directors and may be limited by U.S. banking laws and regulations, including those governing capital and the approval of its capital plan, applicable provisions of Delaware law or its failure to pay full and timely dividends on its preferred stock; • the Company is a non-operating holding company, and as a result, is dependent on dividends from its subsidiaries and extensions of credit from its IHC to meet its obligations, including with respect to its securities, and to provide funds for share repurchases and payment of dividends to its stockholders; and, • changes in accounting standards governing the preparation of the Company's financial statements and future events could have a material impact on its reported financial condition, results of operations, cash flows and other financial data.
D.3	**Key risks related to the Shares**	The risks related to the participation itself in the ESPP, The Bank of New York Mellon Corporation Share Accumulation Plan (the "SAP") and the LTIP, together referred to as the "Plans", and the acquisition of Shares thereunder, can be summarized as follows: • Participation in the Plans is subject to the same risks as inherent to any investment in shares (such as a change of the stock exchange price of the shares) and a participant in the Plans therefore potentially faces the risk of losing a part or all of his invested capital.

		• Participation in the Plans is subject to a currency risk (e.g., US$/EUR or US$/Sterling pound) that could adversely affect the value derived from the participation in the Plan. • The possible tax and/or social security consequences of the participation in the Plans could adversely affect the value derived from the participation in the Plans. • Under the Plans, there may be certain restrictions with respect to the withdrawal of Shares which may lead to a certain restriction on the liquidity thereof. In addition, because of the significant lack of clarity over the terms of the United Kingdom's exit from the EU and the terms of the United Kingdom's future relationship with the EU, there is some uncertainty as to the validity of this prospectus should the United Kingdom exit the EU without an agreement prior to July 21, 2019.

SECTION E — OFFER		
E.1	**Net proceeds and expenses**	Assuming that all 3,449,096 Shares offered under the ESPP pursuant to this prospectus would be purchased by the employees participating in the ESPP, then the gross proceeds would, taking into account a Share price on February 28, 2019 of US$ 52.48 and the applicable rules regarding the price paid for Shares under the ESPP, amount to US$ 171,958,130.18. The Company has incurred legal costs of approximately US$ 55,000 to implement this prospectus in order to offer securities under the Plans to eligible employees of its subsidiaries in the European Economic Area.
E.2a	**Reasons for the offer and use of proceeds**	The purpose of the ESPP and SAP is to provide an opportunity for the Company's eligible employees and the eligible employees of the Company's subsidiaries and affiliates to purchase Shares through payroll deductions and thereby have an additional incentive to contribute to the Company's success. The purpose of the LTIP is to promote the growth and profitability of the Company and its affiliates, to provide officers, other employees and non-employee directors of the Company and its affiliates with the incentive to achieve long-term corporate objectives, to attract and retain officers, other employees and non-employee directors, and to provide such individuals with an opportunity to acquire Shares and cash awards. The proceeds, if any, of the offers under the Plans will be used by the Company for general corporate purposes.

E.3	**Description of the terms and conditions of the offer**	**The below description of the terms and conditions of the offer is only intended to be a very high level summary of those terms and conditions. The reader is strongly encouraged to read the ESPP, SAP and LTIP as attached under Exhibits I, II and III to this prospectus.** ESPP The ESPP is administered by the Company's Human Resources and Compensation Committee (the "HRCC"). The HRCC has the authority and responsibility for the administration of the ESPP and it may delegate to one or more individuals the day-to-day administration of, and other responsibilities relating to, the ESPP. All of the Company's full-time and certain part-time U.S. domestic salaried employees or those of any subsidiary or affiliate on the Offering Date (as defined below) are eligible to participate in the ESPP, unless otherwise determined by the HRCC or its delegate. Certain non-U.S. full-time or part-time salaried employees, as specified by the HRCC or its delegate, may also participate in the ESPP. There will be monthly "Purchase Periods" for the purchase of Shares under the ESPP. The first business day of each Purchase Period is an "Offering Date" and the last business day of each Purchase Period that is also a trading day is a "Purchase Date". An eligible employee may participate in the ESPP during any Purchase Period by filing a payroll deduction authorization form by the enrollment deadline established for the Purchase Period. A participant may authorize a payroll deduction between 1% and 10%, or such other percentage as specified by the HRCC prior to the commencement of a Purchase Period, in whole percentages, of the employee's eligible compensation to be deducted for each pay period ending during the Purchase Period to be applied at the end of the Purchase Period to the purchase of Shares. Under procedures established by the HRCC or its delegate, a participant may discontinue payroll deductions under the ESPP at any time during a Purchase Period. The purchase price of Shares purchased under the ESPP will be 95%, which is referred to as the "Designated Percentage", of the fair market value of the Shares on the Purchase Date. For purposes of the ESPP, the fair market value shall mean the closing price of a Share in the NYSE Composite Transactions on the relevant date, or, if no sale shall have been made on such exchange on that date, the closing price in the NYSE Composite Transactions on the last preceding day on which there was a sale. However, the HRCC may change the Designated Percentage with respect to any future Purchase Period, but not below 85%. On each Purchase Date, subject to certain limitations, a participant automatically purchases that number of full (and, if and to the extent

		permitted by the ESPP administrator, fractional) Shares which the accumulated payroll deductions credited to the participant's account at that time shall purchase at the applicable purchase price (the "Purchase Price"). No purchase rights granted under the ESPP shall be assignable or transferable by a participant other than by will or by the laws of descent and distribution. The ESPP shall continue in effect until the earlier of its termination by the Company's Board of Directors or the date on which all of the Shares available for issuance under the ESPP have been issued. SAP The Bank of New York Mellon Corporation Share Accumulation Plan (the "SAP") was adopted by the HRCC of the Company's Board of Directors on October 13, 2008 as a sub-plan of the ESPP. The SAP is a tax preferential employee share plan operated solely in the United Kingdom, pursuant to which employees of participating companies are able to acquire Shares in the Company. All eligible employees of participating companies who are U.K. resident taxpayers and who have been employed by a participating company at all times during any qualifying period will be eligible to acquire Shares under the SAP. The Company will invite eligible employees to purchase Shares (the "Partnership Shares") worth up to £1,800 per tax year (or 10% of their annual pre-tax salary, if lower) through monthly payroll deductions from their annual pre-tax salary, subject to a minimum contribution of £10 and a maximum contribution of £150. Employees may also opt to make a one-off lump sum contribution in March, subject to the tax-year limit of £1,800. All amounts deducted from the salaries of participating employees will be delivered by the participating company to Link Market Services Ltd. (the "Trustees") who will use the contributions to purchase Shares on the NYSE. The price paid for each Partnership Share will be determined by reference to the market value of the Company's Shares on the date of acquisition. For purposes of the SAP, the market value shall mean, as long as the Shares are listed on the NYSE, (i) if all the Shares are acquired for allocation to participants by the Trustees within a certain timeframe, as further defined in the SAP, the average of prices paid by the Trustees for those Shares; or (ii) in any other case, the closing price of a Share on the NYSE on the last day the London Stock Exchange is open for trade prior to the acquisition date or award date, as further determined in the SAP. Participating employees can withdraw their Partnership Shares from the trust administered by the Trustees (the "Trust") at any time. In the

		event that income tax or National Insurance contributions (the "NICs") are payable, the Trustees will sell all or a portion of the Partnership Shares to cover such liabilities, unless the participating employee provides them with sufficient funds, in advance, to pay the tax liability in advance. Generally, the Partnership Shares must be held in the Trust for at least three years in order for the participating employee to benefit from favourable tax and NICs treatment. Generally, the Partnership Shares must be held in the Trust for at least five years in order for the participating employee to be able to withdraw them from the Trust free of income tax and NICs liability. Where the employment of a participating employee is terminated, the individual will be entitled to retain any Partnership Shares which he or she has acquired. The Company may, in its absolute discretion, also offer other types of awards to participating employees under the SAP. A description of these other award types follows. (i) Free Shares The Company may choose to award Shares worth up to £3,600 per tax year at no cost to eligible employees (the "Free Shares"), which may be subject to the satisfaction of performance criteria. Free Shares cannot be withdrawn from the Trust prior to the end of a holding period of three years and will be forfeited by an employee attempting to do so. If the Free Shares are withdrawn once the holding period has expired but less than five years after acquisition, income tax and NICs will be payable, albeit on a favourable basis. (ii) Matching Shares Upon a participating employee entering into an agreement to acquire Partnership Shares, the Company can agree to award "Matching Shares" worth up to £3,600 per tax year to the participating employee at no cost, determined as a maximum ratio of 2:1 to the number of Partnership Shares which the participating employee acquires. The Company has the discretionary right to vary this ratio on each occasion that the Company agrees to award "Matching Shares". Matching Shares cannot be withdrawn from the Trust prior to the end of the holding period of three years and will be forfeited by an employee attempting to do so. Generally, if the Matching Shares are withdrawn once the holding period has expired, but less than five years after acquisition, income tax and NICs will be payable, albeit on a favourable basis. (iii) Dividend Shares In addition, the Company may offer "Dividend Shares" under which dividends on Shares can be reinvested each year to acquire further Shares under the SAP. There was previously a limit of £1,500 per year on dividends that could be reinvested, but this limitation was removed

		in 2013. Dividend Shares cannot be withdrawn from the Trust prior to the end of the holding period of three years. If the Dividend Shares are withdrawn once the holding period has expired, but less than three years after acquisition, income tax will generally be payable. <u>LTIP</u> Employees of the Company and the Company's affiliates (or former employees, if the award is granted within 12 months of termination of employment and with respect to the final year of service), along with Company's non-employee directors, are eligible to receive awards under the LTIP. Except in the case of awards to non-employee directors, the LTIP will be administered by the HRCC. In the case of awards to non-employee directors, the LTIP will be administered by the Company's (or its delegate) Board of Directors in its entirety. The types of awards which the HRCC has authority to grant are stock options, stock appreciation rights, restricted stock, restricted stock units, performance share units, deferred stock units and other stock-based awards and cash awards. Employees are eligible to receive all types of awards under the LTIP. Non-employee directors are eligible to receive awards under the LTIP other than "incentive stock options." Restricted stock units awarded by the HRCC will be subject to such restrictions (which may include restrictions on the right to transfer or encumber the units while subject to restriction) as the HRCC may impose and will be subject to forfeiture in whole or in part if certain events (which may, in the discretion of the HRCC, include termination of employment and/or performance-based events) specified by the HRCC occur prior to the lapse of the restrictions. The restricted stock unit agreement between the Company and the awardee will set forth the number of restricted stock units awarded to the awardee, the restrictions imposed thereon, the duration of such restrictions, the events the occurrence of which would cause a forfeiture of the restricted stock units in whole or in part and such other terms and conditions as the HRCC in its discretion deems appropriate. The HRCC is authorized, subject to limitations under applicable law, to grant such other awards that are denominated or payable in, valued in whole or in part by reference to, or otherwise based on, or related to, the Company's Shares, as deemed by the HRCC to be consistent with the purposes of the LTIP, including, without limitation, purchase rights, Shares awarded without restrictions or conditions, convertible securities, exchangeable securities or other rights convertible or exchangeable into Shares, as the HRCC in its discretion may determine. For purposes of the LTIP, the fair market value shall mean the closing price of a Share in the NYSE Composite Transaction on the relevant date, or, if no sale shall have been made on such exchange on that date,

		the closing price in the NYSE Composite Transaction on the last preceding day on which there was a sale. No awards may be granted under the LTIP subsequent to February 24, 2024. **A new Long-Term Incentive Plan, The Bank of New York Mellon Corporation 2019 Long-Term Incentive Plan ("2019 LTIP") currently is being established and is slated to become effective upon approval by the Company's shareholders during the 2019 Annual Meeting expected to occur on April 9, 2019. The Company is establishing the 2019 LTIP to obtain shareholder approval for issuance of additional shares pursuant to its awards under the plan. The following description of the terms and conditions of the offer of participation in the 2019 LTIP is only intended to be a very high level summary of those terms and conditions in a highly simplified manner. The LTIP is intended to be terminated once the 2019 LTIP is adopted; but any outstanding awards will continue to be governed by the terms of the incentive plan in effect at the time such grants were made.** The 2019 LTIP will be filed with the SEC and the Company will also file a Form 8-K announcing the results of the voting at the 2019 Annual Meeting. In brief, the 2019 LTIP generally contains the same terms and conditions as the LTIP, except that the 2019 LTIP: • authorizes for issuance of 35,000,000 shares; • removes the terms related to U.S. Code Section 162(m) that have become obsolete as a result of the U.S. federal tax reform legislation enacted in December 2017; • generally requires a minimum three-year ratable vesting schedule for time-vesting options and a one-year vesting schedule for performance-vesting options, consistent with the minimum vesting periods applicable to restricted stock and RSUs; • prohibits the transfer of awards to third-party financial institutions; and • prohibits the payments of dividends and dividend equivalents on any unvested awards. Employees of the Company and the Company's affiliates (or former employees, if the award is granted within 12 months of termination of employment and with respect to the final year of service), along with Company's non-employee directors, are eligible to receive awards under the 2019 LTIP. Except in the case of awards to non-employee directors, the 2019 LTIP will be administered by the HRCC. In the case of awards to non-employee directors, the 2019 LTIP will be administered by the

		Company's (or its delegate) Board of Directors in its entirety. The types of awards which the HRCC has authority to grant are stock options, stock appreciation rights, restricted stock, restricted stock units, performance share units, deferred stock units and other stock-based awards and cash awards. Employees are eligible to receive all types of awards under the 2019 LTIP. Non-employee directors are eligible to receive awards under the 2019 LTIP other than "incentive stock options." Restricted stock units awarded by the HRCC will be subject to such restrictions (which may include restrictions on the right to transfer or encumber the units while subject to restriction) as the HRCC may impose and will be subject to forfeiture in whole or in part if certain events (which may, in the discretion of the HRCC, include termination of employment and/or performance-based events) specified by the HRCC occur prior to the lapse of the restrictions. The restricted stock unit agreement between the Company and the awardee will set forth the number of restricted stock units awarded to the awardee, the restrictions imposed thereon, the duration of such restrictions, the events the occurrence of which would cause a forfeiture of the restricted stock units in whole or in part and such other terms and conditions as the HRCC in its discretion deems appropriate. The HRCC is authorized, subject to limitations under applicable law, to grant such other awards that are denominated or payable in, valued in whole or in part by reference to, or otherwise based on, or related to, the Company's Shares, as deemed by the HRCC to be consistent with the purposes of the 2019 LTIP, including, without limitation, purchase rights, Shares awarded without restrictions or conditions, convertible securities, exchangeable securities or other rights convertible or exchangeable into Shares, as the HRCC in its discretion may determine. For purposes of the 2019 LTIP, the fair market value shall mean the closing price of a Share in the NYSE Composite Transaction on the relevant date, or, if no sale shall have been made on such exchange on that date, the closing price in the NYSE Composite Transaction on the last preceding day on which there was a sale.
E.4	**Description of material interest to the offer including conflict of interests**	Not applicable. There are no such interests.
E.5	**Name of the entity offering to sell the security**	The Bank of New York Mellon Corporation.
E.6	**Maximum dilution**	Assuming that the Shares offered would all be newly issued, the holdings of a shareholder of BNY Mellon currently holding 1% of the total outstanding share capital of BNY Mellon as of January 31, 2019,

<table>
<tr><td rowspan="4"></td><td rowspan="4"></td><td colspan="3">i.e., 9,545,487 Shares, and who is not an eligible employee participating in the offer, would be diluted as indicated in the following table:</td></tr>
<tr><td></td><td>Percentage of the total outstanding Shares</td><td>Total number of outstanding Shares</td></tr>
<tr><td>Before the issuance of Shares under the ESPP (as of January 31, 2019)</td><td>1.00%</td><td>954,548,741</td></tr>
<tr><td>After issuance of 3,449,096 Shares under the ESPP</td><td>0.9964%</td><td>957,997,837</td></tr>
<tr><td>E.7</td><td>Estimated expenses charged to the investor by the issuer or offeror</td><td colspan="3">Not applicable. There are no such expenses.</td></tr>
</table>

II. Risk factors

(a) The risk factors to be taken into consideration when participating in the Plans consist, on the one hand, of risks related to the participation of the Plans itself, and, on the other hand, risks related to the Company's business.

The risks related to the participation itself in the Company's Plans can be summarized as follows:

- Participation in the Plans is subject to the same risks as inherent to any investment in shares (such as a change of the stock exchange price of the shares) and a participant in the Plans therefore potentially faces the risk of losing a part or all of his invested capital.

- Participation in the Plans is subject to a currency risk (e.g., US$/EUR or US$/Sterling pound) that could adversely affect the value derived from the participation in the Plans.

- The possible tax and /or social security consequences of the participation in the Plans could adversely affect the value derived from the participation in the Plans.

- Under the Plans, there may be certain restrictions with respect to the withdrawal of Shares which may lead to a certain restriction on the liquidity thereof.

In addition, because of the significant lack of clarity over the terms of the United Kingdom's exit from the EU and the terms of the United Kingdom's future relationship with the EU, there is some uncertainty as to the validity of this prospectus should the United Kingdom exit the EU without an agreement prior to July 21, 2019.

(b) The risks related to the Company's business can be summarized as follows:

- a communications or technology disruption or failure that results in a loss of information, delays the Company's ability to access information or impacts its ability to provide services to the Company's clients may materially adversely affect its business, financial condition and results of operations;

- a cybersecurity incident, or a failure to protect the Company's computer systems, networks and information and the Company's clients' information against cybersecurity threats, could result in the theft, loss, unauthorized access to, disclosure, use or alteration of information, system or network failures, or loss of access to information; any such incident or failure could adversely impact the Company's ability to conduct the Company's businesses, damage the Company's reputation and cause losses;

- the Company's business may be materially adversely affected by operational risk;

- the Company's risk management framework may not be effective in mitigating risk and reducing the potential for losses;

- the Company is subject to extensive government rulemaking, regulation and supervision; these rules and regulations have, and in the future may, compel the Company to change how the Company manages its businesses, which could have a material adverse effect on its business, financial condition and results of operations; in addition, these rules and regulations have increased its compliance and operational risk and costs;

- regulatory or enforcement actions or litigation could materially adversely affect the Company's results of operations or harm the Company's businesses or reputation;

- the Company's businesses may be negatively affected by adverse events, publicity, government scrutiny or other reputational harm;

- failure to satisfy regulatory standards, including "well capitalized" and "well managed" status or capital adequacy and liquidity rules more generally, could result in limitations on the Company's activities and adversely affect its business and financial condition;

- a failure or circumvention of the Company's controls and procedures could have a material adverse effect on the Company's business, reputation, results of operations and financial condition;

- the application of the Company's Title I preferred resolution strategy or resolution under the Title II orderly liquidation authority could adversely affect the Company's liquidity and financial condition and the Company's security holders;

- if the Company's resolution plan is determined not to be credible or not to facilitate an orderly resolution under the U.S. Bankruptcy Code, its business, reputation, results of operations and financial condition could be materially negatively impacted;

- acts of terrorism, impacts from climate change, natural disasters, pandemics, global conflicts and other geopolitical events may have a negative impact on the Company's business and operations;

- the Company is dependent on fee-based business for a substantial majority of its revenue and the Company's fee-based revenues could be adversely affected by slowing in market activity, weak financial markets, underperformance and/or negative trends in savings rates or in investment preferences;

- weakness and volatility in financial markets and the economy generally may materially adversely affect the Company's business, results of operations and financial condition;

- transitions away from, or changes in the calculation of, LIBOR and other benchmark rates could adversely impact the Company's business and results of operations;

- the United Kingdom's referendum decision to leave the EU has had and may continue to have negative effects on global economic conditions, global financial markets, and the Company's business and results of operations;

- changes in interest rates and yield curves could have a material adverse effect on the Company's profitability;

- the Company may experience write-downs of securities that the Company owns and other losses related to volatile and illiquid market conditions, reducing the Company's earnings and impacting the Company's financial condition;

- the Company's FX revenue may be adversely affected by decreases in market volatility and the cross-border investment activity of its clients;

- the failure or perceived weakness of any of the Company's significant counterparties, many of whom are major financial institutions and sovereign entities, and the Company's assumption of credit and counterparty risk, could expose the Company to loss and adversely affect its business;

- the Company's business, financial condition and results of operations could be adversely affected if the Company does not effectively manage its liquidity;

- the Company could incur losses if its allowance for credit losses, including loan and lending-related commitments reserves, is inadequate;

- any material reduction in the Company's credit ratings or the credit ratings of the Company's principal bank subsidiaries, The Bank of New York Mellon or BNY Mellon, N.A., could increase the cost of funding and borrowing to the Company and its rated subsidiaries and have a material adverse effect on its results of operations and financial condition and on the value of the securities the Company issues;

- new lines of business, new products and services or transformational or strategic project initiatives may subject the Company to additional risks, and the failure to implement these initiatives could affect the Company's results of operations;

- the Company is subject to competition in all aspects of the Company's business, which could negatively affect its ability to maintain or increase the Company's profitability;

- the Company's business may be adversely affected if it is unable to attract and retain employees;

- the Company's strategic transactions present risks and uncertainties and could have an adverse effect on its business, results of operations and financial condition;

- tax law changes or challenges to the Company's tax positions with respect to historical transactions may adversely affect its net income, effective tax rate and the Company's overall results of operations and financial condition;

- the Company's ability to return capital to shareholders is subject to the discretion of its Board of Directors and may be limited by U.S. banking laws and regulations, including those governing capital and the approval of its capital plan, applicable provisions of Delaware law or its failure to pay full and timely dividends on its preferred stock;

- the Company is a non-operating holding company, and as a result, is dependent on dividends from its subsidiaries and extensions of credit from its IHC to meet its obligations, including with respect to its securities, and to provide funds for share repurchases and payment of dividends to its stockholders; and,

- changes in accounting standards governing the preparation of the Company's financial statements and future events could have a material impact on its reported financial condition, results of operations, cash flows and other financial data.

III. Information on the offer and dilution resulting therefrom

A. Information concerning the offer

A.1. Description of the offer

General information

BNY Mellon, a Delaware corporation, with its principle executive offices at 240 Greenwich Street, New York, New York 10286, United States of America, is providing eligible employees (and, in the case of awards under the LTIP, former employees if the award is granted within 12 months of termination of employment and with respect to the final year of service) of its (direct or indirect) subsidiaries in Europe the opportunity to acquire Shares under the following equity incentive plans:

- the ESPP;
- the SAP; and
- the LTIP.

The Shares of BNY Mellon, having a par value of US$ 0.01 per share, offered pursuant to this prospectus can be either authorized but unissued Shares or treasury Shares, and are or will be, after their issuance, listed on the NYSE. The Shares are listed on the NYSE under the ticker symbol "BK". The ISIN Code of the Company's Shares is US0640581007. The currency applicable to the securities is the USD.

Once the Shares are issued an employee participating in the offer will have the rights of a typical shareholder, including dividend and voting rights. Subject to approval of the Board of Directors of BNY Mellon, dividends are typically paid on BNY Mellon's common stock quarterly in February, May, August and November. The Shares are subject to any US and/or Delaware law rules regarding mandatory takeover bids, squeeze-outs and sell-outs.

Employees eligible to participate in the offer are also subject to BNY Mellon's Personal Securities Trading Policy (Exhibit VI), a copy of which they have received. Additional copies can be obtained through the Company's intranet site.

In addition, during identified restricted periods, a limited group of employees may not engage in transactions in Company stock or may not be permitted to change their contributions to the ESPP. The employees concerned will receive separate communications by e-mail if these restrictions apply to them.

Finally, certain employees identified as material risk takers may be subject to additional holding periods after they vest in their restricted stock units or other awards received under the LTIP.

The main features of the ESPP, the SAP, and the LTIP are described hereafter. The following description is only a summary. The awards are consequently subject to the actual terms and conditions of the ESPP, the SAP, and the LTIP, the full text of which is enclosed in Exhibits I, II, and III respectively.

ESPP

Background and Purpose

The ESPP was adopted by the Company's Board of Directors on March 11, 2008 and was approved by the Company's shareholders on April 8, 2008. The purpose of the ESPP is to provide an opportunity for the Company's eligible employees and the eligible employees of the Company's subsidiaries and affiliates to purchase Shares through payroll deductions and thereby have an additional incentive to contribute to the Company's success. The aggregate number of Shares that may be issued and sold under the ESPP is 7,500,000 Shares, subject to proportionate adjustment in the event of stock splits and similar events.

Administration

The ESPP is administered by the HRCC. The HRCC has the authority and responsibility for the administration of the ESPP and it may delegate to one or more individuals the day-to-day administration of, and other responsibilities relating to, the ESPP. Fidelity Stock Plan Services LLC ("Fidelity") (successor to ComputerShare) is currently the stock plan administrator for the ESPP. The HRCC or its delegate has full power and authority to promulgate any rules and regulations that it deems necessary for the proper administration of the ESPP, to interpret the provisions and supervise the administration of the ESPP, to establish required ownership levels for subsidiaries and affiliates, to identify eligible employees or the parameters by which they shall be identified, to make factual determinations relevant to ESPP entitlements and to take all necessary or advisable actions in connection with administration of the ESPP.

Eligibility of Employees

All of the Company's full-time and certain part-time U.S. domestic salaried employees or those of any subsidiary or affiliate on the Offering Date (as defined below) are eligible to participate in the ESPP, unless otherwise determined by the HRCC or its delegate. Certain non-U.S. full-time or part-time salaried employees, as specified by the HRCC or its delegate, may also participate in the ESPP.

Purchase Periods and Payroll Deductions

There will be monthly "Purchase Periods" for the purchase of Shares under the ESPP. The first business day of each Purchase Period is an "Offering Date" and the last business day of each Purchase Period that is also a trading day is a "Purchase Date". The first Purchase Period for the eligible employees in Belgium, Ireland, Luxembourg, the Netherlands and the United Kingdom began on May 1, 2009 and ended on May 31, 2009. Subsequent Purchase Periods run consecutively following the expiration of the preceding Purchase Period. The HRCC or its delegate has the power to change the commencement date or duration of the Purchase Periods.

An eligible employee may participate in the ESPP during any Purchase Period by filing a payroll deduction authorization form by the enrollment deadline established for the Purchase Period. A participant may authorize a payroll deduction between 1% and 10%, or such other percentage as specified by the HRCC prior to the commencement of a Purchase Period, in whole percentages, of the employee's eligible compensation (base rate of cash remuneration, determined prior to any contractual reductions and excluding bonuses, overtime pay, severance, all other forms of special pay or compensation or amounts received from deferred compensation plans) to be deducted for each pay period ending during the Purchase Period and credited to a bookkeeping account (or, if required under applicable law, a dedicated bank account established in the name of all local participants) to be applied at the end of the Purchase Period to the purchase of Shares. In Belgium, a dedicated bank account is opened with The Bank of New York Mellon SA/NV, with registered office at Rue Montoyerstraat 46, B-1000 Brussels. No interest will be credited on payroll deductions, except when required by local law or as determined by the HRCC or its delegate.

Under procedures established by the HRCC or its delegate, a participant may discontinue payroll deductions under the ESPP at any time during a Purchase Period. If a participant discontinues participation during a Purchase Period, his or her accumulated payroll deductions will remain in the ESPP for the purchase of Shares at the end of the Purchase Period, and as soon as administratively practicable no further payroll deductions will be made from his or her pay during such Purchase Period or future Purchase Periods. Amounts not applied to the purchase of Shares on such following Purchase Date, in accordance with the applicable rules of the ESPP administrator, shall be refunded to the participant. A participant's withdrawal will not have any effect upon his or her eligibility to elect to participate in any succeeding Purchase Period.

Purchase of Common Stock

The purchase price of Shares purchased under the ESPP will be 95%, which is referred to as the "Designated Percentage", of the fair market value of the Shares on the Purchase Date. For purposes of the ESPP, the fair market value shall mean the closing price of a Share in the NYSE Composite Transactions on the relevant date, or, if no sale shall have been made on such exchange on that date, the closing price in the NYSE Composite Transactions on the last preceding day on which there was a sale. However, the HRCC may change the Designated Percentage with respect to any future Purchase Period, but not below 85%.

On each Purchase Date, subject to certain limitations, a participant automatically purchases that number of full (and, if and to the extent permitted by the Plan administrator, fractional) Shares which the accumulated payroll deductions credited to the participant's account at that time shall purchase at the applicable Purchase Price. Unless and until otherwise determined by the HRCC or its delegate, all

Shares purchased under the ESPP shall be deposited, in book-entry form or otherwise, directly to an account established in the name of the participant. On a quarterly basis, the Company will deliver to the participant a record of the Shares purchased. Rights to purchase, which are granted to participants, may not be voluntarily or involuntarily assigned, transferred, pledged, or otherwise disposed of in any way, and during the participant's lifetime may be exercised only by the participant.

The maximum number of Shares which may be purchased for any employee for any Purchase Period is limited to US$ 25,000 divided by the fair market value of a Share as of the last day of the Purchase Period, reduced by the number of Shares purchased by an employee during any previous Purchase Periods ending in the same calendar year.

Dividends

If the Company's Board of Directors declares a dividend, the participants will be entitled to dividends on Shares held in their ESPP account. Any dividends on Shares so held in the ESPP account on the record date for the dividend (less any taxes required to be withheld) will be used automatically to purchase more Shares on the participant's behalf (unless otherwise prohibited under local law). These Shares are currently purchased by Fidelity on the open market and credited to the participant's book entry account based on the average price paid. The 5% discount does not apply to Shares purchased with dividends.

Termination of Employment

Participation in the ESPP will discontinue as of the date of termination of employment of a participating employee, whether by death, retirement, disability or otherwise unless otherwise prohibited under local law. In the event of a participating employee's termination of employment prior to the expiration of a Purchase Period, all amounts credited to the participant's stock purchase account will remain in the ESPP for purchase of Shares at the end of the Purchase Period. Amounts not applied to the purchase of Shares on such following Purchase Date, in accordance with the applicable rules of the Plan administrator, shall be refunded to the participant.

BNY Mellon's Personal Securities Trading Policy - Restricted Periods

Employees eligible to participate in the ESPP are also subject to BNY Mellon's Personal Securities Trading Policy (Exhibit VI), a copy of which they have received. Additional copies can be obtained through the Company's intranet site.

In addition, during identified restricted periods, a limited group of employees may not engage in transactions in Company stock or may not be permitted to change their contributions to the ESPP. The employees concerned will receive separate communications by e-mail if these restrictions apply to them.

Stock split – stock dividend – combination or recapitalization of stock

If a stock split, stock dividend, combination or recapitalization of the stock occurs during a purchase period, appropriate adjustments will be made in the formula for determining the purchase price and the number of Shares to be purchased. The HRCC or the Board of Directors also may adjust the number or kind of Shares to be purchased or the purchase price to reflect any reorganization, recapitalization, spin-off, split-up, rights offering or reduction of the outstanding Shares. In the event of an asset sale, merger or consolidation involving the Company, the Board of Directors may advance the purchase date of the then current purchase period to precede consummation of the transaction or may provide for the purchase on the regular purchase date of securities of the successor corporation.

Amendment and Termination

The Company's Board of Directors may amend or terminate the ESPP at any time, provided that without stockholder approval no amendment may (a) increase the total number of Shares that may be issued and sold under the ESPP, other than for adjustments provided for in the ESPP, or (b) otherwise be made if shareholder approval is required by the rules of any stock exchange on which the Share is listed. The HRCC may suspend the ESPP at any time.

If on the last day of a Purchase Period the number of Shares purchasable by employees is greater than the number of Shares remaining available under the ESPP, the HRCC will allocate the available Shares among the participating employees in such manner as it deems equitable.

Shareholder's rights

A participant shall have no rights as a shareholder by virtue of his or her participation in the ESPP until the date of the issuance of the Shares purchased pursuant to the exercise of the Participant's purchase rights under the ESPP (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company).

Transferability

No purchase rights granted under the ESPP shall be assignable or transferable by a participant other than by will or by the laws of descent and distribution.

Term of the ESPP

The ESPP shall continue in effect until the earlier of its termination by the Company's Board of Directors or the date on which all of the Shares available for issuance under the ESPP have been issued.

SAP

Background

The SAP was adopted by the HRCC of the Company's Board of Directors on October 13, 2008 as a sub-plan of the ESPP.

The SAP is a tax preferential employee share plan operated solely in the United Kingdom, pursuant to which employees of participating companies are able to acquire Shares in the Company. The Company has registered the SAP with the HM Revenue & Customs and self-certified that all applicable requirements have been met. All Shares acquired by participating employees will be held in the Trust administered by the Trustees. Provided that certain conditions are met, the Shares acquired under the SAP will benefit from favourable income tax and NICs treatment in the United Kingdom.

Offer of Partnership Shares

All eligible employees of participating companies who are U.K. resident taxpayers and who have been employed by a participating company at all times during any qualifying period will be eligible to acquire Shares under the SAP.

The Company will invite eligible employees to purchase Shares (the "Partnership Shares") worth up to £1,800 per tax year (or 10% of their annual pre-tax salary, if lower) through payroll deductions from their pre-tax earnings, subject to a minimum contribution of £10 per month. A participating employee is entitled to stop (or re-start) the deductions or withdraw from the SAP at any time by giving notice in writing.

All amounts deducted from the salaries of participating employees will be delivered by the participating company to the Trustees who will use the contributions to purchase Shares on the NYSE. The contributions will be accumulated either in a one month period once a year or over 12 monthly periods each year prior to being used to purchase the Partnership Shares (the "Accumulation Period").

The price paid for each Partnership Share will be determined by reference to the market value of the Company's Shares on the date of acquisition. For purposes of the SAP, the market value shall mean, as long as the Shares are listed on the NYSE, (i) if all Shares are acquired for allocation to participants by the Trustees within a certain timeframe, as further defined in the SAP, the average of the prices paid by the Trustees for those Shares; or (ii) in any other case, the closing price of a Share on the NYSE on the last day the London Stock Exchange is open for trade prior to the acquisition date or award date, as further determined in the SAP. As the price of the Shares is quoted in US dollars, the contributions will be converted into US dollars at the prevailing exchange rate at the time of purchase.

Participating employees can withdraw their Partnership Shares from the Trust at any time. In the event that income tax or NICs are payable, the Trustees will sell all or a portion of the Partnership Shares to cover such liabilities, unless the participating employee provides them with sufficient funds to pay the tax liability in advance. Generally, the Partnership Shares must be held in the Trust for at least three years in order for the participating employee to benefit from favourable tax and NICs treatment. Generally, the Partnership Shares must be held in the Trust for at least five years in order for the participating employee to be able to withdraw them free of income tax and NICs liability.

Where the employment of a participating employee is terminated, the individual will be entitled to retain any Partnership Shares which he or she has acquired. However, the individual will generally be liable to pay income tax and NICs on the transfer of the Partnership Shares out of the Trust if these Shares have not been held in the Trust for at least five years. If the participating employee ceases to be employed during an Accumulation Period, any money held by the Trustee but not yet used to purchase Partnership Shares will be refunded to the individual (subject to the deduction of income tax and NICs).

Other Types of Shares which may be Offered

The Company may, in its absolute discretion, also offer other types of awards to participating employees under the SAP. A description of these other award types follows.

(i) Free Shares

The Company may choose to award Free Shares worth up to £3,600 per tax year at no cost to eligible employees, which may be subject to the satisfaction of performance criteria. If performance criteria are used, they will apply to all eligible employees.

Free Shares cannot be withdrawn from the Trust prior to the end of a holding period of three years and will be forfeited by an employee attempting to do so. Generally, if the Free Shares are withdrawn once the holding period has expired but less than five years after acquisition, income tax and NICs will be payable, albeit on a favourable basis. To satisfy the tax and NICs liability, the Trustees will sell all or a portion of the Free Shares, unless the participating employee provides them in advance with sufficient funds to pay the tax liability. No tax or NICs liability will arise on the withdrawal of the Free Shares from the Trust by the participating employees if the Free Shares are held in the Trust for at least five years.

(ii) Matching Shares

Upon a participating employee entering into an agreement to acquire Partnership Shares, the Company can agree to award "Matching Shares" worth up to £3,600 per tax year to the participating employee at no cost, determined as a maximum ratio of 2:1 to the number of Partnership Shares which the participating employee acquires. The Company has the discretionary right to vary this ratio on each occasion that the Company agrees to award "Matching Shares".

Matching Shares cannot be withdrawn from the Trust prior to the end of the holding period of three years and will be forfeited by an employee attempting to do so. Generally, if the Matching Shares are withdrawn once the holding period has expired, but less than five years after acquisition, income tax and NICs will be payable, albeit on a favourable basis. To satisfy the tax and NICs liability, the Trustees will sell all or a portion of the Matching Shares, unless the participating employee provides them in advance with sufficient funds to pay the tax liability. No tax or NICs liability will arise on the withdrawal of the shares from the Trust by the participating employees if the Matching Shares are held in the Trust for at least five years.

(iii) Dividend Shares

The Company may choose to offer "Dividend Shares" under which dividends on Shares can be reinvested each year to acquire further Shares under the SAP. There was previously a limit of £1,500 per year on dividends that could be reinvested, but this limitation was removed in 2013.

Dividend Shares cannot be withdrawn from the Trust prior to the end of the holding period of three years. If the Dividend Shares are withdrawn once the holding period has expired, but less than three years after acquisition, income tax will generally be payable.

LTIP

Background and Purpose

On March 11, 2008, the Company's Board of Directors approved the LTIP and the Company's shareholders approved the LTIP on April 8, 2008. The LTIP was subsequently amended and restated on February 25, 2011, and the Company's stockholders approved this amendment and restatement at its annual shareholders meeting on April 12, 2011, and was again amended and restated on February 24, 2014, and the Company's stockholders approved this amendment and restatement at its annual shareholders meeting on April 8, 2014. The purposes of the LTIP are to promote the growth and profitability of the Company and its affiliates, to provide officers, other employees and non-employee directors of the Company and its affiliates with the incentive to achieve long-term corporate objectives, to attract and retain officers, other employees and non-employee directors of outstanding competence, and to provide such individuals with an opportunity to acquire Shares.

The aggregate number of Shares which may be issued under the LTIP (subject to the counting, substitution and adjustment provisions of the LTIP) following the amendment and restatement of the Plan on April 8, 2014 was 48,395,574 (18,395,574 as of February 24, 2014 plus 30,000,000 additional shares following shareholder approval of the amendment and restatement). Of that total, the maximum aggregate number of Shares which may be issued in connection with awards pursuant to which a participant is not required to pay the fair market value for the Shares represented thereby, measured as of the grant date, is as calculated in Section 2.4 of the LTIP. For purposes of the LTIP, the fair market value shall mean the closing price of a Share in the NYSE Composite Transaction on the relevant date, or, if no sale shall have been made on such exchange on that date, the closing price in the NYSE Composite Transaction on the last preceding day on which there was a sale. No awards may be granted under the LTIP subsequent to February 24, 2024.

The 2019 LTIP currently is being established and is slated to become effective upon approval by the Company's shareholders during the 2019 Annual Meeting expected to occur on April 9, 2019. The Company is establishing the 2019 LTIP to obtain shareholder approval for issuance of additional shares pursuant to its awards under the plan. The following description of the terms and conditions of the offer of participation in the 2019 LTIP is only intended to be a very high level summary of those terms and conditions in a highly simplified manner. The LTIP is intended to be terminated once the 2019 LTIP is adopted; but any outstanding awards will continue to be governed by the terms of the incentive plan in effect at the time such grants were made.

The 2019 LTIP will be filed with the SEC and the Company will also file a Form 8-K announcing the results of the voting at the 2019 Annual Meeting.

In brief, the 2019 LTIP generally contains the same terms and conditions as the LTIP, except that the 2019 LTIP:

- authorizes for issuance of 35,000,000 shares;
- removes the terms related to U.S. Code Section 162(m) that have become obsolete as a result of the U.S. federal tax reform legislation enacted in December 2017;

- generally requires a minimum three-year ratable vesting schedule for time-vesting options and a one-year vesting schedule for performance-vesting options, consistent with the minimum vesting periods applicable to restricted stock and RSUs;

- prohibits the transfer of awards to third-party financial institutions; and

- prohibits the payments of dividends and dividend equivalents on any unvested awards.

Eligibility of Employees

Employees of the Company and the Company's affiliates (or former employees, if the award is granted within 12 months of termination of employment and with respect to the final year of service), along with the Company's non-employee directors, are eligible to receive awards under the LTIP.

Administration

Except in the case of awards to non-employee directors, the LTIP will be administered by the HRCC. Fidelity is currently the stock plan administrator. In the case of awards to non-employee directors, the LTIP will be administered by the Company's (or its delegate) Board of Directors in its entirety.

The HRCC or its delegates has full authority, in their discretion, to interpret the LTIP and to determine the persons who will receive awards and the number of Shares to be covered by each award. In determining the eligibility of any participant, as well as in determining the number of Shares to be covered by an award and the type of awards to be made to such individuals, the HRCC will consider the position and responsibilities of the person being considered, the nature and value of the person's services, the person's present and/or potential contribution to the Company's success and such other factors as the HRCC may deem relevant.

The types of awards which the HRCC has authority to grant are stock options, stock appreciation rights, restricted stock, restricted stock units, performance share units, deferred stock units and other stock-based awards and cash awards. Employees are eligible to receive all types of awards under the LTIP. Non-employee directors are eligible to receive awards under the LTIP other than "incentive stock options". In the discretion of the HRCC, Shares, or other types of awards authorized under the LTIP, may be used in connection with, or to satisfy the Company's obligations or the obligations of any of the Company's subsidiaries under, other compensation or incentive plans, programs or arrangements of the Company or any of the Company's subsidiaries for eligible participants.

Restricted Stock Units

Restricted stock units awarded by the HRCC will be subject to such restrictions (which may include restrictions on the right to transfer or encumber the units while subject to restriction) as the HRCC may impose and will be subject to forfeiture in whole or in part if certain events (which may, in the discretion of the HRCC, include termination of employment and/or performance-based events) specified by the HRCC occur prior to the lapse of the restrictions. The restricted stock unit agreement between the Company and the awardee will set forth the number of restricted stock units awarded to the awardee, the restrictions imposed thereon, the duration of such restrictions, the events the occurrence of which would cause a forfeiture of the restricted stock units in whole or in part and such other terms and conditions as the HRCC in its discretion deems appropriate.

In the case of awards to employees, the restriction period applicable to restricted stock units will be not less than three years in the case of a time-based restriction, with no more frequent than ratable vesting over such period or, in the case of a performance-based restriction, one year, except that up to the sum of (i) the number of Shares not subject to the minimum vesting period immediately prior to stockholder approval of the amendment and restatement of the LTIP (as of February 24, 2014, 4,212,779 such Shares were available, subject to the counting, adjustment and substitution provisions of the LTIP) and (ii) ten percent (10%) of those additional Shares available for awards of restricted stock units and other awards pursuant to which participants are not required to pay the fair market value, applicable following stockholder approval of the amendment and restatement of the LTIP as provided in Section 2.4 of the LTIP, may be granted as restricted stock units with no minimum vesting period. Restricted stock units may include the right to receive dividend equivalents. During the two and one-half months following the end of the year in which vesting occurs, the awardee shall be paid the number of Shares equal to the number of restricted stock units vested. In its discretion, the HRCC may determine that the Company's obligation shall be paid in cash equal to the number of restricted stock units vested multiplied by the fair market value of a Share on such date, or part in Shares and part in cash.

Other Stock-Based Awards and Cash Awards

The HRCC is authorized, subject to limitations under applicable law, to grant such other awards that are denominated or payable in, valued in whole or in part by reference to, or otherwise based on, or related to, the Company's Shares, as deemed by the HRCC to be consistent with the purposes of the LTIP, including, without limitation, purchase rights, Shares awarded without restrictions or conditions, convertible securities, exchangeable securities or other rights convertible or exchangeable into Shares, as the HRCC in its discretion may determine. Other stock-based awards, excepting purchase rights, may include the right to receive dividends or dividend equivalents, as applicable. In addition, the HRCC is authorized, subject to limitations under applicable law, to grant cash awards under the LTIP.

The HRCC shall determine the terms and conditions of other stock-based awards, subject to the same three-year and one-year minimum vesting requirements applicable to restricted stock units, as applicable; provided, such minimum vesting provisions do not apply to certain awards made to participants as annual incentive compensation as described in the LTIP. Any Shares or securities delivered pursuant to a purchase right granted under the LTIP shall be purchased for such consideration, paid for by such methods and in such forms, including, without limitation, cash, Shares, or other property or any combination thereof, as the HRCC shall determine. However, the value of such consideration shall not be less than the fair market value of such Shares or other securities on the date of grant of the purchase right.

Additional Rights in Certain Events

The LTIP provides for certain additional rights upon the occurrence of a change in control, as defined in the LTIP or the award agreement, unless the agreement between the Company and the awardee otherwise provides. Unless otherwise provided in the award agreement, such an event will be as defined in the LTIP.

Unless the agreement between the Company and the awardee otherwise provides, in the event the employment of a participant is terminated by the Company or any of the Company's affiliates without cause within two years following a change in control, all restrictions applicable to stock options, stock appreciation rights, restricted stock and restricted stock units, deferred stock units and other stock-based awards under the LTIP will lapse and such awards will fully vest on its normal vesting schedule. Unless the agreement between the Company and the awardee provides otherwise, upon the occurrence of any change in control, all performance criteria and other conditions to payment of performance share units and other awards under which payments are subject to performance conditions shall be deemed to be achieved or fulfilled on a pro rata basis for the number of whole months elapsed from the commencement of the performance period through the date of the change in control at the actual performance level achieved or, if not determinable, in the manner specified by the HRCC.

Possible Anti-Takeover Effect

The provisions of the LTIP providing for the possible acceleration of the exercise date of stock options, the lapse of restrictions applicable to restricted stock, restricted stock units, deferred stock units and other stock-based awards following the occurrence of a change in control, and the deemed achievement of performance goals on a pro rata basis based upon actual performance following a change in control may be considered as having an anti-takeover effect.

Miscellaneous

The maximum aggregate number of Shares which shall be available for the grant of stock options and stock appreciation rights to any one individual under the LTIP during any calendar year shall be limited to 4,000,000. The Company's Board of Directors may amend or terminate the LTIP at any time, except that the Board of Directors may not terminate any outstanding award and except that no amendment may be made without the approval of the Company's stockholders if (i) the effect of the amendment is to make any changes in the class of employees eligible to receive incentive stock options or increase the number of Shares subject to the LTIP or for which incentive stock options may be granted under the LTIP or (ii) stockholder approval of the amendment is required by the rules of any stock exchange on which the Shares may then be listed or for stock options, stock appreciation rights, performance share units, cash awards and other awards granted under the LTIP to qualify as "performance based compensation". Unless approved by stockholders, repricing of stock options, stock appreciation rights and other purchase rights is not permitted and the purchase price of any such award may not be reduced after grant except to reflect stock splits and similar events. This prohibition applies to direct and indirect repricing, whether through amendment, cancellation, or replacement in exchange for another award or cash payment.

A new Long-Term Incentive Plan, The Bank of New York Mellon Corporation 2019 Long-Term Incentive Plan ("2019 LTIP") currently is being established and is slated to become effective upon approval by the Company's shareholders during the 2019 Annual Meeting expected to occur in April 2019.

A.2 Use of proceeds

The proceeds, if any, of the offers under the Plans will be used by the Company for general corporate purposes.

A.3 Costs related to the sale of Shares

If a participant seeks to sell Shares acquired under the ESPP, he/she will be charged a transaction fee of US$ 19.95 per transaction (except for a rep assisted trade, where the trading fee will amount to US$ 32.95), plus a trading fee of US$ 0.025 per Share sold, plus a fee payable to the U.S. Securities and Exchange Commission ("SEC") equal to US$ 21.80 per million dollars (as of trade date February 28, 2019, this fee payable to the SEC will amount to US$ 0.0000218 per dollar of gross proceeds, rounded up to the next cent). In addition to the above, a domestic wire fee of US$ 15, an international wire fee of US$ 10 and an international check fee of US$ 5 may be due.

If a participant seeks to sell Shares acquired under the LTIP, he/she will be charged a transaction fee of US$ 19.95 per transaction (except for a rep assisted trade, where the trading fee will amount to US$ 32.95), plus a trading fee of US$ 0.025 per Share sold, plus a fee payable to the SEC equal to US$ 21.80 per million dollars (as of trade date February 28, 2019, this fee payable to the SEC will amount to US$ 0.0000218 per dollar of gross proceeds, rounded up to the next cent). In addition to the above, a domestic wire fee of US$ 15, an international wire fee of US$ 10 and an international check fee of US$ 5 may be due.

Please note that Fidelity and the Company reserve the right to change the fees at any time.

More information on real-time trading and limit orders can be obtained by contacting Fidelity at 800-544-9354.

For a basic sale of shares, the SAP administrator, Link Asset Services, charges an administration fee of £33.07 plus commission of 0.55% of the trade value, with a minimum commission charge of the GBP equivalent of US$56 (which may be split between employees who trade on the same day). A transfer of shares from the SAP to another broker would incur the administration fees of £33.07 (without commission). If shares are sold using the monthly bulk trading facility, there are no administration and commission charges payable.

Information concerning the offer, including offer statistics, the method and expected timetable and admission to trading details, is set forth in The Bank of New York Mellon Corporation Employee Stock Purchase Plan (Exhibit I), The Bank of New York Mellon Corporation Share Accumulation Plan (Exhibit II), The Bank of New York Mellon Corporation Long-Term Incentive Plan (Exhibit III), and in the Company's Annual Report (Exhibit IV).

B. Maximum Dilution

The Shares under the ESPP are offered to approximately 7,246 eligible employees of certain EEA subsidiaries of the Company as of January 28, 2019. Further, employees who elect to participate in the ESPP may contribute 1% to 10% of their eligible compensation towards the purchase of Shares, with the maximum number of Shares that can be acquired during any offering period equal to the number of Shares determined by dividing US$ 25,000 by the fair market value of a Share on the applicable offering date, reduced by the aggregate purchase price of any Shares purchased during any offering period(s) which occurred during the same calendar year.

The fair market value of the Shares on February 28, 2019 was US$52.48. Assuming eligible EEA employees would purchase during each Purchase Period one-twelfth of the total number of Shares they were entitled to purchase during a calendar year at the purchase price applicable on February 28, 2019 (i.e., US$52.48), each such eligible employee would be entitled to purchase a maximum of 476 Shares under the ESPP assuming no other ESPP limitations are exceeded. Assuming that all of the eligible EEA employees would each purchase 476 Shares in the offer, the maximum number of Shares offered under the ESPP pursuant to this prospectus amounts to approximately 3,449,096 Shares.

Based on the above assumptions, the holdings of a stockholder of the Company currently holding 1% of the total outstanding share capital of the Company as of January 31, 2019 (i.e., 9,545,487 Shares), and who is not an employee participating in the offer, would be diluted as indicated in the following table:

	Percentage of the total outstanding shares	Total number of outstanding shares
Before the issuance of Shares under the ESPP (i.e., as of January 31, 2018)	1.00%	954,548,741

After issuance of 3,449,096 Shares under the ESPP	0.9964%	957,997,837

IV. Key information on the Company's financial condition, capitalization and indebtedness, working capital and risk factors

A. Statutory auditors

The statutory auditors of the Company over the fiscal years ended on December 31, 2016, ended on December 31, 2017 and ended on December 31, 2018 were KPMG LLP, 500 Grant Street, Suite 2500, Pittsburgh, PA 15219, U.S.A. The accounts for such years, prepared in accordance with the U.S. GAAP, were audited, and the audit reports contained no qualification.

B. Share capital

As of June 30, 2018, the aggregate market value of the Company's Common Stock, $0.01 par value per share, held by non affiliates of the Company was $53,885,206,227.

As of January 31, 2019, 954,548,741 shares of the Company's Common Stock, $0.01 par value per share, were outstanding.

There are no shareholders in the Company that, directly or indirectly, singly or jointly, exercise or are capable of exercising control over the Company.

Based on filings made under Section 13(d) and 13(g) of the Exchange Act reporting ownership of Shares and percent of class as of December 31, 2018, as of February 28, 2019, the only persons known by the Company to be beneficial owners of more than 5% of its common stock were as follows:

Name and Address of Beneficial Owner	Shares of Common Stock Beneficially Owned	Percent of Class
The Vanguard Group (1) 100 Vanguard Blvd. Malvern, PA 19355	68,324,688	6.67%
Warren E. Buffett and Berkshire Hathaway Inc. (2) 3555 Farnam Street Omaha, NE 68131	60,818,783	5.9%
BlackRock, Inc. (3) 55 East 52nd Street New York, NY 10055	58,721,542	5.7%

(1) Based on a review of the Schedule 13G filed on February 12, 2018 by The Vanguard Group. The Schedule 13G discloses that The Vanguard Group had sole voting power as to 1,431,137 shares, shared voting power as to 225,167 shares, sole dispositive power as to 66,698,465 shares and shared dispositive power as to 1,626,223 shares.

(2) Based on a review of the Schedule 13G filed on February 14, 2018 by Warren E. Buffett, Berkshire Hathaway Inc. and certain other reporting persons of which none beneficially owns more than 5% of our common stock. The Schedule 13G discloses that Mr. Buffett had shared voting power as to 60,818,783 shares and shared dispositive power as to 60,818,783 shares, and Berkshire Hathaway Inc. had shared voting power as to 60,818,783 shares and shared dispositive power as to 60,818,783 shares.

(3) Based on a review of the Schedule 13G filed on January 29, 2018 by BlackRock, Inc. The Schedule 13G discloses that BlackRock, Inc. had sole voting power as to 50,221,232 shares and sole dispositive power as to 58,721,542 shares.

For the fiscal year ended on December 31, 2018, no third parties have attempted a public takeover bid on the Company, by purchase or exchange of Shares of the Company.

C. Key financial data

The key financial data (in U.S. GAAP) of the Company as reported in the Company's Annual Report filed on February 25, 2019 (Exhibit IV) are set forth hereafter.

Consolidated Income Statement

See accompanying Notes to Consolidated Financial Statements which can be found in Exhibit IV, the Company's Annual Report.

Consolidated Income Statement

	Year ended Dec. 31,		
(in millions)	**2018**	2017	2016
Fee and other revenue			
Investment services fees:			
Asset servicing	**$ 4,608**	$ 4,383	$ 4,244
Clearing services	**1,578**	1,553	1,404
Issuer services	**1,099**	977	1,026
Treasury services	**554**	557	547
Total investment services fees	**7,839**	7,470	7,221
Investment management and performance fees	**3,685**	3,584	3,350
Foreign exchange and other trading revenue	**732**	668	701
Financing-related fees	**207**	216	219
Distribution and servicing	**139**	160	166
Investment and other income	**240**	64	341
Total fee revenue	**12,842**	12,162	11,998
Net securities (losses) gains — including other-than-temporary impairment	**(47)**	6	79
Noncredit-related portion of other-than-temporary impairment (recognized in other comprehensive income)	**1**	3	4
Net securities (losses) gains	**(48)**	3	75
Total fee and other revenue	**12,794**	12,165	12,073
Operations of consolidated investment management funds			

Investment (loss) income	**(12)**	74	35
Interest of investment management fund note holders	**1**	4	9
(Loss) income from consolidated investment management funds	**(13)**	70	26
Net interest revenue			
Interest revenue	**6,432**	4,382	3,575
Interest expense	**2,821**	1,074	437
Net interest revenue	**3,611**	3,308	3,138
Total revenue	**16,392**	15,543	15,237
Provision for credit losses	**(11)**	(24)	(11)
Noninterest expense			
Staff *(a)*	**6,145**	6,033	5,809
Professional, legal and other purchased services	**1,334**	1,276	1,186
Software	**772**	744	647
Net occupancy	**630**	570	592
Sub-custodian and clearing *(b)*	**450**	414	400
Distribution and servicing	**406**	419	405
Furniture and equipment	**290**	241	247
Business development	**228**	229	245
Bank assessment charges	**170**	220	219
Amortization of intangible assets	**180**	209	237
Other *(a)(b)(c)*	**606**	602	536
Total noninterest expense	**11,211**	10,957	10,523
Income			
Income before income taxes	**5,192**	4,610	4,725
Provision for income taxes	**938**	496	1,177
Net income	**4,254**	4,114	3,548
Net loss (income) attributable to noncontrolling interests (includes $12, $(33) and $(10) related to consolidated investment management funds, respectively)	**12**	(24)	(1)
Net income applicable to shareholders of The Bank of New York Mellon Corporation	**4,266**	4,090	3,547
Preferred stock dividends	**(169)**	(175)	(122)
Net income applicable to common shareholders of The Bank of New York Mellon Corporation	**$ 4,097**	$ 3,915	$ 3,425

(a) *In 2018, we adopted new accounting guidance included in ASU 2017-07, Compensation-Retirement Benefits: Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, which required the reclassification of the components of pension and other postretirement costs, other than the service cost component. As a result, staff expense increased and other expense decreased. Prior periods have been reclassified. See Note 2 of the Notes to Consolidated Financial Statements for additional information.*

(b) *Beginning in 2018, clearing expense, which was previously included in other expense, was included with sub-custodian expense. Prior periods have been reclassified.*

(c) *Beginning in 2018, M&I, litigation and restructuring charges are no longer separately disclosed. Expenses previously reported in this line have been reclassified to existing expense categories, primarily other expense.*

Consolidated Income Statement (continued)

Net income applicable to common shareholders of The Bank of New York Mellon Corporation used for the earnings per share calculation

	Year ended Dec. 31,		
(in millions)	**2018**	2017	2016
Net income applicable to common shareholders of The Bank of New York Mellon Corporation	**$ 4,097**	$ 3,915	$ 3,425
Less: Earnings allocated to participating securities	**27**	43	52

Net income applicable to common shareholders of The Bank of New York Mellon Corporation after required adjustment for the calculation of basic and diluted earnings per common share	**$ 4,070**	$ 3,872	$ 3,373

Average common shares and equivalents outstanding of The Bank of New York Mellon Corporation	Year ended Dec. 31,		
(in thousands)	**2018**	2017	2016
Basic	**1,002,922**	1,034,281	1,066,286
Common stock equivalents	**6,801**	13,030	15,672
Less: Participating securities	**(2,582)**	(7,021)	(9,945)
Diluted	**1,007,141**	1,040,290	1,072,013
Anti-dilutive securities *(a)*	**6,804**	12,383	31,695

Earnings per share applicable to common shareholders of The Bank of New York Mellon Corporation●●	Year ended Dec. 31,		
(in dollars)	**2018**	2017	2016
Basic	**$ 4.06**	$ 3.74	$ 3.16
Diluted	**$ 4.04**	$ 3.72	$ 3.15

(a) Represents stock options, restricted stock, restricted stock units and participating securities outstanding but not included in the computation of diluted average common shares because their effect would be anti-dilutive.

Consolidated Comprehensive Income Statement

	Year ended Dec. 31,		
(in millions)	**2018**	2017	2016
Net income	**$ 4,254**	$ 4,114	$ 3,548
Other comprehensive income, net of tax:			
Foreign currency translation adjustments	**(313)**	853	(850)
Unrealized (loss) gain on assets available-for-sale:			
Unrealized (loss) gain arising during the period	**(416)**	153	(242)
Reclassification adjustment	**36**	(3)	(49)
Total unrealized (loss) gain on assets available-for-sale	**(380)**	150	(291)
Defined benefit plans:			
Net (loss) gain arising during the period	**(189)**	342	(108)
Foreign exchange adjustment	**—**	1	—
Amortization of prior service credit, net loss and initial obligation included in net periodic benefit cost	**69**	68	57
Total defined benefit plans	**(120)**	411	(51)
Net unrealized (loss) gain on cash flow hedges	**(10)**	9	(4)
Total other comprehensive (loss) income, net of tax *(a)*	**(823)**	1,423	(1,196)
Total comprehensive income	**3,431**	5,537	2,352
Net loss (income) attributable to noncontrolling interests	**12**	(24)	(1)
Other comprehensive loss (income) attributable to noncontrolling interests	**11**	(15)	31
Comprehensive income applicable to shareholders of The Bank of New York	**$ 3,454**	$ 5,498	$ 2,382

Mellon Corporation

(a) Other comprehensive (loss) income attributable to The Bank of New York Mellon Corporation shareholders was $(812) million for the year ended Dec. 31, 2018, $1,408 million for the year ended Dec. 31, 2017 and $(1,165) million for the year ended Dec. 31, 2016.

Consolidated Balance Sheet

	Dec. 31,	
(dollars in millions, except per share amounts)	**2018**	2017
Assets		
Cash and due from:		
Banks	**$ 5,864**	$ 5,382
Interest-bearing deposits with the Federal Reserve and other central banks	**67,988**	91,510
Interest-bearing deposits with banks ($2,394 and $1,751 is restricted)	**14,148**	11,979
Federal funds sold and securities purchased under resale agreements	**46,795**	28,135
Securities:		
Held-to-maturity (fair value of $33,302 and $40,512)	**33,982**	40,827
Available-for-sale	**85,809**	79,543
Total securities	**119,791**	120,370
Trading assets	**7,035**	6,022
Loans	**56,564**	61,540
Allowance for loan losses	**(146)**	(159)
Net loans	**56,418**	61,381
Premises and equipment	**1,832**	1,634
Accrued interest receivable	**671**	610
Goodwill	**17,350**	17,564
Intangible assets	**3,220**	3,411
Other assets (includes $742 and $791, at fair value)	**21,298**	23,029
Subtotal assets of operations	**362,410**	371,027
Assets of consolidated investment management funds, at fair value	**463**	731
Total assets	**$ 362,873**	$ 371,758
Liabilities		
Deposits:		
Noninterest-bearing (principally U.S. offices)	**$ 70,783**	$ 82,716
Interest-bearing deposits in U.S. offices	**74,904**	52,294
Interest-bearing deposits in non-U.S. offices	**93,091**	109,312
Total deposits	**238,778**	244,322
Federal funds purchased and securities sold under repurchase agreements	**14,243**	15,163
Trading liabilities	**3,479**	3,984
Payables to customers and broker-dealers	**19,731**	20,184
Commercial paper	**1,939**	3,075
Other borrowed funds	**3,227**	3,028
Accrued taxes and other expenses	**5,669**	6,225
Other liabilities (including allowance for lending-related commitments of $106 and $102, also includes $88 and $800, at fair value)	**5,774**	6,050
Long-term debt (includes $371 and $367, at fair value)	**29,163**	27,979
Subtotal liabilities of operations	**322,003**	330,010

Liabilities of consolidated investment management funds, at fair value	**2**	2
Total liabilities	**322,005**	330,012
Temporary equity		
Redeemable noncontrolling interests	**129**	179
Permanent equity		
Preferred stock – par value $0.01 per share; authorized 100,000,000 shares; issued 35,826 and 35,826 shares	**3,542**	3,542
Common stock – par value $0.01 per share; authorized 3,500,000,000 shares; issued 1,364,877,915 and 1,354,163,581 shares	**14**	14
Additional paid-in capital	**27,118**	26,665
Retained earnings	**28,652**	25,635
Accumulated other comprehensive loss, net of tax	**(3,171)**	(2,357)
Less: Treasury stock of 404,452,246 and 340,721,136 common shares, at cost	**(15,517)**	(12,248)
Total The Bank of New York Mellon Corporation shareholders' equity	**40,638**	41,251
Nonredeemable noncontrolling interests of consolidated investment management funds	**101**	316
Total permanent equity	**40,739**	41,567
Total liabilities, temporary equity and permanent equity	**$ 362,873**	$ 371,758

See accompanying Notes to Consolidated Financial Statements which can be found in Exhibit IV, the Company's Annual Report.

Quarterly and Annual reports will be published respectively in the Company's Quarterly Reports on Form 10-Q and the Company's Annual Report on Form 10-K, which are available on the Company's website (www.bnymellon.com, under the "Investors Relations - Financial Information" captions).

Additional information, such as the credit ratings of the Company, can be found in the Company's Annual Report (Exhibit IV).

The cost of the stock-based compensation for U.S. GAAP accounting purposes is elaborated upon in the Company's Annual Report (Exhibit IV). In addition, the Company has incurred legal costs of approximately US$ 55,000 to implement this prospectus in order to offer securities under the Plans to eligible employees of its subsidiaries in the EEA.

Information concerning the Company's financial condition, including selected financial data, information on capitalization and indebtedness and a description of the risk factors is set forth in the Company's Annual Report (Exhibit IV).

The reasons for the offer and the use of proceeds are described in III.A above.

Information on the Company's capitalization and indebtedness and stockholder's equity is set forth in the Company's Annual Report (Exhibit IV). For detailed information related to the Company's Capital, please refer to the section entitled "Capital" on pages 45 and following of the Company's Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") included in its Annual Report (Exhibit IV). For detailed information related to the Company's indebtedness, please refer to the long-term debt and debt issuance paragraphs included in the section entitled "Liquidity and dividends" on pages 39 and following of the Company's MD&A included in its Annual Report (Exhibit IV) and Note 12 - Long-term debt to the Company's consolidated financial statements on page 157 of its Annual Report (Exhibit IV). For detailed information related to stockholder's equity, please refer to Note 14 – Shareholders' equity to the Company's consolidated financial statements on pages 158 and following of its Annual Report (Exhibit IV).

BNY Mellon's working capital is sufficient for its present requirements.

V. Information on the Company

A. Company history and activities

The Bank of New York Mellon Corporation, a Delaware corporation (NYSE symbol: BK), is a global company headquartered in New York, New York, with $33.1 trillion in assets under custody and/or administration and $1.7 trillion in assets under management as of December 31, 2018. With its subsidiaries, BNY Mellon has been in business since 1784.

The Company divides its businesses into two business segments, Investment Services and Investment Management. The Company also has an other segment, which includes the leasing portfolio, corporate treasury activities (including our investment securities portfolio), derivatives and other trading activity, corporate and bank-owned life insurance, renewable energy investments and business exits.

The Company's two principal U.S. banking subsidiaries engage in trust and custody activities, investment management services, banking services and various securities-related activities. Its two principal U.S. banking subsidiaries are:

1. The Bank of New York Mellon, a New York state-chartered bank, which houses our Investment Services businesses, including Asset Servicing, Issuer Services, Treasury Services, Clearance and Collateral Management, as well as the bank-advised business of Asset Management; and
2. BNY Mellon, National Association ("BNY Mellon, N.A."), a national bank, which houses our Wealth Management business.

The Company has four other U.S. bank and/or trust company subsidiaries concentrating on trust products and services across the United States: The Bank of New York Mellon Trust Company, National Association, BNY Mellon Trust of Delaware, BNY Mellon Investment Servicing Trust Company and BNY Mellon Trust Company of Illinois. Most of the Company's asset management businesses, along with its Pershing businesses, are direct or indirect non-bank subsidiaries of BNY Mellon.

Each of its bank and trust company subsidiaries is subject to regulation by the applicable bank regulatory authority. The deposits of its U.S. banking subsidiaries are insured by the Federal Deposit Insurance Corporation to the extent provided by law.

BNY Mellon's banking subsidiaries outside the United States are subject to regulation by non-U.S. regulatory authorities in addition to the Board of Governors of the Federal Reserve System (the "Federal Reserve"). The Bank of New York Mellon SA/NV ("BNY Mellon SA/NV") is the main banking subsidiary of The Bank of New York Mellon in continental Europe. It is authorized and regulated as a credit institution by the National Bank of Belgium and is also supervised by the European Central Bank. BNY Mellon SA/NV has its principal office in Brussels and branches in

Amsterdam, the Netherlands; Dublin, Ireland; Frankfurt, Germany; London, England; the City of Luxembourg, Luxembourg; and Paris, France. BNY Mellon SA/NV's activities are in the Investment Services segment of BNY Mellon with a focus on global custody, asset servicing and collateral management.

B. Particular provisions of the bylaws

The Company's annual meeting of shareholders is held for the purpose of electing directors and conducting other business as may properly come before the meeting and is held each year. The last annual shareholders' meeting was held on April 10, 2018.

C. Board of Directors (as per January 31, 2019)

Name	*Age*
Linda Z. Cook	60
Joseph J. Echevarria	62
Edward P. Garden	57
Jeffrey A. Goldstein	63
John M. Hinshaw	48
Edmund F. "Ted" Kelly	73
Steve D. Black	66
Jennifer B. Morgan	47
Mark A. Nordenberg	70
Elizabeth E. Robinson	50
Charles W. Scharf	53
Samuel C. Scott III	74

D. Executive Committee and Other Executive Officers (as per January 31, 2019)

Name	*Function*
Lisa Dolly	Chief Executive Officer, Pershing LLC
Bridget E. Engle*	Chief Information Officer
Thomas P. (Todd) Gibbons*	Chief Executive Officer, Clearing, Markets and Client Management
Mitchell E. Harris*	Chief Executive Officer, Investment Management
Monique R. Herena*	Chief Human Resources Officer
Hani A. Kablawi*	Chief Executive Officer, Global Asset Servicing and Chairman, Europe, Middle East and Africa
Kurtis R. Kurimsky*	Corporate Controller
Francis (Frank) La Salla*	Chief Executive Officer, Issuer Services
J. Kevin McCarthy*	General Counsel

Michelle M. Neal	Chief Executive Officer, BNY Mellon Markets
Brian Ruane	Chief Executive Officer, Government Securities Services Corp.
Michael P. Santomassimo*	Chief Financial Officer
Charles W. Scharf*	Chairman and Chief Executive Officer
Roman Regelman	Senior Executive Vice President, Head of Digital
Akash Shah	Senior Executive Vice President, Head of Strategy
James. S. Wiener*	Chief Risk Officer

* Designated as an Executive Officer

As of the date of this Prospectus none of the directors or executive officers of the Company has:

(a) been convicted in relation to fraudulent offences;

(b) been associated with any bankruptcies, receiverships or liquidations when acting in their capacity as directors or executive officers of the Company;

(c) been subject to any official public incrimination and/or sanctions by statutory or regulatory authorities (including designated professional bodies) or ever been disqualified by a court from acting as a member of the administrative, management or supervisory bodies of an issuer or from acting in the management or conduct of the affairs of any issuer; or

(d) been subject to (or are currently subject to) any of the convictions, procedures, incriminations, sanctions referred to under item 14.1 of Annex I of the Prospectus Regulation 809/2004.

There are no family relationships between any of the directors and the executive officers listed above.

As indicated in the Company's Annual Report (Exhibit IV), the Company has adopted guidelines regarding corporate governance, including a Code of Conduct posted on the Company's website at www.bnymellon.com/ethics/codeofconduct.pdf and a Directors' Code of Conduct, posted on the Company's website at www.bnymellon.com/governance/directorscodeofconduct.pdf. Both items are available in print (free of charge) to any shareholder who requests a copy. Requests should be sent by email to investorrelations@bnymellon.com or by mail to Investor Relations at The Bank of New York Mellon Corporation, 225 Liberty Street, New York, NY 10286.

Information on the Company, including its history and development, a business overview, its organizational structure and information concerning its property, is set forth in the Company's Annual Report (Exhibit IV).

VI. Operating and financial review and prospects

Information concerning the Company's operating results, its liquidity and capital resources and trends, among other things, is set forth in the Company's Annual Report (Exhibit IV).

VII. Directors, senior management and employees

Information concerning the Company's directors and senior management, their remuneration, Board practices, the Company's employees and share ownership is set forth in the Company's Annual Report (Exhibit IV) and in the Company's Definitive Proxy Statement as filed on March 9, 2018 (Exhibit V)[1].

VIII. Major shareholders and related party transactions

Information concerning major shareholders of the Company, related party transactions and information concerning interests of experts and advisers is set forth in the Company's Definitive Proxy Statement as filed on March 9, 2018 (Exhibit V)[1].

IX. Additional information

More detailed information about the Company, including information about its charter documents, and its businesses, as well as the contact information for certain subsidiaries of the Company, is available on the Company's website (www.bnymellon.com).

The Annual Report on Form 10-K for the Company and its predecessors for fiscal years ending December 31, 2018, December 31, 2017 and December 31, 2016, as well as Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13 (a) or 15 (d) of the Securities Exchange Act of 1934, as amended, are also made available on the Company's website (www.bnymellon.com, under the "Investor Relations - Financial Information" caption) after the Company electronically files such materials with, or furnishes them to, the SEC.

Required filings by the Company's officers and directors and certain third parties with respect to transactions or holdings in Shares are also made available on the Company's website, as are statements for the Company's shareholder meetings. These filings may also be read and copied at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. The SEC also maintains an internet site (www.sec.gov) that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

Information about the Company's Board of Directors and Board Committees, including Committee charters, is available on the Company's website (www.bnymellon.com, under the "Investor Relations" caption). This information is also available in print (free of charge) to any shareholder who requests it from the Company's Investor Relations department.

[1] The Company's Definitive Proxy Statement of 2019 was not yet filed at the date of approval of this prospectus; once filed, it will be made available on the Company's website (www.bnymellon.com, under the "Investor Relations - Financial Information" caption).

EXHIBITS

EXHIBIT I
THE BANK OF NEW YORK MELLON CORPORATION EMPLOYEE STOCK PURCHASE PLAN

THE BANK OF NEW YORK MELLON CORPORATION
EMPLOYEE STOCK PURCHASE PLAN
Amended and Restated as of May 15, 2017

1. *Purpose.*

The purpose of this Employee Stock Purchase Plan (the "Plan") is to provide an opportunity for employees of The Bank of New York Mellon Corporation (the "Company") and its Subsidiaries and Affiliates, to purchase common stock of the Company (the "Common Stock") and thereby to have an additional incentive to contribute to the success of the Company.

2. *Administration.*

The Human Resources and Compensation Committee of the Board of Directors of the Company (the "Board"), including any successor committee, or such other committee of the Board as the Board may from time to time appoint to administer the Plan (the "Committee") will have the authority and responsibility for the day-to-day administration of the Plan, the authority and responsibility specifically provided in this Plan and any additional duties, responsibility and authority delegated to the Committee by the Board, which may include any of the functions assigned to the Board in this Plan. The Committee may delegate to one or more individuals the day-to-day administration of, and other responsibilities relating to, the Plan. The Committee shall have full power and authority to promulgate any rules and regulations which it deems necessary for the proper administration of the Plan, to establish required ownership levels for Subsidiaries and Affiliates, to identify eligible Employees or the parameters by which they shall be identified, to interpret the provisions and supervise the administration of the Plan, to make factual determinations relevant to Plan entitlements and to take all action in connection with administration of the Plan as it deems necessary or advisable. Decisions of the Board and the Committee shall be final and binding upon all Participants and other persons having or claiming an interest in the Plan. Any decision reduced to writing and signed by all of the members of the Committee shall be fully effective, as if it had been made at a meeting of the Committee duly held. The Company shall pay all expenses incurred in the administration of the Plan. No Board or Committee member shall be liable for any action or determination made in good faith with respect to the Plan or any option granted hereunder.

3. *Eligibility.*

3.1 *Employees.* Any individual classified as a U.S. domestic salaried employee by the Company or a Subsidiary or Affiliate on its payroll records (an "Employee") and regularly employed on a basis of at least 20 hours per week by the Company or by any Subsidiary or Affiliate on an Offering Date, as defined in Section 5.2, shall be eligible to participate in the Plan with respect to the Purchase Period, as defined in Section 5.2, commencing on such Offering Date, unless otherwise determined by the Committee or its delegate. Any individual classified as a non-U.S. employee by the Company or a Subsidiary or Affiliate on its payroll records shall not be eligible to participate in the Plan unless otherwise determined by the Committee or its delegate. The Committee or its delegate may also impose an eligibility period and other restrictions with respect to participation on any prospective Offering Date, including restrictions on eligibility and participation of Employees to facilitate compliance with federal or state securities laws or foreign laws.

3.2 *Subsidiaries and Affiliates.* For purposes of the Plan, the term "Subsidiary" shall mean any corporation (other than the Company) in which the Company owns, directly or indirectly, more than 50% (or higher ownership level established by the Committee) of the voting power and the term "Affiliate" shall mean any limited partnership, limited liability company or other organization in which the Company owns more than 50% (or higher ownership level established by the Committee) of the voting power.

4. ***Participation and Withdrawal.***

4.1 *Enrollment.* An Employee who is eligible to participate in the Plan in accordance with Section 3 may become a participant in the Plan (a "Participant") beginning with the first pay period ending in a Purchase Period by filing, during the enrollment period prior to an applicable Offering Date prescribed by the Committee or its delegate, a completed payroll deduction authorization and Plan enrollment form provided by the Company or by following an interactive voice response ("IVR"), electronic or other enrollment process as prescribed by the Committee or its delegate. Unless otherwise determined by the Committee or its delegate, an Employee who does not follow the prescribed procedures to enroll on or before the enrollment deadline preceding the Offering Date for a Purchase Period may not participate in the Plan with respect to that Purchase Period. Participation may be conditioned on an eligible Employee's consent to transfer and process personal data and on acknowledgment and agreement to Plan terms and other specified conditions not inconsistent with the Plan.

4.2 *Payroll Deductions.*

(a) *Authorization.* An eligible Employee may authorize payroll deductions at the rate of any whole percentage of the Employee's Eligible Compensation, as defined in Section 4.2(c), not to exceed 10% or such greater percentage as specified by the Committee. All payroll deductions may be used by the Company for any corporate purpose, and the Company shall not be obligated to segregate such payroll deductions unless required under local law. No interest shall be paid or credited to the Participant with respect to such payroll deductions except where required by local law as determined by the Committee or its delegate. A separate bookkeeping account for each Participant shall be maintained by the Company under the Plan, and the amount of each Participant's payroll deductions shall be credited to such account. A Participant may not make any additional payments into such account. Payroll deductions made with respect to employees paid in currencies other than U.S. dollars shall be converted to U.S. dollars as of each Purchase Date, as defined in Section 5.2, using the then applicable exchange rate, as determined by the Committee or its delegate; provided, however, that the Committee or its delegate may determine, with respect to any Purchase Period, that payroll deductions shall be converted to U.S. dollars based on an average or median exchange rate applicable for the relevant Purchase Period.

(b) *Increases or Decreases.* Subject to such limitations, if any, as prescribed by the Committee or its delegate, a Participant may prospectively decrease his or her rate of payroll deductions at any time by filing a new payroll deduction authorization and Plan enrollment form or by following IVR, electronic or other procedures prescribed by the Committee or its delegate. A

Participant may not increase his or her rate of payroll deductions during a Purchase Period but may increase such rate only effective on the first payroll date following the next Purchase Date by filing a new payroll deduction authorization and Plan enrollment form or by following IVR, electronic or other procedures prescribed by the Committee or its delegate. If a Participant has not followed such procedures to change the rate of payroll deductions, the rate of payroll deductions shall continue at the originally elected rate throughout the Purchase Period and future Purchase Periods unless reduced to reflect a change by the Committee in the maximum permissible rate.

(c) *Eligible Compensation.* For purposes of this Plan, "Eligible Compensation" shall mean the base rate of cash remuneration of an Employee as it appears on the books and records of the Company, Subsidiary or Affiliate for services rendered, determined prior to any contractual reductions, including, but not limited to, those related to contributions under a "qualified cash or deferred arrangement" (as determined under Section 401(k) of the Internal Revenue Code of 1986, as amended ("Code") and its applicable regulations), any executive deferred compensation plan, or under a "cafeteria plan" (as defined under Section 125 of the Code and its applicable regulations), or reductions for qualified transportation benefits under Section 132(f) of the Code. Eligible Compensation shall not include bonuses, overtime pay, severance, all other forms of special pay or compensation, or amounts received from any deferred compensation plan. The Committee shall have the authority to determine, and to approve the inclusion or deletion of any or all forms of compensation (such as overtime or commissions) in or from the definition of, Eligible Compensation and may change the definition on a prospective basis.

4.3 *Withdrawal.*

(a) *Discontinuance.* Under procedures established by the Committee or its delegate, a Participant may discontinue payroll deductions under the Plan at any time during a Purchase Period by completing and filing a new payroll deduction authorization and Plan enrollment form with the Company or by following IVR, electronic or other procedures prescribed by the Committee or its delegate. If a Participant has not followed such procedures to discontinue the payroll deductions, the rate of payroll deductions shall continue at the originally elected rate throughout the Purchase Period and future Purchase Periods unless reduced to reflect a change by the Committee in the maximum permissible rate.

(b) *Effect of Discontinuance.* If a Participant discontinues participation during a Purchase Period, his or her accumulated payroll deductions will remain in the Plan for purchase of shares as specified in Section 6 on the following Purchase Date, but the Participant will not again participate until he or she re-enrolls in the Plan. Amounts not applied to the purchase of shares on such following Purchase Date, in accordance with the applicable rules of the Plan administrator, shall be refunded to the Participant.

4.4 *Termination of Employment.* In the event any Participant's employment with the Company and its Subsidiaries and Affiliates is terminated for any reason (including death) prior to the expiration of a Purchase Period, the Participant's participation in the Plan shall discontinue; provided, however, all amounts credited to the Participant's account shall remain in the Plan for purchase of shares as specified in Section 6 on the following Purchase Date. Amounts not applied to the purchase of shares on such following Purchase Date, in accordance with the applicable rules of the Plan administrator, shall be refunded to the Participant. Whether a termination of employment (for reasons other than death) has occurred shall be determined by the Committee or its delegate. The Committee or its delegate also may establish rules regarding when leaves of absence or changes of employment status will be considered to be a termination of employment, and the Committee or its delegate may establish termination of employment procedures for this Plan which are independent of similar rules established under other benefit plans of the Company and its Subsidiaries and Affiliates.

5. *Offering.*

5.1 *Authorized Shares.* (a) The maximum number of shares of Common Stock which may be issued pursuant to the Plan shall be 7,500,000 shares. The shares which may be issued under the Plan may be either authorized but unissued shares or treasury shares or partly each, as determined from time to time by the Board. If on any Purchase Date the number of shares otherwise purchasable by Participants is greater than the number of shares then remaining available under the Plan, the Committee shall allocate the available shares among the Participants on a basis as it deems equitable.

5.2 *Purchase Periods.* Each purchase period (a "Purchase Period") shall be determined by the Committee or its delegate. Unless otherwise determined by the Committee or its delegate, the duration of each Purchase Period shall be one month. Unless otherwise determined by the Committee or its delegate, (i) the first Purchase Period shall commence on September 1, 2008; and (ii) subsequent Purchase Periods shall run consecutively after the termination of the preceding Purchase Period. The Committee shall have the power to change the commencement date or duration of future Purchase Periods, without shareholder approval, and without regard to the expectations of any Participants. For purposes of the Plan, the term "Offering Date" shall mean the first business day of each Purchase Period, and the term "Purchase Date" shall mean the last business day of each Purchase Period which is also a trading day.

5.3 *Purchase Price.* The price for each option to purchase shall be 95% (the "Designated Percentage") of the Fair Market Value of Common Stock on the Purchase Date on which the Common Stock is purchased. The Committee may change the Designated Percentage with respect to any future Purchase Period, but not below 85%. For purposes of the Plan, the term "Fair Market Value" shall mean the closing price of a share of Common Stock in the New York Stock Exchange Composite Transactions on the relevant date, or, if no sale shall have been made on such exchange on that date, the closing price in the New York Stock Exchange Composite Transactions on the last preceding day on which there was a sale.

5.4 *$25,000 Limitation.* Notwithstanding any other provision of the Plan to the contrary, no Participant in the Plan shall be granted an option which permits the Participant to accrue options to purchase Common Stock at a rate which exceeds $25,000 of Fair Market Value of Common Stock in any calendar year.

6. *Purchase of Stock.*

On each Purchase Date, a Participant shall automatically exercise the option to purchase the total number of full (and, if and to the extent permitted by the Plan administrator, fractional) shares of Common Stock which the accumulated payroll deductions credited to the Participant's account at that time shall be able to purchase at the applicable price specified in Section 5.3. Notwithstanding the preceding sentence:

(a) The number of shares which may be purchased by any Participant on the first Purchase Date to occur in any calendar year may not exceed the number of shares determined by dividing $25,000 by the Fair Market Value of a share of Common Stock on the Purchase Date; and

(b) The number of shares which may be purchased by a Participant on any subsequent Purchase Date in the same calendar year shall not exceed the number of shares determined by performing the calculation below:

> Step One: Multiply the number of shares purchased by the Participant on each previous Purchase Date in the same calendar year by the Fair Market Value of a share of Common Stock on such Purchase Dates.
>
> Step Two: Subtract the amount(s) determined in Step One from $25,000.
>
> Step Three: Divide the remainder amount determined in Step Two by the Fair Market Value of a share of Common Stock on the Purchase Date for which the calculation is being performed. The quotient thus obtained is the maximum number of shares which may be purchased by the Participant on such Purchase Date.

To the extent any payroll deductions are not used on the Purchase Date for the purchase of shares of Common Stock, excepting any amounts insufficient to purchase a full share on the Purchase Date in accordance with the applicable rules of the Plan administrator, they shall be refunded without interest to the Participant.

7. ***Payment and Delivery.***

Unless otherwise determined by the Committee or its delegate, all shares purchased under the Plan shall be deposited directly to an account established in the name of the Participant with Mellon Investor Services, LLC, or its successor or other entity chosen by the Committee from time to time ("MIS"). Upon the exercise of an option on each Purchase Date, the Company or MIS shall deliver (by electronic or other means) to the Participant a record of the Common Stock purchased. The Committee or its delegate may require or permit shares purchased under the Plan to be deposited directly with any other broker or agent designated by the Committee or its delegate, and the Committee may utilize electronic or automated methods of share transfer. The Committee or its delegate may also require that all dividends received on the shares acquired under the Plan be applied to the purchase of additional shares, without any discount on the Fair Market Value of such shares, and automatically reinvested in a dividend reinvestment plan or program maintained by the Company, including a program maintained under the Plan.

The Company shall retain the amount of payroll deductions used to purchase Common Stock as full payment for the Common Stock, and the Common Stock shall then be fully paid and non-assessable. No Participant shall have any voting, dividend, or other shareholder rights with respect to shares subject to any option granted under the Plan until the shares subject to the option have been purchased and delivered to the Participant as provided in this Section 7.

8. *Recapitalization.*

8.1 *Stock Splits and Dividends.* If a dividend or other distribution shall be declared upon the Common Stock payable in shares of the Common Stock, the number of shares of the Common Stock then subject to any outstanding options, the number of shares of the Common Stock subject to the share limit provided in Section 6 and the number of shares which may be issued under the Plan under Section 5.1 but are not then subject to outstanding stock options shall be adjusted by adding thereto the number of shares of the Common Stock which would have been distributable thereon if such shares had been outstanding on the date fixed for determining the shareholders entitled to receive such stock dividend or distribution. In addition, the terms relating to the purchase price with respect to the option shall be appropriately adjusted, and the Committee shall take any further actions which, in the exercise of its discretion, may be necessary or appropriate under the circumstances.

8.2 *Reorganizations.* The Board or the Committee, if it so determines in the exercise of its sole discretion, also may adjust the number and kind of shares specified in Section 5.1, as well as the price per share covered by each outstanding option, the number of shares subject to any individual option and the share limit of Section 6, in the event the Company effects one or more reorganizations, recapitalizations, spin-offs, split-ups, rights offerings or reductions of shares of its outstanding Common Stock.

8.3 *Effect of Determinations.* The determinations of the Board or the Committee under this Section 8 shall be final, conclusive and binding on all parties.

9. *Merger, Liquidation, Other Company Transactions.*

9.1 *Liquidation or Dissolution.* In the event of the proposed liquidation or dissolution of the Company, the Purchase Period then in progress will terminate immediately prior to the consummation of such liquidation or dissolution, unless otherwise provided by the Board in its sole discretion, and all outstanding options shall automatically terminate and the amounts of all payroll deductions will be refunded without interest to the Participants.

9.2 *Merger or Consolidation.* In the event of a proposed sale of all or substantially all of the assets of the Company, or the merger or consolidation of the Company with or into another corporation, then in the sole discretion of the Board, (1) each option shall be assumed, or an equivalent option shall be substituted, by the successor corporation or parent or subsidiary of such successor corporation or (2) a date established by the Board on or before the date of consummation of such merger, consolidation or sale shall be treated as a Purchase Date, and all outstanding options shall be deemed exercised on such date.

10. *Transferability.*

Options granted to Participants may not be voluntarily or involuntarily assigned, transferred, pledged, or otherwise disposed of in any way, and, except as provided in Section 4.4, are exercisable during the Participant's lifetime only by the Participant. Any attempted assignment, transfer, pledge, or other disposition shall be null and void and without effect. If a Participant in any manner attempts to transfer, assign or otherwise encumber his or her rights or interest under the Plan, such act shall be treated as an election by the Participant to discontinue participation in the Plan pursuant to Section 4.3.

11. ***Amendment or Termination of the Plan.***

The Board may, in its sole discretion, insofar as permitted by law, terminate the Plan, or revise or amend it in any respect whatsoever, except that, no such revision or amendment may be made without approval of the shareholders if shareholder approval is required by the rules of any stock exchange on which the Common Stock is listed or if such revision or amendment would increase the number of shares subject to the Plan, other than an adjustment under Section 8 of the Plan. The Committee may, in its discretion, suspend the Plan.

12. ***Committee Rules For Non-U.S. Jurisdictions.***

12.1 *Local Laws.* The Committee or its delegate may adopt rules or procedures relating to the operation and administration of the Plan to accommodate the specific requirements of local laws and procedures. Without limiting the generality of the foregoing, the Committee or its delegate is specifically authorized to adopt rules and procedures regarding handling of payroll deductions, payment of interest, conversion of local currency, payroll tax, withholding procedures and handling of stock or stock certificates which vary with local requirements.

12.2 *Sub-plans.* The Committee may also adopt sub-plans applicable to particular subsidiaries or affiliates. The rules of such sub-plans may take precedence over other provisions of this Plan, with the exception of Section 5.1, but unless otherwise superseded by the terms of such sub-plan, the provisions of this Plan shall govern the operation of such sub-plan. The Committee may also adopt sub-plans applicable to predecessor company plans, on such terms as it may specify.

13. ***Compliance with Legal and Exchange Requirements.***

The Company shall not be under any obligation to issue Common Stock upon the exercise of any option unless and until the Company has determined that: (i) it and the Participant have taken all actions required to register the Common Stock under the Securities Act of 1933, or to perfect an exemption from the registration requirements thereof; (ii) any applicable listing requirement of any stock exchange on which the Common Stock is listed has been satisfied; and (iii) all other applicable provisions of state, federal and applicable foreign law have been satisfied.

14. ***Governmental Approvals.***

This Plan and the Company's obligation to sell and deliver shares of its stock under the Plan in any jurisdiction shall be subject to the approval of any governmental authority required in connection with the Plan or the authorization, issuance, sale, or delivery of stock hereunder in such jurisdiction.

15. ***No Enlargement Of Employee Rights.***

Nothing contained in this Plan shall be deemed to give any Employee the right to be retained in the employ of the Company or any Subsidiary or Affiliate or to interfere with the right of the Company or any Subsidiary or Affiliate to discharge any Employee at any time. It is not intended that any rights or benefits provided under this Plan shall be considered part of normal or expected compensation for purposes of calculating any severance, resignation, redundancy, end of service payments, bonuses, long service awards, pension, retirement or similar payments.

16. *Withholding Taxes.*

In the event that the Company or any Subsidiary or Affiliate is required to withhold any federal, state, local or foreign taxes in respect of any compensation or other income realized by the Participant, the Company or such Subsidiary or Affiliate may deduct from any payments of any kind otherwise due to such Participant, including without limitation the proceeds of any sale of Common Stock for the account of the Participant, the aggregate amount of such federal, state, local or foreign taxes required to be withheld. If such payments are insufficient to satisfy such federal, state, local or foreign taxes, the Participant will be required to pay to the Company or such Subsidiary or Affiliate, or make other arrangements satisfactory to the Company or such Subsidiary or Affiliate regarding payment to the Company or such Subsidiary or Affiliate of, the aggregate amount of any such taxes.

17. *Governing Law.*

This Plan shall be governed by and construed in accordance with the laws of the State of New York, without regard to conflicts of law principles.

18. *Severability.*

If any provision of the Plan shall be held illegal or invalid in any jurisdiction, such illegality or invalidity shall not affect the remaining provisions of the Plan in such jurisdiction, or any provision of the Plan in any other jurisdiction, and the Plan shall be construed and applied in such jurisdiction as if the invalid provision had never been contained herein.

19. *Effective Date.*

This Plan shall be effective March 11, 2008, the date of its adoption by the Board, subject to approval of the shareholders of the Company at the 2008 Annual Meeting.

EXHIBIT II
THE BANK OF NEW YORK MELLON CORPORATION SHARE ACCUMULATION PLAN

TRUST DEED and RULES

of the

THE BANK OF NEW YORK MELLON CORPORATION

STOCK ACCUMULATION PLAN

DATED
June 2009

Approved by HM Revenue & Customs on
2009
under reference A102766

Deloitte LLP
2 New Street Square
London
EC4A 3BZ

TRUST DEED and
RULES OF THE
THE BANK OF NEW YORK MELLON CORPORATION
STOCK ACCUMULATION PLAN

TRUST DEED

THIS TRUST DEED is made the day of June 2009

BETWEEN

(1) The Bank of New York Mellon Corporation (incorporated in the State of Delaware under no. 5881587) whose principal office is at One Wall Street, New York, New York 10286, United States of America (**"the Company"**);

(2) Those Participating Companies set out at Schedule B to this Deed; and

(3) Capita IRG Trustees Limited (incorporated in England and Wales under registration no: 2729260) whose registered office is at The Registry, 34 Beckenham Road, Beckenham, Kent BR3 4TU **("the Trustees")**

together the **"Original Parties".**

WHEREAS

(A) The Company wishes to establish a share incentive plan approved in accordance with the provisions of Schedule 2 to ITEPA.

(B) The Plan shall constitute an employees' share scheme as that term is defined in section 1166 of the Companies Act 2006 for the provision by the Company of funds for the acquisition by the Trustees of Shares or any shares representing the same.

(C) The Company has adopted the Plan in accordance with Rule 12.2 of the Employee Stock Purchase Plan (**"ESPP"**) approved pursuant to a stockholders resolution dated 8 April 2008.

(D) The Trustees have agreed to be the first trustees of the Plan.

NOW THIS DEED WITNESSETH as follows:

1. DEFINITIONS AND INTERPRETATION

The words and expressions used in this Deed shall where the context permits, have the meaning set out in Rule 1 of the Schedule A to this Deed.

2. OBJECT OF THE TRUST

The purpose of this Deed is to establish a trust for the Plan that satisfies Schedule 2 to ITEPA.

3. THE PLAN

The Plan consists of this Deed and the attached Schedule A. The definitions in the Rules apply to this Deed. The Company from time to time determines which of parts A to D of the Rules shall have effect. Where the Company determines that part B shall have effect it shall also specify whether there is to be an Accumulation Period of up to twelve months, which shall apply equally to all Qualifying Employees in the Plan.

4. DECLARATION OF TRUST

The Company and the Trustees have agreed that all the Shares and other assets that are transferred to the Trustees are to be held on the trusts declared by this Deed, and subject to the terms of the Rules. When Shares or assets are transferred to the Trustees by the Company with the intention of being held as part of the Plan they shall be held upon the trusts and provisions of this Deed and the Rules.

The Trustees shall hold the Trust Fund upon the following trusts namely:

(a) as to Unawarded Shares to allocate those Shares in accordance with the terms of this Deed and the Rules;

(b) as to Shares which have been awarded to a Participant upon trust for the benefit of that Participant on the terms and conditions set out in the Rules;

(c) as to Partnership Share Money upon trust to acquire Shares for the benefit of the contributing Qualifying Employee in accordance with the Rules or to appropriate Unawarded Shares to such Qualifying Employee; and

(d) as to Surplus Assets upon trust to use them to acquire further Shares to be held on the trusts declared in (a) above, at such time during the Trust Period and on such terms as the Trustees in their absolute discretion think fit.

The income of Unawarded Shares and Surplus Assets shall be accumulated by the Trustees and added to, and held upon the trusts applying to, Surplus Assets.

The income of Plan Shares and Partnership Share Money shall be dealt with in accordance with the Rules.

The perpetuity period in respect of the trusts and powers declared by this Deed and the Rules shall be the period of eighty years from the date of this Deed.

5. NUMBER OF TRUSTEES

Unless a corporate Trustee is appointed, there shall always be at least two Trustees. Where there is no corporate Trustee, and the number of Trustees falls below two, the continuing Trustee has the power to act only to achieve the appointment of a new Trustee.

6. INFORMATION

The Trustees shall be entitled to rely without further enquiry on all information supplied to them by the Company and Participating Companies for the purposes of the Plan. In particular, but without prejudice to the generality of the foregoing, any notice given by the Company or a Participating Company to the Trustees in respect of the eligibility of any person to become or remain a Participant in the Plan shall be conclusive in favour of the Trustees.

7. RESIDENCE OF TRUSTEES

At all times the Trustees shall be a body of persons resident in the UK pursuant to paragraph 71(1) of Schedule 2. The Company shall immediately remove any Trustee who ceases to be so resident and, if necessary, appoint a replacement.

8. CHANGE OF TRUSTEES

The Company has the power to appoint or remove any Trustee for any reason. the Company shall execute a deed to effect the change of Trustee. Any Trustee may resign on one month's notice given in writing to the Company, provided that there will be at least two Trustees or a corporate Trustee immediately after the retirement.

9. INVESTMENT AND DEALING WITH TRUST ASSETS

(a) Save as otherwise provided for by the Plan the Trustees shall not sell or otherwise dispose of Plan Shares.

(b) The Trustees shall obey any directions given by a Participant in accordance with the Rules in relation to his Plan Shares and any rights and income relating to those Shares. In the absence of any such direction, or provision by the Plan, the Trustees shall take no action.

(c) The Company and the Participating Companies shall, as soon as practicable after deduction from Salary, pass the Partnership Share Money to the Trustees who will put the money into an account with:

(i) a person falling within section 991(2)(b) of ITA 2007;

(ii) a building society; or

(iii) an institution falling within section 991(2)(c) of ITA 2007,

until it is either used to acquire Partnership Shares (or appropriate Unawarded Shares) on the Acquisition Date, or, in accordance with the Plan, returned to the individual from whose Salary the Partnership Share Money has been deducted.

(d) The Trustees shall pass on any interest arising on this invested money to the individual from whose Salary the Partnership Share Money has been deducted.

(e) The Trustees may either retain or sell Unawarded Shares at their absolute discretion. The proceeds of any sale of Unawarded Shares shall form part of Surplus Assets.

(f) The Trustees shall have all the powers of investment of a beneficial owner in relation to Surplus Assets.

(g) The Trustees shall be under no duty to invest Surplus Assets.

(h) The Trustees shall not be under any liability to the Participating Companies or to current or former Qualifying Employees by reason of a failure to diversify investments, which results from the retention of Plan or Unawarded Shares.

(i) The Trustees may allow any Shares to be registered in the name of an appointed nominee provided that such Shares shall be registered in a designated account. Such registration shall not divest the Trustees of their responsibilities under this Deed or Schedule 2.

(j) The Trustees may at any time, and shall if the Company so directs, revoke any delegation made under this Clause or require any Plan assets held by another person to be returned to the Trustees, or both.

(k) The Trustees may place the documents of title to any securities for the time being in its possession that relate to the Plan or the trusts hereof in any bank or safe deposit. At any time when there is more than one Trustee, the Trustees shall be entitled to procure that any one or more of them may be registered as proprietor of any property held by them upon the trusts of this deed.

(l) The Trustees shall treat Participants fairly and equally in exercising their powers under Part 8 of Schedule 2 in relation to the acquisition of any Dividend Shares.

10. LOANS TO TRUSTEES

The Trustees shall have the power to borrow money for the purpose of:

(a) acquiring Shares; and

(b) paying any other expenses properly incurred by the Trustees in administering the Plan,

on such terms as it thinks fit.

11. SHARES FROM QUALIFYING SHARE OWNERSHIP TRUSTS

Where Shares are transferred to the Trustees by a qualifying transfer in accordance with paragraph 78(1) of Schedule 2, they shall award such Shares only as Free and Matching Shares, and in priority to other available Shares.

12. TRUSTEES' OBLIGATIONS UNDER THE PLAN

Notice of Award of Free and Matching Shares

12.1 As soon as practicable after Free and Matching Shares have been awarded to a Participant, the Trustees shall give the Participant a notice stating:

(a) the number and description of those Shares;

(b) their Initial Market Value on the Award Date; and

(c) the Holding Period applicable to them.

Notice of Award of Partnership Shares

12.2 As soon as practicable after any Partnership Shares have been awarded to a Participant, the Trustees shall give the Participant a notice stating:

(a) the number and description of those Shares;

(b) the amount of money applied by the Trustees in acquiring those Shares on behalf of the Participant; and

(c) the Market Value at the Acquisition Date.

Notice of Dividend Shares

12.3 As soon as practicable after Dividend Shares have been acquired on behalf of a Participant, the Trustees shall give the Participant a notice stating:

(a) the number and description of those Shares;

(b) their Market Value on the Acquisition Date;

(c) the Holding Period applicable to them; and

(d) any amount not reinvested and carried forward for acquisition of further Dividend Shares.

Maintenance of Trust Records

12.4 The Trustees shall maintain proper records and in particular:

(a) The Trustees shall make proper arrangements for the preparation and preservation of all necessary accounts (including the accounts of individual employees) records and other documents necessary to carry out their obligations concerning the proper administration of the Plan. The Participating Companies hereby undertake to make available to the Trustees all facilities and information necessary to ensure that full compliance is made with the provisions of the Plan.

(b) For the purposes of Rules 5.3 to 5.5, the Trustees shall maintain records of any Participant who in any Tax Year has been awarded shares under another plan approved under Schedule 2 and established by the Company or a Connected Company.

(c) Without limitation to the generality of the foregoing the Trustees shall maintain such records as may be necessary for the purposes of their own PAYE and NICs obligations or the PAYE and NICs obligations of the Employer Company (being the company of which the Participant is an employee at the time when any Plan Shares to which the Participant is entitled cease to be subject to the Plan and to whom the PAYE regulations, within the meaning of section 685 of ITEPA, at that time apply).

(d) The Trustees shall submit to the Company such reports or other information as it may reasonably require for ensuring that the Plan is properly administered. Without prejudice to the generality of the foregoing, the Trustees shall submit to the Company copies of all documents including the annual returns which have been supplied to the Board of HM Revenue & Customs within twenty-one days of their being so supplied.

(e) The Company and its proper officers shall at all times be entitled on service of proper notice to inspect all accounts documents and records whatsoever maintained by the Trustees for the purposes of the Plan. The Company may at any time and at its absolute discretion audit or cause to be audited those accounts documents and records.

13. RESTRICTIONS DURING THE HOLDING PERIOD

13.1 During the Holding Period the Trustees shall not dispose of any Free, Matching or Dividend Shares (whether by transfer to the employee or otherwise) unless the Participant has at that point ceased to be in Relevant Employment except as allowed by the following paragraphs of Schedule 2:

(a) paragraph 37(1) (power of Trustees to accept general offers etc.);

(b) paragraph 77(1) (power of Trustees to raise funds to subscribe for rights issue);

(c) paragraph 79(1) (meeting PAYE obligations); and

(d) paragraph 90(8) (termination of plan: early removal of Shares with participant's consent).

PAYE Liability etc.

13.2 This Rule applies where the Trustees become liable to account for PAYE.

(a) The Trustees may dispose of a Participant's Shares or accept a sum from the Participant in order to meet any PAYE liability as a result of a Participant's Shares ceasing to be subject to the Plan, including a liability arising in the circumstances provided in section 510 ITEPA (PAYE: Payment by Trustees to employer company on Shares ceasing to be subject to the plan).

(b) Where the Trustees receive a sum of money which constitutes a Capital Receipt in respect of which a Participant is chargeable to income tax under ITEPA, the Trustees shall pay to the employer a sum equal to that on which income tax is so payable.

(c) The Trustees shall maintain the records necessary to enable them to carry out their PAYE obligations, and the PAYE obligations of the employer company so far as they relate to the Plan.

(d) Where the Participant becomes liable to income tax under ITEPA, or Chapter 3 or Chapter 4 of Part 4 of ITTOIA, the Trustees shall inform the Participant of any facts that are relevant to determining that liability.

Money's worth received by Trustees

13.3 The Trustees shall pay over to the Participant as soon as is practicable, any money or money's worth received by them in respect of or by reference to any Shares, other than money's worth consisting of new shares within paragraph 86 of Schedule 2 ('Company Reconstructions').

This is subject to:

(a) the provisions of paragraph 62 of Schedule 2 (dividend reinvestment);

(b) the Trustees obligations under sections 510 to 514 ITEPA (PAYE: Shares ceasing to be subject to the Plan, and obligations to make payments to employer etc); and

(c) the Trustees' PAYE obligations.

General offers etc.

13.4 If any offer, compromise, arrangement or scheme is made which affects the Free Shares or Matching Shares the Trustees shall notify Participants. Each Participant may direct how the Trustees shall act in relation to that Participant's Plan Shares. In the absence of any direction, the Trustees shall take no action.

14. POWER OF TRUSTEES TO RAISE FUNDS TO SUBSCRIBE FOR A RIGHTS ISSUE

If instructed by Participants in respect of their Plan Shares the Trustees may dispose of some of the Rights under a rights issue arising from those Shares to obtain enough funds to exercise the remaining Rights. The Rights referred to are rights to acquire additional shares or rights in the same company.

15. POWER TO AGREE MARKET VALUE SHARES

Where the Market Value of Shares falls to be determined for the purposes of Schedule 2, the Trustees may agree with HM Revenue & Customs that it shall be determined by reference to such date or dates, or to an average of the values on a number of dates, as specified in the agreement.

16. PERSONAL INTEREST OF TRUSTEES

Trustees, and directors, officers or employees of a corporate Trustee, shall not be liable to account for any benefit accruing to them by virtue of their:

(a) participation in the Plan as a Qualifying Employee;

(b) ownership, in a beneficial or fiduciary capacity, of any shares or other securities in any Participating Company;

(c) being a director or employee of any Participating Company, being a creditor, or being in any other contractual relationship with any such Company.

Permitted dealings of Trustees

A Trustee and any director or other officer of a company acting as Trustee shall not be precluded from acquiring holding or dealing with any debentures, debenture stock shares or securities whatsoever of any Participating Company or any other company in which the Trustees may be interested. Such a person shall not be precluded from making any contract or other transaction with any Participating Company or any such other company. Such a person shall not be in any way liable to account to any Participant, any Participating Company, or such other company for any profits made or benefits obtained in connection therewith.

17. ADMINISTRATION OF THE TRUST

(a) A Trustee being a company may in its capacity as a Trustee hereof act by its officers and may by such officers have and exercise all powers trusts and discretion vested in it hereunder.

(b) The Trustees may employ and act on the advice or opinion of any solicitor, broker, actuary, accountant or other professional or business person whether such advice was obtained by the Trustees or by the Company and shall not be responsible for any loss occasioned by its so acting. the Company shall meet the expenses of such advice or opinions to the extent that it, in its sole discretion, considers such expenses reasonable.

(c) The Trustees may employ on such terms as the Company may agree as to remuneration any agent or agents to transact all or any business of whatsoever nature required to be done in the proper administration of the trusts powers and provisions hereof.

The Trustees shall hold meetings as often as is necessary for the administration of the Plan. There shall be at least two Trustees present at a meeting, except where the sole Trustee is a corporate Trustee, and the Trustees shall give due notice to all the Trustees of such a meeting. Decisions made at such a meeting by a majority of the Trustees present shall be binding on all the Trustees. A written resolution signed by all the Trustees shall have the same effect as a resolution passed at a meeting.

18. NOTICE OF ANY FOREIGN TAX DEDUCTED BEFORE DIVIDEND PAID

Where any foreign cash dividend is received in respect of Plan Shares held on behalf of a Participant, the Trustees shall give the Participant notice of the amount of any foreign tax deducted from the dividend before it was paid.

19. SUBSIDIARY COMPANIES

19.1 Any Subsidiary or Jointly Owned Company may with the agreement of the Company become a Participating Company by executing a deed of adherence agreeing to be bound by the Deed and Rules, in such form as may be agreed in advance with HM Revenue & Customs from time to time. However, any Subsidiary or Jointly Owned Company that is an Original Party to this Deed shall be a Participating Company and shall not be required to execute a deed of adherence.

19.2 Any company, which ceases to be a Subsidiary or Jointly Owned Company, shall cease to be a Participating Company.

19.3 The Plan shall cease to apply to any Participating Company, other than the Company, upon issue of a written notice by the Company to the Trustees that the relevant Company shall cease to be a Participating Company.

20. DUTIES OF PARTICIPATING COMPANIES

20.1 If and so long as any company is a Participating Company it shall:

(a) contribute and pay to the Trustees such sums as are required by the Trustees to acquire such Plan Shares as may be necessary or required for the purpose of discharging the Trustees' duties and obligations under the Plan together with that proportion of the sums required to meet the reasonable expenses of the Trustees in operating and administering the Plan in respect of the Qualifying Employees of that Participating Company;

(b) provide the Trustees with all information reasonably required from it for the purposes of the administration and operation of the Plan in such form as the Trustees may reasonably require; and

(c) at all times comply with the Rules.

20.2 Any company, which ceases to be a Participating Company, shall remain liable to meet its fair proportion of the expenses of the Trustees in respect of any period whether or not arising while it was a Participating Company.

20.3 The rights of Participants employed by any company which ceases to be a Participating Company in relation to Plan Shares Awarded to them whilst that Company was a Participating Company shall not be affected.

21. EXPENSES OF PLAN

The Participating Companies shall meet the costs of the preparation and administration of this Plan.

22. TRUSTEES' LIABILITY AND INDEMNITY

22.1 The Participating Companies shall jointly and severally indemnify each of the Trustees (except a remunerated Trustee) against any expenses and liabilities which are incurred through acting as a Trustee of the Plan and which cannot be recovered from the Trust Fund. This does not apply to expenses and liabilities that are incurred through fraud or wilful wrongdoing or are covered by insurance under Clause 22.3.

22.2 No Trustee except a remunerated Trustee shall be personally liable for any breach of trust (other than through fraud or wilful wrongdoing).

22.3 A non-remunerated Trustee may insure the Plan out of the Trust Fund against any loss caused by him or any of his employees, officers, agents or delegates.

23. TRUSTEES POWER OF DELEGATION

23.1 The Trustees may, to the extent permitted by law, delegate any of their powers and duties under the Plan to any person or company. No delegation made under this Clause shall divest the Trustees of their responsibilities under this Deed or under Schedule 2.

23.2 The Trustees may execute and may authorise any of their directors, officers or employees to execute on their behalf any documents in such manner as may be appropriate and not being inconsistent with the terms of the Plan.

24. REMUNERATION OF TRUSTEES

24.1 Any individual Trustee shall be entitled to receive and retain as remuneration for his services hereunder such sum or sums as a Participating Company may from time to time resolve to pay to him therefor notwithstanding that he is also an officer or employee of a Participating Company. Such a person shall not be disqualified from voting or taking part in any decision of the Trustees on any matter by virtue of any personal or beneficial interest (actual or prospective) therein.

24.2 Any Trustee being a solicitor, broker, actuary, accountant, or other person engaged in any profession or business shall be entitled to be paid all usual professional or proper charges for business transacted time expended and acts done by him or by any employee or partner of his firm in connection with the Plan including acts which a Trustee not being in any profession or business could have done personally.

24.3 Any Trustee being a company may charge and be paid such reasonable remuneration or charges as shall from time to time be agreed in writing between the Company and such company. Any such company (being a bank) shall be entitled, subject to the written consent of the Company, to act as banker and perform any services in relation to the Plan on no less favourable terms than would be made with a customer in the ordinary course of its business as a banker without accounting for any resultant profit including, without prejudice to the generality of the foregoing clause, retention of its customary share of brokerage commission.

24.4 Any Trustee may be employed by or be appointed an officer of the Company or any Subsidiary and shall be entitled to keep for his benefit such fees perquisites and remuneration as he may receive by virtue of such position without having to account therefor and whether or not his position might be by virtue of the fact that he is a Trustee.

25. ACCEPTANCE OF GIFTS

The Trustees may accept gifts of Shares and other assets, which shall be held upon the trusts declared by this Deed.

26. TRUSTEES' LIEN

The Trustees' lien over the Trust Fund in respect of liabilities incurred by them in the performance of their duties (including the repayment of borrowed money and tax liabilities) shall be enforceable subject to the following restrictions:

(a) the Trustees shall not be entitled to resort to Partnership Share Money for the satisfaction of any of their liabilities; and

(b) the Trustees shall not be entitled to resort to Plan Shares for the satisfaction of their liabilities except to the extent that this is permitted by the Plan.

27. AMENDMENTS TO THE PLAN

The Company may, with the Trustees' written consent, from time to time amend the Plan provided that

(a) The Company may not make any amendment that would adversely prejudice to a material extent the rights attaching to any Plan Shares awarded to or acquired by Participants.

(b) The Company may not make any alteration that would give to Participating Companies a beneficial interest in Plan Shares.

(c) If the Plan is approved by HM Revenue & Customs at the time of an amendment or addition, any amendment or addition to a **"key feature"** (as defined in paragraph 84(6) of Schedule 2) of the Plan shall not have effect unless and until the approval of HM Revenue & Customs has been obtained.

and, without stockholder approval, no amendment may otherwise be made to Rule 3 or to any other provision if stockholder approval is required by any stock exchange on which the Shares are listed.

28. SUSPENSION OF THE PLAN

The Company may at any time resolve to suspend the operation of the Plan. Any decision to suspend the operation of the Plan will not affect the subsisting rights of Participants.

29. TERMINATION OF THE PLAN

29.1 The Plan shall terminate on the earliest of:

(a) the date on which the Plan is declared to terminate by a Plan Termination Notice issued by the Company to the Trustees under paragraph 89 of Schedule 2, or

(b) if earlier, the expiry of the Trust Period.

29.2 The Company shall without delay upon executing a Plan Termination Notice provide a copy of the notice to the Trustees, HM Revenue & Customs and each individual who has Plan Shares or who has entered into a Partnership Share Agreement which was in force immediately before the Plan Termination Notice was issued.

29.3 Upon the issue of a Plan Termination Notice or upon the expiry of the Trust Period, paragraph 90 of Schedule 2 shall have effect.

29.4 Any Shares or other assets which remain undisposed of after the requirements of paragraph 90 of Schedule 2 have been complied with shall be held by the Trustees upon trust to pay or apply them to or for the benefit of the Participating Companies as at the termination date in such proportion, having regard to their respective contributions, as the Trustees shall in their absolute discretion consider appropriate.

30. EVENTS ON WHICH A PLAN TERMINATION NOTICE MAY BE GIVEN

The Company will issue a Plan Termination Notice on the earliest of the following dates:

(a) on the date when an order for the winding up of the Company is made or a resolution is passed for the voluntary winding up of the Company, or,

(b) on any other date determined at the discretion of the Company.

31. NOTICES

Any notice or other communication under, or in connection with, the Plan may be given by personal delivery sent by e-mail or fax to any e-mail or fax number which according to the records of the Company or Participating Company is used by him, or by sending the same by post, in the case of a company to its registered office, and in the case of an individual to his last known address, or, where he is a director or employee of the Company or a Participating Company, either to his last known address or to the address of the place of business at which he performs the whole or substantially the whole of the duties of his office or employment. Notices sent by email or fax, in the absence of evidence to the contrary, will be deemed to have been received on the day after sending. Where a notice or other communication is given by first-class post, it shall be deemed to have been received by 10am on the second Business Day after it was put into the post properly addressed and stamped. However, notices sent by airmail to a director or employee who is working overseas or by airmail to the Company or a Participating Company with an overseas registered office will be deemed to have been given on the seventh day after posting. If any notice or other communication would otherwise have become effective on a non-Business Day or after 5 p.m. on a Business Day, it shall instead become effective at 10 a.m. on the next Business Day.

32. THIRD PARTY RIGHTS

Any person who is not a party to this Deed shall have no right under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of this Deed. This clause does not affect any right or remedy of any person which exists or is available otherwise than pursuant to that Act.

33. GOVERNING LAW

This Deed shall be governed by and construed in accordance with the laws of England.

34. JURISDICTION

The parties agree that they shall submit to the exclusive jurisdiction of the English courts.

35. CONSTRUCTION OF THIS DEED

The Schedules to this Deed shall be treated as part of this Deed.

36. COUNTERPARTS

This Deed may be executed in any number of counterparts each of which when executed and delivered is an original and all of which together constitute the same document.

SCHEDULE A

THE PLAN RULES

1. DEFINITIONS

1.1 The following words and expressions have the following meanings:

"Accumulation Period"	in relation to Partnership Shares, the period during which the Trustees accumulate a Qualifying Employee's Partnership Share Money before acquiring Partnership Shares or repaying it to the employee
"Acquisition Date"	(a) in relation to Partnership Shares, where there is no Accumulation Period, the meaning given by paragraph 50(4) of Schedule 2 (b) in relation to Partnership Shares, where there is an Accumulation Period, the meaning given by paragraph 52(5) of Schedule 2; and (c) in relation to Dividend Shares, the meaning given by paragraph 66(4) of Schedule 2
"Associated Company"	the same meaning as in paragraph 94 of Schedule 2
"Award Date"	in relation to Free Shares or Matching Shares, the date on which such Shares are awarded
"Award"	(a) in relation to Free Shares and Matching Shares, the appropriation of Free Shares and Matching Shares in accordance with the Plan; and (b) in relation to Partnership Shares, the acquisition of Partnership Shares on behalf of Qualifying Employees in accordance with the Plan or, as the case may be, the appropriation of Unawarded Shares already held by the Trustees
"Business Day"	any day (other than a Saturday or a Sunday) when clearing banks are open for business in the City of London for the transaction of normal banking business;
"Capital Receipt"	the same meaning as in section 502 ITEPA
"Clause"	a clause of the Deed
"the Company"	The Bank of New York Mellon Corporation (incorporated in the State of Delaware under registration no. 5881587)

"Close Company"	a company that is a close company within the meaning of section 414 of ICTA 1988, but disregarding section 414(1)(a) and section 415 of ICTA 1988
"Connected Company"	the same meaning as in paragraph 18(3) of Schedule 2
"Control"	the same meaning as in section 995 of ITA 2007
"Dealing Day"	a day on which the London Stock Exchange plc (or its successor body) is open for the transaction of business
"Deed"	The Bank of New York Mellon Corporation Stock Accumulation Plan Trust Deed
"Directors"	the board of directors of the Company or a duly authorised committee thereof
"Dividend Shares"	Shares acquired on behalf of a Participant from reinvestment of dividends under Part D of the Plan and which are subject to the Plan
"Employees' Share Scheme"	an employees' share scheme as defined in section 1166 of the Companies Act 2006
"Forfeiture Period"	any period specified by the Company during which Free and Matching Shares may be subject to forfeiture
"Free Share Agreement"	an agreement setting the terms of the Award with respect to an Award of Free Shares in such form as may be approved by HM Revenue & Customs from time to time
"Free Shares"	Shares awarded under Part A of the Plan which are subject to the Plan
"Holding Period"	(a) in relation to Free Shares, the period during which the Participant shall be bound by the terms of the Free Share Agreement specified by the Company as mentioned in Rule 7.16; (b) in relation to Matching Shares, the period during which the Participant shall be bound by the terms of the Partnership Share Agreement specified by the Company as mentioned in Rule 9.5; and (c) in relation to Dividend Shares, the period of three years from the Acquisition Date

"ICTA 1988"	the Income and Corporation Taxes Act 1988
"Initial Market Value"	the Market Value of a Share on an Award Date. Where the Share is subject to a restriction or risk of forfeiture, the market value shall be determined without reference to that restriction or risk
"ITEPA"	the Income Tax (Earnings and Pensions) Act 2003
"IITOIA"	the Income Tax (Trading and Other Income) Act 2005
"ITA 2007"	the Income Tax Act 2007
"Jointly Owned Company"	a company owned by the Company jointly with another person (within the meaning of paragraph 91(5) of Schedule 2) and any company controlled by such jointly owned company, in each case to which HM Revenue & Customs has confirmed the Plan may extend.
"Market Value"	(a) if and for so long as the Shares are admitted to listing on the New York Stock Exchange: (i) if all the Shares acquired for allocation to Participants on an Acquisition Date or Award Date (as applicable) are purchased over 5 or fewer consecutive Dealing Days ending either on that date or on the Dealing Day immediately preceding that date, the average of the prices paid by the Trustees for those Shares; or (ii) in any other case, the closing price of a Share on the New York Stock Exchange on the Dealing Day immediately preceding the Acquisition Date or Award Date (as applicable); (b) if paragraph (a) above does not apply, its market value determined in accordance with Part VIII of the Taxation of Chargeable Gains Act 1992 and agreed for the purposes of the Plan with HM Revenue & Customs Shares Valuation on or before that day
"Matching Shares"	Shares awarded under Part C of the Plan and which are subject to the Plan
"Material Interest"	the same meaning as in paragraph 19 of Schedule 2
"NICs"	National Insurance Contributions

"Participant"	an individual who has received under the Plan an Award of Free Shares, Matching Shares or Partnership Shares, or on whose behalf Dividend Shares have been acquired
"Original Participating Company"	a Participating Company which was an Original Party to the Deed
"Participating Company"	the Company, such Subsidiaries and Jointly Owned Companies which are either Original Parties to the Deed or have executed deeds of adherence to the Plan under Clause 19 of the Deed
"Partnership Share Agreement"	an agreement setting the terms of the Award with respect to an Award of Partnership Shares in such form as may be approved by HM Revenue & Customs from time to time
"Partnership Share Money"	money deducted from a Qualifying Employee's Salary pursuant to a Partnership Share Agreement and held by the Trustees to acquire Partnership Shares or to be returned to such a person
"Partnership Shares"	Shares awarded under Part B of the Plan and which are subject to the Plan
"Performance Criteria "	the criteria which may be used in accordance with Schedule 2 to determine: (a) whether or not Free Shares are awarded; or (b) the number or value of Free Shares to be awarded
"Plan"	The Bank of New York Mellon Corporation Stock Accumulation Plan established under Schedule 2 as constituted by this Deed and Rules in their present form or as amended from time to time in accordance with the provisions hereof
"Plan Shares"	(a) Free Shares, Matching Shares or Partnership Shares awarded to Participants; (b) Dividend Shares acquired on behalf of Participants; and (c) shares in relation to which paragraph 87(2) (company reconstructions: new shares) of Schedule 2 applies and that remain subject to the Plan

"Plan Termination Notice" a notice to terminate the Plan issued by the Company under paragraph 89 of Schedule 2

"Qualifying Company" in relation to any individual means:

(a) the Company; or

(b) a company that when the individual was employed by it was an Associated Company:

(i) of the Company; or

(ii) of another company qualifying under this paragraph

"Qualifying Corporate Bond" the same meaning as in section 117 of the Taxation of Chargeable Gains Act 1992

"Qualifying Employee" an employee who must be invited to participate in an award in accordance with Rule 5.5 and any employee whom the Company has invited in accordance with Rule 5.7

"Qualifying Period"

(a) in the case of Free Shares a period not exceeding 18 months before the Award is made;

(b) in the case of Partnership Shares and Matching Shares where there is an Accumulation Period a period not exceeding six months before the start of the Accumulation Period; and

(c) in the case of Partnership Shares and Matching Shares where there is no Accumulation Period a period not exceeding 18 months before the deduction of Partnership Share Money relating to the Award

"Qualifying Reason" A Participant ceases to be in Relevant Employment for a Qualifying Reason if the Participant ceases to be an employee

(a) because of injury or disability

(b) on being dismissed by reason of Redundancy

(c) by reason of a transfer to which the Transfer of Undertakings (Protection of Employment) Regulations 2006 apply

(d) by reason of a change of control or other circumstances whereby the Participating Company that employs him ceases to be an Associated Company of the Company

(e) by reason of his retirement before, after or on reaching Retirement Age or

(f) on his death

"Recognised Exchange"	a recognised stock exchange within the meaning of section 1005 ITA 2007 or a recognised investment exchange within the meaning of the Financial Services and Markets Act 2000
"Redundancy"	the same meaning as in the Employment Rights Act 1996
"Relevant Employment"	employment by the Company or any Associated Company
"Retirement Age"	50
"Rights"	rights conferred in respect of Plan Shares to be allotted, on payment, other shares or securities or rights of any description in the Company
"Rules"	the rules of the Plan set out as in Schedule 1 to the Deed and a reference to a 'Rule' shall be construed accordingly
"Salary"	the same meaning as in paragraph 43(4) of Schedule 2
"Schedule 2"	Schedule 2 to ITEPA
"Shares"	a share of common stock in the capital of The Bank of New York Mellon Corporation which comply with the conditions set out in paragraphs 25 to 33 of Schedule 2
"Subsidiary"	any company which is for the time being under the Control of the Company
"Surplus Assets"	any assets comprised in the Trust Fund other than Unawarded Shares, Plan Shares and Partnership Share Money
"Tax Year"	a year beginning on 6 April and ending on the following 5 April

"Trust Fund"	all assets transferred to the Trustees to be held on the terms of the Deed and the assets from time to time representing such assets, including any accumulations of income
"Trust Period"	the period of 80 years beginning with the date of the Deed
"Trustees"	the trustees or trustee for the time being of the Plan
"Unawarded Shares"	Shares comprised in the Trust Fund that have not been awarded to Participants

1.2 References to any Act, or Part, Chapter, or section (including ICTA 1988, ITEPA, ITTOIA and ITA 2007) shall include any statutory modification, amendment or re-enactment of that Act, for the time being in force.

1.3 Words of the masculine gender shall include the feminine and words in the singular shall include the plural and *vice versa* unless, in either case, the context otherwise requires or it is otherwise stated.

1.4 Headings and subheadings are for ease of reference only and shall not affect the interpretation of any Rule or Clause.

2. PURPOSE OF THE PLAN

The purpose of the Plan is to enable employees of Participating Companies to acquire Shares, which give them a continuing stake in the Company.

3. PLAN SHARES

3.1 No newly issued Shares may be awarded or acquired under the Plan.

4. ADMISSION TO THE PLAN

4.1 For each Award, the Company shall determine whether and to what extent Qualifying Employees shall be invited to apply for Free Shares, Partnership Shares or Matching Shares subject to the terms and conditions of the Deed and these Rules.

4.2 If the Company determines that Qualifying Employees shall be invited to apply then the Company shall also determine:

(a) any Qualifying Period;

(b) whether there shall be an Accumulation Period in respect of any Award of Partnership Shares;

(c) whether there shall be any Performance Criteria in respect of any Award of Free Shares;

(d) the Holding Period in respect of any Award of Free Shares, Matching Shares or Dividend Shares;

(e) maximum and minimum Partnership Share Money deductions;

(f) the maximum number of Shares to be included in an Award of Partnership Shares; and

(g) whether there shall be a Forfeiture Period in respect of any Award of Free or Matching Shares.

5. ELIGIBILITY OF INDIVIDUALS

5.1 Subject to Rule 5.4, individuals are eligible to participate in an Award only if:

(a) they are employees of a Participating Company;

(b) they have been employees of a Qualifying Company at all times during any Qualifying Period;

(c) they are eligible on the date(s) set out in paragraph 14(7) of Schedule 2; and

(d) they do not fail to be eligible under any of Rules 5.2, 5.3 or 5.4.

5.2 Individuals are not eligible to participate in an Award of Shares if they have, or within the preceding twelve months have had, a Material Interest in:

(a) a Close Company whose Shares may be awarded under the Plan; or

(b) a company which has Control of such a company or is a member of a consortium which owns such a company.

5.3 Individuals are not eligible to participate in an Award of Free Shares if in that Tax Year they are to receive at the same time an award under another plan established by the Company or a Connected Company and approved under Schedule 2, or if they would have received such an award but for their failure to meet a performance target (see Rule 7.6).

5.4 Individuals are not eligible to participate in an Award of Partnership Shares or Matching Shares if in that Tax Year they receive at the same time an award under another plan established by the Company or a Connected Company and approved under Schedule 2.

5.5 If an individual participates in an Award of Shares under the Plan in a Tax Year in which they have already received an award under another plan established by the Company or a Connected Company and approved under Schedule 2, Rules 7.4, 8.5, 8.6 and 10.6 apply as if the Plan and any other plan were a single plan.

Employees who must be invited to participate in Awards

5.6 Individuals shall be eligible to receive an Award of Shares under the Plan if they meet the requirements in Rule 5.1 **and** are UK resident taxpayers within the meaning of para 8(2) of Schedule 2.

5.7 In this case, they shall be invited to participate in any Awards of Shares, and acquisition of Dividend Shares, in accordance with the Rules of the Plan.

Employees who may be invited to participate in Awards

5.8 The Company may also invite any employee who meets the requirements in Rule 5.1 to participate in any Award or acquisition of Dividend Shares in accordance with the rules of the Plan.

6. PARTICIPATION ON SAME TERMS

6.1 Every Qualifying Employee shall be invited to participate in an Award on the same terms. All who do participate in an Award shall do so on the same terms.

6.2 The Company may make an Award of Free Shares to Qualifying Employees by reference to their remuneration, length of service or hours worked. However, if the Company makes such an Award by reference to more than one of these factors, it shall do so on the basis that each factor gives rise to a separate entitlement and the total entitlement is the sum of those separate entitlements.

6.3 The Company may make an Award of Free Shares to Qualifying Employees by reference to their performance as set out in Rule 7.6.

PART A

7. FREE SHARES

7.1 Every Qualifying Employee shall make an agreement with the Company (a **"Free Share Agreement"**) in such form as agreed in advance with the Board of HM Revenue & Customs.

7.2 The Trustees, acting with the prior consent of the Company, may from time to time award Free Shares.

7.3 The number of Free Shares to be awarded by the Trustees to each Qualifying Employee on an Award Date shall be determined by the Company in accordance with this Rule.

Maximum annual Award

7.4 The Initial Market Value of the Shares awarded to a Qualifying Employee in any Tax Year shall not exceed £3,000.

Qualifying Period for Award of Free Shares

7.5 The Company may stipulate a Qualifying Period in respect of the Award of Free Shares. Any such Qualifying Period shall be the same for all Qualifying Employees in relation to the same Award, but may be different for different Awards.

Allocation of Free Shares by reference to performance

7.6 The Company may stipulate that the number of Free Shares (if any) to be awarded to each Qualifying Employee on a given Award Date shall be determined by reference to Performance Criteria.

7.7 If Performance Criteria are used, they shall apply to all Qualifying Employees.

7.8 Performance Criteria shall be determined by reference to such fair and objective criteria (performance targets) relating to business results as the Company shall determine over such period as the Company shall specify.

7.9 Performance targets must be set for performance units of one or more employees.

7.10 For the purposes of an Award of Free Shares, an employee must not be a member of more than one performance unit.

7.11 Where the Company decides to use Performance Criteria it shall, as soon as reasonably practicable:

(a) notify each employee participating in the Award of the performance targets and measures which, under the Plan, shall be used to determine the number or value of Free Shares awarded to him; and

(b) notify all Qualifying Employees of any Participating Company, in general terms, of the performance targets and measures to be used to determine the number or value of Free Shares to be awarded to each Participant in the Award.

7.12 The Company shall determine the number of Free Shares (if any) to be awarded to each Qualifying Employee by reference to performance using Method 1 or Method 2 set out below. The same method shall be used for all Qualifying Employees for each Award.

Performance Criteria: method 1

7.13 By this Method:

(a) at least 20% of Free Shares awarded in any performance period shall be awarded without reference to performance;

(b) the remaining Free Shares shall be awarded by reference to performance; and

(c) the highest Award made to an individual by reference to performance in any period shall be no more than four times the highest Award to an individual without reference to performance.

7.14 If this Method is used:

(a) the Free Shares awarded without reference to performance (paragraph (a) above) shall be awarded on the same terms mentioned in Rule 6; and

(b) the Free Shares awarded by reference to performance (paragraph (b) above) need not be allocated on the same terms mentioned in Rule 6.

Performance Criteria: method 2

7.15 By this Method:

(a) some or all Free Shares shall be awarded by reference to performance;

(b) the Award of Free Shares to Qualifying Employees who are members of the same performance unit shall be made on the same terms, as mentioned in Rule 6; and

(c) Free Shares awarded for each performance unit shall be treated as separate Awards.

Holding Period for Free Shares

7.16 The Company shall, in relation to each Award Date, specify a Holding Period throughout which a Participant shall be bound by the terms of the Free Share Agreement.

7.17 The Holding Period shall, in relation to each Award, be a specified period of not less than three years nor more than five years, beginning with the Award Date and shall be the same for all Participants who receive an Award at the same time. The Holding Period shall not be increased in respect of Free Shares already awarded under the Plan.

7.18 A Participant may during the Holding Period direct the Trustees:

(a) to accept an offer for any of his Free Shares if the acceptance or agreement shall result in a new holding being equated with those Shares for the purposes of capital gains tax; or

(b) to accept an offer of a Qualifying Corporate Bond (whether alone or with other assets or cash or both) for his Free Shares if the offer forms part of such a general offer as is mentioned in paragraph (c); or

(c) to accept an offer of cash, with or without other assets, for his Free Shares if the offer forms part of a general offer which is made to holders of Shares of the same class as their Shares, or to holders of Shares in the same company and which is made in the first instance on a condition such that if it is satisfied the person making the offer shall have control of that company, within the meaning of section 416 of ICTA 1988; or

(d) to agree to a transaction affecting their Free Shares or such of them as are of a particular class, if the transaction would be entered into pursuant to a compromise, arrangement or scheme applicable to or affecting;

(i) all of the ordinary share capital of the Company or, as the case may be, all the Shares of the class in question; or

(ii) all the Shares, or all the Shares of the class in question, which are held by a class of shareholders identified otherwise than by reference to their employment or their participation in a plan approved under Schedule 2.

Forfeiture Period for Free Shares

7.19 The Company shall, in relation to each Award Date, determine whether a Forfeiture Period shall apply to the Free Shares. Any Forfeiture Period so determined shall be specified in the Free Share Agreement and shall not be more than three years. If the

Company so determines, then a Participant who ceases to be in Relevant Employment during the Forfeiture Period for a reason that is not a Qualifying Reason shall cease to be beneficially entitled to those Free Shares.

PART B

8. PARTNERSHIP SHARES

8.1 The Company may at any time invite every Qualifying Employee to enter into an agreement with the Company (a **"Partnership Share Agreement"**) in the terms of the draft appended to these Rules, or on such other terms as agreed in advance with HM Revenue & Customs.

8.2 References in Rule 8 to the Trustees acquiring Partnership Shares on behalf of a Participant include their appropriating to a Participant Unawarded Shares already held by them.

8.3 Partnership Shares shall not be subject to any provision under which they may be forfeited.

Qualifying Period

8.4 The Company may stipulate a Qualifying Period in respect of the Award of Partnership Shares. Any such Qualifying Period shall be the same for all Qualifying Employees in relation to the same Award, but may be different for different Awards.

Maximum amount of deductions

8.5 The amount of Partnership Share Money deducted from an employee's Salary shall not exceed £1,500 (or such other amount as may be permitted by Schedule 2 from time to time) in any Tax Year. The Company may set a lower limit under Rule 4.2 (e) (which may be framed in accordance with paragraph (46(4A) of Schedule 2).

8.6 The amount of Partnership Share Money deducted from an employee's Salary for any Tax Year must not exceed 10% of that Participant's Salary for the Tax Year, or any other limit as amended by legislation from time to time.

8.7 Any amount deducted in excess of that allowed by Rule 8.5 or 8.6 shall be paid over to the employee, subject to both deduction of income tax under PAYE and NICs, as soon as practicable.

8.8 A Participant may only be a party to one Partnership Share Agreement authorising one or more deductions from Salary in any given month but Directors may, from time to time, and subject to Rules 8.5 and 8.6, invite all Participants to vary the amount of deductions authorised to be made.

Minimum amount of deductions

8.9 The minimum amount to be deducted under the Partnership Share Agreement on any occasion shall be the same in relation to all Partnership Share Agreements entered into in response to invitations issued on the same occasion. It shall not be greater than £10, or any other limit as amended by legislation from time to time.

Notice of possible effect of deductions on benefit entitlement

8.10 Every Partnership Share Agreement shall contain a notice under paragraph 48 of Schedule 2 in respect of the possible effect of deductions on benefit entitlement on salary related state benefits such as statutory sick pay and maternity pay. the Company shall provide each participant in the Plan with a statement detailing the effects on such benefits of participation in the Plan. HM Revenue & Customs are empowered to make regulations prescribing the form of such a notice.

Restriction imposed on number of Shares awarded

8.11 The Company may specify the maximum number of Shares to be included in an Award of Partnership Shares.

8.12 The Partnership Share Agreement shall contain an undertaking by the Company to notify each Qualifying Employee of any restriction on the number of Shares to be included in an Award.

8.13 The notification in Rule 8.11 above shall be given:

(a) if there is no Accumulation Period, before the deduction of the Partnership Share Money relating to the Award; and

(b) if there is an Accumulation Period, before the beginning of the Accumulation Period relating to the Award.

Plan with no Accumulation Period

8.14 The Trustees shall acquire Shares on behalf of the Qualifying Employee using the Partnership Share Money. They shall acquire the Shares on the Acquisition Date. The number of Shares awarded to each employee shall be determined in accordance with the Market Value of the Shares on that date.

Plan with Accumulation Period

8.15 If there is an Accumulation Period, the Trustees shall acquire Shares on behalf of the Qualifying Employee, on the Acquisition Date, using the Partnership Share Money.

8.16 The number of Shares acquired on behalf of each Participant shall be determined by reference to the lower of:

(a) the Market Value of the Shares at the beginning of the Accumulation Period; and

(b) the Market Value of the Shares on the Acquisition Date.

8.17 All subsisting Accumulation Periods shall immediately come to an end:

(a) with effect from the date specified in a notice to terminate the operation of the Plan given in accordance with clause 29 of the Deed;

(b) if notice is given to shareholders of the Company of a resolution being proposed for the voluntary winding up of the Company;

(c) upon the commencement of a winding up of the Company;

(d) if a general offer is made to acquire the whole of the issued ordinary share capital of the Company which is made on a condition such that if it is satisfied the person making the offer will have control of the Company when that condition is satisfied;

(e) if a general offer is made to acquire all the shares in the Company of the same class as the Shares, when any condition subject to which the offer is made has been satisfied; or

(f) if any person becomes entitled or bound to acquire shares in the Company under sections 979-982 (inclusive) of the Companies Act 2006.

Surplus Partnership Share Money

8.18 Any surplus Partnership Share Money remaining after the acquisition of Shares by the Trustees:

(a) may, with the agreement of the Participant, be carried forward to the next Accumulation Period or deduction, as appropriate; and

(b) in any other case, shall be paid over to the Participant, subject to both deduction of income tax under PAYE and NICs, as soon as practicable.

Scaling down

8.19 If the Company receives applications for Partnership Shares exceeding the Award maximum determined in accordance with Rule 8.11 then the following steps shall be taken in sequence until the excess is eliminated.

Step 1. the excess of the monthly deduction chosen by each applicant over £10 shall be reduced pro rata;

Step 2. all monthly deductions shall be reduced to £10

Step 3. applications shall be selected by lot, each based on a monthly deduction of £10.

8.20 Each application shall be deemed to have been modified or withdrawn in accordance with the foregoing provisions, and each employee who has applied for Partnership Shares shall be notified of the change.

Withdrawal from Partnership Share Agreement

8.21 An employee may withdraw from a Partnership Share Agreement at any time by notice in writing to the Company. Unless a later date is specified in the notice, such a notice shall take effect 30 days after the Company receives it. Any Partnership Share Money then held on behalf of an employee shall be paid over to that employee as soon as practicable. This payment shall be subject to income tax under PAYE and NICs.

8.22 If an employee ceases to be in Relevant Employment during an Accumulation Period, any Partnership Share Money then held on behalf of that employee shall be paid over to that employee as soon as practicable. This payment shall be subject to tax under PAYE and NICs.

8.23 When Partnership Shares have been Awarded to a Participant, the Participant may at any time withdraw any or all of his Partnership Shares from the Plan.

8.24 An employee may at any time give notice in writing to the Company to stop deductions in pursuance of a Partnership Share Agreement. An employee who has stopped deductions may subsequently give notice in writing to the Company to re-start deductions in pursuance of the agreement, but may not make-up deductions that have been missed. Unless a later date is specified in the notice the Company will ensure that within 30 days of receiving the notice no further deductions are made under the Partnership Share Agreement. The Company on receiving a notice to re-start deductions under the Partnership Share Agreement, will do so no later than the re-start date. The re-start date shall be the date of first deduction due under the Partnership Share Agreement which is at least 30 days after the receipt of the notice to re-start the deductions. [An employee may not re-start deductions more than once in any Accumulation Period].

Repayment of Partnership Share Money on withdrawal of approval or Termination

8.25 If approval to the Plan is withdrawn or a Plan Termination Notice is issued in respect of the Plan, any Partnership Share Money held on behalf of employees shall be repaid to them as soon as practicable after notice of withdrawal is given to the Company or after the Plan Termination Notice is notified to the Trustees, as the case may be, subject to deduction of income tax under PAYE and NICs.

8.26 The authority to make deductions from Salary granted by a Participant pursuant to a Partnership Share Agreement shall lapse upon the occurrence of any of the events specified in Rule 8.18 or, if earlier, upon the effective date of a Participant's withdrawal from a Partnership Share Agreement as mentioned in Rules 8.21, 8.22 and 8.24.

PART C

9. MATCHING SHARES

9.1 The Partnership Share Agreement sets out the basis on which a Participant is entitled to Matching Shares in accordance with this Part of the Rules.

General requirements for Matching Shares

9.2 Matching Shares shall:

(a) be Shares of the same class and carrying the same rights as the Partnership Shares to which they relate;

(b) subject to Rule 9.4, be awarded on the same day as the Partnership Shares to which they relate are acquired on behalf of the Participant; and

(c) be awarded to all Participants on exactly the same basis.

Ratio of Matching Shares to Partnership Shares

9.3 The Partnership Share Agreement shall specify the ratio of Matching Shares to Partnership Shares for the time being offered by the Company and that ratio shall not exceed two for one. The Company may vary the ratio before Partnership Shares are acquired. Employees shall be notified of the terms of any such variation before the Partnership Shares are awarded under the Partnership Share Agreement.

9.4 If the Partnership Shares on that day are not sufficient to produce a Matching Share, the match shall be made when sufficient Partnership Shares have been acquired to allow at least one Matching Share to be appropriated.

Holding Period for Matching Shares

9.5 The Company shall, in relation to each Award Date, specify a Holding Period throughout which a Participant shall be bound by the terms of the Partnership Share Agreement.

9.6 The Holding Period shall, in relation to each Award, be a specified period of not less than three years nor more than five years, beginning with the Award Date and shall be the same for all Participants who receive an Award at the same time. The Holding Period shall not be increased in respect of Matching Shares awarded under the Plan.

9.7 A Participant may during the Holding Period direct the Trustees:

(a) to accept an offer for any of his Matching Shares if the acceptance or agreement shall result in a new holding being equated with those original Shares for the purposes of capital gains tax; or

(b) to accept an offer of a Qualifying Corporate Bond (whether alone or with other assets or cash or both) for their Matching Shares if the offer forms part of such a general offer as is mentioned in paragraph (c); or

(c) to accept an offer of cash, with or without other assets, for his Matching Shares if the offer forms part of a general offer which is made to holders of Shares of the same class as their Shares or to the holders of Shares in the same company, and which is made in the first instance on a condition such that if it is satisfied the person making the offer shall have control of that company, within the meaning of section 416 of ICTA 1988; or

(d) to agree to a transaction affecting his Matching Shares or such of them as are of a particular class, if the transaction would be entered into pursuant to a compromise, arrangement or scheme applicable to or affecting;

(i) all of the ordinary share capital of the Company or, as the case may be, all the Shares of the class in question; or

(ii) all the Shares, or all the Shares of the class in question, which are held by a class of shareholders identified otherwise than by reference to their employment or their participation in a plan approved under Schedule 2.

Forfeiture Period for Matching Shares

9.8 The Company shall, in relation to each Award Date, determine whether a Forfeiture Period shall apply to the Matching Shares. Any Forfeiture Period so determined shall be specified in the Partnership Share Agreement and shall not be more than three years. If the Company so determines, then a Participant who ceases to be in Relevant Employment during the Forfeiture Period for a reason that is not a Qualifying Reason shall cease to be beneficially entitled to those Matching Shares. The Company may additionally determine that a Participant who withdraws the Partnership Shares in respect of which the Matching Shares were awarded from the Plan during the Forfeiture Period shall cease to be beneficially entitled to those Matching Shares.

PART D

10. DIVIDEND SHARES

Reinvestment of cash dividends

10.1 The Free Share Agreement or Partnership Share Agreement, as appropriate, shall set out the rights and obligations of Participants receiving Dividend Shares under the Plan.

10.2 The Company may direct that any cash dividend in respect of Plan Shares held on behalf of Participants may be applied in acquiring further Plan Shares on their behalf.

10.3 Dividend Shares shall be Shares:

(a) of the same class and carrying the same rights as the Shares in respect of which the dividend is paid; and

(b) which are not subject to any provision for forfeiture.

10.4 The Company may decide to:

(a) apply all Participants' dividends, up to the limit specified in Rule 10.6, to acquire Dividend Shares;

(b) to pay all dividends in cash to all Participants; or

(c) to offer Participants the choice of either (a) or (b) above.

10.5 The Company may revoke any direction for reinvestment of cash dividends.

10.6 The amount applied by the Trustees in acquiring Dividend Shares shall not exceed £1,500 in each Tax Year.

10.7 If the amounts received by the Trustees exceed the limit in Rule 10.6, the balance shall be paid to the Participant as soon as practicable.

10.8 If dividends are to be applied to acquire Dividend Shares, the Trustees shall apply all the cash dividend to acquire Shares on behalf of the Participant on the Acquisition

Date. The number of Dividend Shares acquired on behalf of each Participant shall be determined by the Market Value of the Shares on the Acquisition Date.

10.9 References in Rule 10 to the Trustees acquiring Dividend Shares on behalf of a Participant include their appropriating to a Participant Unawarded Shares already held by them.

Certain amounts not reinvested to be carried forward

10.10 Subject to Rule 10.7, any amount that is not reinvested:

(a) because the amount of the cash dividend is insufficient to acquire a Share; or

(b) because there is an amount remaining after acquiring the Dividend Shares;

may be retained by the Trustees and carried forward to be added to the amount of the next cash dividend to be reinvested.

10.11 If, during the period of three years beginning with the date on which the dividend was paid:

(a) it is not reinvested; or

(b) the Participant ceases to be in Relevant Employment; or

(c) a Plan Termination Notice is issued

the amount shall be paid to the Participant as soon as practicable. On making such a payment, the Participant shall be provided with the information specified in paragraph 80(4) of Schedule 2.

Holding Period for Dividend Shares

10.12 The Holding Period shall be a period of three years, beginning with the Acquisition Date.

10.13 A Participant may during the Holding Period direct the Trustees:

(a) to accept an offer for any of his Dividend Shares if the acceptance or agreement shall result in a new holding being equated with those Shares for the purposes of capital gains tax; or

(b) to accept an offer of a Qualifying Corporate Bond (whether alone or with other assets or cash or both) for their Dividend Shares if the offer forms part of such a general offer as is mentioned in paragraph (c); or

(c) to accept an offer of cash, with or without other assets, for their Dividend Shares if the offer forms part of a general offer which is made to holders of Shares of the same class as their Shares or to holders of Shares in the same company, and which is made in the first instance on a condition such that if it is satisfied the person making the offer shall have control of that company, within the meaning of section 416 of ICTA 1988; or

(d) to agree to a transaction affecting their Dividend Shares or such of them as are of a particular class, if the transaction would be entered into pursuant to a compromise, arrangement or scheme applicable to or affecting;

(i) all of the ordinary share capital of the Company or, as the case may be, all the shares of the class in question; or

(ii) all the Shares, or all the Shares of the class in question, which are held by a class of shareholders identified otherwise than by reference to their employment or their participation in a plan approved under Schedule 2.

10.14 Where a Participant is charged to tax in the event of their Dividend Shares ceasing to be subject to the Plan, they shall be provided with the information specified in paragraph 80(4) of Schedule 2.

11. COMPANY RECONSTRUCTIONS

11.1 The following provisions of this Rule apply if there occurs in relation to any of a Participant's Plan Shares (referred to in this Rule as **"the Original Holding"**):

(a) a transaction which results in a new holding (referred to in this Rule as **"the New Holding"**) being equated with the Original Holding for the purposes of capital gains tax; or

(b) a transaction which would have that result but for the fact that what would be the new holding consists of or includes a Qualifying Corporate Bond.

11.2 If an issue of shares of any of the following description (in respect of which a charge to income tax arises) is made as part of a company reconstruction, those shares shall be treated for the purposes of this Rule as not forming part of the New Holding:

(a) redeemable shares or securities issued as mentioned in section 209(2)(c) of ICTA 1988;

(b) share capital issued in circumstances such that section 210(1) of ICTA 1988 applies; or

(c) share capital to which section 249 of ICTA 1988 applies.

11.3 In this Rule:

"Corresponding Shares" in relation to any New Shares, means the Shares in respect of which the New Shares are issued or which the New Shares otherwise represent;

"New Shares" means shares comprised in the New Holding which were issued in respect of, or otherwise represent, shares comprised in the Original Holding.

11.4 Subject to the following provisions of this Rule, references in this Plan to a Participant's Plan Shares shall be respectively construed, after the time of the company reconstruction, as being or, as the case may be, as including references to any New Shares.

11.5 For the purposes of the Plan:

(a) a company reconstruction shall be treated as not involving a disposal of Shares comprised in the Original Holding; and

(b) the date on which any New Shares are to be treated as having been appropriated to or acquired on behalf of the Participant shall be that on which Corresponding Shares were so appropriated or acquired.

11.6 In the context of a New Holding, any reference in this Rule to shares includes securities and rights of any description which form part of the New Holding for the purposes of Chapter II of Part IV of the Taxation of Chargeable Gains Act 1992.

12. RIGHTS ISSUES

12.1 Any shares or securities allotted under Clause 14 of the Deed shall be treated as Plan Shares identical to the Shares in respect of which the rights were conferred. They shall be treated as if they were awarded to or acquired on behalf of the Participant under the Plan in the same way and at the same time as those Shares.

12.2 Rule 12.1 does not apply:

(a) to shares and securities allotted as the result of taking up a rights issue where the funds to exercise those rights were obtained otherwise than by virtue of the Trustees disposing of rights in accordance with this Rule; or

(b) where the rights to a share issue attributed to Plan Shares are different from the rights attributed to other ordinary shares of the Company.

13. ALTERATIONS

No modification alteration or amendment to these Rules shall be made except in accordance with Clause 27 of the Deed.

14. DISPUTES

If any matter arises on or in connection with this Plan or its operation for which specific provision is not made in the Rules or in the Deed to which they are scheduled or in any Deed supplemental to it such matter shall be resolved, dealt with or provided for in such manner as the Directors shall in their absolute discretion consider appropriate after taking into account the respective interests of the relevant Participating Company and of the Participants.

IN WITNESS WHEREOF the parties hereto have hereunto executed this Deed as a deed the day and year first above written.

SIGNED as a deed and delivered by

The Bank of New York Mellon Corporation

……………………………………………...

EXECUTED as a deed (but not delivered)
until the date hereof) by)
Newton Investment Management Limited)
acting by:)

…………………………………………… Director

…………………………………………… Director/Secretary

EXECUTED as a deed (but not delivered)
until the date hereof) by)
BNY Mellon Asset Management)
International Limited)
acting by:)

……………………………………………Director

……………………………………………Director/Secretary

EXECUTED as a deed (but not delivered)
until the date hereof) by)
Pareto Investment Management Limited)
acting by:)

……………………………………………Director

……………………………………………Director/Secretary

THE COMMON SEAL of	)
Capita IRG Trustees	)
Limited was hereunto affixed in the	)
in the presence of:	)

.... Director

.... Director/Secretary

SCHEDULE B

THE BANK OF NEW YORK MELLON CORPORATION

STOCK ACCUMULATION PLAN

ORIGINAL PARTICIPATING COMPANIES

Newton Investment Management Limited (registered number 1371973)

BNY Mellon Asset Management International Limited (registered number 1118580)

Pareto Investment Management Limited (registered number 3169281)

EXHIBIT III
THE BANK OF NEW YORK MELLON CORPORATION LONG-TERM INCENTIVE PLAN, AS AMENDED AND RESTATED THROUGH FEBRUARY 24, 2014 AND A DRAFT OF THE 2019 LONG-TERM INCENTIVE PLAN

EXHIBIT A – THE AMENDED AND RESTATED LONG-TERM INCENTIVE PLAN OF THE BANK OF NEW YORK MELLON CORPORATION

THE BANK OF NEW YORK MELLON CORPORATION
LONG-TERM INCENTIVE PLAN
Amended and Restated through February 24, 2014

I. Purposes

The purposes of this Long-Term Incentive Plan, as amended and restated (the "Plan") are to promote the growth and profitability of The Bank of New York Mellon Corporation (the "Corporation") and its Affiliates, to provide officers, other employees and non-employee directors of the Corporation and its Affiliates with the incentive to achieve long-term corporate objectives, to attract and retain officers, other employees and non-employee directors of outstanding competence, and to provide such individuals with an opportunity to acquire shares of common stock of the Corporation (the "Common Stock") and cash awards. For purposes of the Plan, the term "Affiliate" shall mean any corporation, limited partnership or other organization in which the Corporation owns, directly or indirectly, 50% or more of the voting power.

II. General

2.1 *Administration*.

(a) *Committee Composition*. The Plan shall be administered by a Committee (the "Committee") appointed by the Board of Directors of the Corporation (the "Board"), each member of which shall at the time of any action under the Plan be (1) a "non-employee director" as then defined under Rule 16b-3 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or any successor rule, (2) an "outside director" as then defined in the regulations under Section 162(m) of the Internal Revenue Code of 1986, as amended (the "Code"), or any successor provision, (3) an "independent" director under the rules of the New York Stock Exchange, and (4) an "independent" director under any other applicable regulatory requirements. Notwithstanding the foregoing, unless otherwise determined by the Board, the Board shall administer the Plan, and otherwise exercise the same authority as the Committee, with respect to grants to members of the Board who are not employees of the Corporation or any Affiliate (the "Non-Employee Directors").

(b) *Authority*. The Committee shall have the authority in its sole discretion from time to time: (i) to designate the individuals eligible to participate in the Plan; (ii) to grant Awards, as hereinafter defined, under the Plan and determine who will receive Awards, when such Awards will be granted and the terms of such Awards, including any limitations, restrictions and conditions upon any such Award and provisions with regard to termination of employment or service as a Non-Employee Director, such as termination due to normal or early retirement, death, disability, sale of a business unit or Subsidiary or a change in control or in the event of an involuntary termination; and (iii) to interpret the Plan, to adopt, amend and rescind rules and regulations relating to the Plan, and to make all other determinations and take all other action necessary or advisable for the implementation and administration of the Plan. A majority of the Committee shall constitute a quorum, and the action of a majority of members of the Committee present at any meeting at which a quorum is present, or acts unanimously adopted in writing without the holding of a meeting, shall be the acts of the Committee.

(c) *Binding Action*. All actions of the Committee shall be final, conclusive and binding upon all persons. No member of the Committee shall be liable for any action taken or decision made in good faith relating to the Plan or any Award thereunder.

(d) *Delegation*. To the extent permitted by applicable law, the Committee may delegate, within limits it may establish from time to time, the authority to grant awards to employees who are not subject to Section 16 of the Exchange Act and who are not "covered employees," as defined in Section 162(m) of the Code.

2.2 *Eligibility*. The Committee may grant Awards under the Plan to any employee of the Corporation or any of its affiliates (or to a former employee if such Award is granted within 12 months of termination of employment and with respect to the final year of service). Non-Employee Directors shall also be eligible to be granted Awards other than incentive stock options. Eligible employees and Non-Employee Directors are collectively referred to herein as "Participants".

Subject to the provisions of the Plan, the Committee shall have full and final authority, in its discretion, to grant Awards as described herein and to determine the Participants to whom any such grant shall be made and the number of shares or value to be covered thereby. In determining the eligibility of any Participant, as well as in determining the number of shares or value covered by each Award, the Committee shall consider the position and the responsibilities of the Participant being considered, the nature and value to the Corporation or an Affiliate of his or her services, his or her present and/or potential contribution to the success of the Corporation or an Affiliate and such other factors as the Committee may deem relevant.

2.3 *Awards.*

(a) *Available Awards.* Awards under the Plan may consist of: stock options ("Options") (either incentive stock options within the meaning of Section 422 of the Code or nonstatutory stock options), stock appreciation rights ("SARs"), restricted stock, restricted stock units, performance share units, deferred stock units, other stock-based awards and cash awards (collectively, "Awards").

(b) *Award Agreements.* Each Award shall be confirmed by an agreement (an "Award Agreement"), in such form as the Committee shall prescribe from time to time in accordance with the Plan.

(c) *Other Plans.* In the discretion of the Committee, shares of Common Stock or other types of Awards authorized under the Plan may be used in connection with, or to satisfy obligations of the Corporation or an Affiliate to eligible Participants under, other compensation or incentive plans, programs or arrangements of the Corporation or an Affiliate. The minimum vesting provisions contained within Sections 4.2 and 5.2 of the Plan shall not apply in the case of an Award that is made to a participant as annual incentive compensation, and may be satisfied by reference to the vesting or performance period of any such other compensation or incentive plan, program or arrangement the obligations of which are satisfied through the use of Awards under the Plan.

2.4 *Shares Available under the Plan.* The aggregate number of shares of Common Stock which may be issued and as to which grants of Awards may be made under the Plan following stockholder approval of the amendment and restatement of the Plan is the sum of (i) the number of Shares available under the Plan immediately prior to stockholder approval of this amendment and restatement (as of February 24, 2014, 18,395,574 shares were available, subject to the counting, adjustment and substitution provisions of the Plan), and (ii) 30,000,000 additional Shares, subject to adjustment and substitution as set forth in Section 9. All of the shares may be granted as incentive stock options, non-qualified stock options or SARs.

Notwithstanding the foregoing, the maximum aggregate number of shares of Common Stock in the first sentence of this Section 2.4 which may be issued in connection with Awards of restricted stock, restricted stock units, performance share units, deferred stock units and other stock-based awards granted following stockholder approval of the amendment and restatement of the Plan, pursuant to which the Participant is not required to pay the Fair Market Value, as hereinafter defined, for the shares of Common Stock represented thereby ("full-value awards"), measured as of the grant date, is the sum of (i) the number of Shares available under the Plan for such full-value awards immediately prior to stockholder approval of this amendment and restatement (as of February 24, 2014, 4,477,708 such shares were available, subject to the counting, adjustment and substitution provisions of the Plan), (ii) the number of shares covering such full-value awards that again become available for issuance under this Section 2.4, and (iii) 30,000,000 additional shares; provided, however, that in the event the full number of shares of Common Stock under this sentence have been used, the Corporation may grant additional full-value awards from the number of additional Shares available under the Plan immediately prior to stockholder approval of this amendment and restatement of the Plan that were eligible to be granted as full-value awards, subject to each full-value Share counting as 2.75 Shares against such remaining available Shares (as of February 24, 2014, 13,917,866 such additional shares were available, subject to the counting, adjustment and substitution provisions of the Plan), which shall continue to be subject to each full-value Share counting as 2.75 Shares.

For purposes of clarification, the total number of shares of Common Stock which may be issued and as to which grants of Awards may be made under the Plan following the amendment and restatement of the Plan, based on the shares available as of February 24, 2014, would be 48,395,574, of which 34,477,708 would be available to be issued in connection with stock-based awards pursuant to which the Participant is not required to pay the Full Market Value on the grant date, and 13,917,866 of which would also be available to be issued in connection with full-value awards, subject to each full-value Share counting as 2.75 Shares against such 13,917,866 shares.

For purposes of this Section 2.4, the number of shares of Common Stock to which an Award relates shall be counted against the number of shares of Common Stock available under the Plan at the time of grant of the Award, provided that tandem Awards shall not be double-counted and Awards payable solely in cash or granted in substitution for awards of an acquired company shall not be counted. If any Award under the Plan is cancelled by mutual consent or terminates or expires for any reason without having been exercised in full, except by reason of the exercise of a tandem Award, or if shares of Common Stock pursuant to an Award are forfeited pursuant to restrictions applicable to the Award, or if payment is made to the Participant in the form of cash, cash equivalents or other property other than shares of Common Stock, the number of shares subject thereto shall again be available for purposes of the Plan. Notwithstanding the foregoing, the following shares of Common Stock shall not become available for purposes of the Plan: (1) shares of Common Stock previously owned or acquired by the Participant that are delivered to the Corporation, or withheld from an Award, to pay the exercise price, (2) shares of Common Stock that are delivered or withheld for purposes of satisfying a tax withholding obligation, or (3) shares of Common Stock reserved for issuance upon the grant of a SAR Award that exceed the number of shares actually issued upon exercise. The shares which may be issued under the Plan may be either authorized but unissued shares or treasury shares or partly each, as shall be determined from time to time by the Board or its delegate.

2.5 *Individual Limitations on Awards.* The maximum aggregate number of shares of Common Stock which shall be available for the grant of Options and SARs to any one individual under the Plan during any calendar year shall be limited to 4,000,000 shares. The maximum number of shares subject to Awards (other than Options and SARs and cash awards) that are intended to qualify as performance-based compensation under Section 162(m) of the Code and may be paid to any one individual based on the achievement of Performance Criteria for any calendar year is 1,000,000 shares or, if such Award is payable in cash, the Fair Market Value equivalent thereof on the first day of the performance period to which such Award relates. The maximum amount payable for cash awards to any one individual based on the achievement of Performance Criteria under the Plan for any one calendar year shall be $10,000,000. In the case of multi-year Performance Periods, as hereinafter defined, the amount which is paid for any one calendar year of the Performance Period is the amount paid for the Performance Period divided by the number of calendar years in the period. The limitations in this Section 2.5 shall be interpreted and applied in a manner consistent with Section 162(m) of the Code.

2.6 *Director Awards.* Aggregate Awards granted to any one Non-Employee Director in respect of any calendar year, solely with respect to his or her service as a member of the Board, may not exceed $1,000,000 based on the aggregate value of cash Awards and Fair Market Value of stock-based Awards, in each case determined as of the grant date.

2.7 *Conditions.* The obligation of the Corporation to issue shares of Common Stock under the Plan shall be subject to (i) the effectiveness of a registration statement under the Securities Act of 1933, as amended, with respect to such shares, if deemed necessary or appropriate by counsel for the Corporation, (ii) the condition that the shares shall have been listed (or authorized for listing upon official notice of issuance) upon each stock exchange, if any, on which the Common Stock may then be listed and (iii) all other applicable laws, regulations, rules and orders which may then be in effect.

2.8 *Forfeiture.* Notwithstanding any other provision of the Plan, any incentive-based compensation otherwise payable or paid to current or former executive officers shall be forfeited and/or repaid to the Corporation as may be required pursuant to applicable regulatory requirements or any company policy and the Committee may determine in its discretion that an Award shall be forfeited and/or shall be repaid to the Corporation upon terms specified including, without limitation, if the Participant directly or indirectly engages in (i) competition with the Corporation or any of its Affiliates or (ii) conduct that is materially adverse to the interests of the Corporation, including fraud or conduct contributing to any financial restatements or irregularities.

2.9 *Deferral of Awards.* Subject to approval and any requirements imposed by the Committee and to the extent permitted under Section 409A of the Code, each Participant may be eligible to defer receipt, under the terms and conditions as may be approved by the Corporation, of part or all of any payments otherwise due under any Award.

III. Stock Options and Stock Appreciation Rights

3.1 *Grant.* The Committee shall have authority, in its discretion, (a) to grant "incentive stock options" pursuant to Section 422 of the Code, (b) to grant "nonstatutory stock options" (*i.e.*, Options which do not qualify under Sections 422 or 423 of the Code), (c) to grant tandem SARs in conjunction with Options and (d) to grant SARs on a stand-alone basis. Tandem SARs may only be granted at the time the related Option is granted. No reload option rights or dividend equivalents may be granted in connection with any Option or SAR.

3.2 *Stock Option Provisions.*

(a) *Option Price.* The purchase price at which each Option may be exercised (the "Option Price") shall be such price as the Committee, in its discretion, shall determine but shall not be less than one hundred percent (100%) of the Fair Market Value per share of the Common Stock covered by the Option on the date of grant.

(b) *Form of Payment.* The Option Price for each Option shall be paid in full upon exercise and shall be payable (i) in cash (including check, bank draft or money order), which may include cash forwarded through a broker or other agent-sponsored exercise or financing program, or (ii) except as otherwise provided in the Award Agreement, in whole or in part by delivering to, or withholding from the Award, shares of Common Stock having a Fair Market Value on the date of exercise of the Option equal to the Option Price for the shares being purchased; except that any portion of the Option Price representing a fraction of a share shall in any event be paid in cash, and delivered shares may be subject to terms and conditions imposed by the Committee. If permitted by the Committee, delivery of shares in payment of the Option Price of an Option may be accomplished by the Participant's certification of ownership of the shares to be delivered, in which case the number of shares issuable on exercise of the Option shall be reduced by the number of shares certified but not actually delivered.

(c) *Limitation on Incentive Stock Options.* The aggregate Fair Market Value, determined on the date of grant, of the shares with respect to which incentive stock options are exercisable for the first time by an employee during any calendar year under all plans of the corporation employing such employee, any parent or subsidiary corporation of such corporation and any predecessor corporation of any such corporation shall not exceed $100,000. To the extent the amount is exceeded, such stock options shall be nonstatutory stock options.

(d) *Exercisability and Term.* Options shall become exercisable at such time or times and/or upon the occurrence of such event or events as may be determined by the Committee. No Option shall be exercisable after the expiration of ten years. To the extent exercisable at any time, Options may be exercised in whole or in part. Each Option shall be subject to earlier termination as provided in the Award Agreement.

3.3 *Stock Appreciation Right Provisions.*

(a) *Price of Stand-Alone SARs.* The base price for stand-alone SARs (the "Base Price") shall be such price as the Committee, in its sole discretion, shall determine but shall not be less than one hundred percent (100%) of the Fair Market Value per share of the Common Stock covered by the stand-alone SAR on the date of grant.

(b) *Payment of SARs.* SARs shall entitle the Participant upon exercise to receive the amount by which the Fair Market Value of a share of Common Stock on the date of exercise exceeds the Option Price of any tandem Option or the Base Price of a stand-alone SAR, multiplied by the number of shares in respect of which the SAR shall have been exercised. In the sole discretion of the Committee, the Corporation may pay all or any part of its obligation arising out of a SAR exercise in cash, shares of Common Stock or any combination thereof. Payment shall be made by the Corporation following exercise.

(c) *Term and Exercise of Stand-Alone SARs.* The term of any stand-alone SAR granted under the Plan shall be for such period as the Committee shall determine, but for not more than ten years from the date of grant thereof. Each stand-alone SAR may be subject to earlier termination as provided in the Award Agreement. Each stand-alone SAR granted under the Plan shall be exercisable on such date or dates during the term thereof and for such number of shares of Common Stock as may be provided in the Award Agreement.

(d) *Term and Exercise of Tandem SARs.* If SARs are granted in tandem with an Option (i) the SARs shall be exercisable at such time or times and to such extent, but only to such extent, that the related Option shall be exercisable, (ii) the exercise of the related Option shall cause a share for share reduction in the number of SARs which were granted in tandem with the Option; and (iii) the payment of SARs shall cause a share for share reduction in the number of shares covered by such Option.

3.4 *Non-Transferability*. No incentive stock option and, except to the extent otherwise determined by the Committee and reflected in the Award Agreement or an amendment thereto, no nonstatutory stock option, SAR or other award shall be transferable by the grantee otherwise than by Will, or if the grantee dies intestate, by the laws of descent and distribution of the state of domicile of the grantee at the time of death; provided, further that awards may not in any event be transferred in exchange for consideration. All incentive stock options and, except to the extent otherwise determined by the Committee and reflected in the Award Agreement or an amendment thereto, all nonstatutory stock options, SARs and other purchase rights shall be exercisable during the lifetime of the grantee only by the grantee.

3.5 *Fair Market Value*. For all purposes under the Plan, the fair market value (the "Fair Market Value") of the Common Stock shall mean the closing price of a share of Common Stock in the New York Stock Exchange Composite Transactions on the relevant date, or, if no sale shall have been made on such exchange on that date, the closing price in the New York Stock Exchange Composite Transactions on the last preceding day on which there was a sale.

3.6 *Miscellaneous*. Subject to the foregoing provisions of this Section and the other provisions of the Plan, any Option or SAR granted under the Plan may be exercised at such times and in such amounts and be subject to such restrictions and other terms and conditions, if any, as shall be determined, in its discretion, by the Committee and set forth in the Award Agreement, or an amendment thereto.

IV. Restricted Stock

4.1 *Award*. The Committee may, subject to the provisions of the Plan and such other terms and conditions as it may prescribe, grant one or more shares of restricted stock to Participants.

4.2 *Restrictions*. Shares of restricted stock issued to a Participant may not be sold, assigned, transferred, pledged, hypothecated or otherwise disposed of, except by will or the laws of descent and distribution, for such period as the Committee shall determine, beginning on the date on which the Award is granted (as applicable to any Award, the "Restricted Period"). The Committee may also impose such other restrictions, limitations and conditions on the shares or the release of the restrictions thereon as it deems appropriate, including the achievement of Performance Goals and/or based upon Performance Criteria, as hereinafter defined, established by the Committee, limitations on the right to vote restricted stock or the right to receive dividends thereon on a current, reinvested and/or restricted basis. In determining the Restricted Period of an Award, the Committee may provide that the foregoing restrictions shall lapse with respect to specified percentages of the awarded shares on specified dates following the date of such Award or all at once. The Restricted Period applicable to restricted stock granted to employees shall, in the case of a time-based restriction, be not less than three years, with no more frequent than ratable vesting over such period or, in the case of a performance-based restriction, be not less than one year; provided, however, that up to the sum of (i) the number of shares not subject to the minimum vesting period immediately prior to stockholder approval of this amendment and restatement of the Plan (as of February 24, 2014, 4,212,779 such shares were available, subject to the counting, adjustment and substitution provisions of the Plan) and (ii) ten percent (10%) of those additional shares available for awards of restricted stock and other awards pursuant to which the Participant is not required to pay the Fair Market Value, applicable following stockholder approval of the amendment and restatement of the Plan as provided in Section 2.4, may be granted as restricted stock with no minimum vesting period.

4.3 *Stock Certificate or Book-Entry*. As soon as practicable following the making of an Award, the restricted stock shall be registered in the Participant's name in certificate or book-entry form. If a certificate is issued, it shall bear an appropriate legend referring to the restrictions and it shall be held by the Corporation on behalf of the Participant until the restrictions are satisfied. If the shares are registered in book-entry form, the restrictions shall be placed on the book-entry registration. Except for the transfer restrictions, and subject to such other restrictions or limitations, if any, as determined by the Committee, the Participant shall have all other rights of a holder of shares of Common Stock, including the right to receive dividends paid with respect to the Restricted Stock and the right to vote such shares. As soon as is practicable following the date on which transfer restrictions on any shares lapse, the Corporation shall deliver to the Participant the certificates for such shares or shall cause the shares to be registered in the Participant's name in book-entry form, in either case with the restrictions removed, provided that the Participant shall have complied with all conditions for delivery of such shares contained in the Award Agreement or otherwise reasonably required by the Corporation.

4.4 *Discretion*. Subject to Section 4.2, the Committee may in its discretion allow restrictions on restricted stock to lapse prior to the date specified in an Award Agreement.

V. Restricted Stock Units

5.1 *Award of Restricted Stock Units*. The Committee may, subject to the provisions of the Plan and such other terms and conditions as it may prescribe, grant restricted stock units to Participants.

5.2 *Restrictions*. The Restricted Period applicable to restricted stock units granted to employees shall, in the case of a time-based restriction, be not less than three years, with no more frequent than ratable vesting over such period or, in the case of a performance-based restriction, be not less than one year; provided, however, that up to the sum of (i) the number of shares not subject to the minimum vesting period immediately prior to stockholder approval of this amendment and restatement of the Plan (as of February 24, 2014, 4,212,779 such shares were available, subject to the counting, adjustment and substitution provisions of the Plan) and (ii) ten percent (10%) of those additional shares available for awards of restricted stock units and other awards pursuant to which the Participant is not required to pay the Fair Market Value, applicable following stockholder approval of the amendment and restatement of the Plan as provided in Section 2.4, may be granted as restricted stock units with no minimum vesting period. The Committee may also impose such other restrictions, limitations and conditions on the restricted stock units or the release of the restrictions thereon as it deems appropriate, including the achievement of Performance Goals and/or based upon Performance Criteria established by the Committee and the right to receive dividend equivalents thereon, on a current, reinvested and/or restricted basis. In determining the Restricted Period of an Award, the Committee may provide that the foregoing restrictions shall lapse with respect to specified percentages of the restricted stock units on specified dates following the date of such Award or all at once.

5.3 *Payment*. During the two and one-half months following the end of the calendar year in which vesting occurs, the Corporation shall pay to the Participant or his estate the number of shares of Common Stock equal to the number of restricted share units vested. Notwithstanding the foregoing sentence, the Committee shall have the authority, in its discretion, to determine that the obligation of the Corporation shall be paid in cash, equal to the number of restricted share units vested multiplied by the Fair Market Value of the share of the Common Stock on such date, or part in cash and part in shares of Common Stock.

VI. Performance Share Units

6.1 *Grant*. The Committee may, subject to the provisions of the Plan and such other terms and conditions as it may prescribe, grant performance share units to Participants. Performance share units shall represent the right of a Participant to receive shares of Common Stock (or their cash equivalent) at a future date upon the achievement of Performance Goals established by the Committee, during a specified performance period (a "Performance Period") of not less than one year. Performance share units may include the right to receive dividend equivalents thereon, on a current, reinvested and/or restricted basis. Except as otherwise expressly provided to the contrary in the applicable Award Agreement, no dividend equivalents will be paid at a time when any performance-based goals that apply to the performance share units have not been satisfied and will revert back to the Corporation if such goals are not satisfied.

6.2 *Terms of Performance Share Units*.

(a) *General*. The provisions of this paragraph (a) shall apply to awards that are intended to qualify under Section 162(m) of the Code. The terms established by the Committee for performance share units that are intended to qualify as performance-based compensation under Section 162(m) of the Code shall be objective such that a third party having knowledge of the relevant facts could determine whether or not any Performance Goal has been achieved, or the extent of such achievement, and the amount, if any, which has been earned by the Participant based on such performance. The Committee may retain the discretion to reduce (but not to increase) the amount or number of performance share units which will be earned based on the achievement of Performance Goals. When the Performance Goals are established, the Committee shall also specify the manner in which the level of achievement of such Performance Goals shall be calculated and the weighting assigned to such Performance Goals. The Committee may determine that unusual items or certain specified events or occurrences, including changes in accounting standards or tax laws, shall be excluded from the calculation to the extent permitted in Section 162(m) of the Code.

(b) *Performance Goals*. "Performance Goals" shall mean goals based upon the achievement of one or more pre-established, objective measures of performance during a specified Performance Period, selected by the Committee in its discretion. Performance Goals may be based upon one or more of the following objective performance measures (the "Performance Criteria") and expressed in either, or a combination of, absolute or relative values or as a percentage of an incentive pool: earnings or earnings per share; book value per share; total return to stockholders; return on equity, assets, capital or investment; pre-tax margins; revenues; expenses; costs; stock price; investment performance of funds or accounts or assets under management; market share; charge-offs; non-performing assets; income; operating, net or pre-tax income; business diversification; operating ratios (including, without limitation, capital ratios, risk-measurement ratios or return on risk-weighted assets) or results; cash flow. Performance Goals based on such Performance Criteria may be based either on the performance of the Corporation, an Affiliate, any branch, department, business unit or other portion thereof under such measure for the Performance Period and/or upon a comparison of such performance with the performance of a peer group of corporations, prior Performance Periods or other measure selected or defined by the Committee at the time of making an Award. The Committee may in its discretion also determine to use other objective performance measures for Performance Goals and/or other terms and conditions even if such Award would not qualify under Section 162(m) of the Code, provided that the Committee identifies the Award as non-qualifying at the time of Award.

(c) *Committee Certification*. Following completion of the applicable Performance Period, and prior to any payment of a performance share unit to the Participant which is intended to qualify under Section 162(m) of the Code, the Committee shall determine in accordance with the terms of the Award and shall certify in writing whether the applicable Performance Goal(s) were achieved, or the level of such achievement, and the amount, if any, earned by the Participant based upon such performance. For this purpose, approved minutes of the meeting of the Committee at which certification is made shall be sufficient to satisfy the requirement of a written certification.

6.3 *Payment*. Payment of performance share units shall be made during the two and one-half months following the end of the calendar year in which vesting occurs. In the sole discretion of the Committee, the Corporation may pay all or any part of its obligation under the performance share unit in cash, shares of Common Stock or any combination thereof.

VII. Deferred Stock Units

7.1 *Award*. The Committee may, subject to the provisions of the Plan and such other terms and conditions as it may prescribe, award deferred stock units to eligible Participants. A deferred stock unit shall entitle the Participant to receive from the Corporation a number of shares of Common Stock on a deferred payment date specified by the Participant. Notwithstanding the foregoing sentence, the Committee shall have the authority, in its discretion, to determine that the obligation of the Corporation shall be paid in cash, shares of Common Stock or any combination thereof.

7.2 *Terms of Deferred Stock Units*. Deferred stock units shall be granted upon such terms as the Committee shall determine, subject to any minimum vesting requirement applicable to restricted stock units. Except as otherwise provided by the Committee, a deferred stock unit shall entitle the Participant to receive dividend equivalents payable no earlier than the date payment is elected for the deferred stock unit. Dividend equivalents shall be calculated on the number of shares covered by the deferred stock unit as soon as practicable after the date dividends are payable on the Common Stock.

VIII. Other Stock-Based Awards and Cash Awards

8.1 *Grant of Other Stock-Based Awards*. The Committee shall have the authority in its discretion to grant to eligible Participants such other Awards that are denominated or payable in, valued in whole or in part by reference to, or otherwise based on or related to, shares of Common Stock as deemed by the Committee to be consistent with the purposes of the Plan, including, without limitation, purchase rights, shares awarded without restrictions or conditions, or securities or other rights convertible or exchangeable into shares of Common Stock. Other stock-based awards, excepting purchase rights, may include the right to receive dividends or dividend equivalents, as the case may be, on a current, reinvested and/or restricted basis.

8.2 *Terms of Other Stock-Based Awards*. The Committee shall determine the terms and conditions, if any, of any other stock-based awards made under the Plan, including the achievement of Performance Goals and/or based upon Performance Criteria, subject to any minimum vesting requirements applicable to restricted stock units or restricted stock, as applicable. Other stock-based awards may be granted alone, in addition to or in tandem with other Awards granted under the Plan and/or awards made outside of the Plan. Shares of Common Stock or securities delivered pursuant to a purchase right granted under this Section 8 shall be purchased for such consideration, paid for by such methods and in such forms, including, without limitation, cash, shares of Common Stock, or other property or any combination thereof, as the Committee shall determine, but the value of such consideration shall not be less than the Fair Market Value of such shares of Common Stock or other securities on the date of grant of such purchase right. The exercise of the purchase right shall not be deemed to occur, and no shares of Common Stock or other securities will be issued by the Corporation upon exercise of a purchase right, until the Corporation has received payment in full of the exercise price.

8.3 *Grant of Cash Awards*. The Committee shall have the authority in its discretion to grant to eligible Participants such cash awards (including, without limitation, non-employee director retainers, leadership, committee and meeting-based fees) as deemed by the Committee to be consistent with the purposes of the Plan. Cash awards granted under the Plan may be in such amounts and subject to such terms and conditions as the Committee may determine.

8.4 *Terms of Cash Awards*. Cash awards (other than non-employee director retainers, leadership, committee and meeting-based fees) granted under the Plan shall be subject to the achievement of Performance Goals and based upon such Performance Criteria set forth in Section 6.2(b) as determined by the Committee, and further subject to the individual limitation provided in Section 2.5. Following completion of the applicable Performance Period, and prior to any payment of a cash award to the Participant which is intended to qualify under Section 162(m) of the Code, the Committee shall determine in accordance with the terms of the Award and shall certify in writing whether the applicable Performance Goal(s) were achieved, or the level of such achievement, and the amount, if any, earned by the Participant based upon such performance. For this purpose, approved minutes of the meeting of the Committee at which certification is made shall be sufficient to satisfy the requirement of a written certification. Except as otherwise expressly provided to the contrary in the applicable Award Agreement, to be entitled to receive payment for a cash award, a Participant must remain in the employment of the Corporation or an Affiliate through the date of payment. Payment of cash awards shall be made during the two and one-half months following the end of the calendar year in which vesting occurs.

IX. Adjustment and Substitution of Shares

In the event of any change in the outstanding Common Stock of the Corporation by reason of a stock split, stock dividend, exchange, combination or reclassification of shares, recapitalization, merger, spin-off, split-off, split-up, dividend in partial liquidation, dividend in property other than cash, extraordinary distribution, similar event or other event which the Committee determines affects the Common Stock such that an adjustment pursuant to Section 9 hereof is appropriate, the Committee shall adjust proportionately: (a) the number of shares of Common Stock (i) available for issuance under the Plan, (ii) available for issuance under incentive stock options, (iii) for which Awards may be granted to an individual Participant, (iv) subject to any sub-limits contained herein and (v) covered by outstanding Awards denominated in stock or units of stock, together with the cash or other property into which the stock may be exchanged; (b) the exercise and grant prices related to outstanding Awards; and (c) the appropriate Fair Market Value and other price determinations for such Awards and (d) the Performance Goals.

In the event of any change affecting the Common Stock or any distribution (other than normal cash dividends) to holders of Common Stock, such adjustments in the number and kind of shares and the exercise, grant and conversion prices of the affected Awards as may be deemed equitable by the Committee, including adjustments to avoid fractional shares, shall be made to give proper effect to such event.

All adjustments shall be made (i) consistent with Section 424 of the Code in the case of incentive stock options, so as not to result in any disqualification, modification, extension or renewal of such incentive stock option, (ii) in a manner compliant with Section 409A of the Code and (iii) in a manner compliant with Section 162(m) of the Code.

X. Additional Rights in Certain Events

10.1 *Change in Control*. "Change in Control" means the occurrence of any one of the following events:

(a) During any period of not more than two (2) years, the Incumbent Directors no longer represent a majority of the Board. "Incumbent Directors" are (A) the members of the Board as of July 1, 2007 and (B) any individual who becomes a director subsequent to July 1, 2007 whose appointment or nomination was approved by at least a majority of the Incumbent Directors then on the Board (either by specific vote or by approval, without prior written notice to the Board objecting to the nomination, of a proxy statement in which the member was named as nominee). However, the Incumbent Directors will not include anyone who becomes a member of the Board after July 1, 2007 as a result of an actual or threatened election contest or proxy or consent solicitation on behalf of anyone other than the Board, including as a result of any appointment, nomination or other agreement intended to avoid or settle a contest or solicitation;

(b) There is a beneficial owner of securities entitled to 30% or more of the total voting power of the Corporation's then-outstanding securities in respect of the election of the Board (the "Voting Securities"), other than (A) the Corporation, any Subsidiary of it or any employee benefit plan or related trust sponsored or maintained by the Corporation or any Subsidiary of it; (B) any underwriter temporarily holding securities pursuant to an offering of them; (C) anyone who becomes a beneficial owner of that percentage of Voting Securities as a result of an Excluded Transaction (as defined in Section 10.1(c)); or (D) anyone who becomes a beneficial owner of that percentage of Voting Securities as a result of a transaction in which Voting Securities are acquired from the Corporation, if the transaction is approved by a majority of the Incumbent Directors in a resolution that expressly states that the transaction is not a Change in Control under this Section 10.1(b); or

(c) Consummation of a merger, consolidation, statutory share exchange or similar transaction (including an exchange offer combined with a merger or consolidation) involving the Corporation (a "Reorganization") or a sale, lease or other disposition (including by way of a series of transactions or by way of merger, consolidation, stock sale or similar transaction involving one or more subsidiaries) of all or substantially all of the Corporation's consolidated assets (a "Sale") other than an Excluded Transaction. A Reorganization or Sale is an "Excluded Transaction" if immediately following it: (A) 50% or more of the total voting power of the Surviving Corporation's then-outstanding securities in respect of the election of directors (or similar officials in the case of a non-corporation) is represented by Voting Securities outstanding immediately before the Reorganization or Sale or by securities into which such Voting Securities were converted in the Reorganization or Sale; (B) there is no beneficial owner of securities entitled to

30% or more of the total voting power of the then-outstanding securities of the Surviving Corporation in respect of the election of directors (or similar officials in the case of a non-corporation); and (C) a majority of the board of directors of the Surviving Corporation (or similar officials in the case of a non-corporation) were Incumbent Directors at the time the Board approved the execution of the initial agreement providing for the Reorganization or Sale. The "Surviving Corporation" means in a Reorganization, the entity resulting from the Reorganization or in a Sale, the entity that has acquired all or substantially all of the assets of the Corporation, except that, if there is a beneficial owner of securities entitled to 95% of the total voting power (in respect of the election of directors or similar officials in the case of a non-corporation) of the then-outstanding securities of the entity that would otherwise be the Surviving Corporation, then that beneficial owner will be the Surviving Corporation.

(d) the stockholders of the Corporation approve a plan of complete liquidation or dissolution of the Corporation.

For purposes of this Plan, "Subsidiary" means any corporation or other entity in which the Corporation has a direct or indirect ownership interest of 50% or more of the total combined voting power of the then outstanding securities or interests of such corporation or other entity entitled to vote generally in the election of directors (or members of any similar governing body) or in which the Corporation has the right to receive 50% or more of the distribution of profits or 50% of the assets or liquidation or dissolution.

10.2 *Lapse of Restrictions on Awards*. Except as otherwise expressly provided to the contrary in an Award Agreement, in the event the employment or service of a Participant is terminated by the Corporation and its Affiliates without Cause within two years after the occurrence of a Change in Control, his or her Options, SARs, restricted stock, restricted stock units, deferred stock units and other stock-based awards shall fully vest and, to the extent subject to an exercise right, may be exercised within one year after the date such termination occurred; provided, however, that if the awards are subject to Section 409A of the Code and the Change in Control is not a change in ownership or effective control of the Corporation or a change in the ownership of a substantial portion of the assets of the Corporation under Section 409A of the Code (a "409A Change in Control"), the Options, SARs, restricted stock units, deferred stock units and other stock-based awards shall remain payable on the date(s) provided in the underlying Award Agreement and provisions of the Plan. For purposes of this paragraph, "Cause" shall have the same meaning as set forth in the Participant's Award Agreement.

10.3 *Deemed Achievement of Performance Goals.* Except as otherwise expressly provided to the contrary in an Award Agreement, if any Change in Control occurs prior to the end of any Performance Period, all Performance Criteria and other conditions pertaining to performance share units, cash awards and other Awards under which payments are subject to Performance Goals shall be deemed to be achieved or fulfilled on a pro-rata basis for (i) the number of whole months elapsed from the commencement of the Performance Period through the Change in Control over (ii) the number of whole months included in the original Performance Period, measured at the actual performance level achieved or, if not determinable, in the manner specified by the Committee. If the awards are subject to Section 409A of the Code and the Change in Control is not a 409A Change in Control, such Awards shall remain payable on the date(s) provided in the underlying Award Agreement and provisions of the Plan.

10.4 *Limitation.* Notwithstanding the foregoing Sections 10.2 and 10.3, the Committee may condition the extension of exercise periods, lapse of restrictions and/or deemed achievement of Performance Goals upon the occurrence of a 409A Change in Control.

XI. Effect of the Plan on the Rights of Participants and the Corporation

Neither the adoption of the Plan nor any action of the Board or the Committee pursuant to the Plan shall be deemed to give any employee or Non-Employee Director any right to be granted any Award under the Plan. Nothing in the Plan, in any Award under the Plan or in any Award Agreement shall confer any right to any employee to continue in the employ of the Corporation or any Affiliate or any Non-Employee Director to continue as a Non-Employee Director or interfere in any way with the rights of the Corporation or any Affiliate to terminate the employment of any employee at any time or with the rights of the stockholders of the Corporation or the Board to elect and remove Non-Employee Directors. All grants of Awards and delivery of shares, cash or other property under an Award granted under the Plan shall constitute a special discretionary incentive payment to the Participant and shall not be required to be taken into account in computing the amount of salary or compensation of the Participant for the purpose of determining any contributions to or any benefits under any pension, retirement, profit-sharing, bonus, life insurance, severance or other benefit plan of the Corporation or under any agreement with the Participant unless specifically provided otherwise in the Award or underlying Plan, arrangement or agreement. Subject to the requirements of Section 409A of the Code, the Corporation shall have the right to offset against its obligation to pay or deliver shares pursuant to an Award to any Participant, any outstanding amounts such Participant then owes to the Corporation and any amounts the Committee otherwise deems appropriate pursuant to any tax equalization policy or agreement. Except as otherwise provided in an Award Agreement, neither this Plan nor any Award Agreement shall confer on any person other than the Corporation or a Participant any rights or remedies hereunder.

XII. Amendment

The right to amend the Plan at any time and from time to time and the right to revoke or terminate the Plan are hereby specifically reserved to the Board; provided that no amendment of the Plan shall be made without stockholder approval (1) if the effect of the amendment is (a) to make any changes in the class of employees eligible to receive incentive stock options under the Plan, (b) to increase the number of shares subject to the Plan or with respect to which incentive stock options may be granted under the Plan or (2) if stockholder approval of the amendment is at the time required (a) by the rules of any stock exchange on which the Common Stock may then be listed or (b) for Options, SARs, performance share units, cash awards or other Awards based upon Performance Goals granted under the Plan to qualify as "performance based compensation" as then defined in the regulations under Section 162(m) of the Code. No alteration, amendment, revocation or termination of the Plan shall, without the written consent of the holder of an outstanding Award under the Plan, adversely affect the rights of such holder with respect thereto; except that the Board may amend this Plan from time to time without the consent of any Participant to the extent deemed necessary or appropriate, in its sole discretion, to effect compliance with Section 409A of the Code, including regulations and interpretations thereunder, which amendments may result in a reduction of benefits provided hereunder and/or other unfavorable changes to the Participant. Except as provided in Section 9 of the Plan, repricing of Options, SARs and other purchase rights is prohibited, such that the purchase price of any such award may not be reduced, whether through amendment, cancellation or replacement in exchange for another Option, SAR, other Award or cash payment, unless such action or reduction is approved by the stockholders of the Corporation.

XIII. Effective Date and Duration of Plan

The effective date and date of adoption of the Plan as amended and restated shall be February 24, 2014, provided that the adoption of the Plan by the Board is approved by a majority of the votes cast at a duly held meeting of stockholders held on or prior to February 23, 2015 at which a quorum representing a majority of the outstanding voting stock of the Corporation is, either in person or by proxy, present and voting. No Option or SARs may be granted and no restricted stock, restricted stock units, performance share units, deferred stock units or other stock-based awards may be awarded under the Plan subsequent to February 24, 2024. Absent additional stockholder approval, no performance share unit award or other Award based upon Performance Criteria and intended to qualify under Section 162(m) of the Code may be granted under the Plan subsequent to the Corporation's annual meeting of stockholders in 2019.

XIV. Withholding

To the extent required by applicable Federal, state, local or foreign law, the Participant or his successor shall make arrangements satisfactory to the Corporation, in its discretion, for the satisfaction of any withholding tax obligations that arise in connection with an award. The Corporation shall not be required to issue any shares of Common Stock or make any cash or other payment under the Plan until such obligations are satisfied.

The Corporation is authorized to withhold from any Award granted or any payment due under the Plan, including from a distribution of shares of Common Stock, amounts of withholding taxes due with respect to an Award, its exercise or any payment thereunder, and to take such other action as the Committee may deem necessary or advisable to enable the Corporation and Participants to satisfy obligations for the payment of such taxes. This authority shall include authority to withhold or receive shares of Common Stock or other property, to make cash payments in respect thereof in satisfaction of such tax obligations, and the ability to restrict withholding to statutory minimum amounts where necessary or applicable to avoid adverse accounting treatment.

XV. Miscellaneous

15.1 *Governing Law.* The validity, interpretation, construction and effect of the Plan and any rules and regulations relating to the Plan shall be governed by the laws of the State of New York (without regard to the conflicts of laws thereof), and applicable Federal law.

15.2 *Foreign Plan Requirements.* To the extent the Committee deems it necessary, appropriate or desirable to comply with foreign law or practices and to further the purpose of the Plan, the Committee may, without amending this Plan, establish special rules and/or sub-plans applicable to awards granted to Participants who are foreign nationals, are employed outside the United States, or both, and may grant awards to such Participants in accordance with those rules. In the event that the payment amount is calculated in a foreign currency, the payment amount will be converted to U.S. dollars using the prevailing exchange rate published in The Wall Street Journal (or in such other reliable publication as the Committee, in its discretion, may determine to rely on) on the relevant date.

15.3 *Section 409A.* The intent of the parties is that payments under the Plan will comply with Section 409A of the Code to the extent subject thereto or an exemption therefrom and, accordingly, to the maximum extent permitted the Plan shall be interpreted and administered to be in compliance therewith. Any payments provided under the Plan that are payable within the short-term deferral period as defined in Section 409A of the Code shall not be treated as deferred compensation unless otherwise required by applicable law. Without limiting the generality of the foregoing, to the extent a Participant would otherwise be entitled to any payment under this Plan, or any plan or arrangement of the Corporation or its affiliates, that constitutes "deferred compensation" subject to Section 409A: (i) references to termination of the Participant's employment will mean the Participant's separation from service with the Corporation or one of its Affiliates within the meaning of Section 409A; (ii) any payment to be made with respect to such Award, that if paid or provided during the six months beginning on the date of termination of a Participant's employment would be subject to the Section 409A additional tax because the Participant is a "specified employee" (within the meaning of Section 409A and as determined by the Corporation) will be paid (or will commence being paid, if applicable) to the Participant on the earlier of the six month anniversary of the Participant's date of termination or the Participant's death; (iii) to the extent an Award includes a "series of installment payments" (within the meaning of Section 1.409A-2(b)(2)(iii) of the regulations promulgated under the Code), the Participant's right to the series of installment payments shall be treated as a right to a series of separate payments and not as a right to a single payment, (iv) if the Award includes "dividend equivalents" (within the meaning of Section 1.409A-3(e) of the regulations promulgated under the Code), the Participant's right to the dividend equivalents shall be treated separately from the right to other amounts under the Award; and (v) to the extent necessary to comply with Section 409A, any other securities, other Awards or other property that the Corporation or one of its Affiliates may deliver in lieu of shares of Common Stock in respect of an Award shall not have the effect of deferring delivery or payment beyond the date on which such delivery or payment would occur with respect to the shares of Common Stock that would otherwise have been deliverable (unless the Committee elects a later date for this purpose in accordance with the requirements of Section 409A).

15.4 *No Liability With Respect to Tax Qualification or Adverse Tax Treatment.* Notwithstanding any other provision of the Plan, in no event shall the Corporation or any of its Affiliates be liable to a Participant on account of an Award's failure to (i) qualify for favorable United States or foreign tax treatment of (ii) avoid adverse tax treatment under United States or foreign law, including, without limitation, Section 409A of the Code.

15.5 *Choice of Forum*

(a) Unless otherwise specified in an Award Agreement, it shall be a condition of each Award that the Corporation and the Participant irrevocably submit to the exclusive jurisdiction of any state or federal court located in New York, New York over any suit, action or proceeding arising out of or relating to or concerning the Plan or the Award. By accepting an Award, the Participant acknowledges that the forum designated by this Section 15.5(a) has a reasonable relation to the Plan, any applicable Award and the Participant's relationship with the Corporation. Notwithstanding the foregoing, nothing herein shall preclude the Corporation from bringing any suit, action or proceeding in any other court for the purpose of enforcing the provisions of this Section 15.5(a) or otherwise.

(b) By accepting an Award, (i) the Participant waives, to the fullest extent permitted by applicable law, any objection which the Participant may have to personal jurisdiction or to the laying of venue of any such suit, action or proceeding in any court referred to in Section 15.5(a), (ii) the Participant undertakes not to commence any action arising out of or relating to or concerning any Award in any forum other than a forum described in this Section 15.5 and (iii) the Participant agrees that, to the fullest extent permitted by applicable law, a final and non-appealable judgment in any such suit, action or proceeding in any such court shall be conclusive and binding upon the Participant and the Corporation.

(c) Unless otherwise specified in an Award Agreement, by accepting an Award, the Participant irrevocably appoints each General Counsel of the Corporation as his or her agent for service of process in connection with any suit, action or proceeding arising out of or relating to or concerning this Plan or any Award, who shall promptly advise the Participant of any such service or process.

(d) Unless otherwise specified in an Award Agreement, by accepting an Award, the Participant agrees to keep confidential the existence of, and any information concerning, a dispute, controversy or claim described in this Section 15.5, except that the Participant may disclose information concerning such dispute, controversy or claim to the court that is considering such dispute, controversy or claim or to his legal counsel (provided that such counsel agrees not to disclose any such information other than as necessary to the prosecution or defense of the dispute, controversy or claim).

THE BANK OF NEW YORK MELLON CORPORATION
2019 LONG-TERM INCENTIVE PLAN

I. Purposes

The purposes of this 2019 Long-Term Incentive Plan (the "Plan") are to promote the growth and profitability of The Bank of New York Mellon Corporation (the "Corporation") and its Affiliates, to provide officers, other employees and non-employee directors of the Corporation and its Affiliates with the incentive to achieve long-term corporate objectives, to attract and retain officers, other employees and non-employee directors, and to provide such individuals with an opportunity to acquire shares of common stock of the Corporation (the "Common Stock") and cash awards. For purposes of the Plan, the term "Affiliate" shall mean any corporation, limited partnership or other organization in which the Corporation owns, directly or indirectly, 50% or more of the voting power.

II. General

2.1 *Administration*.

(a) *Committee Composition*. The Plan shall be administered by a Committee (the "Committee") appointed by the Board of Directors of the Corporation (the "Board"). To the extent the Board determines appropriate, each member of the Committee shall at the time of any action under the Plan be (1) a "non-employee director" as then defined under Rule 16b-3 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or any successor rule, (2) an "independent" director under the rules of the New York Stock Exchange, and (3) an "independent" director under any other applicable regulatory requirements. Notwithstanding the foregoing, unless otherwise determined by the Board, the Board shall administer the Plan, and otherwise exercise the same authority as the Committee, with respect to grants to members of the Board who are not employees of the Corporation or any Affiliate (the "Non-Employee Directors").

(b) *Authority*. The Committee shall have the authority in its sole discretion from time to time: (i) to designate the individuals eligible to participate in the Plan; (ii) to grant Awards, as hereinafter defined, under the Plan and determine who will receive Awards, when such Awards will be granted and the terms of such Awards, including any limitations, restrictions and conditions upon any such Award and provisions with regard to termination of employment or service as a Non-Employee Director, such as termination due to normal or early retirement, death, disability, sale of a business unit or Subsidiary or a change in control or in the event of an involuntary termination; and (iii) to interpret the Plan, to adopt, amend and rescind rules and regulations relating to the Plan, and to make all other determinations and take all other action necessary or advisable for the implementation and administration of the Plan. A majority of the Committee shall constitute a quorum, and the action of a majority of members of the Committee present at any meeting at which a quorum is present, or acts unanimously adopted in writing without the holding of a meeting, shall be the acts of the Committee.

(c) *Binding Action*. All actions of the Committee shall be final, conclusive and binding upon all persons. No member of the Committee shall be liable for any action taken or decision made in good faith relating to the Plan or any Award thereunder.

(d) *Delegation*. To the extent permitted by applicable law, the Committee may delegate, within limits it may establish from time to time, the authority to grant awards to employees who are not subject to Section 16 of the Exchange Act.

2.2 *Eligibility*. The Committee may grant Awards under the Plan to any employee of the Corporation or any of its affiliates (or to a former employee if such Award is granted within 12 months of termination of employment and with respect to the final year of service). Non-Employee Directors shall also be eligible to be granted Awards other than incentive stock options. Eligible employees and Non-Employee Directors are collectively referred to herein as "Participants".

Subject to the provisions of the Plan, the Committee shall have full and final authority, in its discretion, to grant Awards as described herein and to determine the Participants to whom any such grant shall be made and the number of shares or value to be covered thereby. In determining the eligibility of any Participant, as well as in determining the number of shares or value covered by each Award, the Committee shall consider the position and the responsibilities of the Participant being considered, retention objectives relating to the Participant being considered, the nature and value to the Corporation or an Affiliate of his or her services, his or her present and/or potential contribution to the success of the Corporation or an Affiliate and such other factors as the Committee may deem relevant.

2.3 *Awards*.

(a) *Available Awards*. Awards under the Plan may consist of: stock options ("Options") (either incentive stock options within the meaning of Section 422 of the Code or nonstatutory stock options), stock appreciation rights ("SARs"), restricted stock, restricted stock units, performance share units, deferred stock units, other stock-based awards and cash awards (collectively, "Awards").

(b) *Award Agreements*. Each Award shall be confirmed by an agreement (an "Award Agreement"), in such form as the Committee shall prescribe from time to time in accordance with the Plan.

(c) *Other Plans*. In the discretion of the Committee, shares of Common Stock or other types of Awards authorized under the Plan may be used in connection with, or to satisfy obligations of the Corporation or an Affiliate to eligible Participants under, other compensation or incentive plans, programs or arrangements of the Corporation or an Affiliate. The minimum vesting provisions contained within Sections 3.2, 4.2 and 5.2 of the Plan shall not apply in the case of an Award that is made to a participant as annual incentive compensation, and may be satisfied by reference to the vesting or performance period of any such other compensation or incentive plan, program or arrangement the obligations of which are satisfied through the use of Awards under the Plan.

2.4 *Share Reserve and Recycling*.

(a) *Shares Available under the Plan*. The aggregate number of shares of Common Stock which may be issued and as to which grants of Awards may be made under the Plan following stockholder approval of the Plan is the sum of (i) ● shares plus (ii) the number of shares covering Awards or awards under The Bank of New York Mellon Corporation Long-Term Incentive Plan Amended and Restated through February 24, 2014 (the "Prior Plan") that again become available for issuance under Section 2.4(b), subject to adjustment and substitution as set forth in Section 9. For purposes of this Section 2.4(a), the number of shares of Common Stock to which an Award relates shall be counted against the number of shares of Common Stock available under the Plan at the time of grant of the Award, provided that tandem Awards shall not be double-counted and Awards payable solely in cash or granted in substitution for awards of an acquired company shall not be counted. The shares which may be issued under the Plan may be either authorized but unissued shares or treasury shares or partly each, as shall be determined from time to time by the Board or its delegate.

(b) *Share Recycling*. If any Award or any outstanding award granted under the Prior Plan (a "Prior Plan Award") is cancelled by mutual consent or terminates or expires for any reason without having been exercised in full, except by reason of the exercise of a tandem Award or Prior Plan Award, or if shares of Common Stock pursuant to an Award or Prior Plan Award are forfeited pursuant to applicable restrictions, or if payment in respect of an Award or Prior Plan Award is made to the Participant or Prior Plan Award holder in the form of cash, cash equivalents or other property other than shares of Common Stock, the number of shares subject thereto (the "Recycled Shares") shall again be available for purposes of the Plan; provided, that with respect to any Prior Plan Award pursuant to which the Prior Plan Award holder is required to pay the fair market value for the shares of Common Stock represented thereby, the number of shares that shall again be available for purposes of the Plan shall be the number of Recycled Shares divided by 2.75. Notwithstanding the foregoing, the following shares of Common Stock shall not become available for purposes of the Plan: (1) shares of Common Stock previously owned or acquired by the Participant that are delivered to the Corporation, or withheld from an Award or Prior Plan

Award, to pay the exercise price, (2) shares of Common Stock that are delivered or withheld for purposes of satisfying a tax withholding obligation, or (3) shares of Common Stock reserved for issuance upon the grant of a SAR Award or a Prior Plan Award consisting of a stock appreciation right that exceed the number of shares actually issued upon exercise.

2.5 *Individual Limitations on Awards*. The maximum aggregate number of shares of Common Stock which shall be available for the grant of Options and SARs to any one individual under the Plan during any calendar year shall be limited to 4,000,000 shares. The maximum number of shares subject to Awards (other than Options and SARs and cash awards) that may be paid to any one individual based on the achievement of Performance Criteria for any calendar year is 1,000,000 shares or, if such Award is payable in cash, the Fair Market Value equivalent thereof on the first day of the performance period to which such Award relates. The maximum amount payable for cash awards to any one individual based on the achievement of Performance Criteria under the Plan for any one calendar year shall be $10,000,000. In the case of multi-year Performance Periods, as hereinafter defined, the amount which is paid for any one calendar year of the Performance Period is the amount paid for the Performance Period divided by the number of calendar years in the period.

2.6 *Director Awards*. Aggregate Awards granted to any one Non-Employee Director in respect of any calendar year, solely with respect to his or her service as a member of the Board, may not exceed $1,000,000 based on the aggregate value of cash Awards and Fair Market Value of stock-based Awards, in each case determined as of the grant date.

2.7 *Conditions*. The obligation of the Corporation to issue shares of Common Stock under the Plan shall be subject to (i) the effectiveness of a registration statement under the Securities Act of 1933, as amended, with respect to such shares, if deemed necessary or appropriate by counsel for the Corporation, (ii) the condition that the shares shall have been listed (or authorized for listing upon official notice of issuance) upon each stock exchange, if any, on which the Common Stock may then be listed and (iii) all other applicable laws, regulations, rules and orders which may then be in effect.

2.8 *Forfeiture*. Notwithstanding any other provision of the Plan, any incentive-based compensation otherwise payable or paid to current or former Participants shall be forfeited and/or repaid to the Corporation as may be required pursuant to applicable regulatory requirements or any company policy and the Committee may determine in its discretion that an Award shall be forfeited and/or shall be repaid to the Corporation upon the terms specified in any agreement between the Participant and the Corporation or any of its Affiliates (including an Award Agreement) including, without limitation, if the Participant directly or indirectly engages in (i) competition with the Corporation or any of its Affiliates or (ii) conduct that is materially adverse to the interests of the Corporation, including fraud or conduct contributing to any financial restatements or irregularities.

2.9 *Deferral of Awards*. Subject to approval and any requirements imposed by the Committee and to the extent permitted under Section 409A of the Code, each Participant may be eligible to defer receipt, under the terms and conditions as may be approved by the Corporation, of part or all of any payments otherwise due under any Award.

III. Stock Options and Stock Appreciation Rights

3.1 *Grant*. The Committee shall have authority, in its discretion, (a) to grant "incentive stock options" pursuant to Section 422 of the Code, (b) to grant "nonstatutory stock options" (*i.e.*, Options which do not qualify under Sections 422 or 423 of the Code), (c) to grant tandem SARs in conjunction with Options and (d) to grant SARs on a stand-alone basis. Tandem SARs may only be granted at the time the related Option is granted. No reload option rights or dividend equivalents may be granted in connection with any Option or SAR.

3.2 *Stock Option Provisions*.

(a) *Option Price*. The purchase price at which each Option may be exercised (the "Option Price") shall be such price as the Committee, in its discretion, shall determine but shall not be less than one hundred percent (100%) of the Fair Market Value per share of the Common Stock covered by the Option on the date of grant.

(b) *Form of Payment*. The Option Price for each Option shall be paid in full upon exercise and shall be payable (i) in cash (including check, bank draft or money order), which may include cash forwarded through a broker or other agent-sponsored exercise or financing program, or (ii) except as otherwise provided in the Award Agreement, in whole or in part by delivering to, or withholding from the Award, shares of Common Stock having a Fair Market Value on the date of exercise of the Option equal to the Option Price for the shares being purchased; except that any portion of the Option Price representing a fraction of a share shall in any event be paid in cash, and delivered shares may be subject to terms and conditions imposed by the Committee. If permitted by the Committee, delivery of shares in payment of the Option Price of an Option may be accomplished by the Participant's certification of ownership of the shares to be delivered, in which case the number of shares issuable on exercise of the Option shall be reduced by the number of shares certified but not actually delivered.

(c) *Limitation on Incentive Stock Options*. The aggregate Fair Market Value, determined on the date of grant, of the shares with respect to which incentive stock options are exercisable for the first time by an employee during any calendar year under all plans of the corporation employing such employee, any parent or subsidiary corporation of such corporation and any predecessor corporation of any such corporation shall not exceed $100,000. To the extent the amount is exceeded, such stock options shall be nonstatutory stock options.

(d) *Exercisability and Term*. Options shall become exercisable at such time or times and/or upon the occurrence of such event or events as may be determined by the Committee. The vesting period applicable to Options granted to employees shall, in the case of time-based vesting, be not less than three years, with no more frequent than ratable vesting over such period or, in the case of performance-based vesting, be not less than one year; provided, however, that up to five percent (5%) of those shares available for Awards following stockholder approval of the Plan as provided in Section 2.4 may be granted as Options with no minimum vesting period. No Option shall be exercisable after the expiration of ten years. To the extent exercisable at any time, Options may be exercised in whole or in part. Each Option shall be subject to earlier termination as provided in the Award Agreement.

3.3 *Stock Appreciation Right Provisions*.

(a) *Price of Stand-Alone SARs*. The base price for stand-alone SARs (the "Base Price") shall be such price as the Committee, in its sole discretion, shall determine but shall not be less than one hundred percent (100%) of the Fair Market Value per share of the Common Stock covered by the stand-alone SAR on the date of grant.

(b) *Payment of SARs*. SARs shall entitle the Participant upon exercise to receive the amount by which the Fair Market Value of a share of Common Stock on the date of exercise exceeds the Option Price of any tandem Option or the Base Price of a stand-alone SAR, multiplied by the number of shares in respect of which the SAR shall have been exercised. In the sole discretion of the Committee, the Corporation may pay all or any part of its obligation arising out of a SAR exercise in cash, shares of Common Stock or any combination thereof. Payment shall be made by the Corporation following exercise.

(c) *Term and Exercise of Stand-Alone SARs*. The term of any stand-alone SAR granted under the Plan shall be for such period as the Committee shall determine, but for not more than ten years from the date of grant thereof. Each stand-alone SAR may be subject to earlier termination as provided in the Award Agreement. Each stand-alone SAR granted under the Plan shall be exercisable on such date or dates during the term thereof and for such number of shares of Common Stock as may be provided in the Award Agreement.

(d) *Term and Exercise of Tandem SARs*. If SARs are granted in tandem with an Option (i) the SARs shall be exercisable at such time or times and to such extent, but only to such extent, that the related Option shall be exercisable, (ii) the exercise of the related Option shall cause a share for share reduction in the number of SARs which were granted in tandem with the Option; and (iii) the payment of SARs shall cause a share for share reduction in the number of shares covered by such Option.

3.4 *Non-Transferability*. No incentive stock option and, except to the extent otherwise determined by the Committee and reflected in the Award Agreement or an amendment thereto, no nonstatutory stock option, SAR or other award may be sold, assigned, transferred (including to any third-party financial institution), pledged, hypothecated or otherwise disposed of by the Participant otherwise than by will, or if the Participant dies intestate, by the laws of descent and distribution of the state of domicile of the Participant at the time of death; provided further, that awards may not in any event be transferred in exchange for consideration. All incentive stock options and, except to the extent otherwise determined by the Committee and reflected in the Award Agreement or an amendment thereto, all nonstatutory stock options, SARs and other purchase rights shall be exercisable during the lifetime of the Participant only by the Participant.

3.5 *Fair Market Value*. For all purposes under the Plan, the fair market value (the "Fair Market Value") of the Common Stock shall mean (unless the Committee specifies another valuation method) the closing price of a share of Common Stock in the New York Stock Exchange Composite Transactions on the relevant date, or, if no sale shall have been made on such exchange on that date, the closing price in the New York Stock Exchange Composite Transactions on the last preceding day on which there was a sale.

3.6 *Miscellaneous*. Subject to the foregoing provisions of this Section and the other provisions of the Plan, any Option or SAR granted under the Plan may be exercised at such times and in such amounts and be subject to such restrictions and other terms and conditions, if any, as shall be determined, in its discretion, by the Committee and set forth in the Award Agreement, or an amendment thereto.

IV. Restricted Stock

4.1 *Award*. The Committee may, subject to the provisions of the Plan and such other terms and conditions as it may prescribe, grant one or more shares of restricted stock to Participants.

4.2 *Restrictions*. Shares of restricted stock issued to a Participant may not be sold, assigned, transferred (including to any third-party financial institution), pledged, hypothecated or otherwise disposed of, except by will or the laws of descent and distribution, for such period as the Committee shall determine, beginning on the date on which the Award is granted (as applicable to any Award, the "Restricted Period"). The Committee may also impose such other restrictions, limitations and conditions on the shares or the release of the restrictions thereon as it deems appropriate, including the achievement of Performance Goals and/or based upon Performance Criteria, as hereinafter defined, established by the Committee, limitations on the right to vote restricted stock or the right to receive dividends thereon on a current, reinvested and/or restricted basis; provided that no dividends will be paid at a time when the Restricted Period applies to shares of restricted stock and will revert back to the Corporation if the applicable restrictions, limitations and conditions are not satisfied. In determining the Restricted Period of an Award, the Committee may provide that the foregoing restrictions shall lapse with respect to specified percentages of the awarded shares on specified dates following the date of such Award or all at once. The Restricted Period applicable to restricted stock granted to employees shall, in the case of a time-based restriction, be not less than three years, with no more frequent than ratable vesting over such period or, in the case of a performance-based restriction, be not less than one year; provided, however, that up to ten percent (10%) of those shares available for Awards following stockholder approval of the Plan as provided in Section 2.4 may be granted as restricted stock with no minimum vesting period.

4.3 *Stock Certificate or Book-Entry*. As soon as practicable following the making of an Award, the restricted stock shall be registered in the Participant's name in certificate or book-entry form. If a certificate is issued, it shall bear an appropriate legend referring to the restrictions and it shall be held by the Corporation on behalf of the

Participant until the restrictions are satisfied. If the shares are registered in book-entry form, the restrictions shall be placed on the book-entry registration. Except for the restrictions and limitations set forth in Section 4.2, and subject to such other restrictions or limitations, if any, as determined by the Committee, the Participant shall have all other rights of a holder of shares of Common Stock, including the right to vote such shares. As soon as is practicable following the date on which transfer restrictions on any shares lapse, the Corporation shall (i) deliver to the Participant the certificates for such shares or cause the shares to be registered in the Participant's name in book-entry form, in either case with the restrictions removed, and (ii) deliver to the Participant any dividends accrued thereon (in cash, shares of Common Stock or part in cash and part in shares of Common Stock, as determined by the Committee in its discretion), in each case provided that the Participant shall have complied with all conditions for delivery of such shares contained in the Award Agreement or otherwise reasonably required by the Corporation.

4.4 *Discretion*. Subject to Section 4.2, the Committee may in its discretion allow restrictions on restricted stock to lapse prior to the date specified in an Award Agreement.

V. Restricted Stock Units

5.1 *Award of Restricted Stock Units*. The Committee may, subject to the provisions of the Plan and such other terms and conditions as it may prescribe, grant restricted stock units to Participants.

5.2 *Restrictions*. The Restricted Period applicable to restricted stock units granted to employees shall, in the case of a time-based restriction, be not less than three years, with no more frequent than ratable vesting over such period or, in the case of a performance-based restriction, be not less than one year; provided, however, that up to ten percent (10%) of those shares available for Awards following stockholder approval of the Plan as provided in Section 2.4 may be granted as restricted stock units with no minimum vesting period. The Committee may also impose such other restrictions, limitations and conditions on the restricted stock units or the release of the restrictions thereon as it deems appropriate, including the achievement of Performance Goals and/or based upon Performance Criteria established by the Committee and the right to receive dividend equivalents thereon, on a current, reinvested and/or restricted basis; provided that no dividend equivalents will be paid at a time when the Restricted Period applies to restricted stock units and will revert back to the Corporation if the applicable restrictions, limitations and conditions are not satisfied. In determining the Restricted Period of an Award, the Committee may provide that the foregoing restrictions shall lapse with respect to specified percentages of the restricted stock units on specified dates following the date of such Award or all at once.

5.3 *Payment*. During the two and one-half months following the end of the calendar year in which vesting occurs, the Corporation shall pay to the Participant or his estate the number of shares of Common Stock equal to the number of restricted share units vested and any dividend equivalents accrued thereon. Notwithstanding the foregoing sentence, the Committee shall have the authority, in its discretion, to determine that the obligation of the Corporation shall be paid in cash, equal to the number of restricted share units vested (inclusive of any dividend equivalents accrued thereon) multiplied by the Fair Market Value of the share of the Common Stock on such date, or part in cash and part in shares of Common Stock.

VI. Performance Share Units

6.1 *Grant*. The Committee may, subject to the provisions of the Plan and such other terms and conditions as it may prescribe, grant performance share units to Participants. Performance share units shall represent the right of a Participant to receive shares of Common Stock (or their cash equivalent) at a future date upon the achievement of Performance Goals established by the Committee, during a specified performance period (a "Performance Period") of not less than one year. Performance share units may not be sold, assigned, transferred (including to any third-party financial institution), pledged, hypothecated or otherwise disposed of, except by will or the laws of descent and distribution, for such period as the Committee shall determine, beginning on the date on which the Award is granted. Performance share units may include the right to receive dividend equivalents thereon, on a current, reinvested and/or restricted basis. No dividend equivalents will be paid at a time when any performance-based goals that apply to the performance share units have not been satisfied and will revert back to the Corporation if such goals are not satisfied.

6.2 *Terms of Performance Share Units*.

(a) *Performance Goals*. "Performance Goals" shall mean goals based upon the achievement of one or more pre-established, objective measures of performance during a specified Performance Period, selected by the Committee in its discretion. Performance Goals may be based upon one or more of the following objective performance measures (the "Performance Criteria") and expressed in either, or a combination of, absolute or relative values or as a percentage of an incentive pool: earnings or earnings per share; book value per share; total return to stockholders; return on equity, assets, capital or investment; pre-tax margins; revenues; expenses; costs; stock price; investment performance of funds or accounts or assets under management; market share; charge-offs; non-performing assets; income; operating, net or pre-tax income; business diversification; operating ratios (including, without limitation, capital ratios, risk-measurement ratios or return on risk-weighted assets) or results; or cash flow. Performance Goals based on such Performance Criteria may be based either on the performance of the Corporation, an Affiliate, any branch, department, business unit or other portion thereof under such measure for the Performance Period and/or upon a comparison of such performance with the performance of a peer group of corporations, prior Performance Periods or other measure selected or defined by the Committee at the time of making an Award. The Committee may in its discretion also determine to use other objective performance measures for Performance Goals and/or other terms and conditions. When the Performance Goals are established, the Committee shall also specify the manner in which the level of achievement of such Performance Goals shall be calculated and the weighting assigned to such Performance Goals. The Committee may determine that unusual items or certain specified events or occurrences, including changes in accounting standards or tax laws, shall be excluded from the calculation

(b) *Committee Determination*. Following completion of the applicable Performance Period, and prior to any payment of a performance share unit to the Participant, the Committee shall determine in accordance with the terms of the Award whether the applicable Performance Goal(s) were achieved, or the level of such achievement, and the amount, if any, earned by the Participant based upon such performance. The Committee may retain the discretion to reduce or increase the amount or number of performance share units which will be earned based on the achievement of Performance Goals (subject to the applicable minimum and maximum levels specified in the Award Agreement).

6.3 *Payment*. Payment of performance share units shall be made during the two and one-half months following the end of the calendar year in which vesting occurs. In the sole discretion of the Committee, the Corporation may pay all or any part of its obligation under the performance share unit (including with respect to any accrued dividend equivalents) in cash, shares of Common Stock or any combination thereof.

VII. Deferred Stock Units

7.1 *Award*. The Committee may, subject to the provisions of the Plan and such other terms and conditions as it may prescribe, award deferred stock units to eligible Participants. A deferred stock unit shall entitle the Participant to receive from the Corporation a number of shares of Common Stock on a deferred payment date specified by the Participant. Notwithstanding the foregoing sentence, the Committee shall have the authority, in its discretion, to determine that the obligation of the Corporation shall be paid in cash, shares of Common Stock or any combination thereof.

7.2 *Terms of Deferred Stock Units*. Deferred stock units shall be granted upon such terms as the Committee shall determine, subject to any minimum vesting requirement applicable to restricted stock units. Except as otherwise provided by the Committee, a deferred stock unit shall entitle the Participant to receive dividend equivalents payable no earlier than the date payment is elected for the deferred stock unit. Dividend equivalents shall be calculated on the number of shares covered by the deferred stock unit as soon as practicable after the date dividends are payable on the Common Stock.

VIII. Other Stock-Based Awards and Cash Awards

8.1 *Grant of Other Stock-Based Awards*. The Committee shall have the authority in its discretion to grant to eligible Participants such other Awards that are denominated or payable in, valued in whole or in part by reference to, or otherwise based on or related to, shares of Common Stock as deemed by the Committee to be consistent with the purposes of the Plan, including, without limitation, purchase rights, shares awarded without restrictions or conditions, or securities or other rights convertible or exchangeable into shares of Common Stock. Other stock-based awards, excepting purchase rights, may include the right to receive dividends or dividend equivalents, as the case may be, on a current, reinvested and/or restricted basis; provided that no dividends or dividend equivalents will be paid at a time when the Restricted Period applies to any Award granted under this Section 8.1 and will revert back to the Corporation if the applicable restrictions, limitations and conditions are not satisfied.

8.2 *Terms of Other Stock-Based Awards*. The Committee shall determine the terms and conditions, if any, of any other stock-based awards made under the Plan, including the achievement of Performance Goals and/or based upon Performance Criteria, subject to any minimum vesting requirements applicable to restricted stock units or restricted stock, as applicable. Other stock-based awards may be granted alone, in addition to or in tandem with other Awards granted under the Plan and/or awards made outside of the Plan. Shares of Common Stock or securities delivered pursuant to a purchase right granted under this Section 8 shall be purchased for such consideration, paid for by such methods and in such forms, including, without limitation, cash, shares of Common Stock, or other property or any combination thereof, as the Committee shall determine, but the value of such consideration shall not be less than the Fair Market Value of such shares of Common Stock or other securities on the date of grant of such purchase right. The exercise of the purchase right shall not be deemed to occur, and no shares of Common Stock or other securities will be issued by the Corporation upon exercise of a purchase right, until the Corporation has received payment in full of the exercise price.

8.3 *Grant of Cash Awards*. The Committee shall have the authority in its discretion to grant to eligible Participants such cash awards (including, without limitation, Non-Employee Director retainers, leadership, committee and meeting-based fees) as deemed by the Committee to be consistent with the purposes of the Plan. Cash awards granted under the Plan may be in such amounts and subject to such terms and conditions as the Committee may determine.

8.4 *Terms of Cash Awards*. Cash awards (other than Non-Employee Director retainers, leadership, committee and meeting-based fees) granted under the Plan shall be subject to the achievement of Performance Goals and based upon such Performance Criteria set forth in Section 6.2(a) as determined by the Committee, and further subject to the individual limitation provided in Section 2.5. Following completion of the applicable Performance Period, and prior to any payment of a cash award to the Participant, the Committee shall determine in accordance with the terms of the Award whether the applicable Performance Goal(s) were achieved, or the level of such achievement, and the amount, if any, earned by the Participant based upon such performance. Except as otherwise expressly provided to the contrary in the applicable Award Agreement or as otherwise required by applicable law, to be entitled to receive payment for a cash award, a Participant must remain in the employment of the Corporation or an Affiliate through the date of payment. Payment of cash awards shall be made during the two and one-half months following the end of the calendar year in which vesting occurs.

IX. Adjustment and Substitution of Shares

In the event of any change in the outstanding Common Stock of the Corporation by reason of a stock split, stock dividend, exchange, combination or reclassification of shares, recapitalization, merger, spin-off, split-off, split-up, dividend in partial liquidation, dividend in property other than cash, extraordinary distribution, similar event or other event which the Committee determines affects the Common Stock such that an adjustment pursuant to Section 9 hereof is appropriate, the Committee shall adjust proportionately: (a) the number of shares of Common Stock (i) available for issuance under the Plan, (ii) available for issuance under incentive stock options, (iii) for which Awards may be granted to an individual Participant, (iv) subject to any sub-limits contained herein and (v) covered by outstanding Awards denominated in stock or units of stock, together with the cash or other property into which the stock may be exchanged; (b) the exercise and grant prices related to outstanding Awards; and (c) the appropriate Fair Market Value and other price determinations for such Awards and (d) the Performance Goals.

In the event of any change affecting the Common Stock or any distribution (other than normal cash dividends) to holders of Common Stock, such adjustments in the number and kind of shares and the exercise, grant and conversion prices of the affected Awards as may be deemed equitable by the Committee, including adjustments to avoid fractional shares, shall be made to give proper effect to such event.

All adjustments shall be made (i) consistent with Section 424 of the Code in the case of incentive stock options, so as not to result in any disqualification, modification, extension or renewal of such incentive stock option and (i) in a manner compliant with Section 409A of the Code.

X. Additional Rights in Certain Events

10.1 *Change in Control*. "Change in Control" means the occurrence of any one of the following events:

(a) During any period of not more than two (2) years, the Incumbent Directors no longer represent a majority of the Board. "Incumbent Directors" are (A) the members of the Board as of the effective date of the Plan and (B) any individual who becomes a director subsequent to the effective date of the Plan whose appointment or nomination was approved by at least a majority of the Incumbent Directors then on the Board (either by specific vote or by approval, without prior written notice to the Board objecting to the nomination, of a proxy statement in which the member was named as nominee). However, the Incumbent Directors will not include anyone who becomes a member of the Board after the effective date of the Plan as a result of an actual or threatened election contest or proxy or consent solicitation on behalf of anyone other than the Board, including as a result of any appointment, nomination or other agreement intended to avoid or settle a contest or solicitation;

(b) There is a beneficial owner of securities entitled to 30% or more of the total voting power of the Corporation's then-outstanding securities in respect of the election of the Board (the "Voting Securities"), other than (A) the Corporation, any Subsidiary of it or any employee benefit plan or related trust sponsored or maintained by the Corporation or any Subsidiary of it; (B) any underwriter temporarily holding securities pursuant to an offering of them; (C) anyone who becomes a beneficial owner of that percentage of Voting Securities as a result of an Excluded Transaction (as defined in Section 10.1(c)); or (D) anyone who becomes a beneficial owner of that percentage of Voting Securities as a result of a transaction in which Voting Securities are acquired from the Corporation, if the transaction is approved by a majority of the Incumbent Directors in a resolution that expressly states that the transaction is not a Change in Control under this Section 10.1(b); or

(c) Consummation of a merger, consolidation, statutory share exchange or similar transaction (including an exchange offer combined with a merger or consolidation) involving the Corporation (a "Reorganization") or a sale, lease or other disposition (including by way of a series of transactions or by way of merger, consolidation, stock sale or similar transaction involving one or more subsidiaries) of all or substantially all of the Corporation's consolidated assets (a "Sale") other than an Excluded Transaction. A Reorganization or Sale is an "Excluded Transaction" if immediately following it: (A) 50% or more of the total voting power of the Surviving Corporation's then-outstanding securities in respect of the election of directors (or similar officials in the case of a non-corporation) is represented by Voting Securities outstanding immediately before the Reorganization or Sale or by securities into which such Voting Securities were converted in the Reorganization or Sale; (B) there is no beneficial owner of securities entitled to 30% or more of the total voting power of the then-outstanding securities of the Surviving Corporation in respect of the election of directors (or similar officials in the case of a non-corporation); and (C) a majority of the board of directors of the Surviving Corporation (or similar officials in the case of a non-corporation) were Incumbent Directors at the time the Board approved the execution of the initial agreement providing for the Reorganization or Sale. The "Surviving Corporation" means in a Reorganization, the entity resulting from the Reorganization or in a Sale, the entity that has acquired all or substantially all of the assets of the Corporation, except that, if there is a beneficial owner of securities entitled to 95% of the total voting power (in respect of the election of directors or similar officials in the case of a non-corporation) of the then-outstanding securities of the entity that would otherwise be the Surviving Corporation, then that beneficial owner will be the Surviving Corporation.

(d) the stockholders of the Corporation approve a plan of complete liquidation or dissolution of the Corporation.

For purposes of the Plan, "Subsidiary" means any corporation or other entity in which the Corporation has a direct or indirect ownership interest of 50% or more of the total combined voting power of the then outstanding securities or interests of such corporation or other entity entitled to vote generally in the election of directors (or members of any similar governing body) or in which the Corporation has the right to receive 50% or more of the distribution of profits or 50% of the assets or liquidation or dissolution.

10.2 *Lapse of Restrictions on Awards*. Except as otherwise expressly provided to the contrary in an Award Agreement, in the event the employment or service of a Participant is terminated by the Corporation and its Affiliates without Cause within two years after the occurrence of a Change in Control, his or her Options, SARs, restricted stock, restricted stock units, deferred stock units and other stock-based awards shall fully vest and, to the extent subject to an exercise right, may be exercised within one year after the date such termination occurred; provided, however, that if the awards are subject to Section 409A of the Code and the Change in Control is not a change in ownership or effective control of the Corporation or a change in the ownership of a substantial portion of the assets of the Corporation under Section 409A of the Code (a "409A Change in Control"), the Options, SARs, restricted stock units, deferred stock units and other stock-based awards shall remain payable on the date(s) provided in the underlying Award Agreement and provisions of the Plan. For purposes of this paragraph, "Cause" shall have the same meaning as set forth in the Participant's Award Agreement.

10.3 *Deemed Achievement of Performance Goals*. Except as otherwise expressly provided to the contrary in an Award Agreement, if any Change in Control occurs prior to the end of any Performance Period, all Performance Criteria and other conditions pertaining to performance share units, cash awards and other Awards under which payments are subject to Performance Goals shall be deemed to be achieved or fulfilled on a pro-rata basis for (i) the number of whole months elapsed from the commencement of the Performance Period through the Change in Control over (ii) the number of whole months included in the original Performance Period, measured at the actual performance level achieved or, if not determinable, in the manner specified by the Committee. If the awards are subject to Section 409A of the Code and the Change in Control is not a 409A Change in Control, such Awards shall remain payable on the date(s) provided in the underlying Award Agreement and provisions of the Plan.

10.4 *Limitation*. Notwithstanding the foregoing Sections 10.2 and 10.3, the Committee may condition the extension of exercise periods, lapse of restrictions and/or deemed achievement of Performance Goals upon the occurrence of a 409A Change in Control.

XI. Effect of the Plan on the Rights of Participants and the Corporation

Neither the adoption of the Plan nor any action of the Board or the Committee pursuant to the Plan shall be deemed to give any employee or Non-Employee Director any right to be granted any Award under the Plan. Nothing in the Plan, in any Award under the Plan or in any Award Agreement shall confer any right to any employee to continue in the employ of the Corporation or any Affiliate or any Non-Employee Director to continue as a Non-Employee Director or interfere in any way with the rights of the Corporation or any Affiliate to terminate the employment of any employee at any time or with the rights of the stockholders of the Corporation or the Board to elect and remove Non-Employee Directors. All grants of Awards and delivery of shares, cash or other property under an Award granted under the Plan shall constitute a special discretionary incentive payment to the Participant and shall not be required to be taken into account in computing the amount of salary or compensation of the Participant for the purpose of determining any contributions to or any benefits under any pension, retirement, profit-sharing, bonus, life insurance, severance or other benefit plan of the Corporation or under any agreement with the Participant unless specifically provided otherwise in the Award or underlying Plan, arrangement or agreement. Subject to the requirements of Section 409A of the Code, the Corporation shall have the right to offset against its obligation to pay or deliver shares pursuant to an Award to any Participant, any outstanding amounts such Participant then owes to the Corporation and any amounts the Committee otherwise deems appropriate pursuant to any tax equalization policy or agreement. Except as otherwise provided in an Award Agreement, neither the Plan nor any Award Agreement shall confer on any person other than the Corporation or a Participant any rights or remedies hereunder.

XII. Amendment

The right to amend the Plan at any time and from time to time and the right to revoke or terminate the Plan are hereby specifically reserved to the Board; provided that no amendment of the Plan shall be made without stockholder approval (1) if the effect of the amendment is (a) to make any changes in the class of employees eligible to receive incentive stock options under the Plan, (b) to increase the number of shares subject to the Plan or with respect to which incentive stock options may be granted under the Plan or (2) if stockholder approval of the amendment is at the time required by the rules of any stock exchange on which the Common Stock may then be listed. No alteration, amendment, revocation or termination of the Plan shall, without the written consent of the holder of an outstanding Award under the Plan, adversely affect the rights of such holder with respect thereto; except that the Board may amend the Plan from time to time without the consent of any Participant to the extent deemed necessary or appropriate, in its sole discretion, to effect compliance with Section 409A of the Code, including regulations and interpretations thereunder, which amendments may result in a reduction of benefits provided hereunder and/or other unfavorable changes to the Participant. Except as provided in Section 9 of the Plan, repricing of Options, SARs and other purchase rights is prohibited, such that the purchase price of any such award may not be reduced, whether through amendment, cancellation or replacement in exchange for another Option, SAR, other Award or cash payment, unless such action or reduction is approved by the stockholders of the Corporation.

XIII. Effective Date and Duration of Plan

The Plan was adopted by the Board on February ●, 2019. The effective date of the Plan shall be the date that the adoption of the Plan by the Board is approved by a majority of the votes cast at a duly held meeting of stockholders held on or prior to February ●, 2020 at which a quorum representing a majority of the outstanding voting stock of the Corporation is, either in person or by proxy, present and voting. No awards may be granted or awarded under the Prior Plan subsequent to the effective date of the Plan, and no Options or SARs may be granted and no restricted stock, restricted stock units, performance share units, deferred stock units or other stock-based awards may be awarded under the Plan subsequent to the tenth anniversary of the effective date of the Plan.

XIV. Withholding

To the extent required by applicable Federal, state, local or foreign law, the Participant or his successor shall make arrangements satisfactory to the Corporation, in its discretion, for the satisfaction of any withholding tax obligations that arise in connection with an award. The Corporation shall not be required to issue any shares of Common Stock or make any cash or other payment under the Plan until such obligations are satisfied.

The Corporation is authorized to withhold from any Award granted or any payment due under the Plan, including from a distribution of shares of Common Stock, amounts of withholding taxes due with respect to an Award, its exercise or any payment thereunder, and to take such other action as the Committee may deem necessary or advisable to enable the Corporation and Participants to satisfy obligations for the payment of such taxes. This authority shall include authority to withhold or receive shares of Common Stock or other property, to make cash payments in respect thereof in satisfaction of such tax obligations, and the ability to withhold amounts not in excess of the statutory maximum rate.

XV. Miscellaneous

15.1 *Governing Law*. The validity, interpretation, construction and effect of the Plan and any rules and regulations relating to the Plan shall be governed by the laws of the State of New York (without regard to the conflicts of laws thereof), and applicable Federal law.

15.2 *Foreign Plan Requirements*. To the extent the Committee deems it necessary, appropriate or desirable to comply with foreign law or practices and to further the purpose of the Plan, the Committee may, without amending the Plan, establish special rules and/or sub-plans applicable to awards granted to Participants who are foreign nationals, are employed outside the United States, or both, and may grant awards to such Participants in accordance with those rules. In the event that the payment amount is calculated in a foreign currency, the payment amount will be converted to U.S. dollars using the prevailing exchange rate published in The Wall Street Journal (or in such other reliable publication as the Committee, in its discretion, may determine to rely on) on the relevant date.

15.3 *Section 409A*. The intent of the parties is that payments under the Plan will comply with Section 409A of the Code to the extent subject thereto or an exemption therefrom and, accordingly, to the maximum extent permitted the Plan shall be interpreted and administered to be in compliance therewith. Any payments provided under the Plan that are payable within the short-term deferral period as defined in Section 409A of the Code shall not be treated as deferred compensation unless otherwise required by applicable law. Without limiting the generality of the foregoing, to the extent a Participant would otherwise be entitled to any payment under the Plan, or any plan or arrangement of the Corporation or its affiliates, that constitutes "deferred compensation" subject to Section 409A: (i) references to termination of the Participant's employment will mean the Participant's separation from service with the Corporation or one of its Affiliates within the meaning of Section 409A; (ii) any payment to be made with respect to such Award, that if paid or provided during the six months beginning on the date of termination of a Participant's employment would be subject to the Section 409A additional tax because the Participant is a "specified employee" (within the meaning of Section 409A and as determined by the Corporation) will be paid (or will commence being paid, if applicable) to the Participant on the earlier of the six month anniversary of the Participant's date of termination or the Participant's death; (iii) to the extent an Award includes a "series of installment payments" (within the meaning of Section 1.409A-2(b)(2)(iii) of the regulations promulgated under the Code), the Participant's right to the series of installment payments shall be treated as a right to a series of separate payments and not as a right to a single payment, (iv) if the Award includes "dividend equivalents" (within the meaning of Section 1.409A-3(e) of the regulations promulgated under the Code), the Participant's right to the dividend equivalents shall be treated separately from the right to other amounts under the Award; and (v) to the extent necessary to comply with Section 409A, any other securities, other Awards or other property that the Corporation or one of its Affiliates may deliver in lieu of shares of Common Stock in respect of an Award shall not have the effect of deferring delivery or payment beyond the date on which such delivery or payment would occur with respect to the shares of Common Stock that would otherwise have been deliverable (unless the Committee elects a later date for this purpose in accordance with the requirements of Section 409A).

15.4 *No Liability With Respect to Tax Qualification or Adverse Tax Treatment*. Notwithstanding any other provision of the Plan, in no event shall the Corporation or any of its Affiliates be liable to a Participant on account of an Award's failure to (i) qualify for favorable United States or foreign tax treatment of (ii) avoid adverse tax treatment under United States or foreign law, including, without limitation, Section 409A of the Code.

15.5 Choice of Forum

(a) Unless otherwise specified in an Award Agreement, it shall be a condition of each Award that the Corporation and the Participant irrevocably submit to the exclusive jurisdiction of any state or federal court located in New York, New York over any suit, action or proceeding arising out of or relating to or concerning the Plan or the Award. By accepting an Award, the Participant acknowledges that the forum designated by this Section 15.5(a) has a reasonable relation to the Plan, any applicable Award and the Participant's relationship with the Corporation. Notwithstanding the foregoing, nothing herein shall preclude the Corporation from bringing any suit, action or proceeding in any other court for the purpose of enforcing the provisions of this Section 15.5(a) or otherwise.

(b) By accepting an Award, (i) the Participant waives, to the fullest extent permitted by applicable law, any objection which the Participant may have to personal jurisdiction or to the laying of venue of any such suit, action or proceeding in any court referred to in Section 15.5(a), (ii) the Participant undertakes not to commence any action arising out of or relating to or concerning any Award in any forum other than a forum described in this Section 15.5 and (iii) the Participant agrees that, to the fullest extent permitted by applicable law, a final and non-appealable judgment in any such suit, action or proceeding in any such court shall be conclusive and binding upon the Participant and the Corporation.

(c) Unless otherwise specified in an Award Agreement, by accepting an Award, the Participant irrevocably appoints each General Counsel of the Corporation as his or her agent for service of process in connection with any suit, action or proceeding arising out of or relating to or concerning the Plan or any Award, who shall promptly advise the Participant of any such service or process.

(d) Unless otherwise specified in an Award Agreement, by accepting an Award, the Participant agrees to keep confidential the existence of, and any information concerning, a dispute, controversy or claim described in this Section 15.5, except that the Participant may disclose information concerning such dispute, controversy or claim to the court that is considering such dispute, controversy or claim or to his legal counsel (provided that such counsel agrees not to disclose any such information other than as necessary to the prosecution or defense of the dispute, controversy or claim).

EXHIBIT IV
ANNUAL REPORT ON FORM 10-K
FILED BY THE BANK OF NEW YORK MELLON CORPORATION ON FEBRUARY 27, 2019

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

[X] Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

For the Fiscal Year Ended December 31, 2018

or

[ ] Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Commission File No. 001-35651

THE BANK OF NEW YORK MELLON CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	**13-2614959**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*

240 Greenwich Street
New York, New York 10286
(Address of principal executive offices) (Zip Code)
Registrant's telephone number, including area code -- (212) 495-1784

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, $0.01 par value	New York Stock Exchange
Depositary Shares, each representing 1/4,000th of a share of Series C Noncumulative Perpetual Preferred Stock	New York Stock Exchange
6.244% Fixed-to-Floating Rate Normal Preferred Capital Securities of Mellon Capital IV (Fully and unconditionally guaranteed by The Bank of New York Mellon Corporation)	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:

Title of class
None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☑ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☑

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☑ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☑

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☑	Accelerated filer ☐
Non-accelerated filer ☐	Smaller reporting company ☐
	Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☑

As of June 30, 2018, the aggregate market value of the registrant's common stock, $0.01 par value per share, held by nonaffiliates of the registrant was $53,885,206,227.

As of January 31, 2019, 954,548,741 shares of the registrant's common stock, $0.01 par value per share, were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the following documents are incorporated by reference in the following parts of this Form 10-K:

The Bank of New York Mellon Corporation 2019 Proxy Statement-Part III
The Bank of New York Mellon Corporation 2018 Annual Report to Shareholders-Parts I, II and IV

Available Information

This Form 10-K filed by The Bank of New York Mellon Corporation ("BNY Mellon" or the "Company") with the Securities and Exchange Commission (the "SEC") contains the Exhibits listed on the Index to Exhibits beginning on page 15, including those portions of BNY Mellon's 2018 Annual Report to Shareholders (the "Annual Report"), which are incorporated herein by reference. The Annual Report and BNY Mellon's Proxy Statement for its 2019 Annual Meeting (the "Proxy") will be available on our website at www.bnymellon.com. We also make available on our website, free of charge, the following materials:

- All of our SEC filings, including annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to these reports as soon as reasonably practicable after we electronically file such materials with, or furnish them to, the SEC pursuant to Section 13(a) of the U.S. Securities Exchange Act of 1934, as amended (the "Exchange Act"), and any proxy statement mailed by us in connection with the solicitation of proxies;
- Financial statements and footnotes prepared using eXtensible Business Reporting Language ("XBRL");
- Our earnings materials and selected management conference calls and presentations;
- Other regulatory disclosures, including: Pillar 3 Disclosures (and Market Risk Disclosure contained therein); Liquidity Coverage Ratio Disclosures; Federal Financial Institutions Examination Council - Consolidated Reports of Condition and Income for a Bank With Domestic and Foreign Offices; Consolidated Financial Statements for Bank Holding Companies; and the Dodd-Frank Act Stress Test Results for BNY Mellon and The Bank of New York Mellon; and
- Our Corporate Governance Guidelines, Amended and Restated By-laws, Directors Code of Conduct and the Charters of the Audit, Finance, Corporate Governance, Nominating and Social Responsibility, Human Resources and Compensation, Risk and Technology Committees of our Board of Directors.

The contents of BNY Mellon's website or any other websites referenced herein are not part of this Form 10-K.

Forward-looking Statements

In this Form 10-K, and other public disclosures of BNY Mellon, words such as "estimate," "forecast," "project," "anticipate," "likely," "target," "expect," "intend," "continue," "seek," "believe," "plan," "goal," "could," "should," "would," "may," "might," "will," "strategy," "synergies," "opportunities," "trends," "future" and words of similar meaning signify forward-looking statements. Some statements in this document are forward-looking. These include all statements about the usefulness of Non-GAAP measures, the future results of BNY Mellon, our businesses, financial, liquidity and capital condition, results of operations, liquidity, risk and capital management and processes, goals, strategies, outlook, objectives, expectations (including those regarding our performance results, expenses, nonperforming assets, seasonality in our businesses, impacts of currency fluctuations, impacts of trends on our businesses, regulatory, technology, market, economic or accounting developments, legal proceedings and other contingencies), effective tax rate, estimates (including those regarding expenses, losses inherent in our credit portfolios, capital ratios and the tax benefit related to U.S. tax legislation), intentions (including those regarding our capital returns and investment in technology), targets, opportunities, growth and initiatives.

These forward-looking statements, and other forward-looking statements contained in other public disclosures of BNY Mellon (including those incorporated into this Form 10-K), are based on assumptions that involve risks and uncertainties and that are subject to change based on various important factors (some of which are beyond BNY Mellon's control), including those factors described in the Annual Report under "Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") – Risk Factors." Actual results may differ materially from those expressed or implied as a result of a number of factors, including those discussed in the "Risk Factors" section of our Annual Report, such as:

- a communications or technology disruption or failure that results in a loss of information, delays our ability to access information or impacts our ability to provide services to our clients may materially adversely affect our business, financial condition and results of operations;

- a cybersecurity incident, or a failure to protect our computer systems, networks and information and our clients' information against cybersecurity threats, could result in the theft, loss, unauthorized access to, disclosure, use or alteration of information, system or network failures, or loss of access to information; any such incident or failure could adversely impact our ability to conduct our businesses, damage our reputation and cause losses;
- our business may be materially adversely affected by operational risk;
- our risk management framework may not be effective in mitigating risk and reducing the potential for losses;
- we are subject to extensive government rulemaking, regulation and supervision; these rules and regulations have, and in the future may, compel us to change how we manage our businesses, which could have a material adverse effect on our business, financial condition and results of operations; in addition, these rules and regulations have increased our compliance and operational risk and costs;
- regulatory or enforcement actions or litigation could materially adversely affect our results of operations or harm our businesses or reputation;
- our businesses may be negatively affected by adverse events, publicity, government scrutiny or other reputational harm;
- failure to satisfy regulatory standards, including "well capitalized" and "well managed" status or capital adequacy and liquidity rules more generally, could result in limitations on our activities and adversely affect our business and financial condition;
- a failure or circumvention of our controls and procedures could have a material adverse effect on our business, reputation, results of operations and financial condition;
- the application of our Title I preferred resolution strategy or resolution under the Title II orderly liquidation authority could adversely affect the Parent's liquidity and financial condition and the Parent's security holders;
- if our resolution plan is determined not to be credible or not to facilitate an orderly resolution under the U.S. Bankruptcy Code, our business, reputation, results of operations and financial condition could be materially negatively impacted;
- acts of terrorism, impacts from climate change, natural disasters, pandemics, global conflicts and other geopolitical events may have a negative impact on our business and operations;
- we are dependent on fee-based business for a substantial majority of our revenue and our fee-based revenues could be adversely affected by slowing in market activity, weak financial markets, underperformance and/or negative trends in savings rates or in investment preferences;
- weakness and volatility in financial markets and the economy generally may materially adversely affect our business, results of operations and financial condition;
- transitions away from, or changes in the calculation of, LIBOR and other benchmark rates could adversely impact our business and results of operations;
- the United Kingdom's referendum decision to leave the EU has had and may continue to have negative effects on global economic conditions, global financial markets, and our business and results of operations;
- changes in interest rates and yield curves could have a material adverse effect on our profitability;
- we may experience write-downs of securities that we own and other losses related to volatile and illiquid market conditions, reducing our earnings and impacting our financial condition;
- our FX revenue may be adversely affected by decreases in market volatility and the cross-border investment activity of our clients;
- the failure or perceived weakness of any of our significant counterparties, many of whom are major financial institutions and sovereign entities, and our assumption of credit and counterparty risk, could expose us to loss and adversely affect our business;
- our business, financial condition and results of operations could be adversely affected if we do not effectively manage our liquidity;
- we could incur losses if our allowance for credit losses, including loan and lending-related commitments reserves, is inadequate;
- any material reduction in our credit ratings or the credit ratings of our principal bank subsidiaries, The Bank of New York Mellon or BNY Mellon, N.A., could increase the cost of funding and borrowing to us and our rated subsidiaries and have a material adverse effect on our results of operations and financial condition and on the value of the securities we issue;

- new lines of business, new products and services or transformational or strategic project initiatives may subject us to additional risks, and the failure to implement these initiatives could affect our results of operations;
- we are subject to competition in all aspects of our business, which could negatively affect our ability to maintain or increase our profitability;
- our business may be adversely affected if we are unable to attract and retain employees;
- our strategic transactions present risks and uncertainties and could have an adverse effect on our business, results of operations and financial condition;
- tax law changes or challenges to our tax positions with respect to historical transactions may adversely affect our net income, effective tax rate and our overall results of operations and financial condition;
- our ability to return capital to shareholders is subject to the discretion of our Board of Directors and may be limited by U.S. banking laws and regulations, including those governing capital and the approval of our capital plan, applicable provisions of Delaware law or our failure to pay full and timely dividends on our preferred stock;
- the Parent is a non-operating holding company, and as a result, is dependent on dividends from its subsidiaries and extensions of credit from its IHC to meet its obligations, including with respect to its securities, and to provide funds for share repurchases and payment of dividends to its stockholders; and,
- changes in accounting standards governing the preparation of our financial statements and future events could have a material impact on our reported financial condition, results of operations, cash flows and other financial data.

All forward-looking statements speak only as of the date on which such statements are made, and BNY Mellon undertakes no obligation to update any statement to reflect events or circumstances after the date on which such forward-looking statement is made or to reflect the occurrence of unanticipated events. The contents of BNY Mellon's website or any other websites referenced herein are not part of this report.

THE BANK OF NEW YORK MELLON CORPORATION

FORM 10-K INDEX

ITEM 1. BUSINESS

Description of Business

The Bank of New York Mellon Corporation, a Delaware corporation (NYSE symbol: BK), is a global company headquartered in New York, New York, with $33.1 trillion in assets under custody and/or administration and $1.7 trillion in assets under management as of Dec. 31, 2018. With its subsidiaries, BNY Mellon has been in business since 1784.

We divide our businesses into two business segments, Investment Services and Investment Management. We also have an Other segment, which includes the leasing portfolio, corporate treasury activities (including our investment securities portfolio), derivatives and other trading activity, corporate and bank-owned life insurance, renewable energy investments and business exits.

For a further discussion of BNY Mellon's products and services, see the "Overview," "Summary of financial highlights," "Fee and other revenue," "Review of businesses" and "International operations" sections in the MD&A section in the Annual Report and Notes 23 and 24 of the Notes to Consolidated Financial Statements in the Annual Report, of which portions are incorporated herein by reference. See the "Available Information" section on page 1 of this Form 10-K, which is incorporated herein by reference, for a description of how to access financial and other information regarding BNY Mellon.

Our two principal U.S. banking subsidiaries engage in trust and custody activities, investment management services, banking services and various securities-related activities. Our two principal U.S. banking subsidiaries are:

- The Bank of New York Mellon, a New York state-chartered bank, which houses our Investment Services businesses, including Asset Servicing, Issuer Services, Treasury Services, Clearance and Collateral Management, as well as the bank-advised business of Asset Management; and
- BNY Mellon, National Association ("BNY Mellon, N.A."), a national bank, which houses our Wealth Management business.

We have four other U.S. bank and/or trust company subsidiaries concentrating on trust products and services across the United States: The Bank of New York Mellon Trust Company, National Association, BNY Mellon Trust of Delaware, BNY Mellon Investment Servicing Trust Company and BNY Mellon Trust Company of Illinois. Most of our asset management businesses, along with our Pershing businesses, are direct or indirect non-bank subsidiaries of BNY Mellon.

Each of our bank and trust company subsidiaries is subject to regulation by the applicable bank regulatory authority. The deposits of our U.S. banking subsidiaries are insured by the Federal Deposit Insurance Corporation to the extent provided by law.

BNY Mellon's banking subsidiaries outside the United States are subject to regulation by non-U.S. regulatory authorities in addition to the Board of Governors of the Federal Reserve System (the "Federal Reserve"). The Bank of New York Mellon SA/NV ("BNY Mellon SA/NV") is the main banking subsidiary of The Bank of New York Mellon in continental Europe. It is authorized and regulated as a credit institution by the National Bank of Belgium and is also supervised by the European Central Bank. BNY Mellon SA/NV has its principal office in Brussels and branches in Amsterdam, the Netherlands; Dublin, Ireland; Frankfurt, Germany; London, England; the City of Luxembourg, Luxembourg; and Paris, France. BNY Mellon SA/NV's activities are in the Investment Services segment of BNY Mellon with a focus on global custody, asset servicing and collateral management. For additional discussion, see the "MD&A – Supervision and Regulation" section in the Annual Report.

Primary Subsidiaries

Exhibit 21.1 to this Form 10-K presents a list of BNY Mellon's primary subsidiaries as of Dec. 31, 2018.

Supervision and Regulation

Information on the supervision and regulation of BNY Mellon can be found in the "MD&A – Supervision and Regulation" section in the Annual Report, which is incorporated herein by reference.

Competition

BNY Mellon is subject to competition in all aspects and areas of our business. Our Investment Services business competes with domestic and international financial services firms that offer custody services, corporate trust services, clearing services, collateral management services, credit services, securities brokerage, foreign exchange services, derivatives, depositary receipt services and cash management services and related products, as well as a wide range of technology service providers, such as financial services data processing firms. Our Investment Management business competes with domestic and international asset management firms, hedge funds, investment banking companies and other financial services companies, including trust banks, brokerage firms, and insurance companies, as well as a wide range of technology service providers. Competition is based on a number of factors including, among others, customer service, quality and range of products and services offered, technological innovation and expertise, price, reputation, rates, lending limits and customer convenience.

Many of our competitors, with the particular exception of financial holding companies, banks and trust companies, are not subject to regulation as extensive as that described under the "MD&A — Supervision and Regulation" section in the Annual Report and, as a result, may have a competitive advantage over us and our subsidiaries in certain respects.

Many broad-based financial services firms have the ability to offer a wide range of products, from loans, deposit-taking and insurance to brokerage and asset management, which may enhance their competitive position.

We also face intense competition in attracting and retaining qualified employees, and must compete with institutions whose compensatory arrangements are not subject to the same regulatory and supervisory frameworks that apply to us. For further discussion see "MD&A — Risk Factors – Our business may be adversely affected if we are unable to attract and retain employees" in the Annual Report, which is incorporated herein by reference.

As part of our business strategy, we seek to distinguish ourselves from competitors by the level of service we deliver to our clients. We also believe that technological innovation is an important competitive factor, and, for this reason, have made and continue to make substantial investments in this area.

The ability to maintain operations during unexpected events and to recover quickly from unexpected events is a competitive factor. We continue to evaluate and strengthen our business continuity and operational resiliency capabilities and have increased our investments in technology to steadily enhance those capabilities, including our ability to resume and sustain our operations.

For additional discussion regarding competition, see "MD&A — Risk Factors – We are subject to competition in all aspects of our business, which could negatively affect our ability to maintain or increase our profitability" in the Annual Report, which is incorporated herein by reference.

Employees

At Dec. 31, 2018, BNY Mellon and its subsidiaries had approximately 51,300 full-time employees.

Statistical Disclosures by Bank Holding Companies

I. Distribution of Assets, Liabilities and Stockholders' Equity; Interest Rates and Interest Differential

Information required by this section of Guide 3 is presented in the Annual Report in the "Net interest revenue" and "Supplemental Information (unaudited) – Rate/volume analysis" sections in the MD&A and in Note 10 of the Notes to Consolidated Financial Statements, which portions are incorporated herein by reference.

II. Securities Portfolio

A. Book Value of Securities;
B. Maturity Distribution and Yields of Securities; and
C. Aggregate Book Value and Market Value of Securities Where Issuer Exceeds 10% of Stockholders' Equity

Information required by these sections of Guide 3 is presented in the Annual Report in the "Net interest revenue" and "Consolidated balance sheet review – Securities" sections in the MD&A and in Notes 1 and 4 of the Notes to Consolidated Financial Statements, which portions are incorporated herein by reference.

III. Loan Portfolio

A. Types of Loans; and
B. Maturities and Sensitivities of Loans to Changes in Interest Rates

Information required by these sections of Guide 3 is presented in the Annual Report in the "Consolidated balance sheet review – Loans" section in the MD&A and Notes 1 and 5 of the Notes to Consolidated Financial Statements, which portions are incorporated herein by reference.

C. Risk Elements; and
D. Other Interest-bearing Assets

Information required by these sections of Guide 3 is included in the Annual Report in the "Consolidated balance sheet review – Loans" and "– Nonperforming assets" and "International operations – Country risk exposure" and "– Cross-border outstandings" sections in the MD&A and Notes 1 and 5 of the Notes to Consolidated Financial Statements, which portions are incorporated herein by reference.

IV. Summary of Loan Loss Experience

Information required by this section of Guide 3 is included in the Annual Report in the "Critical accounting estimates – Allowance for loan losses and allowance for lending-related commitments" section in the MD&A, which portion is incorporated herein by reference, and below.

When losses on specific loans are identified, the portion deemed uncollectible is charged off. The allocation of the reserve for credit losses is presented in the "Consolidated balance sheet review – Asset quality and allowance for credit losses" section in the MD&A, as required by Guide 3, which is incorporated herein by reference.

Further information on our credit policies, the factors that influenced management's judgment in determining the level of the reserve for credit exposure, and the analyses of the reserve for credit exposure are set forth in the Annual Report in the "Risk Management – Credit risk" and "Critical accounting estimates" sections in the MD&A and Notes 1 and 5 of the Notes to Consolidated Financial Statements, which portions are incorporated herein by reference.

V. Deposits

Information required by this section of Guide 3 is set forth in the Annual Report in the "Net interest revenue" and "Consolidated balance sheet review – Deposits" sections in the MD&A and in Note 8 of the Notes to Consolidated Financial Statements, which portions are incorporated herein by reference.

VI. Return on Equity and Assets

Information required by this section of Guide 3 is set forth in the Annual Report in the "Financial Summary" section, which is incorporated herein by reference.

VII. Short-Term Borrowings

Information required by this section of Guide 3 is set forth in the Annual Report in the “Consolidated balance sheet review – Short-term borrowings” section in the MD&A, which portion is incorporated herein by reference.

ITEM 1A. RISK FACTORS

The information required by this Item is set forth in the Annual Report under “MD&A – Risk Factors,” which portion is incorporated herein by reference.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We believe that our owned and leased facilities are suitable and adequate for our business needs. At a number of the locations described below, we are not currently occupying all of the space under our control. Where commercially reasonable and to the extent it is not needed for future expansion, we seek to sell, lease or sublease this excess space. The following is a description of our principal properties, which are utilized by all of our business segments, as of Dec. 31, 2018:

New York area properties
We own our 23-story building located at 240 Greenwich Street in downtown Manhattan that serves as our corporate headquarters. We lease approximately 325,000 square feet of space in an office building located at 225 Liberty Street in downtown Manhattan, virtually all of which has been sublet to a third party as of Jan. 1, 2019. In addition, we lease approximately 272,000 square feet of space at 200 Park Avenue, approximately 318,000 square feet of space in Brooklyn and approximately 485,000 square feet of space in Jersey City.

Pittsburgh properties
We lease under a long-term, triple net lease the entire 54-story office building at BNY Mellon Center, 500 Grant Street. In addition, we own a 14-story office building located at 500 Ross Street.

Boston area properties
We lease approximately 226,000 square feet of space located at One Boston Place, 201 Washington Street. Additionally, we lease approximately 384,000 square feet of space in Everett, Massachusetts and approximately 304,000 square feet of space in Westborough, Massachusetts.

United Kingdom properties
We have a number of leased office locations in London (including approximately 234,000 square feet of space at BNY Mellon Centre at 160-162 Queen Victoria Street and approximately 152,000 square feet of space at The Tower at One Canada Square at Canary Wharf), and leased space totaling 144,000 square feet in Manchester. We have other leased office locations throughout the United Kingdom, including locations in Poole, Leeds, Liverpool and Edinburgh.

Poland properties
We lease approximately 234,000 square feet of space in Wroclaw, Poland.

India properties
We lease approximately 828,000 square feet of space in Pune, India and approximately 827,000 square feet of space in Chennai, India.

Other properties
We also lease (and in a few instances own) office space and other facilities at numerous other locations globally, including properties located in New York, New Jersey, Connecticut, Pennsylvania, Massachusetts, Florida, Delaware, Texas, California, Illinois, Washington and Tennessee; Brussels, Belgium; Toronto, Canada; Wexford, Dublin and Cork, Ireland; Luxembourg; Frankfurt, Germany; Singapore; Hong Kong and Shanghai, China; Seoul, Korea; Tokyo, Japan; Sydney, Australia; and Rio de Janeiro, Brazil.

ITEM 3. LEGAL PROCEEDINGS

The information required by this Item is set forth in the “Legal proceedings” section in Note 21 of the Notes to Consolidated Financial Statements in the Annual Report, which portion is incorporated herein by reference.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is listed on the New York Stock Exchange under the ticker symbol BK. Certain of our depositary shares, each representing 1/4,000th interest in a share of our Series C noncumulative perpetual preferred stock, are listed on the New York Stock Exchange under the ticker symbol BK PrC. Mellon Capital IV's 6.244% Fixed-to-Floating Rate Normal Preferred Capital Securities are also listed on the New York Stock Exchange under the ticker symbol BK/P. Information relating to the closing price per share of our common stock and our common stock dividend for each full quarterly period during fiscal years 2017 and 2018 is set forth in the "Selected Quarterly Data" section in the Annual Report, which is incorporated herein by reference. As of Jan. 31, 2019, there were 27,700 holders of record of our common stock.

For additional information about dividends and a discussion of potential regulatory limitations on our receipt of funds from our regulated subsidiaries and our payment of dividends to stockholders, see the "Liquidity and dividends" and "Supervision and Regulation – Capital Planning and Stress Testing – Payment of Dividends, Stock Repurchases and Other Capital Distributions" sections in the MD&A in the Annual Report and Notes 14 and 18 of the Notes to Consolidated Financial Statements in the Annual Report, which portions are incorporated herein by reference.

Additional information about our common stock, including information about share repurchases during the fourth quarter of 2018 and existing Board of Directors authorizations with respect to purchases by us of our common stock and other equity securities is provided in the "Capital – Issuer purchases of equity securities" section of the MD&A in the Annual Report and Note 14 of the Notes to Consolidated Financial Statements in the Annual Report, which portions are incorporated herein by reference. Share repurchases may be executed through open market repurchases, in privately negotiated transactions or by other means, including through repurchase plans designed to comply with Rule 10b5-1 and other derivative, accelerated share repurchase and other structured transactions.

ITEM 6. SELECTED FINANCIAL DATA

The information required by this Item is set forth in the "Financial Summary" section and the "Summary of financial highlights" section in the MD&A in the Annual Report and Notes 1, 2 and 3 of the Notes to Consolidated Financial Statements in the Annual Report, which portions are incorporated herein by reference.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The information required by this Item is set forth in the MD&A and Notes 3, 11, 13, 18, 21 and 22 of the Notes to Consolidated Financial Statements in the Annual Report, which portions are incorporated herein by reference.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The information required by this Item is set forth in the "Critical accounting estimates," "Off-balance sheet arrangements," "Risk Management," "Trading activities and risk management" and "Asset/liability management" sections in the MD&A in the Annual Report and "Derivative financial instruments" under Note 1 and Notes 19, 21 and 22 of the Notes to Consolidated Financial Statements in the Annual Report, which portions are incorporated herein by reference.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Reference is made to Item 15 on page 14 hereof for a detailed listing of the items under Exhibits and Financial Statements, which are incorporated herein by reference.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management, including the Chief Executive Officer and Chief Financial Officer, with participation by the members of the Disclosure Committee, has responsibility for ensuring that there is an adequate and effective process for establishing, maintaining, and evaluating disclosure controls and procedures that are designed to ensure that information required to be disclosed by us in our SEC reports is timely recorded, processed, summarized and reported and that information required to be disclosed by BNY Mellon is accumulated and communicated to BNY Mellon's management to allow timely decisions regarding the required disclosure. In addition, our ethics hotline can be used by employees and others for the anonymous communication of concerns about financial controls or reporting matters. There are inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures. Accordingly, even effective disclosure controls and procedures can only provide reasonable assurance of achieving their control objectives.

As of Dec. 31, 2018, an evaluation was carried out under the supervision and with the participation of our management, including the Chief Executive Officer and Chief Financial Officer, of the effectiveness of our disclosure controls and procedures as defined in Exchange Act Rule 13a-15(e). Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective.

Changes in Internal Control over Financial Reporting

In the ordinary course of business, we may routinely modify, upgrade or enhance our internal controls and procedures for financial reporting. There have not been any changes in our internal controls over financial reporting as defined in Rule 13a-15(f) of the Exchange Act during the fourth quarter of 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management Report on Internal Control over Financial Reporting and Report of Independent Registered Public Accounting Firm

See "Report of Management on Internal Control Over Financial Reporting" and "Report of Independent Registered Public Accounting Firm" on pages 116 and 117 of the Annual Report, each of which is incorporated herein by reference.

ITEM 9B. OTHER INFORMATION

Not applicable.

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item is included below and in the Proxy in the following sections: "Section 16(a) Beneficial Ownership Reporting Compliance" under the heading "Additional Information - Information on Stock Ownership;" "Background" under the heading "Item 1 - Election of Directors - Resolution;" "Nominees" under the heading "Item 1 - Election of Directors;" and "Board Meetings and Committee Information - Committees and Committee Charters" and "- Audit Committee" under the heading "Item 1 - Election of Directors - Corporate Governance and Board Information," which are incorporated herein by reference.

CODE OF ETHICS

We have adopted a code of ethics for our employees which we refer to as our Code of Conduct. The Code of Conduct applies to all employees of BNY Mellon or an entity that is more than 50% owned by us, including our Chief Executive Officer (principal executive officer), Chief Financial Officer (principal financial officer) and Controller (principal accounting officer). The Code of Conduct is posted on our website at www.bnymellon.com/ethics/codeofconduct.pdf. We also have a code of ethics for our directors, which we refer to as our Directors' Code of Conduct. The Directors' Code of Conduct applies to all directors of BNY Mellon. The Directors' Code of Conduct is posted on our website at www.bnymellon.com/governance/directorscodeofconduct.pdf. We intend to disclose on our website any amendments to or waivers of the Code of Conduct relating to executive officers (including the officers specified above) and will disclose any amendments to or waivers of the Directors' Code of Conduct relating to our directors.

EXECUTIVE OFFICERS OF THE REGISTRANT

The positions of Chairman of the Board, Chief Executive Officer and President are each held for the year for which the Board of Directors was elected and until the appointment and qualification of a successor or until earlier death, resignation, disqualification or removal. All other executive officers serve at the pleasure of the appointing authority. No executive officer has a family relationship to any other executive officer or director or nominee for director.

Name	Age	Positions and offices
Bridget E. Engle	55	Ms. Engle has served as Senior Executive Vice President and Chief Information Officer of BNY Mellon since June 2017. From April 2015 to March 2017, Ms. Engle served as Bank of America Corporation's Chief Information Officer for Global Commercial Banking and Markets Technology. From 2011 to April 2015, Ms. Engle was Bank of America's Chief Information Officer for Consumer Banking.
Thomas P. (Todd) Gibbons	62	Mr. Gibbons has served as Vice Chairman and Chief Executive Officer of Clearing, Markets and Client Management of BNY Mellon since January 2018 and was Vice Chairman and Chief Financial Officer of BNY Mellon from July 2008 to January 2018.
Mitchell E. Harris	64	Mr. Harris has served as Senior Executive Vice President and Chief Executive Officer of Investment Management of BNY Mellon since February 2016 and was President of Investment Management from May 2011 to February 2016.
Monique R. Herena	48	Ms. Herena has served as Senior Executive Vice President and Chief Human Resources Officer of BNY Mellon since April 2014. From 2013 to April 2014, Ms. Herena served as Senior Vice President Human Resources and Chief Human Resources Officer Global Groups, Functions and Corporate for PepsiCo Inc.
Hani A. Kablawi	50	Mr. Kablawi has served as Senior Executive Vice President and Chairman of EMEA and Chief Executive Officer of Global Asset Servicing of BNY Mellon since January 2018 and was Chief Executive Officer of EMEA Investment Services from July 2016 to January 2018. Mr. Kablawi previously served as Chief Executive Officer of EMEA Asset Servicing from January 2012 to July 2016.

Name	Age	Positions and offices
Kurtis R. Kurimsky	45	Mr. Kurimsky has served as Vice President and Controller of BNY Mellon since July 2015 and was Acting Controller from February 2015 to July 2015. Mr. Kurimsky previously served as Deputy Controller of BNY Mellon from May 2014 to February 2015. From October 2006 to April 2014, Mr. Kurimsky served as a partner in the Financial Services Practice at KPMG LLP.
Francis (Frank) La Salla	55	Mr. La Salla has served as Senior Executive Vice President and Chief Executive Officer of Issuer Services of BNY Mellon since January 2018 and was Chief Executive Officer of Corporate Trust from May 2017 to January 2018. Mr. La Salla previously served as Chief Executive Officer of Global Structured Products and Alternative Investment Services from March 2014 to May 2017. From May 2003 to March 2014, Mr. La Salla was Managing Director at Pershing LLC, a wholly-owned subsidiary of BNY Mellon, where he was Co-Head of Global Client Relationships and Head of Trading Services.
J. Kevin McCarthy	54	Mr. McCarthy has served as Senior Executive Vice President and General Counsel of BNY Mellon since April 2014 and was Senior Deputy General Counsel, with oversight of the legal teams supporting BNY Mellon's Litigation, Enforcement, Employment Law, Asset Servicing and corporate center functions, from August 2013 to April 2014. From September 2010 to August 2013, Mr. McCarthy served as Deputy General Counsel for the Litigation, Enforcement and Employment Law functions at BNY Mellon.
Lester J. Owens	61	Mr. Owens has served as Senior Executive Vice President and Head of Operations of BNY Mellon since February 2019. From 2007 to December 2018, Mr. Owens served as managing director responsible for Wholesale Banking Operations at JPMorgan Chase & Co., with additional responsibility for Corporate & Investment Bank Client Onboarding from 2017 through 2018.
Roman Regelman	47	Mr. Regelman has served as Senior Executive Vice President and Head of Digital of BNY Mellon since September 2018. From 2011 to August 2018, Mr. Regelman was partner, managing director and co-leader of the financial institutions digital business at Boston Consulting Group.
Michael P. Santomassimo	43	Mr. Santomassimo has served as Senior Executive Vice President and Chief Financial Officer of BNY Mellon since January 2018 and was Chief Financial Officer of Investment Services from July 2016 to January 2018. Mr. Santomassimo served as Chief Financial Officer, Banking, at JPMorgan Chase & Co., which included Investment Banking (Advisory and Equity and Debt Capital Markets) as well as Treasury Services from December 2013 to June 2016 and Chief Financial Officer, Technology & Operations, for the same division at JPMorgan Chase & Co. from December 2012 to December 2013.
Charles W. Scharf	53	Mr. Scharf has served as a director and Chief Executive Officer of BNY Mellon since July 2017. In January 2018, Mr. Scharf became Chairman of BNY Mellon. From October 2012 through December 2016, Mr. Scharf served as director and Chief Executive Officer of Visa Inc.
Akash Shah	33	Mr. Shah has served as Senior Executive Vice President and Head of Strategy of BNY Mellon since July 2018. From 2006 to July 2018, Mr. Shah worked at McKinsey & Company, mostly recently as a partner and co-head the Capital Markets & Investment Banking practice.
James S. Wiener	51	Mr. Wiener has served as Senior Executive Vice President and Chief Risk Officer of BNY Mellon since November 2014. Mr. Wiener served as a senior partner at Oliver Wyman Group from 2003 to November 2014.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item is included in the Proxy in the following sections: "Director Compensation" under the heading "Item 1 - Election of Directors;" "Compensation Discussion and Analysis" and "Executive Compensation Tables and Other Compensation Disclosure" under the heading "Item 2 - Advisory Vote on Compensation;" "Board Meetings and Committee Information - Committees and Committee Charters" and "- Human Resources and Compensation Committee" under the heading "Item 1 - Election of Directors - Corporate Governance and Board Information," which are incorporated herein by reference. The information incorporated herein by reference to the section "Report of the HRC Committee" under the heading "Item 2 - Advisory Vote on Compensation - Compensation Discussion and Analysis" is deemed furnished hereunder.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this Item is included in the Proxy in the following sections: "Equity Compensation Plans" and "Information on Stock Ownership" under the heading "Additional Information," which are incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this Item is included in the Proxy in the following sections: "Business Relationships and Related Party Transactions Policy" under the heading "Additional Information - Other Information;" "Director Independence" under the heading "Item 1 - Election of Directors - Corporate Governance and Board Information;" and "Board Meetings and Committee Information - Committees and Committee Charters," "- Audit Committee," "- Corporate Governance, Nominating and Social Responsibility Committee" and "- Human Resources and Compensation Committee" under the heading "Item 1 - Election of Directors - Corporate Governance and Board Information," which are incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this Item is included in the Proxy in the following section: "Item 3 – Ratification of KPMG LLP," which is incorporated herein by reference.

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The financial statements, schedules and exhibits required for this Form 10-K are incorporated by reference as indicated in the following index. Page numbers refer to pages of the Annual Report for Items (1) and (2) Financial Statements and Schedules.

(1)(2)	Financial Statements and Schedules	Page No.
	Consolidated Income Statement	119-120
	Consolidated Comprehensive Income Statement	121
	Consolidated Balance Sheet	122
	Consolidated Statement of Cash Flows	123
	Consolidated Statement of Changes in Equity	124-125
	Notes to Consolidated Financial Statements	126-198
	Report of Independent Registered Public Accounting Firm	199
	Selected Quarterly Data (unaudited)	108

(3) Exhibits

See (b) below.

(b) The exhibits listed on the Index to Exhibits on pages 15 through 22 hereof are incorporated by reference or filed or furnished herewith in response to this Item.

(c) Other Financial Data

None.

ITEM 16. FORM 10-K SUMMARY

None.

Pursuant to the rules and regulations of the SEC, BNY Mellon has filed certain agreements as exhibits to this Form 10-K. These agreements may contain representations and warranties by the parties to such agreements. These representations and warranties have been made solely for the benefit of the other party or parties to such agreements and (i) may have been qualified by disclosures made to such other party or parties, (ii) were made only as of the date of such agreements or such other date(s) as may be specified in such agreements and are subject to more recent developments, which may not be fully reflected in BNY Mellon's public disclosure, (iii) may reflect the allocation of risk among the parties to such agreements and (iv) may apply materiality standards that are different from what may be viewed as material to investors. Accordingly, these representations and warranties may not describe BNY Mellon's actual state of affairs at the date hereof and should not be relied upon.

Exhibit	Description	Method of Filing
3.1	Restated Certificate of Incorporation of The Bank of New York Mellon Corporation.	Previously filed as Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 000-52710) as filed with the Commission on July 2, 2007, and incorporated herein by reference.
3.2	Certificate of Designations of The Bank of New York Mellon Corporation with respect to Series A Noncumulative Preferred Stock, dated June 15, 2007.	Previously filed as Exhibit 4.1 to the Company's Current Report on Form 8-K (File No. 000-52710) as filed with the Commission on July 5, 2007, and incorporated herein by reference.
3.3	Certificate of Designations of The Bank of New York Mellon Corporation with respect to Series C Noncumulative Perpetual Preferred Stock, dated Sept. 13, 2012.	Previously filed as Exhibit 3.2 to the Company's Registration Statement on Form 8-A12B (File No. 001-35651) as filed with the Commission on Sept. 14, 2012, and incorporated herein by reference.
3.4	Certificate of Designations of The Bank of New York Mellon Corporation with respect to Series D Noncumulative Perpetual Preferred Stock, dated May 16, 2013.	Previously filed as Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-35651) as filed with the Commission on May 16, 2013, and incorporated herein by reference.
3.5	Certificate of Designations of The Bank of New York Mellon Corporation with respect to Series E Noncumulative Perpetual Preferred Stock, dated April 27, 2015.	Previously filed as Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-35651) as filed with the Commission on April 28, 2015, and incorporated herein by reference.
3.6	Certificate of Designations of The Bank of New York Mellon Corporation with respect to Series F Noncumulative Perpetual Preferred Stock, dated July 29, 2016.	Previously filed as Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-35651) as filed with the Commission on Aug. 1, 2016, and incorporated herein by reference.
3.7	Amended and Restated By-Laws of The Bank of New York Mellon Corporation, as amended and restated on July 10, 2007 and subsequently amended on April 14, 2009, Aug. 11, 2009, Feb. 9, 2010, July 2, 2010, Oct. 12, 2010, Oct. 8, 2013, March 5, 2015, Oct. 13, 2015 and Feb. 12, 2018.	Previously filed as Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-35651) as filed with the Commission on Feb. 13, 2018, and incorporated herein by reference.

Exhibit		Description	Method of Filing
4.1		None of the instruments defining the rights of holders of long-term debt of the Parent or any of its subsidiaries represented long-term debt in excess of 10% of the total assets of the Company as of Dec. 31, 2018. The Company hereby agrees to furnish to the Commission, upon request, a copy of any such instrument.	N/A
10.1	*	The Bank of New York Company, Inc. Excess Contribution Plan as amended through July 10, 1990.	Previously filed as Exhibit 10(b) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1990, and incorporated herein by reference.
10.2	*	Amendments dated Feb. 23, 1994 and Nov. 9, 1993 to The Bank of New York Company, Inc. Excess Contribution Plan.	Previously filed as Exhibit 10(c) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1993, and incorporated herein by reference.
10.3	*	Amendment to The Bank of New York Company, Inc. Excess Contribution Plan dated as of Nov. 1, 1995.	Previously filed as Exhibit 10(e) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1995, and incorporated herein by reference.
10.4	*	Amendment to The Bank of New York Company, Inc. Excess Contribution Plan dated as of Nov. 12, 2002.	Previously filed as Exhibit 10(v) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 2003, and incorporated herein by reference.
10.5	*	Amendment to The Bank of New York Company, Inc. Excess Contribution Plan dated as of Oct. 9, 2006.	Previously filed as Exhibit 10(y) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 2006, and incorporated herein by reference.
10.6	*	The Bank of New York Company, Inc. Excess Benefit Plan as amended through Dec. 8, 1992.	Previously filed as Exhibit 10(d) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1992, and incorporated herein by reference.
10.7	*	Amendment dated as of Aug. 11, 1994 to The Bank of New York Company, Inc. Excess Benefit Plan.	Previously filed as Exhibit 10(g) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1994, and incorporated herein by reference.
10.8	*	Amendment dated as of Nov. 1, 1995 to The Bank of New York Company, Inc. Excess Benefit Plan.	Previously filed as Exhibit 10(i) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1995, and incorporated herein by reference.

Exhibit		Description	Method of Filing
10.9	*	Amendment dated as of July 1, 1996 to The Bank of New York Company, Inc. Excess Benefit Plan.	Previously filed as Exhibit 10(kk) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1999, and incorporated herein by reference.
10.10	*	The Bank of New York Company, Inc. Supplemental Executive Retirement Plan.	Previously filed as Exhibit 10(n) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1992, and incorporated herein by reference.
10.11	*	Amendment dated as of March 9, 1993 to The Bank of New York Company, Inc. Supplemental Executive Retirement Plan.	Previously filed as Exhibit 10(k) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1993, and incorporated herein by reference.
10.12	*	Amendment dated as of Oct. 11, 1994 to The Bank of New York Company, Inc. Supplemental Executive Retirement Plan.	Previously filed as Exhibit 10(o) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1994, and incorporated herein by reference.
10.13	*	Amendment dated as of July 1, 1996 to The Bank of New York Company, Inc. Supplemental Executive Retirement Plan.	Previously filed as Exhibit 10(a) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1996, and incorporated herein by reference.
10.14	*	Amendment dated as of Nov. 12, 1996 to The Bank of New York Company, Inc. Supplemental Executive Retirement Plan.	Previously filed as Exhibit 10(b) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1996, and incorporated herein by reference.
10.15	*	Amendment dated as of July 11, 2000 to The Bank of New York Company, Inc. Supplemental Executive Retirement Plan.	Previously filed as Exhibit 10(e) to The Bank of New York Company, Inc.'s Quarterly Report on Form 10-Q (File No. 001-06152) for the quarter ended Sept. 30, 2000, and incorporated herein by reference.
10.16	*	Amendment dated as of Feb. 13, 2001 to The Bank of New York Company, Inc. Supplemental Executive Retirement Plan.	Previously filed as Exhibit 10(ggg) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 2000, and incorporated herein by reference.
10.17	*	Amendment dated as of Jan. 1, 2006 to The Bank of New York Company, Inc. Supplemental Executive Retirement Plan.	Previously filed as Exhibit 10(yy) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 2005, and incorporated herein by reference.

Exhibit		Description	Method of Filing
10.18	*	Deferred Compensation Plan for Non-Employee Directors of The Bank of New York Company, Inc.	Previously filed as Exhibit 10(s) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1993, and incorporated herein by reference.
10.19	*	Amendment dated as of Nov. 8, 1994 to Deferred Compensation Plan for Non-Employee Directors of The Bank of New York Company, Inc.	Previously filed as Exhibit 10(z) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1994, and incorporated herein by reference.
10.20	*	Amendment dated Feb. 11, 1997 to Deferred Compensation Plan for Non-Employee Directors of The Bank of New York Company, Inc.	Previously filed as Exhibit 10(j) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 1996, and incorporated herein by reference.
10.21	*	Amendment to Deferred Compensation Plan for Non-Employee Directors of The Bank of New York Company, Inc. dated as of July 11, 2000.	Previously filed as Exhibit 10(d) to The Bank of New York Company, Inc.'s Quarterly Report on Form 10-Q (File No. 001-06152) for the quarter ended Sept. 30, 2000, and incorporated herein by reference.
10.22	*	Amendment dated as of Nov. 12, 2002 to Deferred Compensation Plan for Non-Employee Directors of The Bank of New York Company, Inc.	Previously filed as Exhibit 10(yy) to The Bank of New York Company, Inc.'s Annual Report on Form 10-K (File No. 001-06152) for the year ended Dec. 31, 2003, and incorporated herein by reference.
10.23	*	Mellon Financial Corporation Director Equity Plan (2006).	Previously filed as Exhibit A to Mellon Financial Corporation's Proxy Statement (File No. 001-07410) dated March 15, 2006, and incorporated herein by reference.
10.24	*	The Bank of New York Mellon Corporation Deferred Compensation Plan for Directors, effective Jan. 1, 2008.	Previously filed as Exhibit 10.71 to the Company's Annual Report on Form 10-K (File No. 000-52710) for the year ended Dec. 31, 2007, and incorporated herein by reference.
10.25		Lease dated as of Dec. 29, 2004, between 500 Grant Street Associates Limited Partnership and The Bank of New York Mellon with respect to BNY Mellon Center.	Previously filed as Exhibit 99.1 to Mellon Financial Corporation's Annual Report on Form 10-K (File No. 001-07410) for the year ended Dec. 31, 2004, and incorporated herein by reference.
10.26	*	The Bank of New York Mellon Corporation Deferred Compensation Plan for Employees.	Previously filed as Exhibit 4.4 to the Company's Form S-8 (File No. 333-149473) filed on Feb. 29, 2008, and incorporated herein by reference.
10.27	*	Form of Long Term Incentive Plan Deferred Stock Unit Agreement for Directors of The Bank of New York Corporation.	Previously filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 000-52710) for the quarter ended June 30, 2008, and incorporated herein by reference.

Exhibit		Description	Method of Filing
10.28	*	Amendment to The Bank of New York Company, Inc. Supplemental Executive Retirement Plan, dated as of Jan. 1, 2009.	Previously filed as Exhibit 10.156 to the Company's Annual Report on Form 10-K (File No. 000-52710) for the year ended Dec. 31, 2008, and incorporated herein by reference.
10.29	*	Amendment to The Bank of New York Company, Inc. Excess Benefit Plan, dated as of Jan. 1, 2009.	Previously filed as Exhibit 10.158 to the Company's Annual Report on Form 10-K (File No. 000-52710) for the year ended Dec. 31, 2008, and incorporated herein by reference.
10.30	*	Amendment to The Bank of New York Company, Inc. Excess Contribution Plan, dated as of Jan. 1, 2009.	Previously filed as Exhibit 10.159 to the Company's Annual Report on Form 10-K (File No. 000-52710) for the year ended Dec. 31, 2008, and incorporated herein by reference.
10.31	*	The Bank of New York Mellon Corporation Policy Regarding Shareholder Approval of Future Senior Officers Severance Arrangements, adopted July 12, 2010.	Previously filed as Exhibit 99.3 to the Company's Current Report on Form 8-K (File No. 000-52710) as filed with the Commission on July 16, 2010, and incorporated herein by reference.
10.32	*	2011 Form of Executive Stock Option Agreement.	Previously filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q (File No. 000-52710) for the quarter ended March 31, 2011, and incorporated herein by reference.
10.33	*	The Bank of New York Mellon Corporation Long-Term Incentive Plan.	Previously filed as Appendix A to the Company's definitive proxy statement on Schedule 14A (File No. 000-52710) filed on March 11, 2011, and incorporated herein by reference.
10.34	*	Amended and Restated Long-Term Incentive Plan of The Bank of New York Mellon Corporation.	Previously filed as Exhibit A to BNY Mellon's definitive proxy statement on Schedule 14A (File No. 001-35651), filed on March 7, 2014, and incorporated herein by reference.
10.35	*	2012 Form of Nonstatutory Stock Option Agreement.	Previously filed as Exhibit 10.82 to the Company's Annual Report on Form 10-K (File No. 001-35651) for the year ended Dec. 31, 2012, and incorporated herein by reference.
10.36	*	The Bank of New York Mellon Corporation Defined Contribution IRC 401(a)(17) Plan.	Previously filed as Exhibit 10.84 to the Company's Annual Report on Form 10-K (File No. 001-35651) for the year ended Dec. 31, 2012, and incorporated herein by reference.
10.37		Lease agreement by and between The Bank of New York Mellon and WFP Tower Co. L.P., dated June 25, 2014.	Previously filed as Exhibit 10.2 to BNY Mellon's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended June 30, 2014, and incorporated herein by reference.

Exhibit		Description	Method of Filing
10.38	*	Amendment to The Bank of New York Company, Inc. Supplemental Executive Retirement Plan, dated as of Dec. 31, 2014.	Previously filed as Exhibit 10.76 to BNY Mellon's Annual Report on Form 10-K (File No. 001-35651) for the year ended Dec. 31, 2014, and incorporated herein by reference.
10.39	*	2015 Form of Performance Share Unit Agreement.	Previously filed as Exhibit 10.1 to BNY Mellon's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended Sept. 30, 2015, and incorporated herein by reference.
10.40	*	2015 Form of Restricted Stock Unit Agreement.	Previously filed as Exhibit 10.2 to BNY Mellon's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended Sept. 30, 2015, and incorporated herein by reference.
10.41	*	The Bank of New York Mellon Corporation Defined Contribution IRC 401(a)(17) Plan (as amended and restated).	Previously filed as Exhibit 10.69 to the Company's Annual Report on Form 10-K (File No. 001-35651) for the year ended Dec. 31, 2015, and incorporated herein by reference.
10.42	*	Amendment dated as of Dec. 14, 2015 to The Bank of New York Company, Inc. Excess Benefit Plan.	Previously filed as Exhibit 10.70 to the Company's Annual Report on Form 10-K (File No. 001-35651) for the year ended Dec. 31, 2015, and incorporated herein by reference.
10.43	*	The Bank of New York Mellon Corporation Executive Severance Plan (as amended effective Feb. 19, 2016).	Previously filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended March 31, 2016, and incorporated herein by reference.
10.44	*	The Bank of New York Mellon Corporation 2016 Executive Incentive Compensation Plan.	Previously filed as Annex B to the Company's definitive Proxy Statement on Schedule 14A filed on March 11, 2016 and incorporated herein by reference.
10.45	*	Form of Amended and Restated Indemnification Agreement with Directors of The Bank of New York Mellon Corporation.	Previously filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended June 30, 2016, and incorporated herein by reference.
10.46	*	Form of Amended and Restated Indemnification Agreement with Executive Officers of The Bank of New York Mellon Corporation.	Previously filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended June 30, 2016, and incorporated herein by reference.
10.47	*	The Bank of New York Mellon Corporation Executive Severance Plan, as amended.	Previously filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended Sept. 30, 2016, and incorporated herein by reference.
10.48	*	2016 Form of Restricted Stock Unit Agreement.	Previously filed as Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended June 30, 2016, and incorporated herein by reference.

Exhibit		Description	Method of Filing
10.49	*	2016 Form of Performance Share Unit Agreement.	Previously filed as Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended June 30, 2016, and incorporated herein by reference.
10.50	*	Letter Agreement, dated July 13, 2017, between The Bank of New York Mellon Corporation and Charles W. Scharf.	Previously filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-35651) as filed with the Commission on July 17, 2017, and incorporated herein by reference.
10.51	*	2017 Form of Performance Share Unit Agreement.	Previously filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended June 30, 2017, and incorporated herein by reference.
10.52	*	2017 Form of Restricted Stock Unit Agreement.	Previously filed as Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended June 30, 2017, and incorporated herein by reference.
10.53	*	The Bank of New York Mellon Corporation Executive Severance Plan, as amended on Feb. 12, 2018.	Previously filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-35651) as filed with the Commission on Feb. 13, 2018, and incorporated herein by reference.
10.54	*	2018 Form of Performance Share Unit Agreement	Previously filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended June 30, 2018, and incorporated herein by reference.
10.55	*	2018 Form of Restricted Stock Unit Agreement	Previously filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended June 30, 2018, and incorporated herein by reference.
10.56	*	Amendment dated as of Oct. 18, 2018 to The Bank of New York Company, Inc. Excess Benefit Plan	Previously filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 001-35651) for the quarter ended Sept. 30, 2018, and incorporated herein by reference.
13.1		All portions of The Bank of New York Mellon Corporation 2018 Annual Report to Shareholders that are incorporated herein by reference. The remaining portions are furnished for the information of the SEC and are not "filed" as part of this filing.	Filed and furnished herewith.
21.1		Primary subsidiaries of the Company.	Filed herewith.
23.1		Consent of KPMG LLP.	Filed herewith.
24.1		Power of Attorney.	Filed herewith.

Exhibit	Description	Method of Filing
31.1	Certification of the Chief Executive Officer pursuant to Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed herewith.
31.2	Certification of the Chief Financial Officer pursuant to Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed herewith.
32.1	Certification of the Chief Executive Officer pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	Furnished herewith.
32.2	Certification of the Chief Financial Officer pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	Furnished herewith.
101.INS	XBRL Instance Document.	Filed herewith.
101.SCH	XBRL Taxonomy Extension Schema Document.	Filed herewith.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.	Filed herewith.
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.	Filed herewith.
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.	Filed herewith.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.	Filed herewith.

* Management contract or compensatory plan arrangement.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, BNY Mellon has duly caused this Annual Report to be signed on its behalf by the undersigned, thereunto duly authorized.

The Bank of New York Mellon Corporation

By: /s/ Charles W. Scharf
Charles W. Scharf
Chairman and Chief Executive Officer

DATED: February 27, 2019

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report has been signed below by the following persons on behalf of BNY Mellon and in the capacities and on the date indicated.

Signature	Capacities
By: /s/ Charles W. Scharf Charles W. Scharf Chairman and Chief Executive Officer	Director and Principal Executive Officer
By: /s/ Michael P. Santomassimo Michael P. Santomassimo Chief Financial Officer	Principal Financial Officer
By: /s/ Kurtis R. Kurimsky Kurtis R. Kurimsky Corporate Controller	Principal Accounting Officer
Steven D. Black; Linda Z. Cook; Joseph J. Echevarria; Edward P. Garden; Jeffrey A. Goldstein; John M. Hinshaw; Edmund F. Kelly; Jennifer B. Morgan; Mark A. Nordenberg; Elizabeth E. Robinson; Samuel C. Scott III	Directors
By: /s/ J. Kevin McCarthy J. Kevin McCarthy Attorney-in-fact	DATED: February 27, 2019

Exhibit 21.1

THE BANK OF NEW YORK MELLON CORPORATION
PRIMARY SUBSIDIARIES
DEC. 31, 2018

The following are primary subsidiaries of The Bank of New York Mellon Corporation as of Dec. 31, 2018 and the states or jurisdictions in which they are organized. The names of particular subsidiaries have been omitted because, considered in the aggregate as a single subsidiary, they would not constitute, as of Dec. 31, 2018, a “significant subsidiary” as that term is defined in Rule 1-02(w) of Regulation S-X under the Securities Exchange Act of 1934, as amended.

- Alcentra Asset Management Limited - Incorporation: England
- Alcentra Investments Limited - Incorporation: Bermuda
- Alcentra Limited - Incorporation: England
- BNY Alcentra Group Holdings, Inc. - State of Incorporation: Delaware
- BNY Capital Funding LLC – State of Organization: Delaware
- BNY Capital Markets Holdings, Inc. – State of Incorporation: New York
- BNY Capital Resources Corporation – State of Incorporation: New York
- BNY International Financing Corporation – Incorporation: United States
- BNY Lease Equities (Cap Funding) LLC - State of Incorporation: Delaware
- BNY Lease Partners LLC - State of Incorporation: Delaware
- BNY Mellon Asset Management North America Corporation - State of Incorporation: Delaware
- BNY Mellon Capital Markets, LLC – State of Organization: Delaware
- BNY Mellon Fund Managers Limited – Incorporation: England
- BNY Mellon Global Management Limited – Incorporation: Ireland
- BNY Mellon IHC, LLC - State of Organization - Delaware
- BNY Mellon International Asset Management Group Limited – Incorporation: England
- BNY Mellon International Asset Management (Holdings) Limited – Incorporation: England and Wales
- BNY Mellon International Asset Management (Holdings) No. 1 Limited – Incorporation: England and Wales
- BNY Mellon Investment Management APAC LP – Incorporation: England and Wales
- BNY Mellon Investment Management EMEA Limited – Incorporation: England
- BNY Mellon Investment Management Europe Holdings Limited – Incorporation: England
- BNY Mellon Investment Management (Europe) Limited – Incorporation: England
- BNY Mellon Investment Management (Jersey) Limited – Incorporation: Jersey
- BNY Mellon Investment Management Holdings LLC – State or Organization: Delaware
- BNY Mellon Investment Management Seed Capital Limited - Incorporation: England and Wales
- BNY Mellon, National Association – Incorporation: United States
- BNY Mellon Securities Services (Ireland) Limited – Incorporation: Ireland
- BNY Mellon Trust Company (Ireland) Limited – Incorporation: Ireland
- BNY Mellon US Services Holdings LLC – State of Organization: Delaware
- BNY Real Estate Holding LLC - State of Incorporation: Delaware
- Insight Investment Management (Global) Limited – Incorporation: England
- Insight Investment Management (Europe) Limited – Incorporation: Ireland
- Insight Investment Management Limited – Incorporation: England
- MBC Investments Corporation – State of Incorporation: Delaware
- Mellon Canada Holding Company – Incorporation: Canada
- Mellon Overseas Investment Corporation – Incorporation: United States
- Pershing Group LLC – State of Organization: Delaware
- Pershing Holdings (UK) Limited – Incorporation: England
- Pershing Limited – Incorporation: England

PRIMARY SUBSIDIARIES (continued)
DEC. 31, 2018

- Pershing LLC – State of Organization: Delaware
- Pershing Securities Limited – Incorporation: England
- TBC Securities Co., Inc. - State of Incorporation: Massachusetts
- The Bank of New York Mellon – State of Organization: New York
- The Bank of New York Mellon (International) Limited – Incorporation: England
- The Bank of New York Mellon SA/NV – Incorporation: Belgium
- The Bank of New York Mellon Trust Company, National Association - Incorporation: United States
- The Dreyfus Corporation – State of Incorporation: New York
- Walter Scott & Partners Limited – Incorporation: Scotland

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

The Board of Directors
The Bank of New York Mellon Corporation:

We consent to the incorporation by reference in the following registration statements, as amended:

Form	Registration Statement	Filer
S-8	333-198152	The Bank of New York Mellon Corporation
S-8	333-174342	The Bank of New York Mellon Corporation
S-8	333-171258	The Bank of New York Mellon Corporation
S-8	333-150324	The Bank of New York Mellon Corporation
S-8	333-150323	The Bank of New York Mellon Corporation
S-8	333-149473	The Bank of New York Mellon Corporation
S-8	333-144216	The Bank of New York Mellon Corporation
S-3	333-211248	The Bank of New York Mellon Corporation
S-3	333-228787	The Bank of New York Mellon Corporation

of our reports dated February 27, 2019, with respect to the consolidated balance sheets of The Bank of New York Mellon Corporation and subsidiaries (BNY Mellon) as of December 31, 2018 and 2017, and the related consolidated statements of income, comprehensive income, changes in equity, and cash flows, for each of the years in the three-year period ended December 31, 2018, and the related notes (collectively, the consolidated financial statements), and the effectiveness of internal control over financial reporting as of December 31, 2018, which reports appear in the December 31, 2018 Annual Report on Form 10-K of BNY Mellon.

/s/ KPMG LLP

New York, New York
February 27, 2019

Exhibit 24.1

POWER OF ATTORNEY

THE BANK OF NEW YORK MELLON CORPORATION

Know all men by these presents, that each person whose signature appears below constitutes and appoints J. Kevin McCarthy and Kathleen McCabe, and each of them, such person's true and lawful attorney-in-fact and agent, with full power of substitution and revocation, for such person and in such person's name, place and stead, in any and all capacities, to sign one or more Annual Reports on Form 10-K pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, for The Bank of New York Mellon Corporation (the "Corporation") for the year ended December 31, 2018, and any and all amendments thereto, and to file the same with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission and with the New York Stock Exchange, Inc., granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents and each of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

This power of attorney shall be effective as of February 12, 2019 and shall continue in full force and effect until revoked by the undersigned in a writing filed with the secretary of the Corporation.

/s/ Steven D. Black
Steven D. Black, Director

/s/ Linda Z. Cook
Linda Z. Cook, Director

/s/ Joseph J. Echevarria
Joseph J. Echevarria, Director

/s/ Edward P. Garden
Edward P. Garden, Director

/s/ Jeffrey A. Goldstein
Jeffrey A. Goldstein, Director

/s/ John M. Hinshaw
John M. Hinshaw, Director

/s/ Edmund F. Kelly
Edmund F. Kelly, Director

/s/ Jennifer B. Morgan
Jennifer B. Morgan, Director

/s/ Mark A. Nordenberg
Mark A. Nordenberg, Director

/s/ Elizabeth E. Robinson
Elizabeth E. Robinson, Director

/s/ Samuel C. Scott III
Samuel C. Scott III, Director

Exhibit 31.1

CERTIFICATION

I, Charles W. Scharf, certify that:

1. I have reviewed this annual report on Form 10-K of The Bank of New York Mellon Corporation (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 27, 2019

/s/ Charles W. Scharf

Name: Charles W. Scharf
Title: Chief Executive Officer

Exhibit 31.2

CERTIFICATION

I, Michael P. Santomassimo, certify that:

1. I have reviewed this annual report on Form 10-K of The Bank of New York Mellon Corporation (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 27, 2019

/s/ Michael P. Santomassimo

Name: Michael P. Santomassimo
Title: Chief Financial Officer

Exhibit 32.1

CERTIFICATION

Pursuant to 18 U.S.C. Section 1350, the undersigned officer of The Bank of New York Mellon Corporation ("BNY Mellon"), hereby certifies, to his knowledge, that BNY Mellon's Annual Report on Form 10-K for the year ended Dec. 31, 2018 (the "Report") fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of BNY Mellon.

Dated: February 27, 2019

/s/ Charles W. Scharf

Name: Charles W. Scharf

Title: Chief Executive Officer

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of the Report or as a separate disclosure document.

Exhibit 32.2

CERTIFICATION

Pursuant to 18 U.S.C. Section 1350, the undersigned officer of The Bank of New York Mellon Corporation ("BNY Mellon"), hereby certifies, to his knowledge, that BNY Mellon's Annual Report on Form 10-K for the year ended Dec. 31, 2018 (the "Report") fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of BNY Mellon.

Dated: February 27, 2019

/s/ Michael P. Santomassimo
Name: Michael P. Santomassimo
Title: Chief Financial Officer

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of the Report or as a separate disclosure document.

Financial Section

Exhibit 13.1

THE BANK OF NEW YORK MELLON CORPORATION
2018 Annual Report
Table of Contents

The Bank of New York Mellon Corporation (and its subsidiaries)

Financial Summary

(dollar amounts in millions, except per common share amounts and unless otherwise noted)	**2018**	2017	2016	2015	2014
Selected income statement information:					
Fee and other revenue	**$ 12,794**	$ 12,165	$ 12,073	$ 12,082	$ 12,649
(Loss) income from consolidated investment management funds	**(13)**	70	26	86	163
Net interest revenue	**3,611**	3,308	3,138	3,026	2,880
Total revenue	**16,392**	15,543	15,237	15,194	15,692
Provision for credit losses	**(11)**	(24)	(11)	160	(48)
Noninterest expense	**11,211**	10,957	10,523	10,799	12,177
Income before income taxes	**5,192**	4,610	4,725	4,235	3,563
Provision for income taxes	**938**	496	1,177	1,013	912
Net income	**4,254**	4,114	3,548	3,222	2,651
Net loss (income) attributable to noncontrolling interests *(a)*	**12**	(24)	(1)	(64)	(84)
Net income applicable to shareholders of The Bank of New York Mellon Corporation	**4,266**	4,090	3,547	3,158	2,567
Preferred stock dividends	**(169)**	(175)	(122)	(105)	(73)
Net income applicable to common shareholders of The Bank of New York Mellon Corporation	**$ 4,097**	$ 3,915	$ 3,425	$ 3,053	$ 2,494
Earnings per share applicable to common shareholders of The Bank of New York Mellon Corporation:					
Basic	**$ 4.06**	$ 3.74	$ 3.16	$ 2.73	$ 2.17
Diluted	**$ 4.04**	$ 3.72	$ 3.15	$ 2.71	$ 2.15
Average common shares and equivalents outstanding of The Bank of New York Mellon Corporation *(in thousands)***:**					
Basic	**1,002,922**	1,034,281	1,066,286	1,104,719	1,129,897
Diluted	**1,007,141**	1,040,290	1,072,013	1,112,511	1,137,480
Selected balance sheet information (at period-end):					
Interest-earning assets	**$ 308,749**	$ 316,261	$ 280,332	$ 338,955	$ 317,646
Total assets	**362,873**	371,758	333,469	393,780	385,303
Deposits	**238,778**	244,322	221,490	279,610	265,869
Long-term debt	**29,163**	27,979	24,463	21,547	20,264
Preferred stock	**3,542**	3,542	3,542	2,552	1,562
Total The Bank of New York Mellon Corporation common shareholders' equity	**37,096**	37,709	35,269	35,485	35,879
At Dec. 31					
Assets under custody and/or administration *(in trillions) (b)*	**$ 33.1**	$ 33.3	$ 29.9	$ 28.9	$ 28.5
Assets under management *(in billions) (c)*	**1,722**	1,893	1,648	1,625	1,686
Market value of securities on loan *(in billions) (d)*	**373**	408	296	277	289
Selected ratios:					
Return on common equity	**10.8%**	10.8%	9.6%	8.6%	6.8%
Return on tangible common equity – Non-GAAP *(e)*	**22.5**	23.9	21.2	19.7	16.0
Return on average assets	**1.19**	1.14	0.96	0.82	0.67
Pre-tax operating margin	**32**	30	31	28	23
Fee revenue as a percentage of total revenue	**78**	78	79	79	80
Percentage of non-U.S. total revenue	**37**	36	34	36	38
Net interest margin	**1.25**	1.14	1.03	0.96	0.95

(a) Primarily attributable to noncontrolling interests related to consolidated investment management funds.

(b) Includes the assets under custody and/or administration of CIBC Mellon Global Securities Services Company ("CIBC Mellon"), a joint venture with the Canadian Imperial Bank of Commerce, of $1.2 trillion at Dec. 31, 2018, $1.3 trillion at Dec. 31, 2017, $1.2 trillion at Dec. 31, 2016, $1.0 trillion at Dec. 31, 2015 and $1.1 trillion at Dec. 31, 2014.

(c) Excludes securities lending cash management assets and assets managed in the Investment Services business.

(d) Represents the total amount of securities on loan in our agency securities lending program managed by the Investment Services business. Excludes securities for which BNY Mellon acts as an agent on behalf of CIBC Mellon clients, which totaled $58 billion at Dec. 31, 2018, $71 billion at Dec. 31, 2017, $63 billion at Dec. 31, 2016, $55 billion at Dec. 31, 2015 and $65 billion at Dec. 31, 2014.

(e) Return on tangible common equity, a Non-GAAP measure, excludes goodwill and intangible assets, net of deferred tax liabilities. See "Supplemental information - Explanation of GAAP and Non-GAAP financial measures" beginning on page 105 for the reconciliation of the Non-GAAP measure.

The Bank of New York Mellon Corporation (and its subsidiaries)

Financial Summary (continued)

(dollar amounts in millions, except per common share amounts and unless otherwise noted)	**2018**	2017	2016	2015	2014
Cash dividends per common share	**$ 1.04**	$ 0.86	$ 0.72	$ 0.68	$ 0.66
Common dividend payout ratio	**26%**	23 %	23%	25%	31%
Common dividend yield	**2.2%**	1.6 %	1.5%	1.6%	1.6%
Closing stock price per common share	**$ 47.07**	$ 53.86	$ 47.38	$ 41.22	$ 40.57
Market capitalization *(in billions)*	**$ 45.2**	$ 54.6	$ 49.6	$ 44.7	$ 45.4
Book value per common share	**$ 38.63**	$ 37.21	$ 33.67	$ 32.69	$ 32.09
Tangible book value per common share – Non-GAAP *(a)*	**$ 19.04**	$ 18.24	$ 16.19	$ 15.27	$ 14.70
Full-time employees	**51,300**	52,500	52,000	51,200	50,300
Year-end common shares outstanding *(in thousands)*	**960,426**	1,013,442	1,047,488	1,085,343	1,118,228
Average total equity to average total assets	**12.1%**	11.7 %	10.7%	10.2%	10.2%
Capital ratios (at period-end):					
Consolidated regulatory capital ratios - fully phased-in basis: *(b)(c)*					
Advanced:					
CET1 ratio	**10.7%**	10.3 %	9.7%	9.5%	9.8%
Tier 1 capital ratio	**12.8**	12.3	11.8	11.0	10.8
Total (Tier 1 plus Tier 2) capital ratio	**13.6**	13.0	12.1	11.1	11.0
Standardized:					
CET1 ratio	**11.7**	11.5	11.3	10.2	10.6
Tier 1 capital ratio	**14.1**	13.7	13.6	11.8	11.6
Total (Tier 1 plus Tier 2) capital ratio	**15.1**	14.7	14.2	12.0	12.0
Tier 1 leverage ratio	**6.6**	6.4	N/A	N/A	N/A
Supplementary leverage ratio ("SLR")	**6.0**	5.9	5.6	4.9	4.4
Consolidated regulatory capital ratios - transitional basis: *(b)(d)*					
Advanced:					
CET1 ratio	**N/A**	10.7 %	10.6%	10.8%	11.2%
Tier 1 capital ratio	**N/A**	12.7	12.6	12.3	12.2
Total (Tier 1 plus Tier 2) capital ratio	**N/A**	13.4	13.0	12.5	12.5
Tier 1 leverage ratio	**N/A**	6.6	6.6	6.0	5.6
SLR	**N/A**	6.1	6.0	5.4	N/A
BNY Mellon shareholders' equity to total assets ratio	**11.2%**	11.1 %	11.6%	9.7%	9.7%
BNY Mellon common shareholders' equity to total assets ratio	**10.2**	10.1	10.6	9.0	9.3

(a) Tangible book value per common share – Non-GAAP excludes goodwill and intangible assets, net of deferred tax liabilities. See "Supplemental information – Explanation of GAAP and Non-GAAP financial measures" beginning on page 105 for the reconciliation of the Non-GAAP measure.

(b) Risk-based capital ratios at Dec. 31, 2014 do not reflect the adoption of accounting guidance related to Consolidations in Accounting Standards Update ("ASU") 2015-02.

(c) For our Common Equity Tier 1 ("CET1"), Tier 1 and Total capital ratios, our effective capital ratios under U.S. capital rules are the lower of the ratios as calculated under the Standardized and Advanced Approaches. Beginning Jan. 1, 2018, consolidated regulatory ratios are fully phased-in. The consolidated regulatory ratios for all prior periods are presented on an estimated fully phased-in basis. For additional information on our regulatory capital ratios, see "Capital" beginning on page 45.

(d) Reflects transitional adjustments to CET1, Tier 1 capital and Tier 2 capital required in period periods under U.S. capital rules.

Results of Operations

General

In this Annual Report, references to "our," "we," "us," "BNY Mellon," the "Company" and similar terms refer to The Bank of New York Mellon Corporation and its consolidated subsidiaries. The term "Parent" refers to The Bank of New York Mellon Corporation but not its subsidiaries.

BNY Mellon's actual results of future operations may differ from those estimated or anticipated in certain forward-looking statements contained herein for reasons which are discussed below and under the heading "Forward-looking Statements." When used in this Annual Report, words such as "estimate," "forecast," "project," "anticipate," "likely," "target," "expect," "intend," "continue," "seek," "believe," "plan," "goal," "could," "should," "would," "may," "might," "will," "strategy," "synergies," "opportunities," "trends," "future" and words of similar meaning, may signify forward-looking statements.

Certain business terms and commonly used acronyms used in this Annual Report are defined in the Glossary and Acronyms sections.

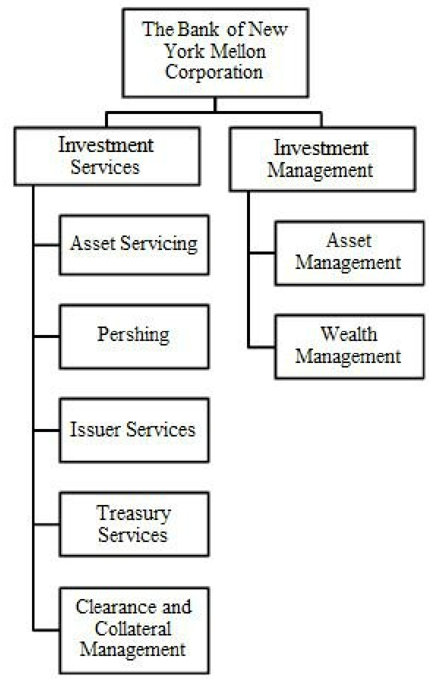
The following should be read in conjunction with the Consolidated Financial Statements included in this report. Investors should also read the section titled "Forward-looking Statements."

Overview

Established in 1784 by Alexander Hamilton, we were the first company listed on the New York Stock Exchange (NYSE: BK). With a more than 230-year history, BNY Mellon is a global company that manages and services assets for financial institutions, corporations and individual investors in 35 countries.

BNY Mellon has two business segments, Investment Services and Investment Management, which offer a comprehensive set of capabilities and deep expertise across the investment lifecycle, enabling the Company to provide solutions to buy-side and sell-side market participants, as well as leading institutional and wealth management clients globally.

The diagram below presents our two business segments and lines of business, with the remaining operations in the Other segment.



Key 2018 events

Share repurchase program and increase in cash dividend on common stock

In June 2018, our Board of Directors approved the repurchase of up to $2.4 billion of common stock starting in the third quarter of 2018 and continuing through the second quarter of 2019.

In July 2018, our Board of Directors approved a 17% increase in the quarterly cash dividend per common share, from $0.24 to $0.28 per share. The first payment of the increased quarterly cash dividend was made on Aug. 10, 2018.

In December 2018, our Board of Directors approved the repurchase of $830 million of additional common stock, all of which was repurchased in the fourth quarter of 2018. These repurchases were in addition to the repurchase of $2.4 billion of common stock previously approved by the Board.

Corporate headquarters

In July 2018, BNY Mellon relocated its corporate headquarters to 240 Greenwich Street in lower Manhattan.

Summary of financial highlights

We reported net income applicable to common shareholders of BNY Mellon of $4.1 billion, or $4.04 per diluted common share, in 2018, including a net charge of $168 million, or $(0.17) per diluted common share, related to severance, expenses associated with consolidating real estate and litigation expense, partially offset by adjustments to provisional estimates for U.S. tax legislation. In 2017, net income applicable to common shareholders of BNY Mellon was $3.9 billion, or $3.72 per diluted common share, including a net benefit of $160 million, or $0.15 per diluted common share, related to the estimated net benefit related to U.S. tax legislation, partially offset by severance, litigation expense and other charges.

Highlights of 2018 results

- Assets under custody and/or administration ("AUC/A") totaled $33.1 trillion at Dec. 31, 2018 compared with $33.3 trillion at Dec. 31, 2017. The 1% decrease primarily reflects lower market values and the unfavorable impact of a stronger U.S. dollar on a spot basis, partially offset by net new business. (See "Investment Services business" beginning on page 14.)
- Assets under management ("AUM") totaled $1.7 trillion at Dec. 31, 2018 compared with $1.9 trillion at Dec. 31, 2017. The 9% decrease primarily reflects the unfavorable impact of a stronger U.S. dollar (principally versus the British pound) on a spot basis, lower market values, net outflows, the divestiture of CenterSquare Investment Management ("CenterSquare") and other changes. AUM excludes securities lending cash management assets and assets managed in the Investment Services business. (See "Investment Management business" beginning on page 17.)
- Investment services fees totaled $7.8 billion in 2018, an increase of 5% compared with $7.5 billion in 2017, primarily reflecting higher equity market values, net new business, including growth in collateral management and higher Depositary Receipts revenue, partially offset by the previously disclosed lost business in Pershing. (See "Investment Services business" beginning on page 14.)
- Investment management and performance fees totaled $3.7 billion in 2018 compared with $3.6 billion in 2017, an increase of 3%, primarily reflecting higher market values, performance fees and the favorable impact of a weaker U.S. dollar (principally versus the British pound), partially offset by the impact of net outflows. On a constant currency basis (Non-GAAP), investment management and performance fees increased 2% compared with 2017. (See "Investment Management business" beginning on page 17.)
- Foreign exchange and other trading revenue totaled $732 million in 2018 compared with $668 million in 2017. Foreign exchange revenue totaled $663 million in 2018, an increase of 4% compared with $638 million in 2017. The increase in foreign exchange revenue primarily reflects higher volumes, partially offset by foreign currency hedging. (See "Fee and other revenue" beginning on page 7.)
- Net interest revenue totaled $3.6 billion in 2018 compared with $3.3 billion in 2017, an increase of 9%. The increase primarily reflects higher interest rates. Net interest margin was 1.25% in 2018 compared with 1.14% in 2017. (See "Net interest revenue" beginning on page 9.)
- The provision for credit losses was a credit of $11 million in 2018 and a credit of $24 million in 2017. (See "Asset quality and allowance for credit losses" beginning on page 35.)
- Noninterest expense totaled $11.2 billion in 2018 compared with $11.0 billion in 2017. The 2% increase primarily reflects investments in technology, expenses associated with consolidating our real estate and the unfavorable impact of a weaker U.S. dollar, partially offset by lower bank assessment charges. (See "Noninterest expense" beginning on page 12.)
- The provision for income taxes was $938 million (18.1% effective tax rate) in 2018, including the impact of the adjustments to provisional estimates for U.S. tax legislation and the tax impact of severance, expenses associated with consolidating real estate and litigation expense. (See "Income taxes" on page 12.)
- The net unrealized pre-tax loss on our total securities portfolio was $907 million at Dec. 31,

2018, compared with a pre-tax loss of $85 million at Dec. 31, 2017, including the impact of related hedges. The increase in net unrealized pre-tax loss was primarily driven by an increase in interest rates. (See "Securities" beginning on page 29.)

- Our CET1 ratio calculated under the Advanced Approach was 10.7% at Dec. 31, 2018 and 10.7%, on a transitional basis, at Dec. 31, 2017. The ratio was unchanged compared to Dec. 31, 2017, reflecting capital deployed through common stock repurchases and dividend payments, and the final phase-in requirements under U.S. capital rules, offset by capital generated through earnings and lower risk-weighted assets ("RWAs"). (See "Capital" beginning on page 45.)
- Our SLR was 6.0% at Dec. 31, 2018 and 6.1%, on a transitional basis, at Dec. 31, 2017. (See "Capital" beginning on page 45.)

Results for 2017

In 2017, we reported net income applicable to common shareholders of BNY Mellon of $3.9 billion, or $3.72 per diluted common share. These results were primarily driven by:

- Investment services fees totaled $7.5 billion in 2017, an increase of 3% compared with $7.2 billion in 2016, primarily reflecting higher money market fees, higher equity market values and net new business, including growth in collateral management, partially offset by the previously disclosed lost business in Pershing and lower volumes in certain Depositary Receipts programs.
- Investment management and performance fees totaled $3.6 billion in 2017 compared with $3.4 billion in 2016, an increase of 7%, primarily reflecting higher market values, money market fees and performance fees, partially offset by the unfavorable impact of a stronger U.S. dollar (principally versus the British pound).
- Foreign exchange and other trading revenue totaled $668 million in 2017 compared with $701 million in 2016. Foreign exchange revenue totaled $638 million in 2017, a decrease of 7%, compared with $687 million in 2016. The decrease in foreign exchange revenue primarily reflects lower volatility, partially offset by higher volumes.
- The provision for credit losses was a credit of $24 million in 2017.
- Noninterest expense totaled $11.0 billion in 2017 compared with $10.5 billion in 2016. The 4% increase primarily reflects higher staff, software, and professional, legal and other purchased services expenses.
- The provision for income taxes was $496 million (10.8% effective tax rate), including the estimated tax benefit related to U.S. tax legislation.

Results for 2016

In 2016, we reported net income applicable to common shareholders of BNY Mellon of $3.4 billion, or $3.15 per diluted common share. These results were primarily driven by:

- Investment services fees totaled $7.2 billion, primarily reflecting higher money market fees and securities lending revenue, partially offset by the unfavorable impact of lost business on clearing services fees, the unfavorable impact of a stronger U.S. dollar and the downsizing of the UK transfer agency business.
- Investment management and performance fees totaled $3.4 billion, primarily reflecting the unfavorable impact of a stronger U.S. dollar (principally versus the British pound), net outflows of AUM and lower performance fees, partially offset by higher market values and money market fees.
- Foreign exchange and other trading revenue totaled $701 million, of which $687 million represented foreign exchange revenue. The decrease in foreign exchange revenue primarily reflects the impact of clients migrating to lower margin products and lower volumes.
- The provision for credit losses was a credit of $11 million.
- Noninterest expense totaled $10.5 billion primarily reflecting lower expenses in nearly all categories, driven by the favorable impact of a stronger U.S. dollar, lower staff, other, litigation and legal expenses and the benefit of the business improvement process. The decrease was partially offset by higher bank assessment charges, distribution and servicing and software expenses.
- The provision for income taxes was $1.2 billion (24.9% effective tax rate) in 2016.

Fee and other revenue

Fee and other revenue *(dollars in millions, unless otherwise noted)*	**2018**	2017	2016	**2018 vs. 2017**	2017 vs. 2016
Investment services fees:					
Asset servicing *(a)*	**$ 4,608**	$ 4,383	$ 4,244	**5 %**	3%
Clearing services	**1,578**	1,553	1,404	**2**	11
Issuer services	**1,099**	977	1,026	**12**	(5)
Treasury services	**554**	557	547	**(1)**	2
Total investment services fees	**7,839**	7,470	7,221	**5**	3
Investment management and performance fees	**3,685**	3,584	3,350	**3**	7
Foreign exchange and other trading revenue	**732**	668	701	**10**	(5)
Financing-related fees	**207**	216	219	**(4)**	(1)
Distribution and servicing	**139**	160	166	**(13)**	(4)
Investment and other income	**240**	64	341	**N/M**	N/M
Total fee revenue	**12,842**	12,162	11,998	**6**	1
Net securities (losses) gains	**(48)**	3	75	**N/M**	N/M
Total fee and other revenue	**$ 12,794**	$ 12,165	$ 12,073	**5 %**	1%
Fee revenue as a percentage of total revenue	**78%**	78%	79%		
AUC/A at period end *(in trillions) (b)*	**$ 33.1**	$ 33.3	$ 29.9	**(1)%**	11%
AUM at period end *(in billions) (c)*	**$ 1,722**	$ 1,893	$ 1,648	**(9)%**	15%

(a) Asset servicing fees include securities lending revenue of $220 million in 2018, $195 million in 2017 and $207 million in 2016.
(b) Includes the AUC/A of CIBC Mellon of $1.2 trillion at Dec. 31, 2018, $1.3 trillion at Dec. 31, 2017 and $1.2 trillion at Dec. 31, 2016.
(c) Excludes securities lending cash management assets and assets managed in the Investment Services business.

Fee and other revenue increased 5% compared with 2017. The increase primarily reflects higher asset servicing fees, investment and other income, issuer servicing fees and investment management and performance fees, partially offset by net securities losses.

Investment services fees

Investment services fees increased 5% compared with 2017 reflecting the following:

- Asset servicing fees increased 5%, primarily reflecting growth in collateral management, higher equity market values and securities lending volumes.
- Clearing services fees increased 2%, primarily driven by higher equity market values and average long-term mutual funds balances, partially offset by the previously disclosed lost business.
- Issuer services fees increased 12%, primarily reflecting higher Depositary Receipts revenue and higher volumes in Corporate Trust.
- Treasury services fees decreased 1%, primarily reflecting higher compensating balance credits provided to clients, which reduce fee revenue and increase net interest revenue, partially offset by higher volumes.

See the “Investment Services business” in “Review of businesses” for additional details.

Investment management and performance fees

Investment management and performance fees increased 3% compared with 2017, primarily reflecting higher market values, performance fees and the favorable impact of a weaker U.S. dollar (principally versus the British pound), partially offset by the impact of net outflows. On a constant currency basis (Non-GAAP), investment management and performance fees increased 2% compared with 2017. Performance fees were $144 million in 2018, $94 million in 2017 and $60 million in 2016.

AUM was $1.7 trillion at Dec. 31, 2018, a decrease of 9% compared with $1.9 trillion at Dec. 31, 2017. The decrease primarily reflects the unfavorable impact of a stronger U.S. dollar (principally versus the British pound) on a spot basis, lower market values, net outflows, the divestiture of CenterSquare and other changes.

See the "Investment Management business" in "Review of businesses" for additional details regarding the drivers of investment management and performance fees, AUM and AUM flows.

Foreign exchange and other trading revenue

Foreign exchange and other trading revenue *(in millions)*	**2018**	2017	2016
Foreign exchange	**$ 663**	$ 638	$ 687
Other trading revenue	**69**	30	14
Total foreign exchange and other trading revenue	**$ 732**	$ 668	$ 701

Foreign exchange and other trading revenue increased 10% compared with 2017.

Foreign exchange revenue is primarily driven by the volume of client transactions and the spread realized on these transactions, both of which are impacted by market volatility, and the impact of foreign currency hedging activities. In 2018, foreign exchange revenue totaled $663 million, an increase of 4% compared with 2017, primarily reflecting higher volumes, partially offset by foreign currency hedging. Foreign exchange revenue is primarily reported in the Investment Services business and, to a lesser extent, the Investment Management business and the Other segment.

Total other trading revenue was $69 million in 2018, compared with $30 million in 2017. The increase primarily reflects gains on Investment Management hedging activities. Other trading revenue is reported in all three business segments.

Financing-related fees

Financing-related fees, which are primarily reported in the Investment Services business and the Other segment, include capital markets fees, loan commitment fees and credit-related fees. Financing-related fees totaled $207 million in 2018 compared with $216 million in 2017, primarily reflecting lower fees on standby letters of credit and underwriting.

Distribution and servicing fees

Distribution and servicing fees earned from mutual funds are primarily based on average assets in the funds and the sales of funds that we manage or administer and are primarily reported in the Investment Management business. These fees, which include 12b-1 fees, fluctuate with the overall level of net sales, the relative mix of sales between share classes, the funds' market values and money market fee waivers.

Distribution and servicing fees were $139 million in 2018 compared with $160 million in 2017. The decrease primarily reflects the impact of lower fees from mutual funds.

Investment and other income

The following table provides the components of investment and other income.

Investment and other income *(in millions)*	**2018**	2017	2016
Corporate/bank-owned life insurance	**$ 145**	$ 153	$ 149
Expense reimbursements from joint venture	**71**	64	67
Asset-related gains (losses)	**70**	(1)	10
Equity investment income (loss)	**4**	37	(10)
Seed capital gains *(a)*	**3**	32	44
Lease-related gains	**1**	56	38
Other (loss) income	**(54)**	(277)	43
Total investment and other income	**$ 240**	$ 64	$ 341

(a) Excludes seed capital gains related to consolidated investment management funds, which are reflected in operations of consolidated investment management funds.

Investment and other income includes corporate and bank-owned life insurance contracts, expense reimbursements from our CIBC Mellon joint venture, gains or losses from asset-related activity, equity investments, seed capital, lease-related activity and other (loss) income. Expense reimbursements from our CIBC Mellon joint venture relate to expenses incurred by BNY Mellon on behalf of the CIBC Mellon joint venture. Asset-related gains (losses) include real estate, loan and other asset dispositions. Other (loss) income primarily includes foreign currency remeasurement gain (loss), other investments, including renewable energy, and various miscellaneous revenues. Investments in renewable energy generate losses in other income that are more than offset by benefits and credits recorded to the provision for income taxes.

Investment and other income was $240 million in 2018 compared with $64 million in 2017. The increase primarily reflects the impact of U.S. tax legislation on our renewable energy investments recorded in 2017.

Net securities losses

Net securities losses were $48 million in 2018, primarily reflecting the sale of debt securities.

2017 compared with 2016

Fee and other revenue totaled $12.2 billion in 2017 compared with $12.1 billion in 2016. The increase primarily reflects higher investment services fees and investment management and performance fees, partially offset by lower investment and other income and net securities gains.

The increase in investment services fees primarily reflects higher money market fees, higher equity market values and net new business, including growth in collateral management, partially offset by previously disclosed lost business in Pershing and lower volumes in certain Depositary Receipts programs.

The increase in investment management and performance fees primarily reflects higher market values, money market fees and performance fees, partially offset by the unfavorable impact of a stronger U.S. dollar on an average basis (principally versus the British pound).

The decrease in investment and other income primarily reflects the impact of U.S. tax legislation on our renewable energy investments.

Net interest revenue

Net interest revenue *(dollars in millions)*	**2018**	2017	2016	**2018 vs. 2017**	2017 vs. 2016
Net interest revenue	**$ 3,611**	$ 3,308	$ 3,138	**9%**	**5%**
Add: Tax equivalent adjustment	**20**	47	51	**N/M**	**N/M**
Net interest revenue on a fully taxable equivalent basis ("FTE") – Non-GAAP *(a)*	**$ 3,631**	$ 3,355	$ 3,189	**8%**	**5%**
Average interest-earning assets	**$289,916**	$ 290,522	$ 303,379	**—%**	**(4)%**
Net interest margin	**1.25%**	1.14%	1.03%	**11 bps**	**11 bps**
Net interest margin (FTE) – Non-GAAP *(a)*	**1.25%**	1.15%	1.05%	**10 bps**	**10 bps**

(a) Net interest revenue (FTE) – Non-GAAP and net interest margin (FTE) – Non-GAAP include the tax equivalent adjustments on tax-exempt income which allows for comparisons of amounts arising from both taxable and tax-exempt sources and is consistent with industry practice. The adjustment to an FTE basis has no impact on net income.

Net interest revenue increased 9% compared with 2017, primarily reflecting higher interest rates.

Net interest margin increased 11 basis points compared with 2017, primarily reflecting higher yields on interest-earning assets, partially offset by higher interest rates paid on interest-bearing liabilities.

Average interest-earning assets were $290 billion in 2018 compared with $291 billion in 2017. The decrease primarily reflects lower loans and interest-bearing deposits with the Federal Reserve and other central banks, partially offset by higher trading securities.

Average non-U.S. dollar deposits comprised approximately 30% of our average total deposits in 2018 and 2017. Approximately 45% of the average non-U.S. dollar deposits in 2018 and 2017 were euro-denominated.

2017 compared with 2016

Net interest revenue increased 5% compared with 2016, primarily driven by higher interest rates, partially offset by lower interest-earning assets driven by lower average deposits. The 11 basis points increase in the net interest margin primarily reflects higher yields on interest-earning assets, partially offset by higher interest rates paid on interest-bearing liabilities.

Average balances and interest rates	**2018**		
(dollar amounts in millions, presented on an FTE basis)	**Average balance**	**Interest**	**Average rates**
Assets			
Interest-earning assets:			
Interest-bearing deposits with banks (primarily foreign banks)	$ 14,740	$ 219	1.48%
Interest-bearing deposits with the Federal Reserve and other central banks	68,408	531	0.78
Federal funds sold and securities purchased under resale agreements *(a)*	27,883	1,116	4.00
Margin loans	14,397	510	3.54
Non-margin loans:			
Domestic offices:			
Consumer	9,789	319	3.26
Commercial	19,853	701	3.53
Foreign offices	11,771	336	2.85
Total non-margin loans	41,413	1,356 *(b)*	3.27
Securities:			
U.S. government obligations	23,908	486	2.03
U.S. government agency obligations	63,902	1,518	2.37
State and political subdivisions	2,565	69	2.69
Other securities:			
Domestic offices	8,186	341	4.17
Foreign offices	19,848	179	0.90
Total other securities	28,034	520	1.85
Trading securities (primarily domestic)	4,666	127	2.74
Total securities	123,075	2,720	2.21
Total interest-earning assets	$ 289,916	$ 6,452	2.23%
Noninterest-earning assets	53,858		
Total assets	$ 343,774		
Liabilities			
Interest-bearing liabilities:			
Interest-bearing deposits:			
Domestic offices	$ 59,226	$ 537	0.91%
Foreign offices	95,475	340	0.36
Total interest-bearing deposits	154,701	877	0.57
Federal funds purchased and securities sold under repurchase agreements *(a)*	15,546	758	4.88
Trading liabilities	1,310	29	2.21
Other borrowed funds:			
Domestic offices	2,122	55	2.57
Foreign offices	423	3	0.73
Total other borrowed funds	2,545	58	2.26
Commercial paper	2,607	51	1.97
Payables to customers and broker-dealers	16,353	191	1.17
Long-term debt	28,257	857	3.03
Total interest-bearing liabilities	$ 221,319	$ 2,821	1.27%
Total noninterest-bearing deposits	63,814		
Other noninterest-bearing liabilities	16,952		
Total liabilities	302,085		
Temporary equity			
Redeemable noncontrolling interests	187		
Permanent equity			
Total The Bank of New York Mellon Corporation shareholders' equity	41,360		
Noncontrolling interests	142		
Total permanent equity	41,502		
Total liabilities, temporary equity and permanent equity	$ 343,774		
Net interest revenue (FTE) – Non-GAAP		$ 3,631	
Net interest margin (FTE) – Non-GAAP			1.25%
Less: Tax equivalent adjustment *(c)*		20	
Net interest revenue - GAAP		$ 3,611	
Net interest margin- GAAP			1.25%
Percentage of assets attributable to foreign offices *(d)*	31%		
Percentage of liabilities attributable to foreign offices *(d)*	34		

Note: Interest and average rates were calculated on a taxable equivalent basis using dollar amounts in thousands and actual number of days in the year.

(a) Includes the average impact of offsetting under enforceable netting agreements of approximately $25 billion in 2018.

(b) Includes fees of $7 million in 2018. Non-accrual loans are included in average loans; the associated income, which was recognized on a cash basis, is included in interest income.

(c) The tax equivalent adjustment relates to tax-exempt securities, primarily state and political subdivisions, and is based on the U.S. federal statutory tax rate of 21%, adjusted for applicable state income taxes, net of the related federal tax benefit.

(d) Includes the Cayman Islands branch office.

Average balances and interest rates (continued)	2017			2016		
(dollar amounts in millions, presented on an FTE basis)	Average balance	Interest	Average rates	Average balance	Interest	Average rates
Assets						
Interest-earning assets:						
Interest-bearing deposits with banks (primarily foreign banks)	$ 14,879	$ 120	0.80%	$ 14,704	$ 104	0.70%
Interest-bearing deposits with the Federal Reserve and other central banks	70,213	319	0.45	80,593	198	0.25
Federal funds sold and securities purchased under resale agreements *(a)*	27,192	423	1.55	25,767	233	0.91
Margin loans	14,500	343	2.36	18,201	265	1.46
Non-margin loans:						
Domestic offices:						
Consumer	9,548	298	3.12	8,483	259	3.05
Commercial	20,976	521	2.49	21,820	417	1.91
Foreign offices	12,915	258	2.00	13,177	197	1.50
Total non-margin loans	43,439	1,077 *(b)*	2.48	43,480	873 *(b)*	2.01
Securities:						
U.S. government obligations	25,674	425	1.66	25,074	378	1.51
U.S. government agency obligations	60,268	1,195	1.98	56,384	986	1.75
State and political subdivisions	3,226	100	3.09	3,703	110	2.96
Other securities:						
Domestic offices	9,141	215	2.35	12,326	210	1.71
Foreign offices	19,541	150	0.77	20,664	206	1.00
Total other securities	28,682	365	1.27	32,990	416	1.26
Trading securities (primarily domestic)	2,449	62	2.54	2,483	63	2.56
Total securities	120,299	2,147	1.79	120,634	1,953	1.62
Total interest-earning assets	$ 290,522	$ 4,429	1.52%	$ 303,379	$ 3,626	1.20%
Noninterest-earning assets	53,326			55,098		
Total assets	$ 343,848			$ 358,477		
Liabilities						
Interest-bearing liabilities:						
Interest-bearing deposits:						
Domestic offices:	$ 46,908	$ 107	0.23%	$ 54,547	$ 41	0.08%
Foreign offices	96,215	55	0.06	102,399	(25)	(0.02)
Total interest-bearing deposits	143,123	162	0.11	156,946	16	0.01
Federal funds purchased and securities sold under repurchase agreements *(a)*	19,653	225	1.14	14,489	36	0.25
Trading liabilities	1,243	7	0.57	711	6	0.89
Other borrowed funds:						
Domestic offices	1,113	21	1.86	93	4	4.15
Foreign offices	803	5	0.67	753	4	0.51
Total other borrowed funds	1,916	26	1.36	846	8	0.91
Commercial paper	2,630	29	1.08	1,337	5	0.37
Payables to customers and broker-dealers	18,984	64	0.34	16,925	12	0.07
Long-term debt	27,424	561	2.05	23,334	354	1.52
Total interest-bearing liabilities	$ 214,973	$ 1,074	0.50%	$ 214,588	$ 437	0.20%
Total noninterest-bearing deposits	71,664			82,712		
Other noninterest-bearing liabilities	16,932			21,928		
Total liabilities	303,569			319,228		
Temporary equity						
Redeemable noncontrolling interests	180			182		
Permanent equity						
Total The Bank of New York Mellon Corporation shareholders' equity	39,687			38,489		
Noncontrolling interests	412			578		
Total permanent equity	40,099			39,067		
Total liabilities, temporary equity and permanent equity	$ 343,848			$ 358,477		
Net interest revenue (FTE) – Non-GAAP		$ 3,355			$ 3,189	
Net interest margin (FTE) – Non-GAAP			1.15%			1.05%
Less: Tax equivalent adjustment *(c)*		47			51	
Net interest revenue - GAAP		$ 3,308			$ 3,138	
Net interest margin - GAAP			1.14%			1.03%
Percentage of assets attributable to foreign offices *(d)*	30%			29%		
Percentage of liabilities attributable to foreign offices *(d)*	35			36		

Note: Interest and average rates were calculated on a taxable equivalent basis using dollar amounts in thousands and actual number of days in the year.

(a) Includes the average impact of offsetting under enforceable netting agreements of approximately $6 billion in 2017 and less than $350 million in 2016.

(b) Includes fees of $9 million in 2017 and $10 million in 2016. Non-accrual loans are included in the average loans; the associated income, which was recognized on a cash basis, is included in interest income.

(c) The tax equivalent adjustment relates to tax-exempt securities, primarily state and political subdivisions, and is based on the U.S. federal statutory tax rate of 35%, adjusted for applicable state income taxes, net of the related federal tax benefit.

(d) Includes the Cayman Islands branch office.

Noninterest expense

Noninterest expense *(dollars in millions)*	**2018**	2017	2016	**2018 vs. 2017**	2017 vs. 2016
Staff *(a)*	**$ 6,145**	$ 6,033	$ 5,809	**2 %**	**4%**
Professional, legal and other purchased services	**1,334**	1,276	1,186	**5**	**8**
Software	**772**	744	647	**4**	**15**
Net occupancy	**630**	570	592	**11**	**(4)**
Sub-custodian and clearing *(b)*	**450**	414	400	**9**	**4**
Distribution and servicing	**406**	419	405	**(3)**	**3**
Furniture and equipment	**290**	241	247	**20**	**(2)**
Business development	**228**	229	245	**—**	**(7)**
Bank assessment charges	**170**	220	219	**(23)**	**—**
Amortization of intangible assets	**180**	209	237	**(14)**	**(12)**
Other *(a)(b)(c)*	**606**	602	536	**1**	**12**
Total noninterest expense	**$ 11,211**	$ 10,957	$ 10,523	**2 %**	**4%**
Full-time employees at period end	51,300	52,500	52,000	**(2)%**	**1%**

(a) *In 2018, we adopted new accounting guidance included in ASU 2017-07, Compensation-Retirement Benefits: Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, which required the reclassification of the components of pension and other postretirement costs, other than the service cost component. As a result, staff expense increased and other expense decreased. Prior periods have been reclassified. See Note 2 of the Notes to Consolidated Financial Statements for additional information.*

(b) *Beginning in 2018, clearing expense, which was previously included in other expense, was included with sub-custodian expense. Prior periods have been reclassified.*

(c) *Beginning in 2018, merger and integration ("M&I"), litigation and restructuring charges are no longer separately disclosed. Expenses previously reported in this line have been reclassified to existing expense categories, primarily other expense.*

Total noninterest expense increased 2% compared with 2017. The increase primarily reflects investments in technology, expenses associated with consolidating our real estate and the unfavorable impact of a weaker U.S. dollar, partially offset by lower bank assessment charges. The investments in technology are included in staff, professional, legal and other purchased services, software and furniture and equipment expenses.

Our investments in technology infrastructure and platforms increased throughout 2018 and are expected to continue at recent levels. As a result, we expect to incur higher technology-related expenses in 2019 than in 2018. This increase is expected to be mostly offset by decreases in other expenses as we continue to manage overall expenses.

2017 compared with 2016

Total noninterest expense increased 4% compared with 2016. The increase primarily reflects higher staff, software and professional, legal and other purchased services expenses. The increase in staff expense primarily reflects higher incentive expense, driven by stronger performance, the annual employee merit increase and higher severance expense, partially offset by the favorable impact of a stronger U.S. dollar. The increase in software expense primarily reflects asset impairments and increased amortization. The increase in professional, legal and other purchased services expense primarily reflects higher consulting and purchased services expenses.

Income taxes

BNY Mellon recorded an income tax provision of $938 million (18.1% effective tax rate) in 2018, including the impact of adjusting provisional estimates related to U.S. tax legislation and the tax impact of severance, expenses associated with consolidating real estate and litigation expense. The income tax provision was $496 million (10.8% effective tax rate) in 2017, including the estimated tax benefit related to U.S. tax legislation. The income tax provision was $1.2 billion (24.9% effective tax rate) in 2016. For additional information, see Note 11 of the Notes to Consolidated Financial Statements.

Review of businesses

We have an internal information system that produces performance data along product and service lines for our two principal businesses, Investment Services and Investment Management, and the Other segment.

Business accounting principles

Our business data has been determined on an internal management basis of accounting, rather than the generally accepted accounting principles used for consolidated financial reporting. These measurement principles are designed so that reported results of the businesses will track their economic performance.

For information on the accounting principles of our businesses, the primary products and services in each line of business, the primary types of revenue by business and how our businesses are presented and analyzed, see Note 23 of the Notes to Consolidated Financial Statements.

Business results are subject to reclassification when organizational changes are made. There were no significant organizational changes in 2018. The results are also subject to refinements in revenue and expense allocation methodologies, which are typically reflected on a prospective basis.

The results of our businesses may be influenced by client and other activities that vary by quarter. In the first quarter, incentive expense typically increases reflecting the vesting of long-term stock awards for retirement-eligible employees. In the third quarter, Depositary Receipts revenue is typically higher due to an increased level of client dividend payments. Also in the third quarter, volume-related fees may decline due to reduced client activity. In the third quarter, staff expense typically increases reflecting the annual employee merit increase. In the fourth quarter, we typically incur higher business development and marketing expenses. In our Investment Management business, performance fees are typically higher in the fourth quarter, as the fourth quarter represents the end of the measurement period for many of the performance fee-eligible relationships.

The results of our businesses may also be impacted by the translation of financial results denominated in foreign currencies to the U.S. dollar. We are primarily impacted by activities denominated in the British pound and the euro. On a consolidated basis and in our Investment Services business, we typically have more foreign currency-denominated expenses than revenues. However, our Investment Management business typically has more foreign currency-denominated revenues than expenses. Overall, currency fluctuations impact the year-over-year growth rate in the Investment Management business more than the Investment Services business. However, currency fluctuations, in isolation, are not expected to significantly impact net income on a consolidated basis.

Fee revenue in Investment Management, and to a lesser extent in Investment Services, is impacted by the value of market indices. At Dec. 31, 2018, we estimate that a 5% change in global equity markets, spread evenly throughout the year, would impact fee revenue by less than 1% and diluted earnings per common share by $0.03 to $0.05.

See Note 23 of the Notes to Consolidated Financial Statements for the consolidating schedules which show the contribution of our businesses to our overall profitability.

Investment Services business

(dollars in millions unless otherwise noted)	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
Revenue:					
Investment services fees:					
Asset servicing	**$ 4,520**	$ 4,286	$ 4,141	**5 %**	**4 %**
Clearing services	**1,577**	1,549	1,399	**2**	**11**
Issuer services	**1,099**	975	1,024	**13**	**(5)**
Treasury services	**553**	555	541	**—**	**3**
Total investment services fees	**7,749**	7,365	7,105	**5**	**4**
Foreign exchange and other trading revenue	**665**	620	663	**7**	**(6)**
Other *(a)*	**512**	542	531	**(6)**	**2**
Total fee and other revenue	**8,926**	8,527	8,299	**5**	**3**
Net interest revenue	**3,372**	3,058	2,797	**10**	**9**
Total revenue	**12,298**	11,585	11,096	**6**	**4**
Provision for credit losses	**1**	(7)	8	**N/M**	**N/M**
Noninterest expense (excluding amortization of intangible assets)	**7,929**	7,598	7,187	**4**	**6**
Amortization of intangible assets	**129**	149	155	**(13)**	**(4)**
Total noninterest expense	**8,058**	7,747	7,342	**4**	**6**
Income before taxes	**$ 4,239**	$ 3,845	$ 3,746	**10 %**	**3 %**
Pre-tax operating margin	**34%**	33%	34%		
Securities lending revenue	**$ 198**	$ 168	$ 170	**18 %**	**(1)%**
Total revenue by line of business:					
Asset Servicing	**$ 5,932**	$ 5,603	$ 5,504	**6 %**	**2 %**
Pershing	**2,255**	2,180	1,979	**3**	**10**
Issuer Services	**1,743**	1,588	1,585	**10**	**—**
Treasury Services	**1,302**	1,251	1,136	**4**	**10**
Clearance and Collateral Management	**1,066**	963	892	**11**	**8**
Total revenue by line of business	**$ 12,298**	$ 11,585	$ 11,096	**6 %**	**4 %**
Metrics:					
Average loans	**$ 36,931**	$ 40,142	$ 44,740	**(8)%**	**(10)%**
Average deposits	**$ 203,279**	$ 200,235	$ 217,882	**2 %**	**(8)%**
AUC/A at period end *(in trillions) (b)*	**$ 33.1**	$ 33.3	$ 29.9	**(1)%**	**11 %**
Market value of securities on loan at period end *(in billions) (c)*	**$ 373**	$ 408	$ 296	**(9)%**	**38 %**
Pershing:					
Average active clearing accounts (U.S. platform) *(in thousands)*	**6,097**	6,137	5,949	**(1)%**	**3 %**
Average long-term mutual fund assets (U.S. platform)	**$ 511,004**	$ 487,845	$ 431,937	**5 %**	**13 %**
Average investor margin loans (U.S. platform)	**$ 10,829**	$ 9,810	$ 10,772	**10 %**	**(9)%**
Clearance and Collateral Management:					
Average tri-party collateral management balances *(in billions)*	**$ 2,918**	$ 2,502	$ 2,183	**17 %**	**15 %**

(a) Other revenue includes investment management fees, financing-related fees, distribution and servicing revenue and investment and other income.
(b) Includes the AUC/A of CIBC Mellon of $1.2 trillion at Dec. 31, 2018, $1.3 trillion at Dec. 31, 2017 and $1.2 trillion at Dec. 31, 2016.
(c) Represents the total amount of securities on loan in our agency securities lending program managed by the Investment Services business. Excludes securities for which BNY Mellon acts as agent on behalf of CIBC Mellon clients, which totaled $58 billion at Dec. 31, 2018, $71 billion at Dec. 31, 2017 and $63 billion at Dec. 31, 2016.

Business description

BNY Mellon Investment Services provides business services and technology solutions to entities including financial institutions, corporations, foundations and endowments, public funds and government agencies. Our lines of business include: Asset Servicing, Pershing, Issuer Services, Treasury Services and Clearance and Collateral Management.

We are one of the leading global investment services providers with $33.1 trillion of AUC/A at Dec. 31, 2018.

- We are the primary provider of U.S. government securities clearance and a provider of non-U.S. government securities clearance.
- We are a leading provider of tri-party collateral management services with an average of $2.9 trillion serviced globally including approximately $2.0 trillion of the U.S. tri-party repo market.
- Our agency securities lending program is one of the largest lenders of U.S. and non-U.S. securities, servicing a lendable asset pool of approximately $3.4 trillion in 34 separate markets.

The Asset Servicing business provides a comprehensive suite of solutions. As one of the largest global custody and fund accounting providers and a trusted partner, we offer services for the safekeeping of assets in capital markets globally as well as alternative investment and structured product strategies. We provide custody and foreign exchange services, support exchange-traded funds and unit investment trusts and provide our clients outsourcing capabilities. We deliver securities lending and financing solutions on both an agency and principal basis. Our market leading liquidity services portal enables cash investments for institutional clients and includes fund research and analytics.

Pershing provides clearing, custody, business and technology solutions, delivering dependable operational support to financial organizations globally.

The Issuer Services business includes Corporate Trust and Depositary Receipts. Our Corporate Trust business delivers a full range of issuer and related investor services, including trustee, paying agency, fiduciary, escrow and other financial services. We are a leading provider to the debt capital markets, providing customized and market-driven solutions to investors, bondholders and lenders. Our Depositary Receipts business drives global investing by providing servicing and value-added solutions that enable, facilitate and enhance cross-border trading, clearing, settlement and ownership. We are one of the largest providers of depositary receipts services in the world, partnering with leading companies from more than 50 countries.

Our Treasury Services business includes global payments, liquidity management, payables/receivables and trade finance services for financial institutions, corporations and the public sector.

Our Clearance and Collateral Management business clears and settles equity and fixed-income transactions globally and serves as custodian for tri-party repo collateral worldwide. Our collateral services include collateral management, administration and segregation. We offer innovative solutions and industry expertise which help financial institutions and institutional investors with their liquidity, financing, risk and balance sheet challenges.

Review of financial results

AUC/A decreased 1% compared with Dec. 31, 2017 to $33.1 trillion, primarily reflecting lower market values and the unfavorable impact of a stronger U.S. dollar on a spot basis, partially offset by net new business. AUC/A consisted of 33% equity securities and 67% fixed-income securities at Dec. 31, 2018 and 37% equity securities and 63% fixed-income securities at Dec. 31, 2017.

Total revenue of $12.3 billion increased 6% compared with 2017. Net interest revenue increased compared with 2017 in all businesses, primarily driven by higher interest rates. The drivers of fee revenue by line of business are indicated below.

Asset Servicing revenue of $5.9 billion increased 6% compared with 2017. The increase primarily reflects higher net interest revenue, higher foreign exchange and securities lending volumes, higher equity market values and the favorable impact of a weaker U.S. dollar.

Pershing revenue of $2.3 billion increased 3% compared with 2017. The increase primarily reflects higher net interest revenue and higher fees due to growth in average long-term mutual fund balances and higher clearance volumes, partially offset by the previously disclosed lost business.

Issuer Services revenue of $1.7 billion increased 10% compared with 2017. The increase primarily reflects higher Depositary Receipts revenue driven by corporate actions and higher volumes, higher net interest revenue and increased volumes in Corporate Trust.

Treasury Services revenue of $1.3 billion increased 4% compared with 2017. The increase primarily reflects higher net interest revenue and higher payment volumes.

Clearance and Collateral Management revenue of $1.1 billion increased 11% compared with 2017. The increase primarily reflects growth in collateral management, clearance volumes and net interest revenue.

Market and regulatory trends are driving investable assets toward lower fee asset management products at reduced margins for our clients. These dynamics are also negatively impacting our investment services fees. However, at the same time, these trends are providing additional outsourcing opportunities as clients and other market participants seek to comply with new regulations and reduce their operating costs.

Noninterest expense of $8.1 billion increased 4% compared with 2017. The increase was primarily driven by investments in technology, higher volume-related expenses and the unfavorable impact of a weaker U.S. dollar.

2017 compared with 2016

Total revenue of $11.6 billion increased 4% compared with 2016. Net interest revenue increased in most lines of business, primarily driven by higher interest rates. Asset Servicing revenue increased primarily reflecting higher net interest revenue, equity market values and money market fees, partially offset by the downsizing of the UK transfer agency business. Pershing revenue increased primarily reflecting higher net interest revenue, higher money market fees and growth in long-term mutual fund assets. Issuer Services revenue increased slightly primarily reflecting higher net interest revenue partially offset by lost business and lower volumes from weaker cross-border settlement activity in Depositary Receipts. Treasury Services revenue increased primarily reflecting higher net interest revenue and higher payment volumes. Clearance and Collateral Management revenue increased primarily reflecting growth in collateral management and higher clearance volumes, partially offset by lower net interest revenue.

Noninterest expense of $7.7 billion increased 6% compared with 2016 primarily reflecting higher staff expense, including severance, higher litigation expense, additional technology-related costs and asset impairments.

Investment Management business

(dollars in millions)	**2018**	2017	2016	**2018 vs. 2017**	2017 vs. 2016
Revenue:					
Investment management fees *(a)*	**$ 3,488**	$ 3,428	$ 3,232	**2%**	6 %
Performance fees	**144**	94	60	**53**	57
Investment management and performance fees *(b)*	**3,632**	3,522	3,292	**3**	7
Distribution and servicing	**190**	207	192	**(8)**	8
Other *(a)*	**(41)**	(61)	(60)	**N/M**	N/M
Total fee and other revenue *(a)*	**3,781**	3,668	3,424	**3**	7
Net interest revenue	**303**	329	327	**(8)**	1
Total revenue	**4,084**	3,997	3,751	**2**	7
Provision for credit losses	**3**	2	6	**N/M**	N/M
Noninterest expense (excluding amortization of intangible assets)	**2,767**	2,794	2,696	**(1)**	4
Amortization of intangible assets	**51**	60	82	**(15)**	(27)
Total noninterest expense	**2,818**	2,854	2,778	**(1)**	3
Income before taxes	**$ 1,263**	$ 1,141	$ 967	**11%**	18 %
Pre-tax operating margin	**31%**	29%	26%		
Adjusted pre-tax operating margin – Non-GAAP *(c)*	**34%**	32%	29%		
Total revenue by line of business:					
Asset Management	**$ 2,836**	$ 2,775	$ 2,615	**2%**	6 %
Wealth Management	**1,248**	1,222	1,136	**2**	8
Total revenue by line of business	**$ 4,084**	$ 3,997	$ 3,751	**2%**	7 %
Average balances:					
Average loans	**$ 16,774**	$ 16,565	$ 15,015	**1%**	10 %
Average deposits	**$ 14,291**	$ 13,615	$ 15,650	**5%**	(13)%

(a) Total fee and other revenue includes the impact of the consolidated investment management funds, net of noncontrolling interests. Additionally, other revenue includes asset servicing, foreign exchange and other trading revenue, treasury services and investment and other income.

(b) On a constant currency basis, investment management and performance fees increased 2% (Non-GAAP) compared with 2017. See "Supplemental information – Explanation of GAAP and Non-GAAP financial measures" beginning on page 105 for the reconciliation of this Non-GAAP measure.

(c) Net of distribution and servicing expense. See "Supplemental information – Explanation of GAAP and Non-GAAP financial measures" beginning on page 105 for the reconciliation of this Non-GAAP measure. In 2018, the adjusted pre-tax margin – Non-GAAP for prior periods was restated to include amortization of intangible assets and the provision for credit losses.

AUM trends *(dollars in billions)*	**2018**		2017	2016
AUM at period end, by product type: *(a)*				
Equity	**$ 135**		$ 161	$ 153
Fixed income	**200**		206	186
Index	**301**		350	312
Liability-driven investments	**659**		667	554
Multi-asset and alternative investments	**167**		214	181
Cash	**260**		295	262
Total AUM by product type	**$ 1,722**		$ 1,893	$ 1,648
Changes in AUM: *(a)*				
Beginning balance of AUM	**$ 1,893**		$ 1,648	$ 1,625
Net (outflows) inflows:				
Long-term strategies:				
Equity	**(13)**		(14)	(15)
Fixed income	**4**		6	(5)
Liability-driven investments	**45**		50	26
Multi-asset and alternative investments	**(6)**		8	12
Total long-term active strategies inflows	**30**		50	18
Index	**(34)**		(17)	(32)
Total long-term strategies (outflows) inflows	**(4)**		33	(14)
Short-term strategies:				
Cash	**(35)**		30	(9)
Total net (outflows) inflows	**(39)**		63	(23)
Net market impact	**(48)**		106	181
Net currency impact	**(53)**		76	(137)
Acquisition/divestiture/ other	**(31)**	*(b)*	—	2
Ending balance of AUM	**$ 1,722**		$ 1,893	$ 1,648
Wealth Management client assets *(c)*	**$ 239**		$ 262	$ 240

(a) Excludes securities lending cash management assets and assets managed in the Investment Services business.
(b) Primarily reflects a change in methodology beginning in 2018 to exclude AUM related to equity method investments as well as the CenterSquare divestiture.
(c) Includes AUM and AUC/A in the Wealth Management business. Prior period amounts were revised to include additional AUC/A.

Business description

Our Investment Management business consists of two lines of business, Asset Management and Wealth Management. With AUM of $1.7 trillion, our Investment Management business is the seventh largest global asset manager and includes our investment specialists and Wealth Management business.

Our investment specialists deliver a highly diversified portfolio of investment strategies independently, and through our global distribution network, to institutional and retail clients globally. The investment specialists offer a broad range of actively managed equity, fixed income, alternative and liability-driven investments, along with passive products and cash management. Each investment specialist follows its own investment approach to innovate and develop investment solutions designed to deliver performance returns and outcomes that meet the investing goals of an increasingly sophisticated client base. Our multi-boutique model of investment specialists is designed to provide the best elements of investment focus and infrastructure at scale for the benefit of clients.

In the third quarter of 2018, BNY Mellon announced the wind-down of EACM Advisors and, effective Jan. 2, 2019, Mellon Investments Corporation (“Mellon”) as the new name of our specialized multi-asset investment manager formed from the consolidation of Mellon Capital Management, Standish Mellon Asset Management, and The Boston Company Asset Management.

In addition to the investment specialists, Investment Management has multiple global distribution entities which are responsible for distributing investment products developed and managed by the investment specialists, as well as responsibility for management and distribution of our U.S. mutual funds and certain offshore money market funds.

BNY Mellon Wealth Management provides investment management, custody, wealth and estate planning and private banking services, and conducts business globally. BNY Mellon Wealth Management has $239 billion in Wealth Management client assets as of Dec. 31, 2018, and an extensive network of offices in the U.S. and internationally.

The results of the Investment Management business are driven by the period end, average and mix of AUM, as well as the level of activity in client accounts. The overall level of AUM for a given period is determined by:

- the beginning level of AUM;
- the net flows of new assets during the period resulting from new business wins and existing client enrichments, reduced by the loss of clients and withdrawals; and

- the impact of market price appreciation or depreciation, acquisitions or divestitures and foreign exchange rates.

The mix of AUM is determined principally by client asset allocation decisions among equity, fixed income, passive products, cash, liability-driven investments and multi-asset and alternative investments.

Managed equity assets typically generate higher percentage fees than liability-driven investments and fixed-income assets. Also, actively managed assets typically generate higher management fees than indexed or passively managed assets of the same type.

Investment management fees are dependent on the overall level and mix of AUM and the management fees expressed in basis points (one-hundredth of one percent) charged for managing those assets. Management fees are typically subject to fee schedules based on the overall level of assets managed for a single client or by individual asset class and style. This is most common for institutional clients where we typically manage substantial assets for individual accounts.

Performance fees are generally calculated as a percentage of a portfolio's performance in excess of a benchmark index or a peer group's performance.

A key driver of organic growth in investment management and performance fees is the amount of net new AUM flows. Overall market conditions are also key drivers, with a significant long-term economic driver being growth of global financial assets.

Net interest revenue is determined by loan and deposit volumes and the interest rate spread between customer rates and internal funds transfer rates on loans and deposits. Expenses in the Investment Management business are mainly driven by staffing costs, incentives and distribution and servicing expense.

Review of financial results

AUM decreased 9% compared with Dec. 31, 2017 primarily reflecting the unfavorable impact of a stronger U.S. dollar (principally versus the British pound) on a spot basis, lower market values, net outflows and the divestiture of CenterSquare and other changes. Net long-term outflows of $4 billion in 2018 were a result of $34 billion of outflows from index funds and $30 billion of inflows from actively managed strategies, primarily liability-driven investments.

Total revenue of $4.1 billion increased 2% compared with 2017.

Asset Management revenue of $2.8 billion increased 2% compared with the 2017, primarily reflecting higher market values, performance fees and the favorable impact of a weaker U.S. dollar (principally versus the British pound), partially offset by the impact of net outflows. Market and regulatory trends have resulted in increased demand for lower fee asset management products, and for performance-based fees.

Wealth Management revenue of $1.2 billion increased 2% compared with 2017, primarily reflecting higher equity market values and net new business, partially offset by lower net interest revenue.

Revenue generated in the Investment Management business included 42% from non-U.S. sources in 2018, compared with 41% in 2017.

Noninterest expense of $2.8 billion decreased 1% compared with 2017, primarily reflecting the divestiture of CenterSquare.

2017 compared with 2016

Total revenue of $4.0 billion increased 7% compared with 2016. Asset Management revenue increased primarily reflecting higher equity market values, money market fees and performance fees, partially offset by the unfavorable impact of a stronger U.S. dollar (principally versus the British pound). Wealth management revenue increased primarily reflecting higher equity market values and net interest revenue.

Noninterest expense of $2.9 billion increased 3% primarily reflecting higher incentive, distribution and servicing and severance expenses, partially offset by the favorable impact of a stronger U.S. dollar.

Other segment

(in millions)	**2018**	2017	2016
Fee revenue	**$ 133**	$ 4	$ 291
Net securities (losses) gains	**(48)**	3	75
Total fee and other revenue	**85**	7	366
Net interest (expense) revenue	**(64)**	(79)	14
Total revenue (loss)	**21**	(72)	380
Provision for credit losses	**(15)**	(19)	(25)
Noninterest expense	**334**	347	394
(Loss) income before taxes	**$ (298)**	$ (400)	$ 11
Average loans and leases	**$ 2,105**	$ 1,232	$ 1,926

Description of segment

The Other segment primarily includes:

- the leasing portfolio;
- corporate treasury activities, including our securities portfolio;
- derivatives and other trading activity;
- corporate and bank-owned life insurance;
- renewable energy investments; and
- business exits.

Revenue primarily reflects:

- net interest revenue and lease-related gains (losses) from leasing operations;
- net interest revenue from corporate treasury activity;
- fee and other revenue from corporate and bank-owned life insurance and business exits; and
- gains (losses) associated with investment securities and other assets, including renewable energy.

Expenses include:

- direct expenses supporting leasing, investing, and funding activities; and
- expenses not directly attributable to Investment Services and Investment Management operations.

Review of financial results

Loss before taxes was $298 million in 2018 compared with $400 million in 2017.

Fee revenue increased $129 million compared with 2017, primarily reflecting the impact of U.S. tax legislation on our renewable energy investments recorded in 2017.

Net securities losses of $48 million in 2018 primarily related to the sale of debt securities.

Net interest expense decreased $15 million compared with 2017, primarily resulting from lease-related adjustments recorded in 2017.

Noninterest expense decreased $13 million compared with 2017, primarily reflecting lower pension expense and a methodological change in 2017 for allocating employee benefits expense to the business segments with no impact to consolidated results, partially offset by expenses associated with relocating our corporate headquarters.

2017 compared with 2016

Loss before taxes was $400 million in 2017 compared with income before taxes of $11 million in 2016. Total fee and other revenue decreased primarily reflecting the impact of U.S. tax legislation on our investments in renewable energy investments and lower net securities gains. Net interest expense increased primarily reflecting the impact of interest rate hedging activities and lease-related adjustments, partially offset by higher interest rates. Noninterest expense decreased primarily reflecting lower staff and other expense.

International operations

Our primary international activities consist of asset servicing and global payment services in our Investment Services business and asset management in our Investment Management business.

Our clients include central banks and sovereigns, financial institutions, asset managers, insurance companies, corporations, local authorities and high net worth individuals and family offices. Through our global network of offices, we have developed a deep understanding of local requirements and cultural needs, and we pride ourselves on providing dedicated service through our multilingual sales, marketing and client service teams.

At Dec. 31, 2018, we had approximately 9,100 employees in Europe, the Middle East and Africa ("EMEA"), approximately 14,500 employees in the Asia-Pacific region ("APAC") and approximately 700 employees in other global locations, primarily Brazil.

We are the seventh largest global asset manager. At Dec. 31, 2018, our international operations managed 55% of BNY Mellon's AUM, compared with 51% at Dec. 31, 2017. The proportionate increase in international AUM primarily resulted from the reduction in domestic AUM and net inflows, partially offset by the unfavorable impact of a stronger U.S. dollar (principally versus the British pound).

In Europe, we maintain a presence in Undertakings for Collective Investment in Transferable Securities Directives ("UCITS"). In Ireland, BNY Mellon provides fund administration services across domiciled and non-domiciled funds. We offer a full range of tailored solutions for investment companies, financial institutions and institutional investors in Germany.

We are a provider of non-U.S. government securities, fixed income and equities clearance, settling securities transactions directly in 8 different markets in Europe while for other markets using a high quality and established network of local agents.

We have extensive experience providing trade and cash services to financial institutions and central banks outside of the U.S. In addition, we offer a broad range of servicing and fiduciary products to financial institutions, corporations and central banks depending on the state of market development. In emerging markets, we lead with global payments and issuer services, introducing other products as the markets mature. For more established markets, our focus is on global investment services.

We are also a full-service global provider of foreign exchange services, actively trading in over 100 of the world's currencies. We serve clients from trading desks located in Europe, Asia and North America.

Our financial results, as well as our levels of AUC/A and AUM, are impacted by translation from foreign currencies to the U.S. dollar. We are primarily impacted by activities denominated in the British pound and the euro. If the U.S. dollar depreciates against these currencies, the translation impact is a higher level of fee revenue, net interest revenue, noninterest expense and AUC/A and AUM. Conversely, if the U.S. dollar appreciates, the translated levels of fee revenue, net interest revenue, noninterest expense and AUC/A and AUM will be lower.

Foreign exchange rates vs. U.S. dollar	**2018**	2017	2016
Spot rate (at Dec. 31):			
British pound	**$ 1.2801**	$ 1.3532	$ 1.2323
Euro	**1.1455**	1.2009	1.0538
Yearly average rate:			
British pound	**$ 1.3349**	$ 1.2885	$ 1.3548
Euro	**1.1808**	1.1390	1.1065

International clients accounted for 37% of revenues in 2018, compared with 36% in 2017 and 34% in 2016. Net income from international operations was $2.2 billion in 2018, compared with $1.8 billion in 2017 and $1.6 billion in 2016.

In 2018, revenues from EMEA were $4.3 billion, compared with $4.0 billion in 2017 and $3.7 billion 2016. Revenues from EMEA increased 7% in 2018 compared with 2017, primarily reflecting higher revenue in the Investment Services business, driven by higher net interest revenue, the favorable impact of a weaker U.S. dollar, growth in collateral management and higher clearance volumes. Revenues from EMEA also reflect higher revenue in the Investment Management business, driven by the favorable impact of a weaker U.S. dollar and higher performance fees, partially offset by net outflows. Our Investment Services and Investment Management businesses generated 68% and 32% of EMEA revenues, respectively. Net income from EMEA was $1.3 billion in 2018, compared with $1.2 billion in 2017 and $1.0 billion in 2016.

Revenues from APAC were $1.1 billion in 2018, compared with $997 million in 2017 and $922 million in 2016. Revenues from APAC increased 11% in 2018 compared with 2017, primarily reflecting higher net interest revenue, securities lending volumes and growth in collateral management, as well as higher revenue in the Investment Management business, driven by new business and higher equity market values. Our Investment Services and Investment Management businesses generated 80% and 20% of APAC revenues, respectively. Net income from APAC was $448 million in 2018, compared with $426 million in 2017 and $389 million in 2016.

For additional information regarding our international operations, including certain key subjective assumptions used in determining the results, see Note 24 of the Notes to Consolidated Financial Statements.

Country risk exposure

The following table presents BNY Mellon's top 10 exposures by country (excluding the U.S.) as of Dec. 31, 2018, as well as certain countries with higher risk profiles, and is presented on an internal risk management basis. We monitor our exposure to these and other countries as part of our internal country risk management process.

The country risk exposure below reflects the Company's risk to an immediate default of the counterparty or obligor based on the country of residence of the entity which incurs the liability. If there is credit risk mitigation, the country of residence of the entity providing the risk mitigation is the country of risk. The country of risk for investment securities is generally based on the domicile of the issuer of the security.

Country risk exposure	Interest-bearing deposits					
(in billions)	Central banks	Banks	Lending *(a)*	Investment securities *(b)*	Other *(c)*	Total exposure
Top 10 country exposure:						
UK	$ 15.9	$ 0.6	$ 1.9	$ 2.9	$ 2.1	$ 23.4
Germany	18.1	0.5	0.9	2.4	0.3	22.2
Japan	8.8	1.2	0.1	—	0.2	10.3
Canada	—	1.8	0.3	2.2	0.9	5.2
Luxembourg	2.9	0.2	0.2	—	1.8	5.1
China	—	2.3	0.8	—	0.3	3.4
Belgium	2.4	0.3	0.1	0.3	—	3.1
France	—	0.2	—	2.3	0.6	3.1
Ireland	—	0.1	0.5	0.6	1.1	2.3
Netherlands	—	—	0.3	1.7	0.1	2.1
Total Top 10 country exposure	$ 48.1	$ 7.2	$ 5.1	$ 12.4	$ 7.4	$ 80.2 *(d)*
Select country exposure:						
Spain	$ —	$ 0.3	$ —	$ 1.4	$ —	$ 1.7
Brazil	—	—	1.3	0.1	—	1.4
Italy	—	0.2	—	0.9	—	1.1
Turkey	—	—	0.2	—	—	0.2
Total other country exposure	$ —	$ 0.5	$ 1.5	$ 2.4	$ —	$ 4.4

(a) *Lending includes loans, acceptances, issued letters of credit, net of participations, and lending-related commitments.*
(b) *Investment securities include both the available-for-sale and held-to-maturity portfolios.*
(c) *Other exposures include securities financing and over-the-counter ("OTC") derivative transactions, net of collateral.*
(d) *The top 10 country exposures comprise approximately 80% of our total non-U.S. exposure.*

Our largest country risk exposure, based on our internal country risk management process at Dec. 31, 2018, was to the UK, which is planning to withdraw from the EU. For additional information, see "United Kingdom's Withdrawal from the European Union ("Brexit")" in Supervision and Regulation and "The United Kingdom's referendum decision to leave the EU has had and may continue to have negative effects on global economic conditions, global financial markets, and our business and results of operations" in Risk Factors.

Select country exposure

Events in recent years have resulted in increased focus on Spain, Brazil, Italy and Turkey. The country risk exposure to Spain and Italy primarily consisted of investment grade sovereign debt. The country risk exposure to Brazil is primarily short-term trade finance loans extended to large financial institutions. We also have operations in Brazil providing investment services and investment management services. The country risk exposure to Turkey consists primarily of syndicated credit facilities. We mainly provide treasury and issuer services as well as foreign exchange products primarily to the top 10 largest financial institutions in Turkey.

Cross-border outstandings

Cross-border outstandings are based on the Federal Financial Institutions Examination Council's ("FFIEC") regulatory guidelines for reporting cross-border risk and provides information on the distribution, by country and sector, of claims on foreign residents held by U.S. banks. Under the FFIEC guidelines, cross-border outstandings are reported based on the domicile of the counterparty, issuer of collateral or guarantor. Cross-border outstandings in the table below include claims of U.S. domiciled offices on foreign counterparties as well as claims of foreign offices on counterparties located outside those foreign jurisdictions. The guidelines to determine the cross-border outstandings in the table below are different than how we determine and manage our country risk exposure. For example, unfunded loan commitments as well as central bank deposits made by our foreign bank subsidiaries in their local jurisdiction are not considered cross-border outstandings. As a result, the cross-border outstandings in the table below are not comparable to the country risk exposure in the previous section.

Foreign assets are subject to the general risks attendant on the conduct of business in each foreign country, including economic uncertainties and each foreign government's regulations. In addition, our foreign assets may be affected by changes in demand or pricing resulting from fluctuations in currency exchange rates or other factors.

The table below shows our cross-border outstandings at Dec. 31 of each of the last three years where cross-border exposure exceeds 1.00% of total assets (denoted with "*") or exceeds 0.75% but less than or equal to 1.00% of total assets (denoted with "**").

Cross-border outstandings *(in millions)*	**Banks and other financial institutions** *(a)*	**Public sector**	**Commercial, industrial and other**	**Total cross-border outstandings** *(b)*
2018:				
Canada*	**$ 1,888**	**$ 381**	**$ 2,263**	**$ 4,532**
Germany**	**1,655**	**736**	**1,079**	**3,470**
China**	**3,030**	**—**	**5**	**3,035**
2017:				
Germany**	$ 1,530	$ 1,344	$ 600	$ 3,474
Canada**	2,256	1	1,170	3,427
France**	295	2,519	130	2,944
2016:				
France*	$ 1,662	$ 2,559	$ 109	$ 4,330
Germany*	2,398	1,408	357	4,163
Canada*	2,199	1	1,211	3,411
United Kingdom**	1,325	1,584	405	3,314

(a) Primarily short-term interest-bearing deposits with banks. Also includes global trade finance loans.
(b) Excludes assets of consolidated investment management funds.

Emerging markets exposure

We determine our emerging markets exposures using the MSCI Emerging Markets (EM) IMI Index. Our emerging markets exposures totaled $11 billion at both Dec. 31, 2018 and Dec. 31, 2017, as higher interest-bearing deposits with banks in Mexico and China were offset by lower loans to banks in India and Turkey.

Critical accounting estimates

Our significant accounting policies are described in Note 1 of the Notes to Consolidated Financial Statements under "Summary of significant accounting and reporting policies." Our critical accounting estimates are those related to the allowance for loan losses and allowance for lending-related commitments, fair value of financial instruments and derivatives, goodwill and other intangibles, and litigation and regulatory contingencies. Further information on policies related to the allowance for loan losses and allowance for lending-related commitments can be found under "Summary of significant accounting and reporting policies" in Note 1 of the Notes to Consolidated Financial Statements. Additionally, further information can be found in the Notes to Consolidated Financial Statements related to the following: the valuation of derivatives and securities can be found under "Fair value measurement" in Note 19; and policies related to goodwill and intangible assets can be found in "Goodwill and intangible assets" in Note 6.

Allowance for loan losses and allowance for lending-related commitments

The allowance for loan losses and allowance for lending-related commitments represent management's estimate of losses inherent in our credit portfolio. This evaluation process is subject to numerous estimates and judgments.

We utilize a quantitative methodology and qualitative framework for determining the allowance for loan losses and the allowance for lending-related commitments. Within this qualitative framework, management applies judgment when assessing internal risk factors and environmental factors to compute an additional allowance for each component of the loan portfolio.

The components of the allowance for loan losses and the allowance for lending-related commitments are inclusive of the qualitative allowance framework and consist of the following three elements:

- an allowance for impaired credits of $1 million or greater;
- an allowance for higher risk-rated credits and pass-rated credits; and
- an allowance for residential mortgage loans.

Our lending is primarily to institutional customers. As a result, our loans are generally larger than $1 million. Therefore, the first element, impaired credits, is based on individual analysis of all impaired loans of $1 million or greater. The allowance is measured by the difference between the recorded value of impaired loans and their impaired value. Impaired value is either the present value of the expected future cash flows from the borrower, the market value of the loan, or the fair value of the collateral, if the loan is collateral dependent.

The second element, higher risk-rated credits and pass-rated credits, is based on our incurred loss model. Individual credit analyses are performed on such loans before being assigned a credit rating. All borrowers are collectively evaluated based on their credit rating. The loss inherent in each loan incorporates the borrower's credit rating, facility rating and maturity. The loss given default, derived from the facility rating, incorporates a recovery expectation and an estimate of the use of the facility at default (usage given default). The borrower's probability of default is derived from the associated credit rating. Borrower ratings are reviewed at least annually and are periodically mapped to third-party databases, including rating agency and default and recovery databases, for ongoing consistency and validity. Higher risk-rated credits are reviewed quarterly.

The third element, the allowance for residential mortgage loans, is determined by segregating six mortgage pools into delinquency periods, ranging from current through foreclosure. Each of these delinquency periods is assigned a probability of default. A specific loss given default is assigned for each mortgage pool. BNY Mellon assigns all residential mortgage pools, except home equity lines of credit, a probability of default and loss given default based on default and loss data derived from internal historical data related to our residential mortgage portfolio. The resulting incurred loss factor (the probability of default multiplied by the loss given default) is applied against the loan balance to determine the allowance held for each pool. For home equity lines of credit, probability of default and loss given default are based on external data from third-party databases due to the small size of the portfolio and insufficient internal data.

The qualitative framework is used to determine an additional allowance for each portfolio based on the factors below:

Internal risk factors:

- Ratio of nonperforming loans to total non-margin loans;
- Ratio of criticized assets to total loans and lending-related commitments;
- Borrower concentration; and
- Significant concentrations in high-risk industries and countries.

Environmental risk factors:

- U.S. non-investment grade default rate;
- Unemployment rate; and
- Change in real gross domestic product.

The objective of the qualitative framework is to capture incurred losses that may not have been fully captured in the quantitative reserve, which is based primarily on historical data. Management determines the qualitative allowance each period based on judgment informed by consideration of internal and external risk factors and other considerations that may be deemed relevant during the period. Once determined in the aggregate, our qualitative allowance is then allocated to each of our loan classes based on the respective classes' quantitative allowance balances with the allocations adjusted, when necessary, for class specific risk factors.

For each risk factor, we calculate the minimum and maximum values, and percentiles in-between, to evaluate the distribution of our historical experience. The distribution of historical experience is compared to the risk factor's current quarter observed experience to assess the current risk inherent in the portfolio and overall direction/trend of a risk factor relative to our historical experience.

Based on this analysis, we assign a risk level–no impact, low, moderate, high and elevated–to each risk factor for the current quarter. Management assesses the impact of each risk factor to determine an aggregate risk level. We do not quantify the impact of any particular risk factor. Management's assessment of the risk factors, as well as the trend in the quantitative allowance, supports management's judgment for the overall required qualitative allowance. A smaller qualitative allowance may be required when our quantitative allowance has reflected incurred losses associated with the aggregate risk level. A greater qualitative allowance may be required if our quantitative allowance does not yet reflect the incurred losses associated with the aggregate risk level.

To the extent actual results differ from forecasts or management's judgment, the allowance for credit losses may be greater or less than future charge-offs.

The credit rating assigned to each credit is a significant variable in determining the allowance. If each credit were rated one grade better, the allowance would have decreased by $62 million, while if each credit were rated one grade worse, the allowance would have increased by $99 million. Similarly, if the loss given default were one rating worse, the allowance would have increased by $40 million, while if the loss given default were one rating better, the allowance would have decreased by $31 million. For impaired credits, if the net carrying value of the loans was 10% higher or lower, the allowance would have decreased or increased by less than $1 million, respectively.

Fair value of financial instruments and derivatives

The guidance included in Accounting Standards Codification ("ASC") 820, *Fair Value Measurement*, defines fair value, establishes a framework for measuring fair value, and expands disclosures about assets and liabilities measured at fair value. The standard also established a three-level hierarchy for fair value measurements based upon the transparency of inputs to the valuation of an asset or liability as of the measurement date.

Fair value - Securities

<u>*Level 1 - Securities*</u>: Securities where valuations are based on recent quoted prices for identical securities in actively traded markets.

<u>*Level 2 - Securities*</u>: For securities where quotes from recent transactions are not available for identical securities, we determine fair value primarily based on pricing sources with reasonable levels of price transparency. The pricing sources employ financial models or obtain comparisons to similar instruments to arrive at "consensus" prices.

Specifically, the pricing sources obtain recent transactions for similar types of securities (e.g., vintage or position in the securitization structure) and ascertain variables such as discount rate and speed of prepayment for the type of transaction and apply such variables to similar types of bonds. We view these as observable transactions in the current market place and classify such securities as Level 2.

In addition, we have significant investments in more actively traded agency residential mortgage-backed securities ("RMBS") and other types of securities such as sovereign debt. The pricing sources derive the prices for these securities largely from quotes they obtain from three major inter-dealer brokers. The pricing sources receive their daily observed trade price and other information feeds from the inter-dealer brokers.

We obtain prices for our Level 1 and Level 2 securities from multiple pricing sources. We have designed controls to develop an understanding of the pricing sources' securities pricing methodology and have implemented specific internal controls over the valuation of securities.

As appropriate, we review the quality control procedures and pricing methodologies used by the pricing sources, including the process for obtaining prices provided by the pricing sources, their valuation methodology and controls for each class of security.

Prices received from pricing sources are subject to validation checks that help determine the completeness and accuracy of the prices. These validation checks are reviewed by management and, based on the results, may be subject to additional review and investigation. We also review securities with no price changes (stale prices) and securities with zero values.

We have a surveillance process in place to monitor the reasonableness of prices provided by the pricing sources. We utilize a hierarchy that compares security prices obtained from multiple pricing sources against established thresholds. Discrepancies that fall outside of these thresholds are challenged with the pricing services and adjusted if necessary.

If further research is required, we review and validate these prices with the pricing sources. We also validate prices from pricing sources by comparing prices received to actual observed prices from actions such as purchases and sales, when possible.

At Dec. 31, 2018, approximately 99% of our securities were valued by pricing sources with reasonable levels of price transparency.

<u>*Level 3 - Securities*</u>: Where we have used our own cash flow models, which included a significant input into the model that was deemed unobservable, to estimate the value of securities, we classify them as Level 3. At both Dec. 31, 2018 and Dec. 31, 2017, we have no securities included in Level 3 of the fair value hierarchy.

See Note 19 of the Notes to Consolidated Financial Statements for details of our securities by ASC 820, *Fair Value Measurement*, hierarchy level.

Fair value - Derivative financial instruments

<u>*Level 1 - Derivative financial instruments*</u>: Includes derivative financial instruments that are actively traded on exchanges, principally listed equity options.

<u>*Level 2 - Derivative financial instruments*</u>: Includes OTC derivative financial instruments. Derivatives classified as Level 2 are valued utilizing discounted cash flow analysis and financial models for which the valuation inputs are observable or can be corroborated, directly or indirectly, for substantially the full term of the instrument. Valuation inputs include interest rate yield curves, foreign exchange rates, equity prices, credit curves, option volatilities and other factors.

Where appropriate, valuation adjustments are made to account for various factors such as creditworthiness of the counterparty, creditworthiness of the Company and model and liquidity risks.

<u>*Level 3 - Derivative financial instruments*</u>: Level 3 derivatives include derivatives for which valuations are based on inputs that are unobservable and significant to the overall fair value measurement, and may include certain long-dated or highly structured contracts. At both Dec. 31, 2018 and Dec. 31, 2017, we have no derivatives included in Level 3 of the fair value hierarchy.

For details of our derivative financial instruments by level of the valuation hierarchy, see Note 19 of the Notes to Consolidated Financial Statements.

Fair value option

ASC 825, *Financial Instruments*, provides the option to elect fair value as an alternative measurement basis for selected financial assets and financial liabilities which are not subject to fair value under other accounting standards. The changes in fair value are recognized in income. See Note 20 of the Notes to Consolidated Financial Statements for additional disclosure regarding the fair value option.

Fair value - Judgments

In times of illiquid markets and financial stress, actual prices and valuations may significantly diverge from results predicted by models. In addition, other factors can affect our estimate of fair value, including market dislocations and unexpected correlations. The use of different methodologies or different assumptions to value certain financial instruments could result in a different estimate of fair value. See Note 1 of the Notes to Consolidated Financial Statements.

Goodwill and other intangibles

We initially record all assets and liabilities acquired in purchase acquisitions, including goodwill, indefinite-lived intangibles and other intangibles, in accordance with ASC 805, *Business Combinations*. Goodwill, indefinite-lived intangibles and other intangibles are subsequently accounted for in accordance with ASC 350, *Intangibles - Goodwill and Other*. The initial measurement of goodwill and intangibles requires judgment concerning estimates of the fair value of the acquired assets and liabilities. Goodwill ($17.4 billion at Dec. 31, 2018) and indefinite-lived intangible assets ($2.6 billion at Dec. 31, 2018) are not amortized but are subject to tests for impairment annually or more often if events or circumstances indicate it is more likely than not they may be impaired. Other intangible assets are amortized over their estimated useful lives and are subject to impairment if events or circumstances indicate a possible inability to realize the carrying value.

BNY Mellon's three business segments include seven reporting units for which annual goodwill impairment testing is performed in accordance with ASC 350, *Intangibles - Goodwill and Other*. The Investment Management segment is comprised of two reporting units; the Investment Services segment is comprised of four reporting units and one reporting unit is included in the Other segment.

The goodwill impairment test compares the estimated fair value of the reporting unit with its carrying amount, including goodwill. If the estimated fair value of the reporting unit exceeds its carrying amount, goodwill of the reporting unit is considered not impaired. However, if the carrying amount of the reporting unit were to exceed its estimated fair value, an impairment loss would be recorded. A substantial goodwill impairment charge would not have a significant impact on our financial condition or our regulatory capital ratios, but could have an adverse impact on our results of operations. In addition, due to regulatory restrictions, the Company's subsidiary banks could be restricted from distributing available cash to the Parent, resulting in the Parent needing to issue additional long-term debt.

In the second quarter of 2018, we performed our annual goodwill test on all seven reporting units using an income approach to estimate the fair values of each reporting unit. Estimated cash flows used in the income approach were based on management's projections as of March 31, 2018. The discount rate applied to these cash flows ranged from 10.0% to 10.25% and incorporated a 6.0% market equity risk premium. Estimated cash flows extend many years into the future, and, by their nature, are difficult to estimate over such an extended time frame.

As a result of the annual goodwill impairment test of the seven reporting units, no goodwill impairment was recognized. The fair value of the Asset Management reporting unit, which is one of the two reporting units in the Investment Management segment, exceeded its carrying value by 34%. The Asset Management reporting unit had $7.4 billion of allocated goodwill. For the Asset Management reporting unit, in the future, changes in the assumptions, such as changes in the level of AUM and operating margin, could produce a non-cash goodwill impairment.

Key judgments in accounting for intangibles include useful life and classification between goodwill and indefinite-lived intangibles or other intangibles requiring amortization.

Indefinite-lived intangible assets are evaluated for impairment at least annually by comparing their fair values, estimated using discounted cash flow analyses, to their carrying values. Other amortizing intangible assets ($600 million at Dec. 31, 2018) are evaluated for impairment if events and circumstances indicate a possible impairment. Such evaluation of other intangible assets would be initially based on undiscounted cash flow projections.

See Notes 1 and 6 of the Notes to Consolidated Financial Statements for additional information regarding goodwill, intangible assets and the annual and interim impairment testing.

Litigation and regulatory contingencies

Significant estimates and judgments are required in establishing an accrued liability for litigation and regulatory contingencies. For additional information on our policy, see “Legal proceedings” in Note 21 of the Notes to Consolidated Financial Statements.

Consolidated balance sheet review

One of our key risk management objectives is to maintain a balance sheet that remains strong throughout market cycles to meet the expectations of our major stakeholders, including our shareholders, clients, creditors and regulators.

We also seek to verify that the overall liquidity risk, including intraday liquidity risk, that we undertake stays within our risk appetite. The objective of our balance sheet management strategy is to maintain a balance sheet that is characterized by strong liquidity and asset quality, ready access to external funding sources at competitive rates and a strong capital structure that supports our risk-taking activities and is adequate to absorb potential losses. In managing the balance sheet, appropriate consideration is given to balancing the competing needs of maintaining sufficient levels of liquidity and complying with applicable regulations and supervisory expectations while optimizing profitability.

In 2018, we continued to maintain sufficient liquidity and comply with applicable regulations. Our overall liquidity position remained strong and is managed in accordance with the nature of our balance sheet and business model. Our liquidity coverage ratio (“LCR”) averaged 118% in the fourth quarter and the SLR was 6.0% at Dec. 31, 2018.

At Dec. 31, 2018, total assets were $363 billion, compared with $372 billion at Dec. 31, 2017. The decrease in total assets was primarily driven by lower interest-bearing deposits with the Federal Reserve and other central banks and loans, partially offset by higher federal funds sold and securities purchased under resale agreements. Deposits totaled $239 billion at Dec. 31, 2018, compared with $244 billion at Dec. 31, 2017. The decrease primarily reflects lower interest-bearing deposits in non-U.S. offices and noninterest-bearing deposits principally in U.S. offices, partially offset by higher interest-bearing deposits in U.S. offices. At Dec. 31, 2018, total interest-bearing deposits were 54% of total interest-earning assets, compared with 51% at Dec. 31, 2017.

At Dec. 31, 2018, we had $61 billion of liquid funds (which include interest-bearing deposits with banks and federal funds sold and securities purchased under resale agreements) and $74 billion of cash (including $68 billion of overnight deposits with the Federal Reserve and other central banks) for a total of $135 billion of available funds. This compares with available funds of $137 billion at Dec. 31, 2017. Total available funds as a percentage of total assets were 37% at both Dec. 31, 2018 and Dec. 31, 2017. For additional information on our liquid funds and available funds, see “Liquidity and dividends.”

Securities were $119.8 billion, or 33% of total assets, at Dec. 31, 2018, compared with $120.4 billion, or 32% of total assets, at Dec. 31, 2017. The decrease primarily reflects lower investment in sovereign debt/ sovereign guaranteed securities and additional unrealized losses on the portfolio, partially offset by additional investments in agency commercial mortgage-backed securities (“MBS”), supranational securities and agency RMBS. For additional information on our securities portfolio, see “Securities” and Note 4 of the Notes to Consolidated Financial Statements.

Loans were $57 billion, or 16% of total assets, at Dec. 31, 2018, compared with $62 billion, or 17% of total assets, at Dec. 31, 2017. The decrease was primarily driven by lower margin loans and loans to financial institutions. For additional information on our loan portfolio, see “Loans” and Note 5 of the Notes to Consolidated Financial Statements.

Long-term debt totaled $29 billion at Dec. 31, 2018 and $28 billion at Dec. 31, 2017. The balance reflects issuances of $5.2 billion, offset by maturities of $3.7 billion and a decrease in the fair value of hedged long-term debt. For additional information on long-term debt, see “Liquidity and dividends.”

The Bank of New York Mellon Corporation total shareholders’ equity decreased to $40.6 billion from $41.3 billion at Dec. 31, 2017. For additional information on our capital, see “Capital” and Note 14 of the Notes to Consolidated Financial Statements.

Securities

In the discussion of our securities portfolio, we have included certain credit ratings information because the information can indicate the degree of credit risk to which we are exposed. Significant changes in ratings classifications for our securities portfolio could indicate increased credit risk for us and could be accompanied by a reduction in the fair value of our securities portfolio.

The following table shows the distribution of our total securities portfolio.

Securities portfolio	Dec. 31, 2017	2018 change in	**Dec. 31, 2018**		Fair value as a % of		Ratings *(b)*				
(dollars in millions)	Fair value	unrealized gain (loss)	Amortized cost	Fair value	amortized cost *(a)*	Unrealized gain (loss)	AAA/ AA-	A+/ A-	BBB+/ BBB-	BB+ and lower	Not rated
Agency RMBS	$ 49,746	$ (423)	$ **51,101**	$ **50,214**	98 %	$ (887)	100 %	— %	— %	— %	— %
U.S. Treasury	24,848	(22)	**24,917**	**24,792**	99	(125)	100	—	—	—	—
Sovereign debt/sovereign guaranteed *(c)*	14,128	(49)	**11,496**	**11,577**	101	81	74	5	20	1	—
Agency commercial MBS	10,083	(50)	**11,031**	**10,947**	99	(84)	100	—	—	—	—
CLOs	2,909	(57)	**3,410**	**3,364**	99	(46)	98	—	—	1	1
U.S. government agencies	2,603	(49)	**3,173**	**3,157**	99	(16)	100	—	—	—	—
Supranational	2,108	—	**3,011**	**3,006**	100	(5)	100	—	—	—	—
Foreign covered bonds *(d)*	2,615	(22)	**2,970**	**2,959**	100	(11)	100	—	—	—	—
State and political subdivisions	2,973	(11)	**2,268**	**2,264**	100	(4)	78	21	—	—	1
Other asset-backed securities ("ABS")	1,043	(6)	**1,776**	**1,773**	100	(3)	99	—	1	—	—
Non-agency commercial MBS	1,368	(23)	**1,491**	**1,470**	99	(21)	96	4	—	—	—
Non-agency RMBS *(e)*	1,854	(83)	**1,195**	**1,427**	119	232	12	12	5	47	24
Corporate bonds	1,255	(26)	**1,074**	**1,054**	98	(20)	14	68	18	—	—
Other *(f)*	2,375	(1)	**1,236**	**1,238**	100	2	94	—	—	—	6
Total securities	$ 119,908 *(g)*	$ **(822)**	$ **120,149**	$ **119,242** *(g)*	**99%**	$ **(907)** *(g)(h)*	**95%**	**2%**	**2%**	**1%**	**—%**

(a) Amortized cost reflects historical impairments.
(b) Represents ratings by Standard & Poor's ("S&P") or the equivalent.
(c) Primarily consists of exposure to UK, France, Germany, Spain, Italy and the Netherlands.
(d) Primarily consists of exposure to Canada, UK, Australia and Sweden.
(e) Includes RMBS that were included in the former Grantor Trust of $1,091 million at Dec. 31, 2017 and $832 million at Dec. 31, 2018.
(f) Includes commercial paper with a fair value of $700 million and money market funds with a fair value of $963 million at Dec. 31, 2017. There was no commercial paper or money market funds at Dec. 31, 2018. In the first quarter of 2018, we adopted the new accounting guidance included in ASU 2016-01, Financial Instruments-Overall: Recognition and Measurement of Financial Assets and Financial Liabilities. As a result, the money market fund investments were reclassified to trading assets, primarily from available-for-sale securities.
(g) Includes net unrealized losses on derivatives hedging securities available-for-sale of $147 million at Dec. 31, 2017 and net unrealized gains of $131 million at Dec. 31, 2018.
(h) Unrealized losses of $227 million at Dec. 31, 2018 related to available-for-sale securities, net of hedges.

The fair value of our securities portfolio, including related hedges, was $119.2 billion at Dec. 31, 2018, compared with $119.9 billion at Dec. 31, 2017. The decrease primarily reflects lower investment in sovereign debt/sovereign guaranteed securities and additional unrealized losses on the portfolio, partially offset by additional investments in agency commercial MBS, supranational securities and agency RMBS.

At Dec. 31, 2018, the total securities portfolio had a net unrealized loss of $907 million, compared with a net unrealized loss of $85 million at Dec. 31, 2017, including the impact of related hedges. The increase in the net unrealized pre-tax loss was primarily driven by higher market interest rates.

The unrealized loss, net of tax, on our available-for-sale securities portfolio included in accumulated other comprehensive income ("OCI") was $167 million at Dec. 31, 2018, compared with an unrealized gain of $184 million at Dec. 31, 2017.

At Dec. 31, 2018, 95% of the securities in our portfolio were rated AAA/AA-, compared with 93% at Dec. 31, 2017.

The following table presents the amortizable purchase premium (net of discount) related to the securities portfolio and accretable discount related to the 2009 restructuring of the securities portfolio.

Net premium amortization and discount accretion of securities *(a)* *(dollars in millions)*	**2018**	2017	2016
Amortizable purchase premium (net of discount) relating to securities:			
Balance at period end	**$ 1,429**	$ 1,987	$ 2,188
Estimated average life remaining at period end *(in years)*	**5.0**	5.0	4.9
Amortization	**$ 437**	$ 547	$ 641
Accretable discount related to the prior restructuring of the securities portfolio:			
Balance at period end	**$ 207**	$ 274	$ 315
Estimated average life remaining at period end *(in years)*	**6.3**	6.3	6.2
Accretion	**$ 86**	$ 100	$ 102

(a) Amortization of purchase premium decreases net interest revenue while accretion of discount increases net interest revenue. Both were recorded on a level yield basis.

See Note 4 of the Notes to Consolidated Financial Statements for the pre-tax net securities gains (losses) by security type. See Note 19 of the Notes to Consolidated Financial Statements for details of securities by level in the fair value hierarchy.

Equity investments

We have several equity investments recorded in other assets. These include equity method investments, including renewable energy, and investments in qualified affordable housing projects, Federal Reserve Bank stock, seed capital, private equity and other investments. The following table presents the carrying values at Dec. 31, 2018 and 2017.

Equity investments	Dec. 31,	
(in millions)	**2018**	2017
Renewable energy investments	**$ 1,264**	$ 1,368
Equity in a joint venture and other investments:		
CIBC Mellon	**548**	580
Siguler Guff	**244**	246
Other equity investments	**272**	257
Total equity in a joint venture and other investments	**$ 1,064**	$ 1,083
Qualified affordable housing project investments	**999**	1,014
Federal Reserve Bank stock	**484**	477
Seed capital	**224**	288
Federal Home Loan Bank stock	**111**	82
Private equity investments *(a)*	**74**	55
Total equity investments	**$ 4,220**	$ 4,367

(a) Represents investments in small business investment companies ("SBICs"), which are compliant with the Volcker Rule.

Renewable energy investments

We invest in renewable energy projects to receive an expected after-tax return, which consists of allocated renewable energy tax credits, tax deductions and cash distributions based on the operations of the project. The pre-tax losses on these investments are recorded in investment and other income on the consolidated income statement. The corresponding tax benefits and credits are recorded to the provision for income taxes on the consolidated income statement.

For additional information on the fair value of certain seed capital investments and our private equity investments, see Note 7 of the Notes to Consolidated Financial Statements.

Loans

Total exposure – consolidated	**Dec. 31, 2018**			Dec. 31, 2017		
(in billions)	**Loans**	**Unfunded commitments**	**Total exposure**	Loans	Unfunded commitments	Total exposure
Non-margin loans:						
Financial institutions	**$ 11.6**	**$ 34.0**	**$ 45.6**	$ 13.1	$ 32.5	$ 45.6
Commercial	**2.1**	**15.2**	**17.3**	2.9	18.0	20.9
Subtotal institutional	**13.7**	**49.2**	**62.9**	16.0	50.5	66.5
Wealth management loans and mortgages	**16.0**	**0.8**	**16.8**	16.5	1.1	17.6
Commercial real estate	**4.8**	**3.5**	**8.3**	4.9	3.5	8.4
Lease financings	**1.3**	**—**	**1.3**	1.3	—	1.3
Other residential mortgages	**0.6**	**—**	**0.6**	0.7	—	0.7
Overdrafts	**5.5**	**—**	**5.5**	5.1	—	5.1
Other	**1.2**	**—**	**1.2**	1.2	—	1.2
Subtotal non-margin loans	**43.1**	**53.5**	**96.6**	45.7	55.1	100.8
Margin loans	**13.5**	**0.1**	**13.6**	15.8	—	15.8
Total	**$ 56.6**	**$ 53.6**	**$ 110.2**	$ 61.5	$ 55.1	$ 116.6

At Dec. 31, 2018, total exposures of $110.2 billion decreased 5% compared with Dec. 31, 2017, primarily reflecting lower exposure in the commercial and margin loan portfolios.

Our financial institutions and commercial portfolios comprise our largest concentrated risk. These portfolios comprised 57% of our total exposure at both Dec. 31, 2018 and Dec. 31, 2017. Additionally, most of our overdrafts relate to financial institutions.

Financial institutions

The financial institutions portfolio is shown below.

Financial institutions portfolio exposure	**Dec. 31, 2018**					Dec. 31, 2017		
(dollars in billions)	**Loans**	**Unfunded commitments**	**Total exposure**	**% Inv. grade**	**% due <1 yr.**	Loans	Unfunded commitments	Total exposure
Securities industry	**$ 3.1**	**$ 22.5**	**$ 25.6**	**99%**	**99%**	$ 3.6	$ 19.2	$ 22.8
Banks	**6.3**	**1.6**	**7.9**	**77**	**94**	7.0	1.2	8.2
Asset managers	**1.3**	**6.1**	**7.4**	**98**	**85**	1.4	6.4	7.8
Insurance	**0.1**	**2.5**	**2.6**	**100**	**8**	0.1	3.5	3.6
Government	**0.1**	**0.5**	**0.6**	**100**	**38**	0.1	0.9	1.0
Other	**0.7**	**0.8**	**1.5**	**96**	**48**	0.9	1.3	2.2
Total	**$ 11.6**	**$ 34.0**	**$ 45.6**	**95%**	**88%**	$ 13.1	$ 32.5	$ 45.6

The financial institutions portfolio exposure was $45.6 billion at Dec. 31, 2018, unchanged from Dec. 31, 2017, primarily reflecting an increase in securities industry exposure, offset by lower exposure in all other portfolios.

Financial institution exposures are high-quality, with 95% of the exposures meeting the investment grade equivalent criteria of our internal credit rating classification at Dec. 31, 2018. Each customer is assigned an internal credit rating, which is mapped to an equivalent external rating agency grade based upon a number of dimensions, which are continually evaluated and may change over time. The exposure to financial institutions is generally short-term. Of these exposures, 88% expire within one year and 20% expire within 90 days. In addition, 81% of the financial institutions exposure is secured. For example, securities industry clients and asset managers often borrow against marketable securities held in custody.

For ratings of non-U.S. counterparties, our internal credit rating is generally capped at a rating equivalent to the sovereign rating of the country where the counterparty resides, regardless of the internal credit rating assigned to the counterparty or the underlying collateral.

At Dec. 31, 2018, the secured intraday credit provided to dealers in connection with their tri-party repo activity totaled $20.6 billion and was primarily included in the securities industry portfolio. Dealers secure the outstanding intraday credit with high-quality liquid collateral having a market value in excess of the amount of the outstanding credit.

Our bank exposure primarily relates to our global trade finance. These exposures are short-term in nature, with 94% due in less than one year. The investment grade percentage of our bank exposure was 77% at Dec. 31, 2018, compared with 68% at Dec. 31, 2017. Our non-investment grade exposures are primarily in Brazil. These loans are primarily trade finance loans.

The asset manager portfolio exposure was high-quality, with 98% of the exposures meeting our investment grade equivalent ratings criteria as of Dec. 31, 2018. These exposures are generally short-term liquidity facilities, with the majority to regulated mutual funds.

Commercial

The commercial portfolio is presented below.

Commercial portfolio exposure	**Dec. 31, 2018**					Dec. 31, 2017		
(dollars in billions)	**Loans**	**Unfunded commitments**	**Total exposure**	**% Inv. grade**	**% due <1 yr.**	Loans	Unfunded commitments	Total exposure
Manufacturing	**$ 0.8**	**$ 5.1**	**$ 5.9**	**95%**	**8%**	$ 1.3	$ 6.1	$ 7.4
Services and other	**0.7**	**4.8**	**5.5**	**96**	**25**	0.9	6.0	6.9
Energy and utilities	**0.5**	**4.1**	**4.6**	**95**	**12**	0.7	4.4	5.1
Media and telecom	**0.1**	**1.2**	**1.3**	**94**	**12**	—	1.5	1.5
Total	**$ 2.1**	**$ 15.2**	**$ 17.3**	**95%**	**15%**	$ 2.9	$ 18.0	$ 20.9

The commercial portfolio exposure was $17.3 billion at Dec. 31, 2018, a 17% decrease compared with $20.9 billion at Dec. 31, 2017, primarily reflecting lower exposure in the manufacturing and services and other portfolios.

Utilities-related exposure represents approximately 76% of the energy and utilities portfolio at Dec. 31, 2018. Included in this portfolio is unsecured funded exposure of approximately $160 million to a California utility company that filed for bankruptcy in the first quarter of 2019. As of Feb. 27, 2019, we expect our exposure to this California utility company to decrease by approximately $60 million as a result of current sales. Our nonperforming assets are expected to increase in the first quarter 2019 as a result of the bankruptcy. Based on current market conditions and facts and circumstances which may change, we also expect to record an additional provision for credit losses relating to this exposure of $20 million - $30 million in the first quarter of 2019.

The remaining exposure in the energy and utilities portfolio, which includes exposure to refining, exploration and production companies, integrated companies and pipelines, was 88% investment grade at Dec. 31, 2018, and 77% at Dec. 31, 2017.

Our credit strategy is to focus on investment grade clients that are active users of our non-credit services. The following table summarizes the percentage of the financial institutions and commercial portfolio exposures that are investment grade.

Percentage of the portfolios that are investment grade	Dec. 31, **2018**	2017	2016
Financial institutions	**95%**	93%	92%
Commercial	**95%**	95%	94%

Wealth management loans and mortgages

Our wealth management exposure was $16.8 billion at Dec. 31, 2018, compared with $17.6 billion at Dec. 31, 2017. Wealth management loans and mortgages primarily consist of loans to high-net-worth individuals, which are secured by marketable securities and/or residential property. Wealth management mortgages are primarily interest-only, adjustable-rate mortgages with a weighted-average loan-to-value ratio of 62% at origination. Less than 1% of the mortgages were past due at Dec. 31, 2018.

At Dec. 31, 2018, the wealth management mortgage portfolio consisted of the following geographic concentrations: California - 24%; New York - 18%; Massachusetts - 10%; Florida - 8%; and other - 40%.

Commercial real estate

Our commercial real estate exposure totaled $8.3 billion at Dec. 31, 2018, compared with $8.4 billion at Dec. 31, 2017. Our income-producing commercial real estate facilities are focused on experienced owners and are structured with moderate leverage based on existing cash flows. Our commercial real estate lending activities also include construction and renovation facilities. Our client base consists of experienced developers and long-term holders of real estate assets. Loans are approved on the basis of existing or projected cash flows and supported by appraisals and knowledge of local market conditions. Development loans are structured with moderate leverage, and in many instances, involve some level of recourse to the developer.

At Dec. 31, 2018, 61% of our commercial real estate portfolio was secured. The secured portfolio is diverse by project type, with 43% secured by residential buildings, 36% secured by office buildings, 11% secured by retail properties and 10% secured by other categories. Approximately 97% of the unsecured portfolio consists of real estate investment trusts ("REITs") and real estate operating companies, which are both predominantly investment grade.

At Dec. 31, 2018, our commercial real estate portfolio consisted of the following concentrations: REITs and real estate operating companies - 38%; New York metro - 42%; and other - 20%.

Lease financings

The leasing portfolio exposure totaled $1.3 billion at both Dec. 31, 2018 and Dec. 31, 2017. At Dec. 31, 2018, the lease financings portfolio consisted of exposures backed by well-diversified assets, including large-ticket transportation equipment, the largest consisting of both passenger and freight train cars. Assets are both domestic and foreign-based, with primary concentrations in the United States and Germany. Approximately 48% of the portfolio is additionally secured by highly rated securities and/or secured by letters of credit from investment grade issuers. Counterparty rating equivalents at Dec. 31, 2018 were as follows:

- 55% of the counterparties were A or better;
- 42% were BBB; and
- 3% were non-investment grade.

Other residential mortgages

The other residential mortgages portfolio primarily consists of 1-4 family residential mortgage loans and totaled $594 million at Dec. 31, 2018 and $708 million at Dec. 31, 2017. Included in this portfolio at Dec. 31, 2018 were $128 million of mortgage loans purchased in 2005, 2006 and the first quarter of 2007, of which 11% of the serviced loan balance was at least 60 days delinquent.

Overdrafts

Overdrafts primarily relate to custody and securities clearance clients. Overdrafts occur on a daily basis primarily in the custody and securities clearance business and are generally repaid within two business days.

Other loans

Other loans primarily include loans to consumers that are fully collateralized with equities, mutual funds and fixed-income securities.

Margin loans

Margin loans are collateralized with marketable securities, and borrowers are required to maintain a daily collateral margin in excess of 100% of the value of the loan. Margin loans included $2.6 billion at Dec. 31, 2018 and $4.2 billion at Dec. 31, 2017 related to a term loan program that offers fully collateralized loans to broker-dealers.

Loans by category

The following table shows loans outstanding at year-end over the last five years.

Loans by category *(in millions)*	Dec. 31, **2018**	2017	2016	2015	2014
Domestic:					
Commercial	**$ 1,949**	$ 2,744	$ 2,286	$ 2,115	$ 1,390
Commercial real estate	**4,787**	4,900	4,639	3,899	2,524
Financial institutions	**5,091**	5,568	6,342	6,640	5,603
Lease financings	**706**	772	989	1,007	1,282
Wealth management loans and mortgages	**15,843**	16,420	15,555	13,247	11,095
Other residential mortgages	**594**	708	854	1,055	1,222
Overdrafts	**1,550**	963	1,055	911	1,348
Other	**1,181**	1,131	1,202	1,137	1,113
Margin loans	**13,343**	15,689	17,503	19,340	20,034
Total domestic	**45,044**	48,895	50,425	49,351	45,611
Foreign:					
Commercial	**183**	167	331	227	252
Commercial real estate	**—**	—	15	46	6
Financial institutions	**6,492**	7,483	8,347	9,259	7,716
Lease financings	**551**	527	736	850	889
Wealth management loans and mortgages	**122**	108	99	100	89
Other (primarily overdrafts)	**4,031**	4,264	4,418	3,637	4,569
Margin loans	**141**	96	87	233	—
Total foreign	**11,520**	12,645	14,033	14,352	13,521
Total loans *(a)*	**$ 56,564**	$ 61,540	$ 64,458	$ 63,703	$ 59,132

(a) Net of unearned income of $358 million at Dec. 31, 2018, $394 million at Dec. 31, 2017, $527 million at Dec. 31, 2016, $674 million at Dec. 31, 2015 and $866 million at Dec. 31, 2014, primarily on domestic and foreign lease financings.

Foreign loans

We have credit relationships in foreign markets, particularly in areas associated with our securities servicing and trade finance activities. Excluding lease financings, these activities resulted in outstanding foreign loans of $11.0 billion at Dec. 31, 2018 and $12.1 billion at Dec. 31, 2017. The decrease primarily resulted from lower loans to financial institutions and lower overdrafts.

Maturity of loan portfolio

The following table shows the maturity structure of our loan portfolio at Dec. 31, 2018.

Maturity of loan portfolio at Dec. 31, 2018 *(a)* *(in millions)*	Within 1 year	Between 1 and 5 years	After 5 years	Total
Domestic:				
Commercial	$ 463	$ 1,371	$ 115	$ 1,949
Commercial real estate	702	2,384	1,701	4,787
Financial institutions	4,119	940	32	5,091
Overdrafts	1,550	—	—	1,550
Other	1,181	—	—	1,181
Margin loans	12,843	500	—	13,343
Subtotal	20,858	5,195	1,848	27,901
Foreign	10,283	524	40	10,847
Total	$ 31,141	$ 5,719 *(b)*	$ 1,888 *(b)*	$38,748

(a) Excludes loans collateralized by residential properties, lease financings and wealth management loans and mortgages.

(b) Variable rate loans due after one year totaled $7.6 billion and fixed rate loans totaled $35 million.

Asset quality and allowance for credit losses

Our credit strategy is to focus on investment grade clients who are active users of our non-credit services. Our primary exposure to the credit risk of a customer consists of funded loans, unfunded contractual commitments to lend, standby letters of credit ("SBLC") and overdrafts associated with our custody and securities clearance businesses.

The following table details changes in our allowance for credit losses.

Allowance for credit losses activity *(dollar amounts in millions)*	**2018**	2017	2016	2015	2014
Non-margin loans	**$ 43,080**	$ 45,755	$ 46,868	$ 43,708	$ 39,077
Margin loans	**13,484**	15,785	17,590	19,573	20,034
Total loans	**$ 56,564**	$ 61,540	$ 64,458	$ 63,281	$ 59,111
Average loans outstanding	**55,810**	57,939	61,681	60,672	54,210
Balance, Jan. 1					
Domestic	**$ 226**	$ 245	$ 240	$ 236	$ 288
Foreign	**35**	36	35	44	56
Total allowance at Jan. 1	**261**	281	275	280	344
Charge-offs:					
Commercial	**—**	—	—	—	(12)
Commercial real estate	**—**	—	—	—	(2)
Financial institutions	**—**	—	—	(170)	—
Wealth management loans and mortgages	**—**	—	—	—	(1)
Other residential mortgages	**(1)**	(1)	(2)	(2)	(2)
Foreign	**—**	—	—	—	(3)
Total charge-offs	**(1)**	(1)	(2)	(172)	(20)
Recoveries:					
Commercial	**—**	—	—	—	1
Financial institutions	**—**	—	13	1	1
Other residential mortgages	**2**	5	5	6	2
Foreign	**1**	—	1	—	—
Total recoveries	**3**	5	19	7	4
Net recoveries (charge-offs)	**2**	4	17	(165)	(16)
Provision for credit losses	**(11)**	(24)	(11)	160	(48)
Balance, Dec. 31,					
Domestic	**220**	226	245	240	236
Foreign	**32**	35	36	35	44
Total allowance, Dec. 31,	**$ 252**	$ 261	$ 281	$ 275	$ 280
Allowance for loan losses	**$ 146**	$ 159	$ 169	$ 157	$ 191
Allowance for lending-related commitments	**106**	102	112	118	89
Net (recoveries) charge-offs to average loans outstanding	**— %**	(0.01)%	(0.03)%	0.27%	0.03%
Net (recoveries) charge-offs to total allowance for credit losses	**(0.79)**	(1.53)	(6.05)	60.00	5.71
Allowance for loan losses as a percentage of total loans	**0.26**	0.26	0.26	0.25	0.32
Allowance for loan losses as a percentage of non-margin loans	**0.34**	0.35	0.36	0.36	0.49
Total allowance for credit losses as a percentage of total loans	**0.45**	0.42	0.44	0.43	0.47
Total allowance for credit losses as a percentage of non-margin loans	**0.58**	0.57	0.60	0.63	0.72

The allowance for credit losses decreased $9 million compared with Dec. 31, 2017, driven by the credit to provision for credit losses, partially offset by the impact of an update to the usage given default parameter in 2018. The usage given default parameter associated with the estimate of the probability of drawdown at default was updated in 2018, resulting in an $11 million increase to the allowance for lending-related commitments.

The provision for credit losses was a credit of $11 million in 2018, a credit of $24 million in 2017 and a credit of $11 million in 2016.

We had $13.5 billion of secured margin loans on our balance sheet at Dec. 31, 2018 compared with $15.8 billion at Dec. 31, 2017 and $17.6 billion at Dec. 31, 2016. We have rarely suffered a loss on these types of loans and do not allocate any of our allowance for credit losses to them. As a result, we believe that the ratio of total allowance for credit losses as a percentage of non-margin loans is a more appropriate metric to measure the adequacy of the reserve.

The allowance for loan losses and allowance for lending-related commitments represent management's estimate of losses inherent in our credit portfolio. This evaluation process is subject to numerous estimates and judgments. To the extent actual results differ from forecasts or management's judgment, the allowance for credit losses may be greater or less than future charge-offs.

Based on an evaluation of the allowance for credit losses as discussed in "Critical accounting estimates" and Note 1 of the Notes to Consolidated Financial Statements, we have allocated our allowance for credit losses as follows.

Allocation of allowance	Dec. 31,				
	2018	2017	2016	2015	2014
Commercial	**32%**	30%	29%	30%	21%
Commercial real estate	**30**	29	26	22	18
Foreign	**13**	13	13	13	16
Financial institutions	**9**	9	9	11	11
Wealth management *(a)*	**8**	8	8	7	8
Other residential mortgages	**6**	8	10	12	14
Lease financing	**2**	3	5	5	12
Total	**100%**	100%	100%	100%	100%

(a) Includes the allowance for wealth management mortgages.

The allocation of the allowance for credit losses is inherently judgmental, and the entire allowance for credit losses is available to absorb credit losses regardless of the nature of the losses.

Nonperforming assets

Nonperforming assets *(dollars in millions)*	Dec. 31, **2018**	2017	2016	2015	2014
Nonperforming loans:					
Other residential mortgages	**$ 67**	$ 78	$ 91	$ 102	$ 112
Wealth management loans and mortgages	**9**	7	8	11	12
Commercial real estate	**—**	1	—	2	1
Lease financings	**—**	—	4	—	—
Financial institutions	**—**	—	—	171	—
Total nonperforming loans	**76**	86	103	286	125
Other assets owned	**3**	4	4	6	3
Total nonperforming assets *(a)*	**$ 79**	$ 90	$ 107	$ 292	$ 128
Nonperforming assets ratio	**0.14%**	0.15%	0.17%	0.46%	0.22%
Nonperforming assets ratio, excluding margin loans	**0.18**	0.20	0.23	0.67	0.33
Allowance for loan losses/nonperforming loans	**192.1**	184.9	164.1	54.9	152.8
Allowance for loan losses/nonperforming assets	**184.8**	176.7	157.9	53.8	149.2
Total allowance for credit losses/nonperforming loans	**331.6**	303.5	272.8	96.2	224.0
Total allowance for credit losses/nonperforming assets	**319.0**	290.0	262.6	94.2	218.8

(a) Loans of consolidated investment management funds are not part of BNY Mellon's loan portfolio and are excluded from the nonperforming assets table above. Included in the loans of consolidated investment management funds are nonperforming loans of $53 million at Dec. 31, 2014 which are recorded at fair value and therefore do not impact the provision for credit losses and allowance for loan losses. In the second quarter of 2015, BNY Mellon adopted the accounting guidance included in ASU 2015-02, Consolidations. As a result, we deconsolidated substantially all of the loans of consolidated investment management funds retrospectively to Jan. 1, 2015.

Nonperforming assets activity *(in millions)*	**2018**	2017
Balance at beginning of year	**$ 90**	$ 107
Additions	**10**	12
Return to accrual status	**(2)**	(5)
Charge-offs	**(1)**	(1)
Paydowns/sales	**(18)**	(23)
Balance at end of year	**$ 79**	$ 90

Nonperforming assets decreased $11 million compared with Dec. 31, 2017, primarily reflecting lower other residential mortgage loans driven by paydowns and sales.

As noted earlier, our nonperforming assets are expected to increase in the first quarter of 2019 as a result of the bankruptcy of a Californian utility company.

The following table presents loans that are past due 90 days or more and still accruing interest.

Past due loans ≥ 90 days still accruing interest at year-end					
(in millions)	**2018**	2017	2016	2015	2014
Domestic:					
Consumer	**$ 12**	$ 5	$ 7	$ 5	$ 6
Commercial	**—**	—	—	—	—
Total domestic	**12**	5	7	5	6
Foreign	**—**	—	—	—	—
Total past due loans	**$ 12**	$ 5	$ 7	$ 5	$ 6

Loans past due 90 days or more at Dec. 31, 2018 primarily consisted of other residential mortgage loans and wealth management loans and mortgages. See Note 5 of the Notes to Consolidated Financial Statements for additional information on our past due loans. See "Nonperforming assets" in Note 1 of the Notes to Consolidated Financial Statements for our policy for placing loans on nonaccrual status.

Deposits

We receive client deposits through a variety of Investment Services and Investment Management businesses and we rely on those deposits as a low-cost and stable source of funding.

Total deposits were $238.8 billion at Dec. 31, 2018, a decrease of 2% compared with $244.3 billion at Dec. 31, 2017. The decrease primarily reflects lower interest-bearing deposits in non-U.S. offices and noninterest-bearing deposits principally in U.S. offices, partially offset by higher interest-bearing deposits in U.S. offices.

Noninterest-bearing deposits were $70.8 billion at Dec. 31, 2018 compared with $82.7 billion at Dec. 31, 2017. Interest-bearing deposits were $168.0 billion at Dec. 31, 2018 compared with $161.6 billion at Dec. 31, 2017.

The aggregate amount of deposits by foreign customers in domestic offices was $36.4 billion and $39.9 billion at Dec. 31, 2018 and Dec. 31, 2017, respectively.

Deposits in foreign offices totaled $99.2 billion at Dec. 31, 2018 and $114.8 billion at Dec. 31, 2017. The majority of these deposits were in amounts in excess of $100,000 and were primarily overnight foreign deposits.

The following table shows the maturity breakdown of domestic time deposits of $100,000 or more at Dec. 31, 2018.

Domestic time deposits ≥ $100,000 at Dec. 31, 2018			
(in millions)	Certificates of deposit	Other time deposits	Total
3 months or less	**$ 77**	**$ 32,247**	**$ 32,324**
Between 3 and 6 months	**36**	**—**	**36**
Between 6 and 12 months	**88**	**—**	**88**
Over 12 months	**2**	**—**	**2**
Total	**$ 203**	**$ 32,247**	**$ 32,450**

Short-term borrowings

We fund ourselves primarily through deposits and, to a lesser extent, other short-term borrowings and long-term debt. Short-term borrowings consist of federal funds purchased and securities sold under repurchase agreements, payables to customers and broker-dealers, commercial paper and other borrowed funds. Certain other borrowings, for example, securities sold under repurchase agreements, require the delivery of securities as collateral.

See "Liquidity and dividends" for a discussion of long-term debt and liquidity metrics that we monitor.

Information related to federal funds purchased and securities sold under repurchase agreements is presented below.

Federal funds purchased and securities sold under repurchase agreements			
(dollars in millions)	**2018**	2017	2016
Maximum month-end balance during the year	**$ 21,600**	$ 21,850	$ 25,995
Average daily balance *(a)*	**$ 15,546**	$ 19,653	$ 14,489
Weighted-average rate during the year *(a)*	**4.88%**	1.14%	0.25%
Ending balance *(b)*	**$ 14,243**	$ 15,163	$ 9,989
Weighted-average rate at Dec. 31 *(b)*	**12.99%**	2.33%	0.38%

(a) Includes the impact of offsetting under enforceable netting agreements of $25,203 million for 2018, $5,657 million for 2017 and less than $350 million for 2016.

(b) Includes the impact of offsetting under enforceable netting agreements of $76,040 million at Dec. 31, 2018, $25,848 million at Dec. 31, 2017 and $481 million at Dec. 31, 2016.

Federal funds purchased and securities sold under repurchase agreements	Quarter ended		
(dollars in millions)	**Dec. 31, 2018**	Sept. 30, 2018	Dec. 31, 2017
Maximum month-end balance during the quarter	**$ 14,243**	$ 13,020	$ 20,098
Average daily balance *(a)*	**$ 10,980**	$ 14,199	$ 20,211
Weighted-average rate during the quarter *(a)*	**10.95%**	5.33%	1.83%
Ending balance *(b)*	**$ 14,243**	$ 10,158	$ 15,163
Weighted-average rate at period end *(b)*	**12.99%**	7.33%	2.33%

(a) Includes the impact of offsetting under enforceable netting agreements of $42,721 million for the fourth quarter of 2018, $25,922 million for the third quarter of 2018 and $14,128 million for the fourth quarter of 2017.

(b) Includes the impact of offsetting under enforceable netting agreements of $76,040 million at Dec. 31, 2018, $58,540 million at Sept. 30, 2018 and $25,848 million at Dec. 31, 2017.

Fluctuations of federal funds purchased and securities sold under repurchase agreements between periods reflect changes in overnight borrowing opportunities. The increase in the weighted-average rates, compared with both Sept. 30, 2018 and Dec. 31, 2017, primarily reflects the increase in repurchase agreement activity with the Fixed Income Clearing Corporation (“FICC”), where we record interest expense gross, but the average balances are reduced as a result of the impact of offsetting under enforceable netting agreements. The increased activity primarily relates to government securities collateralized resale and repurchase agreements executed with clients that are novated to and settle with the FICC.

Information related to payables to customers and broker-dealers is presented below.

Payables to customers and broker-dealers			
(dollars in millions)	**2018**	2017	2016
Maximum month-end balance during the year	**$ 20,905**	$ 21,621	$ 22,327
Average daily balance *(a)*	**$ 19,450**	$ 21,142	$ 21,149
Weighted-average rate during the year *(a)*	**1.17%**	0.34%	0.07%
Ending balance at Dec. 31	**$ 19,731**	$ 20,184	$ 20,987
Weighted-average rate at Dec. 31	**1.62%**	0.56%	0.09%

(a) The weighted-average rate is calculated based on, and is applied to, the average interest-bearing payables to customers and broker-dealers, which were $16,353 million in 2018, $18,984 million in 2017 and $16,925 million in 2016.

Payables to customers and broker-dealers	Quarter ended		
(dollars in millions)	**Dec. 31, 2018**	Sept. 30, 2018	Dec. 31, 2017
Maximum month-end balance during the quarter	**$ 19,731**	$ 19,232	$ 21,380
Average daily balance *(a)*	**$ 18,955**	$ 19,073	$ 21,130
Weighted-average rate during the quarter *(a)*	**1.61%**	1.23%	0.49%
Ending balance	**$ 19,731**	$ 18,683	$ 20,184
Weighted-average rate at period end	**1.62%**	1.30%	0.56%

(a) The weighted-average rate is calculated based on, and is applied to, the average interest-bearing payables to customers and broker-dealers, which were $15,727 million in the fourth quarter of 2018, $16,252 million in the third quarter of 2018 and $17,868 million in the fourth quarter of 2017.

Payables to customers and broker-dealers represent funds awaiting re-investment and short sale proceeds payable on demand. Payables to customers and broker-dealers are driven by customer trading activity levels and market volatility.

Information related to commercial paper is presented below.

Commercial paper			
(dollars in millions)	**2018**	2017	2016
Maximum month-end balance during the year	**$ 4,470**	$ 4,714	$ 4,950
Average daily balance	**$ 2,607**	$ 2,630	$ 1,337
Weighted-average rate during the year	**1.97%**	1.08%	0.37%
Ending balance at Dec. 31	**$ 1,939**	$ 3,075	$ —
Weighted-average rate at Dec. 31	**2.34%**	1.27%	—%

Commercial paper	Quarter ended		
(dollars in millions)	**Dec. 31, 2018**	Sept. 30, 2018	Dec. 31, 2017
Maximum month-end balance during the quarter	**$ 1,939**	$ 4,422	$ 4,714
Average daily balance	**$ 353**	$ 3,102	$ 3,391
Weighted-average rate during the quarter	**2.41%**	2.10%	1.23%
Ending balance	**$ 1,939**	$ 735	$ 3,075
Weighted-average rate at period end	**2.34%**	2.06%	1.27%

The Bank of New York Mellon, our largest bank subsidiary, issues commercial paper that matures within 397 days from date of issue and is not redeemable prior to maturity or subject to voluntary prepayment. The fluctuations in the commercial paper balances, compared with prior periods, primarily reflects management of overall liquidity. The increase in weighted-average rates, compared with prior periods, primarily reflects increases in the Fed Funds effective rate and the issuance of higher-yielding term commercial paper.

Information related to other borrowed funds is presented below.

Other borrowed funds *(dollars in millions)*	**2018**	2017	2016
Maximum month-end balance during the year	**$ 3,269**	$ 3,955	$ 1,280
Average daily balance	**$ 2,545**	$ 1,916	$ 846
Weighted-average rate during the year	**2.26%**	1.36%	0.91%
Ending balance at Dec. 31	**$ 3,227**	$ 3,028	$ 754
Weighted-average rate at Dec. 31	**2.64%**	1.48%	0.89%

Other borrowed funds	Quarter ended		
(dollars in millions)	**Dec. 31, 2018**	Sept. 30, 2018	Dec. 31, 2017
Maximum month-end balance during the quarter	**$ 3,227**	$ 3,269	$ 3,955
Average daily balance	**$ 2,903**	$ 2,747	$ 3,421
Weighted-average rate during the quarter	**2.44%**	2.33%	1.46%
Ending balance	**$ 3,227**	$ 2,934	$ 3,028
Weighted-average rate at period end	**2.64%**	2.48%	1.48%

Other borrowed funds primarily include borrowings from the Federal Home Loan Bank ("FHLB"), overdrafts of sub-custodian account balances in our Investment Services businesses, capital lease obligations and borrowings under lines of credit by our Pershing subsidiaries. Overdrafts typically relate to timing differences for settlements. The increase in other borrowed funds, compared with prior periods primarily reflects an increase in borrowings from the FHLB partially offset by a decline in overdrafts and lower capital lease obligations due to the purchase of the leased asset.

Liquidity and dividends

BNY Mellon defines liquidity as the ability of the Parent and its subsidiaries to access funding or convert assets to cash quickly and efficiently, or to roll over or issue new debt, especially during periods of market stress, at a reasonable cost and in order to meet its short-term (up to one year) obligations. Funding liquidity risk is the risk that BNY Mellon cannot meet its cash and collateral obligations at a reasonable cost for both expected and unexpected cash flow and collateral needs without adversely affecting daily operations or our financial condition. Funding liquidity risk can arise from funding mismatches, market constraints from the inability to convert assets to cash, the inability to hold or raise cash, low overnight deposits, deposit run-off or contingent liquidity events.

We also manage liquidity risks on an intraday basis. Intraday liquidity risk is the risk that BNY Mellon cannot access funds during the business day to make payments or settle immediate obligations, usually in real time. Intraday liquidity risk can arise from timing mismatches, market constraints from the inability to convert assets to cash, the inability to raise cash intraday, low overnight deposits and/or adverse stress events.

Changes in economic conditions or exposure to credit, market, operational, legal and reputational risks also can affect BNY Mellon's liquidity risk profile and are considered in our liquidity risk framework.

For additional information on our liquidity policy, see "Risk Management - Liquidity risk."

We monitor and control liquidity exposures and funding needs within and across significant legal entities, branches, currencies and business lines, taking into account, among other factors, any applicable restrictions on the transfer of liquidity among entities.

BNY Mellon also manages potential intraday liquidity risks. We monitor and manage intraday liquidity against existing and expected intraday liquid resources (such as cash balances, remaining intraday credit capacity, intraday contingency funding and available collateral) to enable BNY Mellon to meet its intraday obligations under normal and reasonably severe stressed conditions.

The Parent's policy is to have access to sufficient unencumbered cash and cash equivalents at each quarter-end to cover forecasted debt redemptions, net interest payments and net tax payments for the following 18-month period, and to provide sufficient collateral to satisfy transactions subject to Section 23A of the Federal Reserve Act. As of Dec. 31, 2018, the Parent was in compliance with this policy.

We define available funds for internal liquidity management purposes as liquid funds (which include interest-bearing deposits with banks and federal funds sold and securities purchased under resale agreements), cash and due from banks and interest-bearing deposits with the Federal Reserve and other central banks. The following table presents our total available funds, including liquid funds, at period end and on an average basis.

Available and liquid funds *(in millions)*	**Dec. 31, 2018**	Dec. 31, 2017	Average **2018**	Average 2017	Average 2016
Available funds:					
Liquid funds:					
Interest-bearing deposits with banks	**$ 14,148**	$ 11,979	**$ 14,740**	$ 14,879	$ 14,704
Federal funds sold and securities purchased under resale agreements	**46,795**	28,135	**27,883**	27,192	25,767
Total liquid funds	**60,943**	40,114	**42,623**	42,071	40,471
Cash and due from banks	**5,864**	5,382	**5,014**	5,039	4,308
Interest-bearing deposits with the Federal Reserve and other central banks	**67,988**	91,510	**68,408**	70,213	80,593
Total available funds	**$ 134,795**	$ 137,006	**$ 116,045**	$ 117,323	$ 125,372
Total available funds as a percentage of total assets	**37%**	37%	**34%**	34%	35%

We had $60.9 billion of liquid funds at Dec. 31, 2018 and $40.1 billion at Dec. 31, 2017. Of the $60.9 billion in liquid funds held at Dec. 31, 2018, $14.1 billion was placed in interest-bearing deposits with large, highly-rated global financial institutions with a weighted-average life to maturity of approximately 13 days. Of the $14.1 billion, $1.1 billion was placed with banks in the Eurozone.

Total available funds were $134.8 billion at Dec. 31, 2018, compared with $137.0 billion at Dec. 31, 2017. The decrease was primarily due to lower interest-bearing deposits with the Federal Reserve and other central banks, partially offset by higher federal funds sold and securities purchased under resale agreements.

Average non-core sources of funds, such as federal funds purchased and securities sold under repurchase agreements, trading liabilities, commercial paper and other borrowed funds, were $22.0 billion for 2018 and $25.4 billion for 2017. The decrease primarily reflects a decrease in federal funds purchased and securities sold under repurchase agreements.

Average foreign deposits, primarily from our European-based Investment Services business, were $95.5 billion for 2018, compared with $96.2 billion for 2017. Average interest-bearing domestic deposits were $59.2 billion for 2018 and $46.9 billion for 2017. The increase primarily reflects an increase in demand deposits.

Average payables to customers and broker-dealers were $16.4 billion for 2018 and $19.0 billion for 2017. Payables to customers and broker-dealers are driven by customer trading activity and market volatility.

Average long-term debt was $28.3 billion for 2018 and $27.4 billion for 2017. The increase reflects issuances, partially offset by the maturities of long-term debt.

Average noninterest-bearing deposits decreased to $63.8 billion for 2018 from $71.7 billion for 2017, reflecting lower client deposits.

A significant reduction in our Investment Services business would reduce our access to deposits. See "Asset/liability management" for additional factors that could impact our deposit balances.

Sources of liquidity

The Parent's three major sources of liquidity are access to the debt and equity markets, dividends from its subsidiaries, and cash on hand and cash otherwise made available in business-as-usual circumstances to the Parent through a committed credit facility with our intermediate holding company ("IHC").

Our ability to access the capital markets on favorable terms, or at all, is partially dependent on our credit ratings, which are as follows:

Credit ratings at Dec. 31, 2018	Moody's		S&P	Fitch		DBRS
Parent:						
Long-term senior debt	A1		A	AA-		AA (low)
Subordinated debt	A2		A-	A+		A (high)
Preferred stock	Baa1		BBB	BBB		A (low)
Outlook - Parent:	Stable		Stable	Stable		Stable
The Bank of New York Mellon:						
Long-term senior debt	Aa2		AA-	AA		AA
Subordinated debt	NR		A	NR		NR
Long-term deposits	Aa1		AA-	AA+		AA
Short-term deposits	P1		A-1+	F1+		R-1 (high)
Commercial paper	P1		A-1+	F1+		R-1 (high)
BNY Mellon, N.A.:						
Long-term senior debt	Aa2	*(a)*	AA-	AA	*(a)*	AA
Long-term deposits	Aa1		AA-	AA+		AA
Short-term deposits	P1		A-1+	F1+		R-1 (high)
Outlook - Banks:	Stable		Stable	Stable		Stable

(a) Represents senior debt issuer default rating.
NR - Not rated.

Long-term debt totaled $29.2 billion at Dec. 31, 2018 and $28.0 billion at Dec. 31, 2017. The balance reflects issuances of $5.2 billion, offset by maturities of $3.7 billion and a decrease in the fair value of hedged long-term debt. The Parent has $4.3 billion of long-term debt that will mature in 2019.

The following table presents the long-term debt issued in 2018.

Debt issuances *(in millions)*	**2018**
Senior notes:	
3-month LIBOR + 30bps senior notes due 2020	**$ 1,000**
2.95% senior notes due 2023	**1,000**
3.50% senior notes due 2023	**750**
3.45% senior notes due 2023	**750**
3.40% senior notes due 2028	**750**
3.85% senior notes due 2028	**900**
Total debt issuances	**$ 5,150**

In the second quarter of 2018, BNY Mellon established programs for the issuance of notes and certificates of deposit ("CDs") issued by The Bank of New York Mellon, our largest bank subsidiary. These programs are designed to improve the diversity of our funding sources and provide additional flexibility in our liquidity planning. In December 2018, we issued $1 billion of senior bank notes maturing in 2020 at an annual interest rate of LIBOR plus 30 basis points. At Dec. 31, 2018, $2.8 billion of CDs were outstanding.

The Bank of New York Mellon, our largest bank subsidiary, issues commercial paper that matures within 397 days from date of issue and is not redeemable prior to maturity or subject to voluntary prepayment. The average commercial paper borrowings were $2.6 billion for both 2018 and 2017. Commercial paper outstanding was $1.9 billion at Dec. 31, 2018 and $3.1 billion at Dec. 31, 2017.

Subsequent to Dec. 31, 2018, our U.S. bank subsidiaries could declare dividends to the Parent of approximately $3.7 billion, without the need for a regulatory waiver. In addition, at Dec. 31, 2018, non-bank subsidiaries of the Parent had liquid assets of approximately $1.7 billion. Restrictions on our ability to obtain funds from our subsidiaries are discussed in more detail in "Supervision and Regulation - Capital Planning and Stress Testing - Payment of Dividends, Stock Repurchases and Other Capital Distributions" and in Note 18 of the Notes to Consolidated Financial Statements.

Pershing LLC has uncommitted lines of credit in place for liquidity purposes which are guaranteed by the Parent. Pershing LLC has three separate uncommitted lines of credit amounting to $750 million in aggregate. There were no borrowings under these lines in 2018. Pershing Limited, an indirect UK-based subsidiary of BNY Mellon, has two separate uncommitted lines of credit amounting to $250 million in aggregate. Average borrowings under these lines were $1 million, in aggregate, in 2018.

The double leverage ratio is the ratio of our equity investment in subsidiaries divided by our consolidated parent company equity, which includes our noncumulative perpetual preferred stock. In short, the double leverage ratio measures the extent to which equity in subsidiaries is financed by Parent company debt. As the double leverage ratio increases, this can reflect greater demands on a company's cash flows in order to service interest payments and debt maturities. BNY Mellon's double leverage ratio is managed in a range considering the high level of unencumbered available liquid assets held in its principal subsidiaries (such as central bank deposit placements and government securities), the Company's cash generating fee-based business model, with fee revenue representing 78% of total revenue in 2018, and the dividend capacity of our banking subsidiaries. Our double leverage ratio was 117.7% at Dec. 31, 2018 and 122.5% at Dec. 31, 2017, and within the range targeted by management.

Uses of funds

The Parent's major uses of funds are payment of dividends, repurchases of common stock, principal and interest payments on its borrowings, acquisitions and additional investments in its subsidiaries.

In 2018, we paid $1.2 billion in dividends on our common and preferred stock. Our common stock dividend payout ratio was 26% for 2018.

In 2018, we repurchased 63.7 million common shares at an average price of $51.29 per common share for a total cost of $3.3 billion.

Liquidity coverage ratio

U.S. regulators have established an LCR that requires certain banking organizations, including BNY Mellon, to maintain a minimum amount of unencumbered high-quality liquid assets ("HQLA") sufficient to withstand the net cash outflow under a hypothetical standardized acute liquidity stress scenario for a 30-day time horizon.

The following table presents the consolidated HQLA at Dec. 31, 2018, and the average HQLA and average LCR for the fourth quarter of 2018.

Consolidated HQLA and LCR *(dollars in billions)*		**Dec. 31, 2018**
Securities *(a)*	**$**	**121**
Cash *(b)*		**61**
Total consolidated HQLA *(c)*	**$**	**182**
Total consolidated HQLA - average *(c)*	**$**	**164**
Average LCR		**118%**

(a) Primarily includes securities of U.S. government-sponsored enterprises, U.S. Treasury, sovereign securities, U.S. agency and investment-grade corporate debt.
(b) Primarily includes cash on deposit with central banks.
(c) Consolidated HQLA presented before adjustments. After haircuts and the impact of trapped liquidity, consolidated HQLA totaled $133 billion at Dec. 31, 2018 and averaged $121 billion for the fourth quarter of 2018.

The U.S. LCR rule requires BNY Mellon and each of our affected domestic bank subsidiaries to meet an LCR of at least 100%. BNY Mellon and each of our affected domestic bank subsidiaries were compliant with the U.S. LCR requirements throughout 2018.

Statement of cash flows

The following summarizes the activity reflected on the consolidated statement of cash flows. While this information may be helpful to highlight certain macro trends and business strategies, the cash flow analysis may not be as relevant when analyzing changes in our net earnings and net assets. We believe that in addition to the traditional cash flow analysis, the discussion related to liquidity and dividends and asset/liability management herein may provide more useful context in evaluating our liquidity position and related activity.

Net cash provided by operating activities was $6.0 billion in 2018, compared with $4.7 billion in 2017 and $6.3 billion in 2016. In 2018, 2017 and 2016, cash flows provided by operations were principally the result of earnings. In 2018, cash flows provided by operations was also the result of changes in accruals and other balances, partially offset by changes in trading assets and liabilities. In 2017, cash flows provided by operations were partially offset by changes in trading assets and liabilities. In 2016, cash flows provided by operations also reflect changes in trading assets and liabilities, partially offset by changes in accruals and other balances.

Net cash provided by investing activities was $3.3 billion in 2018, compared with net cash used for investing activities of $32.7 billion in 2017 and net cash provided by investing activities of $50.3 billion in 2016. In 2018, 2017 and 2016, net cash provided by or used for investing activities primarily reflects changes in interest-bearing deposits with the Federal Reserve and other central banks and the net impact of securities activity. In 2018, net cash provided by investing activities was partially offset by changes in federal funds sold and securities purchased under resale agreements.

Net cash used for financing activities was $8.1 billion in 2018, compared with net cash provided by financing activities of $26.8 billion in 2017 and net cash used for financing activities of $59.1 billion in 2016. In 2018, net cash used for financing activities primarily reflects repayments of long-term debt, common stock repurchases and changes in deposits, partially offset by proceeds from the issuance of long-term debt. In 2017 and 2016, net cash provided by, or used for, financing activities primarily reflects changes in deposits and changes in federal funds purchased and securities sold under repurchase agreements. In 2017, net cash provided by financing activities also reflects net proceeds from the issuance of long-term debt, changes in commercial paper and other borrowed funds, partially offset by common stock repurchases. In 2016, net cash used for financing activities also reflects repayment of long-term debt and common stock repurchases, partially offset by the net proceeds from the issuance of long-term debt.

Commitments and obligations

We have contractual obligations to make fixed and determinable payments to third parties as indicated in the table below. The table excludes certain obligations such as trade payables and trading liabilities, where the obligation is short-term or subject to valuation based on market factors. In addition to the amounts shown in the table below, at Dec. 31, 2018, $103 million of unrecognized tax benefits have been recorded as liabilities in accordance with ASC 740, *Income Taxes*. Related to these unrecognized tax benefits, we have also recorded a liability for potential interest of $22 million. At this point, it is not possible to determine when these amounts will be settled or resolved.

Contractual obligations at Dec. 31, 2018		Payments due by period			
(in millions)	Total	Less than 1 year	1-3 years	3-5 years	Over 5 years
Deposits without a stated maturity	**$ 128,032**	$ 128,032	$ —	$ —	$ —
Term deposits	**40,592**	40,543	48	—	1
Federal funds purchased and securities sold under repurchase agreements	**14,243**	14,243	—	—	—
Payables to customers and broker-dealers	**19,731**	19,731	—	—	—
Other borrowed funds *(a)*	**3,227**	3,227	—	—	—
Long-term debt *(b)*	**33,614**	5,080	10,883	7,650	10,001
Unfunded pension and post-retirement benefits	**256**	27	58	53	118
Investment commitments *(c)*	**479**	201	230	30	18
Total contractual obligations	**$ 240,174**	$ 211,084	$ 11,219	$ 7,733	$ 10,138

(a) Includes capital leases.
(b) Includes interest.
(c) Includes Community Reinvestment Act commitments.

We have entered into fixed and determinable commitments as indicated in the table below:

Other commitments at Dec. 31, 2018		Amount of commitment expiration per period			
(in millions)	Total	Less than 1 year	1-3 years	3-5 years	Over 5 years
Securities lending indemnifications *(a)*	**$ 401,504**	$ 401,504	$ —	$ —	$ —
Lending commitments	**50,631**	29,766	6,985	13,310	570
Standby letters of credit	**2,817**	1,972	496	349	—
Operating leases	**1,459**	264	455	308	432
Purchase obligations *(b)*	**1,374**	722	465	148	39
Commercial letters of credit	**165**	165	—	—	—
Private equity commitments *(c)*	**41**	17	13	11	—
Total commitments	**$ 457,991**	$ 434,410	$ 8,414	$ 14,126	$ 1,041

(a) Excludes the indemnifications for securities booked at BNY Mellon resulting from the CIBC Mellon joint venture, which totaled $56 billion at Dec. 31, 2018.
(b) Purchase obligations are defined as agreements to purchase goods or services that are enforceable and legally binding and specify all significant terms.
(c) Relates to SBIC investments, which are compliant with the Volcker Rule.

See "Liquidity and dividends" and Note 21 of the Notes to Consolidated Financial Statements for a further discussion of the source of funds for our commitments and obligations.

Off-balance sheet arrangements

Off-balance sheet arrangements discussed in this section are limited to guarantees, retained or contingent interests and obligations arising out of unconsolidated variable interest entities ("VIEs"). For BNY Mellon, these items include certain guarantees. Guarantees include SBLCs issued as part of our corporate banking business and securities lending indemnifications issued as part of our Investment Services business. See Note 21 of the Notes to Consolidated Financial Statements for a further discussion of our off-balance sheet arrangements.

Capital

Capital data *(dollars in millions except per share amounts; common shares in thousands)*	**2018**	2017
At period end:		
BNY Mellon shareholders' equity to total assets ratio	**11.2%**	11.1%
BNY Mellon common shareholders' equity to total assets ratio	**10.2%**	10.1%
Total BNY Mellon shareholders' equity	**$ 40,638**	$ 41,251
Total BNY Mellon common shareholders' equity *(a)*	**$ 37,096**	$ 37,709
BNY Mellon tangible common shareholders' equity – Non-GAAP *(a)*	**$ 18,290**	$ 18,486
Book value per common share *(a)*	**$ 38.63**	$ 37.21
Tangible book value per common share – Non-GAAP *(a)*	**$ 19.04**	$ 18.24
Closing stock price per common share	**$ 47.07**	$ 53.86
Market capitalization	**$ 45,207**	$ 54,584
Common shares outstanding	**960,426**	1,013,442
Full-year:		
Average common equity to average assets	**11.0%**	10.5%
Cash dividends per common share	**$ 1.04**	$ 0.86
Common dividend payout ratio	**26%**	23%
Common dividend yield	**2.2%**	1.6%

(a) See "Supplemental information – Explanation of GAAP and Non-GAAP financial measures" beginning on page 105 for a reconciliation of GAAP to Non-GAAP.

The Bank of New York Mellon Corporation total shareholders' equity decreased to $40.6 billion at Dec. 31, 2018 from $41.3 billion at Dec. 31, 2017. The decrease primarily reflects common stock repurchases, dividend payments and unrealized losses on securities available-for-sale, partially offset by earnings and the impact of stock awards and option exercises.

We repurchased 63.7 million common shares at an average price of $51.29 per common share for a total of $3.3 billion in 2018 including the additional share repurchases approved in December 2018. We expect to continue to repurchase shares in the first half of 2019 under the 2018 capital plan.

The unrealized loss, net of tax, on our available-for-sale securities portfolio included in accumulated OCI was $167 million at Dec. 31, 2018, compared with a net unrealized gain of $184 million at Dec. 31, 2017. The decrease in the unrealized gain, net of tax, was primarily driven by higher interest rates.

Capital adequacy

Regulators establish certain levels of capital for bank holding companies ("BHCs") and banks, including BNY Mellon and our bank subsidiaries, in accordance with established quantitative measurements. For the Parent to maintain its status as a financial holding company, our U.S. bank subsidiaries and BNY Mellon must, among other things, qualify as "well capitalized." As of Dec. 31, 2018 and Dec. 31, 2017, BNY Mellon and our U.S. bank subsidiaries were "well capitalized."

Failure to satisfy regulatory standards, including "well capitalized" status or capital adequacy rules more generally, could result in limitations on our activities and adversely affect our financial condition. See the discussion of these matters in "Supervision and Regulation - Regulated Entities of BNY Mellon and Ancillary Regulatory Requirements" and "Risk Factors - Operational Risk - Failure to satisfy regulatory standards, including "well capitalized" and "well managed" status or capital adequacy and liquidity rules more generally, could result in limitations on our activities and adversely affect our business and financial condition."

The U.S. banking agencies' capital rules are based on the framework adopted by the Basel Committee on Banking Supervision ("BCBS"), as amended from time to time. For additional information on these capital requirements, see "Supervision and Regulation." BNY Mellon is subject to the U.S. capital rules, which were gradually phased-in over a multi-year period through Jan. 1, 2019. The phase-in requirements for consolidated capital were completed on Jan. 1, 2018.

Our risk-based capital adequacy is determined using the higher of RWAs determined using the Advanced Approach and Standardized Approach.

The table below presents our consolidated and largest bank subsidiary regulatory capital ratios.

Consolidated and largest bank subsidiary regulatory capital ratios	**Dec. 31, 2018**			Dec. 31, 2017	
	Well capitalized	Minimum required *(a)*	Capital ratios	Fully phased-in	Transitional *(b)*
Consolidated regulatory capital ratios: *(c)(d)*					
Advanced Approach:					
CET1 ratio	N/A *(e)*	7.5%	**10.7%**	10.3%	10.7%
Tier 1 capital ratio	6%	9	**12.8**	12.3	12.7
Total capital ratio	10%	11	**13.6**	13.0	13.4
Standardized Approach:					
CET1 ratio	N/A *(e)*	7.5%	**11.7%**	11.5%	11.9%
Tier 1 capital ratio	6%	9	**14.1**	13.7	14.2
Total capital ratio	10%	11	**15.1**	14.7	15.1
Tier 1 leverage ratio	N/A *(e)*	4	**6.6**	6.4	6.6
SLR *(f)*	N/A *(e)*	5	**6.0**	5.9	6.1
The Bank of New York Mellon regulatory capital ratios: *(c)*					
Advanced Approach:					
CET1 ratio	6.5%	6.375%	**14.0%**	N/A	14.1%
Tier 1 capital ratio	8	7.875	**14.3**	N/A	14.4
Total capital ratio	10	9.875	**14.7**	N/A	14.7
Tier 1 leverage ratio	5	4	**7.6**	N/A	7.6
SLR *(f)*	6	3	**6.8**	6.7	6.9

(a) *Minimum requirements for Dec. 31, 2018 include minimum thresholds plus currently applicable buffers.*
(b) *Reflects transitional adjustments to CET1, Tier 1 capital and Tier 2 capital required in 2017 under the U.S. capital rules.*
(c) *For our CET1, Tier 1 capital and Total capital ratios, our effective capital ratios under U.S. capital rules are the lower of the ratios as calculated under the Standardized and Advanced Approaches. The Tier 1 leverage ratio is based on Tier 1 capital and quarterly average total assets.*
(d) *See page 48 for the capital ratio requirements with the phase-in of the capital conservation buffer and the U.S. Global Systemically Important Bank ("G-SIB") surcharge, as well as the introduction of the SLR buffer.*
(e) *The Federal Reserve's regulations do not establish well capitalized thresholds for these measures for BHCs.*
(f) *SLR became a binding measure on Jan. 1, 2018. The SLR is based on Tier 1 capital and total leverage exposure, which includes certain off-balance sheet exposures.*

Our CET1 ratio determined under the Advanced Approach was 10.7% at Dec. 31, 2018 and 10.7%, on a transitional basis, at Dec. 31, 2017. The ratio was unchanged compared to Dec. 31, 2017, reflecting capital deployed through common stock repurchases and dividend payments, and the final phase-in requirements under U.S. capital rules, offset by capital generated through earnings and lower RWAs.

Our SLR was 6.0% at Dec. 31, 2018 and 6.1%, on a transitional basis, at Dec. 31, 2017.

The Advanced Approach capital ratios are significantly impacted by RWAs for operational risk. Our operational loss risk model is informed by external losses, including fines and penalties levied against institutions in the financial services industry, particularly those that relate to businesses in which we operate, and as a result external losses have impacted and could in the future impact the amount of capital that we are required to hold.

Our capital ratios are necessarily subject to, among other things, anticipated compliance with all necessary enhancements to model calibration, approval by regulators of certain models used as part of RWA calculations, other refinements, further implementation guidance from regulators, market practices and standards and any changes BNY Mellon may make to its businesses. As a consequence of these factors, our capital ratios may materially change, and may be volatile over time and from period to period.

The following table presents our capital components and RWAs.

Capital components and risk-weighted assets *(in millions)*	**Dec. 31, 2018**	Dec. 31, 2017 Fully phased-in	Dec. 31, 2017 Transitional Approach *(a)*
CET1:			
Common shareholders' equity	**$ 37,096**	$ 37,709	$ 37,859
Adjustments for:			
Goodwill and intangible assets *(b)*	**(18,806)**	(19,223)	(18,684)
Net pension fund assets	**(320)**	(211)	(169)
Equity method investments	**(361)**	(387)	(372)
Deferred tax assets	**(42)**	(41)	(33)
Other	**—**	(9)	(8)
Total CET1	**17,567**	17,838	18,593
Other Tier 1 capital:			
Preferred stock	**3,542**	3,542	3,542
Deferred tax assets	**—**	—	(8)
Net pension fund assets	**—**	—	(42)
Other	**(65)**	(41)	(41)
Total Tier 1 capital	**$ 21,044**	$ 21,339	$ 22,044
Tier 2 capital:			
Subordinated debt	**$ 1,250**	$ 1,250	$ 1,250
Allowance for credit losses	**252**	261	261
Other	**(10)**	(12)	(12)
Total Tier 2 capital – Standardized Approach	**1,492**	1,499	1,499
Excess of expected credit losses	**65**	31	31
Less: Allowance for credit losses	**252**	261	261
Total Tier 2 capital – Advanced Approach	**$ 1,305**	$ 1,269	$ 1,269
Total capital:			
Standardized Approach	**$ 22,536**	$ 22,838	$ 23,543
Advanced Approach	**$ 22,349**	$ 22,608	$ 23,313
Risk-weighted assets:			
Standardized Approach	**$ 149,618**	$ 155,324	$ 155,621
Advanced Approach:			
Credit Risk	**$ 92,917**	$ 101,366	$ 101,681
Market Risk	**3,454**	3,657	3,657
Operational Risk	**68,300**	68,688	68,688
Total Advanced Approach	**$ 164,671**	$ 173,711	$ 174,026
Average assets for Tier 1 leverage ratio	**$ 319,007**	$ 330,894	$ 331,600
Total leverage exposure for SLR	**$ 347,943**	$ 360,543	$ 361,249

(a) Reflects transitional adjustments to CET1, Tier 1 capital and Tier 2 capital required in 2017 under the U.S. capital rules.

(b) Reduced by deferred tax liabilities associated with intangible assets and tax deductible goodwill.

The table below presents the factors that impacted the CET1 capital.

CET1 generation *(in millions)*	**Dec. 31, 2018**
CET1 – Beginning of period	$ 17,838
Net income applicable to common shareholders of The Bank of New York Mellon Corporation	4,097
Goodwill and intangible assets, net of related deferred tax liabilities	417
Gross CET1 generated	4,514
Capital deployed:	
Common stock dividends	(1,052)
Common stock repurchased	(3,269)
Total capital deployed	(4,321)
Other comprehensive income:	
Foreign currency translation	(302)
Unrealized loss on assets available-for-sale	(380)
Defined benefit plans	(120)
Unrealized gain on cash flow hedges	(10)
Other	(2)
Total other comprehensive income	(814)
Additional paid-in capital *(a)*	453
Other (deductions) additions:	
Net pension fund assets	(109)
Deferred tax assets	(1)
Embedded goodwill	26
Other	(19)
Total other deductions	(103)
Net CET1 deployed	(271)
CET1 – End of period	$ 17,567

(a) *Primarily related to stock awards, the exercise of stock options and stock issued for employee benefit plans.*

Minimum capital ratios and capital buffers

The U.S. capital rules include a series of buffers and surcharges over required minimums that apply to BHCs, including BNY Mellon, which are being phased-in over time. Banking organizations with a risk-based ratio or SLR above the minimum required level, but with a risk-based ratio or SLR below the minimum level with buffers, will face constraints on dividends, equity repurchases and discretionary executive compensation based on the amount of the shortfall. Different regulatory capital buffers apply to our banking subsidiaries.

The following table presents the principal minimum capital ratio requirements with buffers and surcharges, as phased-in, applicable to the Parent and our U.S. insured depository institutions. This table does not include the imposition of a countercyclical capital buffer. Buffers and surcharges are not applicable to the Tier 1 leverage ratio. The SLR buffer was fully implemented on Jan. 1, 2018 and the other buffers and surcharge were fully implemented on Jan. 1, 2019.

Capital ratio requirements	Well capitalized	Minimum ratios	Minimum ratios with buffers, as phased-in *(a)*	
			2018	2019
Capital conservation buffer (CET1)			1.875%	2.5%
U.S. G-SIB surcharge (CET1) *(b)(c)*			1.125%	1.5%
Consolidated:				
CET1 ratio	N/A	4.5%	7.5%	8.5%
Tier 1 capital ratio	6.0%	6.0%	9.0%	10.0%
Total capital ratio	10.0%	8.0%	11.0%	12.0%
Enhanced SLR buffer (Tier 1 capital)	N/A		2.0%	2.0%
SLR	N/A	3.0%	5.0%	5.0%
U.S. insured depository institutions: *(c)*				
CET1 ratio	6.5%	4.5%	6.375%	7.0%
Tier 1 capital ratio	8.0%	6.0%	7.875%	8.5%
Total capital ratio	10.0%	8.0%	9.875%	10.5%
SLR	6.0%	3.0%	6.0% *(d)*	6.0% *(d)*

(a) *Countercyclical capital buffer currently set to 0%.*
(b) *The fully phased-in U.S. G-SIB surcharge of 1.5% applicable to BNY Mellon is subject to change.*
(c) *The U.S. G-SIB surcharge is not applicable to the regulatory capital ratios of the bank subsidiaries.*
(d) *Well capitalized threshold.*

The following table shows the impact on the consolidated capital ratios at Dec. 31, 2018 of a $100 million increase or decrease in common equity, or a $1 billion increase or decrease in RWAs, quarterly average assets or total leverage exposure.

Sensitivity of consolidated capital ratios at Dec. 31, 2018	**Increase or decrease of**	
(in basis points)	**$100 million in common equity**	**$1 billion in RWA, quarterly average assets or total leverage exposure**
CET1:		
Standardized Approach	7 bps	8 bps
Advanced Approach	6	7
Tier 1 capital:		
Standardized Approach	7	9
Advanced Approach	6	8
Total capital:		
Standardized Approach	7	10
Advanced Approach	6	8
Tier 1 leverage	3	2
SLR	3	2

Capital ratios vary depending on the size of the balance sheet at year-end and the levels and types of investments in assets. The balance sheet size fluctuates from year to year based on levels of customer and market activity. In general, when servicing clients are more actively trading securities, deposit balances and the balance sheet as a whole are higher. In addition, when markets experience significant volatility or stress, our balance sheet size may increase considerably as client deposit levels increase.

Issuer purchases of equity securities

Share repurchases - fourth quarter of 2018 *(dollars in millions, except per share information; common shares in thousands)*	Total shares repurchased	Average price per share	Total shares repurchased as part of a publicly announced plan or program	Maximum approximate dollar value of shares that may yet be purchased under the publicly announced plans or programs at Dec. 31, 2018
October 2018	7,763	$ 47.30	7,763	$ 1,432
November 2018	1,479	51.14	1,479	1,356
December 2018	19,702	47.15	19,702	1,257
Fourth quarter of 2018 *(a)*	**28,944**	**$ 47.40**	**28,944**	**$ 1,257** *(b)*

(a) Includes 14 thousand shares repurchased at a purchase price of $1 million from employees, primarily in connection with the employees' payment of taxes upon the vesting of restricted stock. The average price per share of open market purchases was $47.39.
(b) Represents the maximum value of the shares authorized to be repurchased through the second quarter of 2019, including employee benefit plan repurchases.

In June 2018, in connection with the Federal Reserve's non-objection to our 2018 capital plan, BNY Mellon announced a share repurchase plan providing for the repurchase of up to $2.4 billion of common stock starting in the third quarter of 2018 and continuing through the second quarter of 2019. This new share repurchase plan replaces all previously authorized share repurchase plans.

In December 2018, the Federal Reserve approved the repurchase of up to $830 million of additional common stock under our repurchase program. Our Board of Directors approved the additional share repurchases, all of which were repurchased in the fourth quarter of 2018. These repurchases were in addition to the Company's repurchase of $2.4 billion of common stock previously approved by the Board and announced in June 2018.

Share repurchases may be executed through open market repurchases, in privately negotiated transactions or by other means, including through repurchase plans designed to comply with Rule 10b5-1 and other derivative, accelerated share repurchase and other structured transactions. The timing and exact amount of any common stock repurchases will depend on various factors, including market conditions and the common stock trading price; the Company's capital position, liquidity and financial performance; alternative uses of capital; and legal and regulatory considerations.

Trading activities and risk management

Our trading activities are focused on acting as a market-maker for our customers, facilitating customer trades and risk mitigating hedging in compliance with the Volcker Rule. The risk from market-making activities for customers is managed by our traders and limited in total exposure through a system of position limits, value-at-risk ("VaR") methodology and other market sensitivity measures. VaR is the potential loss in value due to adverse market movements over a defined time horizon with a specified confidence level. The calculation of our VaR used by management and presented below assumes a one-day holding period, utilizes a 99% confidence level, and incorporates non-linear product characteristics. VaR facilitates comparisons across portfolios of different risk characteristics. VaR also captures the diversification of aggregated risk at the firm-wide level.

VaR represents a key risk management measure and it is important to note the inherent limitations to VaR, which include:

- VaR does not estimate potential losses over longer time horizons where moves may be extreme;
- VaR does not take account of potential variability of market liquidity; and
- Previous moves in market risk factors may not produce accurate predictions of all future market moves.

See Note 22 of the Notes to Consolidated Financial Statements for additional information on the VaR methodology.

The following tables indicate the calculated VaR amounts for the trading portfolio for the designated periods using the historical simulation VaR model.

VaR *(a)*	**2018**			**Dec. 31,**
(in millions)	**Average**	**Minimum**	**Maximum**	**2018**
Interest rate	**$ 4.1**	**$ 3.0**	**$ 5.5**	**$ 4.3**
Foreign exchange	**4.3**	**2.9**	**8.3**	**4.1**
Equity	**0.7**	**—**	**1.2**	**0.8**
Credit	**0.9**	**0.6**	**2.6**	**0.6**
Diversification	**(4.2)**	**N/M**	**N/M**	**(3.2)**
Overall portfolio	**5.8**	**3.6**	**10.4**	**6.6**

VaR *(a)*	2017			Dec. 31,
(in millions)	Average	Minimum	Maximum	2017
Interest rate	$ 3.6	$ 2.4	$ 4.9	$ 4.4
Foreign exchange	4.1	2.6	8.6	8.6
Equity	0.5	0.1	1.1	0.8
Credit	1.1	0.5	1.7	1.3
Diversification	(5.0)	N/M	N/M	(5.2)
Overall portfolio	4.3	3.2	9.9	9.9

(a) VaR exposure does not include the impact of the Company's consolidated investment management funds and seed capital investments.

N/M - Because the minimum and maximum may occur on different days for different risk components, it is not meaningful to compute a minimum and maximum portfolio diversification effect.

The interest rate component of VaR represents instruments whose values predominantly vary with the level or volatility of interest rates. These instruments include, but are not limited to: sovereign debt, swaps, swaptions, forward rate agreements, exchange-traded futures and options, and other interest rate derivative products.

The foreign exchange component of VaR represents instruments whose values predominantly vary with the level or volatility of currency exchange rates or interest rates. These instruments include, but are not limited to: currency balances, spot and forward transactions, currency options, exchange-traded futures and options, and other currency derivative products.

The equity component of VaR consists of instruments that represent an ownership interest in the form of domestic and foreign common stock or other equity-linked instruments. These instruments include, but are not limited to: common stock, exchange-traded funds, preferred stock, listed equity options (puts and calls), OTC equity options, equity total return swaps, equity index futures and other equity derivative products.

The credit component of VaR represents instruments whose values predominantly vary with the credit worthiness of counterparties. These instruments include, but are not limited to, credit derivatives (credit default swaps and exchange-traded credit index instruments) and exposures from corporate credit spreads, and mortgage prepayments. Credit derivatives are used to hedge various credit exposures.

The diversification component of VaR is the risk reduction benefit that occurs when combining portfolios and offsetting positions, and from the correlated behavior of risk factor movements.

During 2018, interest rate risk generated 41% of average gross VaR, foreign exchange risk generated 43% of average gross VaR, equity risk accounted for 7% of average gross VaR and credit risk generated 9% of average gross VaR. During 2018, our daily trading loss exceeded our calculated VaR amount of the overall portfolio on one occasion.

The following table of total daily trading revenue or loss illustrates the number of trading days in which our trading revenue or loss fell within particular ranges during the past five quarters.

Distribution of trading revenue (loss) *(a)*	Quarter ended				
(dollars in millions)	**Dec. 31, 2018**	Sept. 30, 2018	June 30, 2018	March 31, 2018	Dec. 31, 2017
Revenue range:	Number of days				
Less than $(2.5)	**1**	—	1	—	2
$(2.5) – $0	**7**	6	3	2	4
$0 – $2.5	**17**	30	21	18	23
$2.5 – $5.0	**24**	20	30	32	22
More than $5.0	**13**	7	9	10	11

(a) *Trading revenue (loss) includes realized and unrealized gains and losses primarily related to spot and forward foreign exchange transactions, derivatives and securities trades for our customers and excludes any associated commissions, underwriting fees and net interest revenue.*

Trading assets include debt and equity instruments and derivative assets, primarily interest rate and foreign exchange contracts, not designated as hedging instruments. Trading assets were $7.0 billion at Dec. 31, 2018 and $6.0 billion at Dec. 31, 2017. The increase was impacted by the reclassification of money market fund investments of approximately $1 billion primarily from available-for-sale securities.

Trading liabilities include debt and equity instruments and derivative liabilities, primarily interest rate and foreign exchange contracts, not designated as hedging instruments. Trading liabilities were $3.5 billion at Dec. 31, 2018 and $4.0 billion at Dec. 31, 2017.

Under our fair value methodology for derivative contracts, an initial "risk-neutral" valuation is performed on each position assuming time-discounting based on a AA credit curve. In addition, we consider credit risk in arriving at the fair value of our derivatives.

We reflect external credit ratings as well as observable credit default swap spreads for both ourselves and our counterparties when measuring the fair value of our derivative positions. Accordingly, the valuation of our derivative positions is sensitive to the current changes in our own credit spreads, as well as those of our counterparties.

At Dec. 31, 2018, our OTC derivative assets, including those in hedging relationships, of $2.8 billion included a credit valuation adjustment ("CVA") deduction of $22 million. Our OTC derivative liabilities, including those in hedging relationships, of $2.4 billion included a debit valuation adjustment ("DVA") of $1 million related to our own credit spread. Net of hedges, the CVA decreased by $4 million and the DVA increased by less than $1 million in 2018. The net impact of these adjustments increased foreign exchange and other trading revenue by $5 million in 2018. During 2018, no realized loss was charged off against CVA reserves.

At Dec. 31, 2017, our OTC derivative assets, including those in hedging relationships, of $3.1 billion included a CVA deduction of $27 million. Our OTC derivative liabilities, including those in hedging relationships, of $3.6 billion included a DVA of $1 million related to our own credit spread. Net of hedges, the CVA decreased by $9 million and the DVA decreased by $1 million in 2017. The net impact of these adjustments increased foreign exchange and other trading revenue by $8 million in 2017. During 2017, no realized loss was charged off against CVA reserves.

The table below summarizes the risk ratings for our foreign exchange and interest rate derivative counterparty credit exposure during the past five quarters. This information indicates the degree of risk to which we are exposed. Significant changes in ratings classifications for our foreign exchange and other trading activity could result in increased risk for us.

Foreign exchange and other trading counterparty risk rating profile *(a)*	Quarter ended				
	Dec. 31, 2018	Sept. 30, 2018	June 30, 2018	March 31, 2018	Dec. 31, 2017
Rating:					
AAA to AA-	**50%**	48%	37%	48%	44%
A+ to A-	**28**	30	41	27	31
BBB+ to BBB-	**18**	19	18	20	20
Non-investment grade (BB+ and lower)	**4**	3	4	5	5
Total	**100%**	100%	100%	100%	100%

(a) Represents credit rating agency equivalent of internal credit ratings.

Asset/liability management

Our diversified business activities include processing securities, accepting deposits, investing in securities, lending, raising money as needed to fund assets and other transactions. The market risks from these activities include interest rate risk and foreign exchange risk. Our primary market risk is exposure to movements in U.S. dollar interest rates and certain foreign currency interest rates. We actively manage interest rate sensitivity and use earnings simulation and discounted cash flow models to identify interest rate exposures.

An earnings simulation model is the primary tool used to assess changes in pre-tax net interest revenue. The model incorporates management's assumptions regarding interest rates, market spreads, changes in the prepayment behavior of loans and securities and the impact of derivative financial instruments used for interest rate risk management purposes. These assumptions have been developed through a combination of historical analysis and future expected pricing behavior and are inherently uncertain. Actual results may differ materially from projected results due to timing, magnitude and frequency of interest rate changes, and changes in market conditions and management's strategies, among other factors.

In the table below, we use the earnings simulation model to run various interest rate ramp scenarios from a baseline scenario. The interest rate ramp scenarios examine the impact of large interest rate movements. In each scenario, all currencies' interest rates are shifted higher or lower. The baseline scenario is based on our quarter-end balance sheet and the spot yield curve. The 100 basis point ramp scenario assumes rates change 25 basis points above or below the yield curve in each of the next four quarters and the 200 basis point ramp scenario assumes a 50 basis point per quarter change. Interest rate sensitivity is quantified by calculating the change in pre-tax net interest revenue between the scenarios over a 12-month measurement period.

The following table shows net interest revenue sensitivity for BNY Mellon.

Estimated changes in net interest revenue *(in millions)*	**Dec. 31, 2018**	Sept. 30, 2018	Dec. 31, 2017
Up 200 bps parallel rate ramp vs. baseline *(a)*	**$ 411**	$ 362	$ 280
Up 100 bps parallel rate ramp vs. baseline *(a)*	**198**	180	148
Down 100 bps parallel rate ramp vs. baseline *(a)*	**(163)**	(140)	(225)
Long-term up 50 bps, short-term unchanged *(b)*	**82**	83	105
Long-term down 50 bps, short-term unchanged *(b)*	**(98)**	(96)	(122)

(a) In the parallel rate ramp, both short-term and long-term rates move in four equal quarterly increments.
(b) Long-term is equal to or greater than one year.

Sensitivities in the 200 bps and 100 bps parallel rate ramp scenarios increased in the fourth quarter of 2018 from the third quarter of 2018 primarily driven by a favorable asset and liability mix change. In the first quarter of 2018, we changed the net interest revenue sensitivity methodology to assume static deposit levels. Previously, our sensitivities included assumptions about deposit runoff which were difficult to predict. Prior period results have been restated to conform to the current methodology.

To illustrate the net interest revenue sensitivity to deposit runoff, we note that a $5 billion reduction of U.S. dollar denominated non-interest bearing deposits would reduce the net interest revenue sensitivity results in the ramp up 100 basis point and 200 basis point scenarios in the table above by approximately $150 million and approximately $185 million, respectively. The impact would be smaller if the runoff was assumed to be a mixture of interest-bearing and noninterest-bearing deposits.

For a discussion of factors impacting the growth or contraction of deposits, see "Risk Factors - Our business, financial condition and results of operations could be adversely affected if we do not effectively manage our liquidity."

We also project future cash flows from our assets and liabilities over a long-term horizon and then discount these cash flows using instantaneous parallel shocks to prevailing interest rates. This measure reflects the structural balance sheet interest rate sensitivity by discounting all future cash flows. The aggregation of these discounted cash flows is the economic value of equity ("EVE"). The following table shows how the EVE would change in response to changes in interest rates.

Estimated changes in EVE	**Dec. 31, 2018**
Rate change:	
Up 200 bps vs. baseline	**0.8%**
Up 100 bps vs. baseline	**0.8%**

The asymmetrical accounting treatment of the impact of a change in interest rates on our balance sheet may create a situation in which an increase in interest rates can adversely affect reported equity and regulatory capital, even though economically there may be no impact on our economic capital position. For example, an increase in rates will result in a decline in the value of our available-for-sale securities portfolio. In this example, there is no corresponding change on our fixed liabilities, even though economically these liabilities are more valuable as rates rise.

These results do not reflect strategies that management could employ to limit the impact as interest rate expectations change.

To manage foreign exchange risk, we fund foreign currency-denominated assets with liability instruments denominated in the same currency. We utilize various foreign exchange contracts if a liability denominated in the same currency is not available or desired, and to minimize the earnings impact of translation gains or losses created by investments in foreign markets. We use forward foreign exchange contracts to protect the value of our net investment in foreign operations. At Dec. 31, 2018, net investments in foreign operations totaled $13 billion and were spread across 15 foreign currencies.

Risk management overview

Governance

BNY Mellon's management is responsible for execution of the Company's risk appetite and the risk management and compliance framework and the governance structure that supports it, with oversight provided by BNY Mellon's Board of Directors and two key Board committees: the Risk Committee and the Audit Committee.

The Risk Committee is comprised entirely of independent directors and meets on a regular basis to review and assess the control processes with respect to the Company's inherent risks. It also reviews and assesses the risk management activities of the Company and the Company's risk policies and activities. Policy formulation and day-to-day oversight of the Company's risk management framework is delegated to the Chief Risk Officer, who, together with the Chief Auditor and Chief Compliance Officer, helps ensure an effective risk management governance structure. The roles and responsibilities of the Risk Committee are described in more detail in its charter, a copy of which is available on our website, www.bnymellon.com.

The Audit Committee is also comprised entirely of independent directors. The Audit Committee meets on a regular basis to perform an oversight review of the integrity of the financial statements and financial reporting process, compliance with legal and regulatory requirements, our independent registered public accountant's qualifications and independence, and the performance of our registered public accountant and internal audit function. The Audit Committee also reviews management's assessment of the adequacy of internal controls. The functions of the Audit Committee are described in more detail in its charter, a copy of which is available on our website, www.bnymellon.com.

The Senior Risk and Control Committee ("SRCC") is the most senior management body responsible for ensuring that emerging risks are weighed against the corporate risk appetite. The SRCC also reviews any material breaches to our risk appetite and approves action plans required to remediate the issue. SRCC provides oversight for the risk management, compliance and ethics framework. The Chief Executive Officer, Chief Risk Officer and Chief Financial Officer are among SRCC's members.

Primary risk types

The understanding, identification and management of risk are essential elements for the successful management of BNY Mellon. Our primary risk categories are:

Type of risk	Description
Operational	The risk of loss resulting from inadequate or failed internal processes, human factors and systems, breaches of technology and information systems, or from external events. Also includes fiduciary risk, reputational risk, and litigation risk.
Market	The risk of loss due to adverse changes in the financial markets. Our market risks are primarily interest rate, foreign exchange, and equity risk. Market risk particularly impacts our exposures that are fair valued such as the securities portfolio, trading book, and equity investments.
Credit	The risk of loss if any of our borrowers or other counterparties were to default on their obligations to us. Credit risk is resident in the majority of our assets, but primarily concentrated in the loan and securities books, as well as off-balance sheet exposures such as lending commitments, letters of credit, and securities lending indemnifications.
Liquidity	The risk that BNY Mellon cannot meet its cash and collateral obligations at a reasonable cost for both expected and unexpected cash flows, without adversely affecting daily operations or financial conditions. Liquidity risk can arise from cash flow mismatches, market constraints from the inability to convert assets to cash, the inability to raise cash in the markets, deposit run-off, or contingent liquidity events.
Strategic	The risk that BNY Mellon doesn't effectively manage and protect the firm's market positioning and stability. This includes risks associated with the inability to maintain a strong understanding of clients' needs, provide suitable product offerings that are financially viable and fit within the firm's operating model and adapt to transformational change in the industry.

The following table presents the primary types of risk typically embedded in our balance sheet and our off-balance sheet instruments.

On- and off-balance sheet risks	
Assets:	
Interest-bearing deposits with banks	credit
Federal funds sold and securities purchased under resale agreements	market, credit
Securities	market, credit, liquidity
Trading assets	market, credit, liquidity
Loans	credit, liquidity
Goodwill	operational, market
Intangible assets	operational, market
Liabilities:	
Deposits	liquidity
Federal funds purchased and securities sold under repurchase agreements	market, liquidity
Trading liabilities	market, liquidity
Payables to customers and broker-dealers	liquidity
Off-balance sheet instruments:	
Lending commitments	credit, liquidity
Standby letters of credit	credit, liquidity
Commercial letters of credit	credit, liquidity
Securities lending indemnifications	market, credit

Operational risk

In providing a comprehensive array of products and services, we may be exposed to operational risk. Operational risk may result from, but is not limited to, errors related to transaction processing, breaches of internal control systems and compliance requirements, fraud by employees or persons outside BNY Mellon or business interruption due to system failures or other events. Operational risk may also include breaches of our technology and information systems resulting from unauthorized access to confidential information or from internal or external threats, such as cyberattacks. Operational risk also includes potential legal or regulatory actions that could arise as a result of noncompliance with applicable laws and/or regulatory requirements. In the case of an operational event, we could suffer financial losses as well as reputational damage.

To address these risks, we maintain comprehensive policies and procedures and an internal control framework designed to provide a sound operational environment. These controls have been designed to manage operational risk at appropriate levels given our financial strength, the business environment and markets in which we operate, and the nature of our businesses, and considering factors such as competition and regulation. Our internal auditors and internal control group monitor and test the overall effectiveness of our internal controls and financial reporting systems on an ongoing basis.

We have also established procedures that are designed to ensure compliance with generally accepted conduct, ethics and business practices which are defined in our corporate policies. These include training programs, such as for our “Code of Conduct” and “Know Your Customer” programs, and compliance training programs, such as those regarding information protection and suspicious activity reporting.

We have established operational risk management as an independent risk discipline. The organizational framework for operational risk is based upon a strong risk culture that incorporates both governance and risk management activities comprising:

- Board Oversight and Governance – The Risk Committee of the Board oversees our operational risk management strategy in addition to overseeing our strategic management of credit and market risk. The Risk Committee meets regularly to review operational risk management initiatives, discuss key risk issues and review the effectiveness of the risk management systems.
- Accountability of Businesses – Business managers are responsible for maintaining an effective system of internal controls commensurate with their risk profiles and in accordance with BNY Mellon policies and procedures.
- Corporate Operational Risk Management is responsible for developing risk management policies and tools for assessing, measuring, monitoring and managing operational risk for BNY Mellon. The primary objectives of Corporate Operational Risk Management are to promote effective risk management, identify emerging risks, create incentives for generating continuous improvement in controls and to optimize capital.
- Technology Risk is a subset of operational risk. Technology Risk Management is under the leadership of the Global Chief Technology Risk Officer (“CTRO”) and drives the development of global technology policies, controls and methods for assessing, measuring and monitoring information and technology risk for BNY Mellon.

Technology Risk Management partners with the businesses to drive better understanding and a more accurate assessment of operational risks that can occur from technology operations.

Market risk

Our business activity tends to minimize outright or direct exposure to market risk, with such risk primarily limited to market volatility from trading activity in support of clients. More significant direct market risk is assumed in the form of interest rate and credit spread risk within the investment portfolio both as a means for forward asset/liability management and net interest revenue generation.

The Company has indirect market risk exposure associated with the change in the value of financial collateral underlying securities financing and derivatives positions. The Collateral Margin Review Committee reviews and approves the standards for collateral received or paid in respect of collateralized derivative agreements and securities financing transactions.

In addition to the Risk Committee, oversight of market risk is performed by the SRCC and Balance Sheet Risk Committee ("BSRC") and through executive review meetings. Detailed reviews of stress tests results are conducted during the Markets Weekly Risk Review. Senior managers from Risk Management, Finance and Sales and Trading attend the review. Regarding the Corporate Treasury function, oversight is provided by the Treasury Risk Committee, biweekly Portfolio Management Group risk meetings, Business Risk Committee and numerous portfolio reviews.

The Business Risk Committee for the Markets business also provides a forum for market risk oversight. The goal of the Business Risk Committee meeting, which is held monthly, is to review key risk and control issues and related initiatives facing all Markets lines of business. Also addressed during the Business Risk Committee meetings are trading VaR and trading stressed VaR exposures against limits.

Finally, the Risk Quantification Review Group reviews back-testing results for the Company's VaR model.

Credit risk

The extension of credit is not considered a discrete product and is not, typically, attributable to a specific business, but instead is used as a means of supporting our clients and our business activity more holistically. Specifically, we extend direct credit in order to foster client relationships and as a method by which to generate interest income from the deposits that result from business activity. We extend and incur intraday credit exposure in order to facilitate our various processing activities.

To balance the value of our activities with the credit risk incurred in pursuing them, we set and monitor internal credit limits for activities that entail credit risk, most often on the size of the exposure and the quality of the counterparty. For credit exposures driven by changing market rates and prices, exposure measures include an add-on for such potential changes.

We manage credit risk at both the individual exposure level as well as the portfolio level. Credit risk at the individual exposure level is managed through our credit approval system and involves four approval levels up to and including the Chief Risk Officer of the Company. The requisite approvals are based upon the size and relative risk of the aggregate exposure under consideration. The Credit Risk Group is responsible for approving the size, terms and maturity of all credit exposures as well as the ongoing monitoring of the creditworthiness of the counterparty. In addition, they are responsible for assigning and maintaining the internal risk ratings on each exposure.

Credit risk management at the portfolio level is supported by the Enterprise Capital Adequacy Group, within Risk Management and Compliance. The Enterprise Capital Adequacy Group is responsible for calculating two fundamental credit measures. First, we project a statistically probable credit loss, used to help determine the appropriate loan loss reserve and to measure customer profitability. Credit loss considers three basic components: the estimated size of the exposure whenever default might occur, the probability of default before maturity and the severity of the loss we would incur, commonly called "loss given default." For institutional lending, where most of our credit risk is created, unfunded commitments are assigned a usage given default percentage. Borrowers/counterparties are assigned ratings by

Credit Portfolio Managers on an 18-grade scale, which translate to a scaled probability of default. Additionally, transactions are assigned loss-given-default ratings (on a 7-grade scale) that reflect the transactions' structures including the effects of guarantees, collateral and relative seniority of position.

The second fundamental measurement of credit risk calculated by the Enterprise Capital Adequacy Group is called economic capital. Our economic capital model estimates the capital required to support the overall credit risk portfolio. Using a Monte Carlo simulation engine and measures of correlation among borrower defaults, the economic capital model examines extreme and highly unlikely scenarios of portfolio credit loss in order to estimate credit-related capital, and then allocates that capital to individual borrowers and exposures.

The Enterprise Capital Adequacy Group is responsible for the calculation methodologies and the estimates of the inputs used in those methodologies for the determination of expected loss and economic capital. These methodologies and input estimates are regularly evaluated to ensure their appropriateness and accuracy. As new techniques and data become available, the Enterprise Capital Adequacy Group attempts to incorporate, where appropriate, those techniques or data.

BNY Mellon seeks to limit both on- and off-balance sheet credit risk through prudent underwriting and the use of capital only where risk-adjusted returns warrant. We seek to manage risk and improve our portfolio diversification through syndications, asset sales, credit enhancements and active collateralization and netting agreements. In addition, we have a separate Credit Risk Review Group, which is part of Internal Audit, made up of experienced loan review officers who perform timely reviews of the loan files and credit ratings assigned to the loans.

Liquidity risk

Access to global capital markets and financial market utilities are fundamental to both our operating model and overall strategy. Without such access, it would be difficult, if not impossible, to process payments as well as settle and clear transactions on behalf of clients. Deterioration in our liquidity position, whether actual or perceived, can impact our market access by affecting participants' willingness to transact with us. Changes to our liquidity can be caused by various factors, such as funding mismatches, market constraints limiting the ability to liquidate assets, inability to issue debt, run-off of core deposits and contingent liquidity events, such as additional collateral posting. Changes in economic conditions or exposure to credit, market, operational, legal and reputational risks can also affect our liquidity. Our liquidity risk management practices are designed to maintain a strong liquidity profile, by actively managing both the quality of the investment portfolio and intraday liquidity positions, and by having sufficient deposits and other funding to meet timely payment and settlement obligations under both normal and stressed conditions.

Our overall approach to liquidity management is to have sources of liquidity that are sufficient in amount and diversity such that changes in funding requirements at the Parent and at our bank and broker-dealer subsidiaries can be accommodated routinely without material adverse impact on earnings, capital, daily operations or our financial condition.

The Board of Directors has the responsibility for oversight of liquidity risk management for the Company and approves the liquidity risk tolerances. The Asset Liability Committee ("ALCO") is the senior management committee responsible for the oversight of liquidity management. ALCO is responsible for appropriately executing Board-approved strategies, policies and procedures for managing liquidity. Senior management is responsible for regularly reporting the liquidity position of the Company to the Board of Directors. The BSRC provides governance over independent Risk oversight of liquidity risks associated with assets and liabilities, liquidity risk limits calibration, and the adequacy of related control procedures. The Treasury Risk Committee, which is chaired by independent risk management, is responsible for reviewing liquidity stress tests and various liquidity metrics, including contractual cash flow gaps for liquidity, liquidity stress metrics and ratios, LCR, net stable funding ratio ("NSFR") and client deposit concentration. The Treasury Risk Committee validates and approves stress test methodologies and assumptions, and an independent liquidity Risk function provides ongoing review and oversight of liquidity risk management.

BNY Mellon seeks to maintain an adequate liquidity cushion in both normal and stressed environments and seeks to diversify funding sources by line of business, customer and market segment. Additionally, we seek to maintain liquidity ratios within approved limits and liquidity risk tolerance, maintain a liquid asset buffer that can be liquidated, financed and/or pledged as necessary, and control the levels and sources of wholesale funds.

Potential uses of liquidity include withdrawals of customer deposits and client drawdowns on unfunded credit or liquidity facilities. We actively monitor unfunded lending-related commitments, thereby reducing unanticipated funding requirements.

When monitoring liquidity, we evaluate multiple metrics in order to have sufficient liquidity for expected and unexpected events. Metrics include cash flow mismatches, asset maturities, debt spreads, peer ratios, liquid assets, unencumbered collateral, funding sources and balance sheet liquidity ratios. We monitor the LCR, as well as various internal liquidity limits as part of our standard analysis to monitor depositor and market funding concentration, liability maturity profile and potential liquidity draws due to off-balance sheet exposure.

We also perform liquidity stress tests ("LSTs") to evaluate whether the Company and certain domestic bank subsidiaries maintain sufficient liquidity resources under multiple stress scenarios. LSTs are based on scenarios that measure liquidity risks under unlikely but plausible conditions. We perform these tests under various time horizons ranging from one day to one year in a base case, as well as supplemental tests to determine whether the Company and certain domestic subsidiaries' liquidity is sufficient for severe market events and firm-specific events. The Parent's LST framework includes the Resolution Liquidity Adequacy and Positioning ("RLAP") test. The RLAP test is designed to ensure that the liquidity needs of certain key subsidiaries in a stress environment can be met by available resources held directly within the entity itself or at the Parent or IHC, as applicable. Our results indicate that we have sufficient RLAP liquidity.

Strategic Risk

Our strategy includes expanding our client base, increasing product offerings and better aligning certain business activities with market demand. Successful realization of our strategy requires that we provide expertise and insight through market-leading solutions that drive economies of scale while developing highly talented people and protecting our financial strength and stability. We understand and meet market and client expectations with suitable products and offerings that are financially viable and leverageable and that integrate into our business model.

Markets, and the manner in which our clients interact and transact within markets, can evolve quickly, such as when new or disruptive technologies are introduced. Failure to either anticipate or participate in transformational change within a given market could result in poor strategic positioning and potential negative financial impact.

Stress Testing

It is the policy of the Company to perform Enterprise-wide Stress Testing at regular intervals as part of its Internal Capital Adequacy Assessment Process ("ICAAP"). Additionally, the Company performs an analysis of capital adequacy in a stressed environment in its Enterprise-Wide Stress Test Framework, as required by the enhanced prudential standards issued pursuant to the Dodd-Frank Act.

Enterprise-Wide Stress Testing performs analyses across the Company's lines of business, products, geographic areas, and risk types incorporating the results from the different underlying models and projections given alternative stress test scenarios. It is an important component of assessing the adequacy of capital as well as identifying any high risk touch points in business activities. Furthermore, by integrating enterprise-wide stress testing into the Company's capital planning process, the results provide a forward-looking evaluation of the ability to complete planned capital actions in a more-adverse-than-anticipated economic environment.

Global compliance

Our global compliance function provides leadership, guidance and oversight to help our businesses identify applicable laws and regulations and implement effective measures to meet the specific requirements. Compliance takes a proactive approach by anticipating evolving regulatory standards and remaining aware of industry best practices, legislative initiatives, competitive issues, and public expectations and perceptions. The function uses its global reach to disseminate information about compliance-related matters throughout BNY Mellon. The Chief Compliance and Ethics Officer reports to the Chief Risk Officer, is a member of key committees of BNY Mellon and provides regular updates to the Risk Committee of the Board of Directors.

Internal audit

Internal Audit is an independent, objective assurance function that reports directly to the Audit Committee of the Company's Board of Directors. It assists the Company in accomplishing its objectives by bringing a systematic, disciplined, risk-based approach to evaluate and improve the effectiveness of the Company's risk management, control and governance processes. The scope of Internal Audit's work includes the review and evaluation of the adequacy, effectiveness and sustainability of risk management procedures, internal control systems, information systems and governance processes.

Evolving Regulatory Environment

BNY Mellon engages in banking, investment advisory and other financial activities in the U.S. and 34 other countries, and is subject to extensive regulation in the jurisdictions in which it operates. Global supervisory authorities generally are charged with ensuring the safety and soundness of financial institutions, protecting the interests of customers, including depositors in banking entities and investors in mutual funds and other pooled vehicles, safeguarding the integrity of securities and other financial markets and promoting systemic resiliency and financial stability in the relevant country. They are not, however, generally charged with protecting the interests of our shareholders or non-deposit creditors. This discussion outlines the material elements of selected laws and regulations applicable to us. The impact of certain other laws and regulations, such as tax law, is discussed elsewhere in the Annual Report. Changes in these standards, or in their application, cannot be predicted, but may have a material effect on our businesses and results of operations.

The financial services industry has been the subject of enhanced regulatory oversight in the past decade globally, and this trend may continue in the future. Our businesses have been subject to a significant number of global reform measures. In particular, the Dodd-Frank Act and its implementing regulations have significantly restructured the financial regulatory regime in the U.S. and enhanced supervision and prudential standards for large and internationally active BHCs like BNY Mellon. The implications of the Dodd-Frank Act for our businesses depend to a large extent on the manner in which implementing regulations continue to be established and interpreted by the primary U.S. financial regulatory agencies - the Federal Reserve, the Federal Deposit Insurance Corporation ("FDIC"), the Office of the Comptroller of the Currency ("OCC"), the Securities and Exchange Commission ("SEC") and the Commodity Futures Trading Commission ("CFTC"). The implications are also dependent on continuing changes in market practices and structures in response to the requirements of the Dodd-Frank Act and financial reforms in other jurisdictions. Certain aspects of the Dodd-Frank Act remain subject to further rulemaking, take effect over various transition periods, or contain other elements that make it difficult to precisely anticipate their full impact. In addition, other national and global non-U.S. reform measures adopted or under consideration by various policy makers that are being considered may materially adversely impact us.

Political developments may result in legislative and regulatory changes to key aspects of the Dodd-Frank Act, its implementing regulations, and related laws, including the recently enacted Economic Growth, Regulatory Relief, and Consumer Protection Act (the "Reform Act"), discussed later in this section. In addition, the UK referendum vote to withdraw from the European Union, discussed below, and the implementation of that decision have resulted in uncertainty as to the implementation, scope and timing of regulatory reforms affecting our UK and EU operations and contingency planning for our EU operating model.

United Kingdom's Withdrawal from the European Union ("Brexit")

The United Kingdom is scheduled to withdraw from the European Union on March 29, 2019. In anticipation of this event, BNY Mellon has assessed the impact of this withdrawal on our businesses. Our program currently assumes that the UK will leave the EU without an agreement in place, meaning that, among other things, UK firms will lose the benefit of transacting within the EU by relying on their existing "passport" on March 29, 2019.

BNY Mellon maintains a presence in the UK through the London branch of The Bank of New York Mellon, The Bank of New York Mellon (International) Limited and a number of its investment management subsidiaries, and in the remaining EU member states, through The Bank of New York Mellon SA/NV ("BNY Mellon SA/NV") and through certain of its investment management subsidiaries. We have undertaken, and continue to undertake, adjustments to the operations of BNY Mellon SA/NV so that it may provide a wider range of services to clients domiciled in the EU.

Enhanced Prudential Standards

The Federal Reserve has adopted rules ("Final SIFI Rules") to implement liquidity requirements, stress testing of capital and overall risk management requirements affecting U.S. SIFIs. BNY Mellon must comply with enhanced liquidity and overall risk management standards, which include maintenance of a buffer of highly liquid assets based on projected funding needs for 30 days. The liquidity buffer is in addition to the U.S. banking agencies' rules regarding the LCR, discussed below, and is described by the Federal Reserve as being "complementary" to those liquidity standards.

Financial Services Regulatory Reform Legislation

The Reform Act became law in May 2018. Provisions of the Reform Act that may impact BNY Mellon include the elimination of the Dodd-Frank company-run stress test requirements for BHCs, banks, and other financial companies with less than $250 billion in assets, including BNY Mellon, N.A.; the elimination of the "adverse scenario" as a required stress scenario, reducing the minimum number of supervisory scenarios from three (baseline, adverse, and severely adverse) to two (baseline and severely adverse); and its direction to U.S. banking agencies to exclude certain central bank deposit placements from the total leverage exposure (the SLR denominator) of custody banks, including BNY Mellon and The Bank of New York Mellon, to the extent of the value of client deposits at the custody bank that are linked to fiduciary, custody or safekeeping accounts. See "*Regulatory Stress-Testing Requirements*" and "*Leverage Ratios*" below.

Single Counterparty Credit Limits

On June 14, 2018, the Federal Reserve approved a final rule imposing single-counterparty credit limits ("SCCLs") on, among other organizations, domestic BHCs, including BNY Mellon, that are G-SIBs or that have $250 billion or more in total consolidated assets. The SCCLs apply to the credit exposure of a covered firm and all of its subsidiaries to a single counterparty and all of its affiliates and connected entities. The final rule introduces new definitions of "subsidiary" and "affiliate" under a financial consolidation standard that is consistent with accounting standards. The final rule will apply to BNY Mellon beginning Jan. 1, 2020.

The final rule establishes two primary credit exposure limits: (1) a covered domestic BHC may not have aggregate net credit exposure to any unaffiliated counterparty in excess of 25% of its tier 1 capital, and (2) a U.S. G-SIB is further prohibited from having aggregate net credit exposure in excess of 15% of its tier 1 capital to any "major counterparty" (defined as a G-SIB or a nonbank SIFI). The final rule adopts a risk-sensitive exposure measurement methodology for securities financing transactions ("SFTs") that permits the use of any method authorized under the Federal Reserve's capital rules, including internal models.

BNY Mellon is still evaluating the impact that the final rule will have, which will depend on various factors including, for example, the Federal Reserve's interpretation of the final rule, whether interpretive guidance is published and the impact of the final rule on other covered firms.

Capital Planning and Stress Testing

Payment of Dividends, Stock Repurchases and Other Capital Distributions

The Parent is a legal entity separate and distinct from its banks and other subsidiaries. Therefore, the Parent primarily relies on dividends, interest, distributions, and other payments from its subsidiaries, including extensions of credit from the IHC, to meet its obligations, including its obligations with respect to its securities, and to provide funds for share repurchases and payment of common and preferred dividends to its stockholders, to the extent declared by the Board of Directors. Various federal and state laws and regulations limit the amount of dividends that may be paid to the Parent by our bank subsidiaries without regulatory consent. If, in the opinion of the applicable federal regulatory agency, a depository institution under its jurisdiction is engaged in or is about to engage in an unsafe or unsound practice (which, depending on the financial condition of the bank, could include the payment of dividends), the regulator may require, after notice and hearing, that the bank cease and desist from such practice. The OCC, the Federal Reserve and the FDIC have indicated that the payment of dividends would constitute an unsafe and unsound practice if the payment would reduce a depository institution's capital to an inadequate level. Moreover, under the Federal Deposit Insurance Act, as amended (the "FDI Act"), an insured depository institution ("IDI") may not pay any dividends if the institution is undercapitalized or if the payment of the dividend would cause the institution to become undercapitalized. In addition, the federal bank regulatory agencies have issued policy statements which provide that FDIC-insured depository institutions and their holding companies should generally pay dividends only out of their current operating earnings.

In general, the amount of dividends that may be paid by our U.S. banking subsidiaries, including to the Parent, is limited to the lesser of the amounts calculated under a "recent earnings" test and an "undivided profits" test. Under the recent earnings test, a dividend may not be paid if the total of all dividends declared and paid by the entity in any calendar year exceeds the current year's net income combined with the retained net income of the two preceding years, unless the entity obtains prior regulatory approval. Under the undivided profits test, a dividend may not be paid in excess of the entity's "undivided profits" (generally, accumulated net profits that have not been paid out as dividends or transferred to surplus). The ability of our bank subsidiaries to pay dividends to the Parent may also be affected by the capital adequacy standards applicable to those subsidiaries, which include minimum requirements and buffers.

There are also limitations specific to the IHC's ability to make distributions or extend credit to the Parent. The IHC is not permitted to pay dividends to the Parent if certain key capital, liquidity and operational risk indicators are breached. Additionally, if our projected financial resources deteriorate so severely that resolution of the Parent becomes imminent, the committed lines of credit provided by the IHC to the Parent will automatically terminate, with all outstanding amounts becoming due.

BNY Mellon's capital distributions are subject to Federal Reserve oversight. The major component of that oversight is the Federal Reserve's Comprehensive Capital Analysis and Review ("CCAR"), implementing its capital plan rule. That rule requires BNY Mellon to submit an annual capital plan to the Federal Reserve. We are also required to collect and report certain related data on a quarterly basis to allow the Federal Reserve to monitor progress against the annual capital plans. Generally, BNY Mellon and other affected BHCs may pay dividends, repurchase stock and make other capital distributions only in accordance with a capital plan that has been reviewed by the Federal Reserve and as to which the Federal Reserve has not objected. The Federal Reserve may object to our capital plan for quantitative or qualitative reasons, including if the plan does not show that the covered BHC will meet, for each quarter throughout the nine-quarter planning horizon covered by the capital plan, all minimum regulatory capital ratios under applicable capital rules as in effect for that quarter on a *pro forma* basis under the base case and stressed scenarios (including a severely adverse scenario provided by the Federal Reserve). The capital plan rule also stipulates that we may not make a capital distribution unless after giving effect to the distribution it will meet all minimum regulatory capital ratios.

The purpose of CCAR is to ensure that these BHCs have robust, forward-looking capital planning processes that account for their unique risks and that permit continued operations during times of economic and financial stress. The 2018 CCAR instructions, consistent with prior Federal Reserve guidance, provide that capital plans contemplating dividend payout ratios exceeding 30% of projected after-tax net income will receive particularly close scrutiny. BNY Mellon's common stock dividend payout ratio was 26% for 2018. See "Capital" for information about our 2018 capital plan.

Regulatory Stress-Testing Requirements

In addition to the CCAR stress testing requirements, Federal Reserve regulations also include complementary Dodd-Frank Act Stress Tests ("DFAST"). The CCAR and DFAST requirements substantially overlap, and the Federal Reserve implements them at the BHC level on a coordinated basis. Under these DFAST regulations, we are required to undergo regulatory stress tests conducted by the Federal Reserve annually, and to conduct our own internal stress tests pursuant to regulatory requirements twice annually. In addition, The Bank of New York Mellon is required to conduct its own annual internal stress test (although the bank is permitted to combine certain reporting and disclosure of its stress test results with the results of BNY Mellon). The Reform Act revised the Dodd-Frank company-run stress test requirements for BHCs subject to enhanced prudential standards, such as BNY Mellon, to require periodic, rather than semi-annual, company-run stress tests. Proposed Federal Reserve regulations would require BNY Mellon and other affected BHCs to conduct an annual, but not a mid-cycle, company-run stress test effective beginning with the 2020 cycle. The Reform Act also eliminated the Dodd-Frank company-run stress test requirements for BHCs, banks, and other financial companies with less than $250 billion in assets, including BNY Mellon, N.A. Results from our annual company-run stress tests are reported to the appropriate regulators and published. The Federal Reserve published the results of its most recent annual 2018 DFAST stress-test on June 21, 2018. We published the results of our most recent company-run annual stress test on June 21, 2018, and the results of our company-run mid-year stress test on Oct. 12, 2018.

Capital Requirements - Generally

As a BHC, we are subject to U.S. capital rules, administered by the Federal Reserve. Our bank subsidiaries are subject to similar capital requirements administered by the Federal Reserve in the case of The Bank of New York Mellon and by the OCC in the case of our national bank subsidiaries, BNY Mellon, N.A. and The Bank of New York Mellon Trust Company, National Association. These requirements are intended to ensure that banking organizations have adequate capital given the risk levels of their assets and off-balance sheet exposures.

Notwithstanding the detailed U.S. capital rules, the federal banking agencies retain significant discretion to set higher capital requirements for categories of BHCs or banks or for an individual BHC or bank as situations warrant.

U.S. Capital Rules - Minimum Risk-Based Capital Ratios and Capital Buffers

Consistent with the terms of the Basel III framework and the Dodd-Frank Act, as amended by the Reform Act, the U.S. capital rules require Advanced Approaches banking organizations, such as BNY Mellon, to satisfy minimum risk-based capital ratios using both the U.S. capital rules' standardized approach risk-weightings framework (the "Standardized Approach") and the advanced approaches risk-weighting framework (the "Advanced Approaches"). See "Capital" for details on these requirements. In addition, these minimum ratios are supplemented by a capital conservation buffer required threshold that began being phased in on Jan. 1, 2016, in increments of 0.625% per year until it reached 2.5% on Jan. 1, 2019. The capital conservation buffer can only be satisfied with CET1 capital.

When systemic vulnerabilities are meaningfully above normal, the capital conservation buffer may be expanded up to an additional 2.5% through the imposition of a countercyclical capital buffer. For internationally active banks such as BNY Mellon, the countercyclical capital buffer required threshold is a weighted average of the countercyclical capital buffers deployed in each of the jurisdictions in which the bank has private sector credit exposures. The Federal Reserve, in consultation with the OCC and FDIC, has affirmed the current countercyclical capital buffer level for U.S. exposures of 0% and noted that any future modifications to the buffer would generally be subject to a 12-month phase-in period. Any countercyclical capital buffer required threshold arising from exposures outside the United States will also generally be subject to a 12-month phase-in period.

The U.S. capital rules' buffers are also supplemented by a risk-based capital surcharge on G-SIBs which requires G-SIBs to calculate their surcharges under two methods (referred to as "method 1" and "method 2") and use the higher of the two surcharges. The first method is based on the BCBS's framework and considers a G-SIB's size, interconnectedness, cross-jurisdictional activity, substitutability and complexity. The second method uses similar inputs, but is calibrated to result in significantly higher surcharges and replaces substitutability with a measure of reliance on short-term wholesale funding. Consistent with the phase-in of the capital conservation buffer, the G-SIB capital surcharge began to be phased-in beginning on Jan. 1, 2016 and became fully effective on Jan. 1, 2019. The G-SIB surcharge applicable to BNY Mellon is 1.5% on a fully phased-in basis.

U.S. Capital Rules - Deductions from and Adjustments to Capital Elements

The U.S. capital rules provide for a number of deductions from and adjustments to CET1 capital. These include, for example, providing that unrealized gains and losses on all available-for-sale debt securities may not be filtered out for regulatory capital purposes, and the requirement that mortgage servicing rights, deferred tax assets dependent upon future taxable income and significant investments in non-consolidated financial entities be deducted from CET1 to the extent that any one such category exceeds 10% of CET1 or all such categories in the aggregate exceed 15% of CET1.

U.S. Capital Rules - Advanced Approaches Risk-Based Capital Rules

Under the U.S. capital rules' Advanced Approaches framework, credit risk risk-weightings are generally based on risk-sensitive approaches that largely rely on the use of internal credit models and parameters, whereas under the Standardized Approach credit risk risk-weightings are generally based on supervisory risk-weightings which vary primarily by counterparty type and asset class. BNY Mellon is required to comply with Advanced Approaches reporting and public disclosures. Under the U.S. capital rules, this means, among other things, for purposes of determining whether we meet minimum risk-based capital requirements, our CET1 ratio, Tier 1 capital ratio, and total capital ratio is the lower of that calculated under the Standardized Approach and under the Advanced Approaches framework.

U.S. Capital Rules - Generally Applicable Risk-Based Capital Rules: Standardized Approach

The agencies' generally applicable risk-based capital rules (i.e., the Standardized Approach) calculate risk-weighted assets in the denominator of capital ratios using a broad array of risk weighting categories that are intended to be risk sensitive. The risk-weights for the Standardized Approach generally range from 0% to 1,250%. Higher risk-weights under the Standardized Approach apply to a variety of exposures, including certain securitization exposures, equity exposures, claims on securities firms and exposures to counterparties on OTC derivatives.

Concerning securities finance transactions, including transactions in which we serve as agent and provide securities replacement indemnification to a securities lender, the U.S. capital rules do not permit a banking organization to use a simple VaR approach to calculate exposure amounts for repo-style transactions or to use internal models to calculate the exposure amount for the counterparty credit exposure for repo-style transactions under the Standardized Approach (although these methodologies are allowed in the Advanced Approaches). Under the Standardized Approach, a banking organization may use a collateral haircut approach to recognize the credit risk mitigation benefits of financial collateral that secures a repo-style transaction, including an agented securities lending transaction, among other transactions. To apply the collateral haircut approach, a banking organization must determine the exposure amount and the relevant risk weight for the counterparty and collateral posted.

Federal Reserve Proposed Changes to CCAR and its Capital Rules

On April 10, 2018, the Federal Reserve issued a proposed rule that would integrate its regulatory capital, capital planning, and stress test rules, as well as the CCAR process. The proposal would introduce a stress capital buffer ("SCB") that would be part of the firm's quarterly capital requirements. The proposal would replace the current static 2.5% capital conservation buffer with an SCB requirement for Standardized Approach capital ratios that would, among other things, be tied to the projected decrease in a firm's common equity Tier 1 capital ratio in the Federal Reserve's supervisory severely adverse scenario. The proposed rule would introduce a new requirement that firms reduce their planned capital distributions if those distributions would not be consistent with the applicable buffer constraints based on the firms' own baseline scenario projections. In addition, the proposed rule would introduce a stress leverage buffer ("SLB") that is analogous to the SCB and applies to firms' Tier 1 leverage ratios. Under the proposal, a firm's first SCB and SLB would become effective on Oct. 1, 2019.

Leverage Ratios

The U.S. capital rules require a minimum 4% leverage ratio for all banking organizations, as well as a 3% Basel III-based SLR for Advanced Approaches banking organizations, including BNY Mellon, which became effective Jan. 1, 2018. Unlike the Tier 1 leverage ratio, the SLR includes certain off-balance sheet exposures in the denominator, including the potential future credit exposure of derivative contracts and 10% of the notional amount of unconditionally cancelable commitments.

The Reform Act directed the U.S. banking agencies to exclude certain central bank deposit placements from the total leverage exposure (the SLR denominator) of custody banks, including BNY Mellon and The Bank of New York Mellon. The U.S. banking agencies have not yet proposed rules implementing this provision. See "*Federal Reserve and OCC Proposed Amendments to the Enhanced Supplementary Leverage Ratio Requirements for U.S. G-SIBs*" below for a discussion of additional proposed amendments to applicable SLR requirements.

The U.S. G-SIBs (including BNY Mellon) are subject to an enhanced SLR, which requires us to maintain an SLR of greater than 5% (composed of the current minimum requirement of 3% plus a greater than 2% buffer) and requires bank subsidiaries of those BHCs to maintain at least a 6% SLR in order to qualify as "well capitalized" under the prompt corrective action regulations discussed below. The final enhanced SLR rule for U.S. G-SIBs, like the SLR more generally applicable to all Advanced Approaches banking organizations, became effective on Jan. 1, 2018. At Dec. 31, 2018, our SLR was 6.0% and the SLR for our primary banking subsidiary, The Bank of New York Mellon, was 6.8%.

Federal Reserve and OCC Proposed Amendments to the Enhanced Supplementary Leverage Ratio Requirements for U.S. G-SIBs

On April 11, 2018, the Federal Reserve and the OCC issued a joint notice of proposed rule-making that would recalibrate the enhanced SLR standards that apply to U.S. G-SIBs and certain of their IDI subsidiaries. The proposed rule would replace the 2% SLR buffer that currently applies to all U.S. G-SIBs with a buffer equal to 50% of the firm's risk-based G-SIB surcharge.

For IDI subsidiaries of U.S. G-SIBs regulated by the Federal Reserve or the OCC, the proposal would replace the current 6% SLR threshold requirement for those institutions to be considered "well capitalized" under the agencies' prompt corrective action framework with an SLR of at least 3% plus 50% of the G-SIB surcharge applicable to their top-tier holding companies. The proposed rule would also make corresponding changes to the total loss-absorbing capacity ("TLAC") SLR buffer and long-term debt requirements for U.S. G-SIBs, as well as technical changes to the Federal Reserve's TLAC rule. The Federal Reserve and OCC have not yet issued a final rule.

These proposed amendments are separate from the Reform Act's change to the SLR denominator of custody banks discussed above under the heading "*Leverage Ratios.*"

BCBS Revisions to Components of Basel III

In December 2017 the BCBS released revisions to Basel III intended to reduce variability of RWA and improve the comparability of banks' risk-based capital ratios. Among other measures, the final revisions: (1) establish a revised Standardized Approach for credit risk that enhances the Standardized Approach's granularity and risk sensitivity; (2) adjust the internal ratings-based approaches for credit risk by removing the use of the advanced internal ratings-based approach for certain asset classes and establishing input floors for the calculation of RWA; (3) replace the advanced measurement approach for operational risk with a revised Standardized Approach for operational risk based on measures of a bank's income and historical losses; (4) revise the leverage ratio exposure measure, establish a "leverage ratio buffer" for G-SIBs, set at 50% of a G-SIB's risk-based capital surcharge, and allow national discretion to exclude central bank placements in limited circumstances (see "*Federal Reserve and OCC Proposed Amendments to the Enhanced Supplementary Leverage Ratio Requirements for U.S. G-SIBs*" above); and (5) introduce a new 72.5% output floor based on the Standardized Approach. The revised standards are effective Jan. 1, 2022, with the output floor phasing in from 2022 to 2027.

In January 2019, the BCBS released revised minimum capital requirements for market risk. The revised standards also come into effect Jan. 1, 2022. There is continuing uncertainty regarding whether and how the U.S. regulators will implement these revised Basel standards.

Standardized Approach for Measuring Counterparty Credit Risk Exposures

On Oct. 30, 2018, the Federal Reserve, FDIC and OCC jointly issued a Notice of Proposed Rulemaking ("NPR"), which would amend the U.S. capital rules to implement a new approach for calculating the exposure amount for derivative contracts, which is called the Standardized Approach for Counterparty Credit Risk ("SA-CCR"). The NPR also incorporates SA-CCR into the determination of exposure amount of derivatives for total leverage exposure under the SLR and the cleared transaction framework under the U.S. capital rules. Further, the NPR would make technical amendments to the capital rule with respect to cleared transactions. The effective date of the proposed SA-CCR rule for the Advanced Approaches Banks would be July 1, 2020. BNY Mellon is evaluating what effect such amendments to the U.S. capital rules, if implemented, would have on our financial condition or results of operations.

Total Loss-Absorbing Capacity

On Dec. 15, 2016, the Federal Reserve issued a final rule (the "TLAC Rule") establishing external TLAC and related requirements for U.S. G-SIBs, including BNY Mellon, at the top-tier holding company level. The rule became effective on Jan. 1, 2019, and at Dec. 31, 2018, we had sufficient TLAC to be compliant with the requirement.

Under the TLAC Rule, U.S. G-SIBs are required to maintain a minimum eligible external TLAC equal to the greater of (a) 18% of RWAs plus a buffer (to be met using only CET1) equal to the sum of 2.5% of RWAs, the G-SIB surcharge calculated under method 1 and any applicable countercyclical buffer; and (b) 7.5% of their total leverage exposure (the denominator of the SLR) plus a buffer (to be met using only Tier 1 Capital) equal to 2%.

U.S. G-SIBs are also required to maintain minimum external eligible long-term debt ("LTD") equal to the greater of (a) 6% of RWAs plus the G-SIB surcharge (calculated using the greater of method 1 and method 2), and (b) 4.5% of total leverage exposure. In order to be deemed eligible LTD, debt instruments must, among other requirements, be unsecured, not be structured notes, be governed by U.S. law, and have a maturity of at least one year from the date of issuance. In addition, the TLAC Rule requires that LTD issued on or after Dec. 31, 2016 (i) not have acceleration rights, other than in the event of non-payment or the bankruptcy or insolvency of the issuer and (ii) be governed by U.S. law. However, debt issued by a U.S. G-SIB prior to Dec. 31, 2016 is permanently grandfathered to the extent these securities would be ineligible only due to containing impermissible acceleration rights or being governed by foreign law.

Further, the top-tier holding companies of U.S. G-SIBs are not permitted to issue certain guarantees of subsidiary liabilities, incur liabilities guaranteed by subsidiaries, issue short-term debt to third parties, or enter into derivatives and certain other financial contracts with external counterparties. Certain liabilities are capped at 5% of the value of the U.S. G-SIB's eligible external TLAC instruments. The Federal Reserve considered requiring internal TLAC at domestic subsidiaries of U.S. G-SIBs, but has not proposed rules regarding these instruments.

Foreign jurisdictions may impose internal TLAC requirements on the foreign subsidiaries of U.S. G-SIBs. The draft Capital Requirements Regulation II in the European Union would require EU material subsidiaries of non-EU G-SIBs (including BNY Mellon) to maintain a minimum level of internal loss absorbing capacity, broadly in line with the Financial Stability Board ("FSB") TLAC term sheet, promulgated by the Financial Stability Board in November 2015. The Bank of New York Mellon SA/NV is likely to be considered an EU material subsidiary for purposes of this regulation.

Prompt Corrective Action

The FDI Act, as amended by the Federal Deposit Insurance Corporation Improvement Act of 1991 ("FDICIA"), requires the federal banking agencies to take "prompt corrective action" in respect of depository institutions that do not meet specified capital requirements. FDICIA establishes five capital categories for FDIC-insured banks: "well capitalized," "adequately capitalized," "undercapitalized," "significantly undercapitalized," and "critically undercapitalized." The FDI Act imposes progressively more restrictive constraints on operations, management and capital distributions the less capital the institution holds. While these regulations apply only to banks, such as The Bank of New York Mellon and BNY Mellon, N.A., the Federal Reserve is authorized to take appropriate action against the parent bank holding company, such as the Parent, based on the under-capitalized status of any banking subsidiary. In certain circumstances, the Parent would be required to guarantee the performance of the capital restoration plan if one of our banking subsidiaries were undercapitalized.

The federal banking agencies' prompt corrective action framework ("PCA rules") contain "well capitalized" thresholds for IDIs. Under these rules, an IDI is deemed to be "well capitalized" if it has capital ratios as detailed in the "Capital" disclosure.

The PCA rules require an Advanced Approaches banking organization to maintain an SLR of at least 3% to qualify for the "adequately capitalized" status. In addition, the U.S. federal banking agencies' revisions to the enhanced SLR establish a SLR "well capitalized" threshold of 6% for certain IDIs of U.S. G-SIBs, including The Bank of New York Mellon and BNY Mellon N.A.

Current Expected Credit Losses Accounting Standard

In June 2016, the Financial Accounting Standards Board issued an update to the accounting standards for credit losses that included the "Current Expected Credit Losses" ("CECL") methodology, which replaces the existing incurred loss methodology for certain financial assets. Upon adopting CECL, a company will record a one-time adjustment to its credit loss allowances as of the beginning of its fiscal year of adoption equal to the difference between the amounts of its credit loss allowances under the incurred loss methodology and CECL.

On Dec. 21, 2018 the Federal Reserve, the OCC and the FDIC approved a final rule modifying their regulatory capital rules and providing an option to phase in over a period of three years the regulatory capital effects of adopting the CECL methodology. During the phase in, the agencies will continue to monitor the impact of CECL adoption. The final rule will take effect April 1, 2019. The Federal Reserve also indicated that it would maintain the current framework for calculating credit loss allowances in CCAR, and would not incorporate CECL into supervisory stress testing, through the 2021 stress test cycle.

Liquidity Standards - Basel III and U.S. Rules and Proposals

BNY Mellon is subject to the Final U.S. LCR Rule, which is designed to ensure that BNY Mellon and certain domestic bank subsidiaries maintain an adequate level of unencumbered HQLA equal to their expected net cash outflow for a 30-day time horizon under an acute liquidity stress scenario. As of Dec. 31, 2018, the Parent and its domestic bank subsidiaries were in compliance with applicable LCR requirements.

The BCBS issued the final NSFR document in October 2014 which contemplates an additional liquidity measure, referred to as NSFR, which is designed to promote more medium- and long-term funding of the assets and activities of banking entities over a one-year time horizon. In May 2016, the Federal Reserve, FDIC and OCC proposed an NSFR rule that would implement a quantitative long-term liquidity requirement applicable to large and internationally active banking organizations, including BNY Mellon. The proposed NSFR rule would implement a test similar to the Basel III framework's test for medium- and long-term funding of the assets and activities of banking entities over a one-year time horizon. Under the proposed rule, BNY Mellon's NSFR would be expressed as a ratio of its available stable funding to its required stable funding amount, and BNY Mellon would be required to maintain an NSFR of 1.0. BNY Mellon continues to evaluate the potential effects of this proposal on its operations. The proposed NSFR rule would have been effective Jan. 1, 2018 had it been finalized as proposed; however, final rules have not been issued.

Separately, as noted above, the Final SIFI Rules address liquidity requirements for BHCs with $100 billion or more in total assets, including BNY Mellon. These enhanced liquidity requirements include an independent review of liquidity risk management; establishment of cash flow projections; a contingency funding plan, and liquidity risk limits; liquidity stress testing under multiple stress scenarios and time horizons tailored to the specific products and profile of the company; and maintenance of a liquidity buffer of unencumbered highly liquid assets sufficient to meet projected net cash outflows over 30 days under a range of stress scenarios.

Volcker Rule

The Dodd-Frank Act imposed broad prohibitions and restrictions on proprietary trading and investments in or sponsorship of hedge funds and private equity funds by banking organizations and their affiliates, commonly referred to as the "Volcker Rule."

The Volcker Rule, subject to certain exceptions, prohibits "banking entities," including BNY Mellon, from engaging in proprietary trading and limits our sponsorship of, and investments in, private equity and hedge funds ("covered funds"), including our ability to own or provide seed capital to covered funds. In addition, the Volcker Rule restricts us from engaging in certain transactions with covered funds (including, without limitation, certain U.S. funds for which BNY Mellon acts as both sponsor/manager and custodian).

The restrictions concerning proprietary trading do not contain a broad exemption for asset-liability management functions, but contain more limited exceptions for, among other things, bona fide liquidity risk management and risk-mitigating hedging activities, as well as certain classes of exempted instruments, including government securities. Ownership interests in covered funds that banking organizations organize and offer are generally limited to 3% of the total number or value of the outstanding ownership interests of any individual fund at any time more than one year after the date of its establishment, and with respect to the aggregate value of all such ownership interests in covered funds (when combined with ownership interests in covered funds held under the Volcker Rule's ABS issuer exemption and underwriting and market-making exemption), 3% of the banking organization's Tier 1 capital. Moreover, a banking entity relying on the Volcker Rule's exemption for sponsoring covered funds must deduct from its Tier 1 capital the value of related ownership interests.

The final Volcker Rule regulations also require us to develop and maintain an extensive compliance program, subject to CEO attestation, addressing proprietary trading and covered fund activities.

In June 2018, the Federal Reserve, OCC, FDIC, CFTC and SEC approved a proposal to modify the current regulations implementing the Volcker Rule. The proposal would establish three categories of institutions based on trading activity, and the scope and scale of compliance requirements would vary based on such categories.

In addition, the proposal would revise the definitions applicable to the prohibition on proprietary trading so that all financial instruments accounted for at fair value on a recurring basis would be subject to the prohibition, unless an exception or exemption applies. The proposal would also revise certain of the exceptions and exemptions. It remains uncertain whether or when the proposal will be finalized.

Derivatives

Title VII of the Dodd-Frank Act imposes a comprehensive regulatory structure on the OTC derivatives markets in which BNY Mellon operates, including requirements relating to the business conduct of dealers, trade reporting, margin and recordkeeping. Title VII also requires persons acting as swap dealers, including The Bank of New York Mellon, to register with the CFTC and become subject to the CFTC's supervisory, examination and enforcement powers.

In addition, because BNY Mellon is subject to supervision by the Federal Reserve, we must comply with the U.S. prudential margin rules with respect to its OTC swap transactions. The variation margin requirements of these rules already apply, and the initial margin requirements are expected to become applicable in September 2019. Furthermore, various BNY Mellon subsidiaries are also subject to OTC derivatives regulation by local authorities in Europe and Asia.

EU Money Market Fund Reforms

The European Union's Money Market Funds Regulation ("MMFR") has applied since July 21, 2018 for new MMFs and Jan. 21, 2019 for existing MMFs. MMFR is a significant change for the money market fund sector in the EU and aims to ensure that MMFs can better withstand redemption pressure in stressed market conditions by enhancing their liquidity profile and stability. In particular, constant net asset value ("CNAV") MMFs as they currently exist will need to convert into variable net asset value MMFs, low volatility net asset value MMFs or public debt CNAV MMFs. Other significant restrictions would apply, such as (i) the need for MMFs to apply liquidity fees and redemption gates and diversify asset portfolios, (ii) extensive valuation and reporting requirements and (iii) prohibitions on external support.

SEC Rules on Mutual Funds

On Oct. 13, 2016, the SEC adopted regulations that impose new requirements on mutual funds, exchange-traded funds and other registered investment companies. The new rules will require mutual funds (other than money market funds) to provide portfolio-wide and position-level holdings data to the SEC on a monthly basis. This data would include the pricing of portfolio securities, information regarding repurchase and securities lending activities, and the terms of derivatives contracts. Information contained in reports for the last month of each fund's fiscal quarter would be made available to the public within 60 days of the end of the relevant quarter.

The rules also impose liquidity risk management requirements that are intended to reduce the risk that funds will not be able to meet shareholder redemptions and to minimize the impact of redemptions on remaining shareholders. Each fund will be required to establish a liquidity risk management program; classify the investments in its portfolio into one of four liquidity categories; maintain a highly liquid investment minimum; and limit illiquid investments to 15% of net assets. The rules also permit funds to use swing pricing in certain circumstances although the SEC has delayed the effective date of these swing pricing provisions. The compliance dates for the reporting requirements depend on the applicable reporting form. Most funds were required to comply with the liquidity risk management requirements by Dec. 1, 2018. BNY Mellon is still evaluating the cost of compliance and the impact of the new regulations on its activities.

Recovery and Resolution

As required by the Dodd-Frank Act, the Federal Reserve and FDIC have jointly issued a final rule requiring large financial institutions, such as BNY Mellon, to submit periodically to the Federal Reserve and the FDIC a plan - referred to as the 165(d) resolution plan - for its rapid and orderly resolution in the event of material financial distress or failure. In addition, the FDIC requires certain large IDIs, such as The Bank of New York Mellon, to submit periodically to the FDIC a plan for resolution in the event of the institution's failure. The public portions of our resolution plans are available on the Federal Reserve's and FDIC's websites.

If the Federal Reserve and FDIC jointly determine that our future submissions are not credible and the covered BHC fails to address the deficiencies in a timely manner, the FDIC and the Federal Reserve may jointly impose more stringent capital, leverage or liquidity requirements or restrictions on our growth, activities or operations. If we continue to fail to adequately remedy any deficiencies, we could be required to divest assets or operations that the regulators determine necessary to facilitate our orderly resolution.

In connection with our single point of entry resolution strategy, we have established the IHC to facilitate the provision of capital and liquidity resources to certain key subsidiaries in the event of material financial distress or failure. In 2017, we entered into a binding support agreement that requires the IHC to provide that support. The support agreement required the Parent to transfer its intercompany loans and most of its cash to the IHC, and requires the Parent to continue to transfer cash and other liquid financial assets to the IHC.

BNY Mellon and the other U.S. G-SIBs are subject to heightened supervisory expectations for recovery and resolution preparedness under Federal Reserve rules and guidance. These expectations relate to capabilities critical to operational resilience and contingency planning, including: effective processes for managing, identifying and valuing collateral; a comprehensive understanding of obligations and exposures associated with payment, clearing and settlement activities; the ability to analyze liquidity and funding sources, uses and risks; demonstrated management information systems capabilities on a legal entity basis; and robust arrangements for the continued provision of shared and outsourced services. The Federal Reserve incorporates reviews of these key capabilities as part of its ongoing supervision of BNY Mellon.

The European Union Bank Recovery and Resolution Directive ("BRRD") applies to various subsidiaries and branches of BNY Mellon. BRRD provides for recovery and resolution planning and a set of harmonized powers to resolve or implement recovery of relevant institutions, including branches of non-European Economic Area ("EEA") banks operating within the EEA. BRRD includes rules regarding the preparation of recovery and resolution plans, giving relevant EEA regulators powers to impose requirements on an institution before resolution actions become necessary; a set of resolution tools and powers to facilitate the resolution of failing entities, such as the power to "bail-in" the debt of an institution (including certain deposit obligations); and the power to require a firm to change its structure to remove impediments to resolvability. Certain BRRD-related requirements are currently subject to review under the EU Banking Reform Package, referred to below, and the European Commission is expected to commence a broader review of BRRD during 2019.

BRRD includes a minimum requirement for own funds, defined as regulatory capital, and eligible liabilities ("MREL") to ensure that institutions maintain enough capital capable of being written down and/or bailed-in. MREL will be set on a case-by-case basis for each institution subject to BRRD. MREL is the EU equivalent of TLAC, and is generally aligned with the FSB's TLAC proposals. In contrast with TLAC, MREL will apply to all EU-domiciled credit institutions and certain other firms subject to BRRD (not only G-SIBs).

In addition, BRRD requires such institutions and firms to prepare recovery plans or group recovery plans. Under BRRD, resolution authorities (rather than the institutions themselves) are responsible for drawing up resolution plans.

Final Rule on Resolution Stays for Qualified Financial Contracts

In 2017, the Federal Reserve, OCC and FDIC adopted final rules requiring U.S. G-SIBs (and their subsidiaries and controlled entities) and the U.S. operations of foreign G-SIBs to amend their covered qualified financial contracts ("QFCs"), thereby facilitating the application of U.S. special resolution regimes as necessary. QFCs generally include derivatives, repurchase agreements and securities lending arrangements, among others. The final rule includes two key requirements. First, the final rule requires that covered QFCs of such G-SIBs explicitly provide for the suspension or stay of transfer restriction rights with respect to such QFCs, allowing any resolution transfers under U.S. special resolution regimes to apply to such QFCs. Second, the final rule requires that covered QFCs of these G-SIBs be amended to stay the exercise of default or cross-default rights by relevant QFC counterparties. This stay would last for a period of up to 48 hours.

The final rule allows these G-SIBs to comply with the rule by amending covered QFCs (with the consent of relevant counterparties) using the International Swaps and Derivatives Association ("ISDA") 2018 U.S. Resolution Stay Protocol (the "Protocol"), ISDA 2015 Universal Stay Protocol or by executing appropriate bilateral amendments to the covered QFCs. BNY Mellon entities which have been confirmed to engage in covered QFC activities have adhered to the Protocol in compliance with the final rule's first phase implementation date of Jan. 1, 2019. BNY Mellon is evaluating the impact of the final rule on its activities, in particular regarding non G-SIB counterparty compliance by the second phase implementation date of July 1, 2019.

Cybersecurity Regulation

The New York State Department of Financial Services ("NYSDFS") requires financial institutions regulated by NYSDFS, including BNY Mellon, to establish a cybersecurity program, adopt a written cybersecurity policy, designate a chief information security officer, and have policies and procedures in place to ensure the security of information systems and non-public information accessible to, or held by, third parties. The NYSDFS rule also includes a variety of other requirements to protect the confidentiality, integrity and availability of information systems, as well as the annual delivery of a certificate of compliance.

Insolvency of an Insured Depository Institution or a Bank Holding Company; Orderly Liquidation Authority

If the FDIC is appointed as conservator or receiver for an IDI such as The Bank of New York Mellon or BNY Mellon National Association ("BNY Mellon, N.A."), upon its insolvency or in certain other circumstances, the FDIC has the power to:

- Transfer any of the depository institution's assets and liabilities to a new obligor, including a newly formed "bridge" bank without the approval of the depository institution's creditors;

- Enforce the terms of the depository institution's contracts pursuant to their terms without regard to any provisions triggered by the appointment of the FDIC in that capacity; or

- Repudiate or disaffirm any contract or lease to which the depository institution is a party, the performance of which is determined by the FDIC to be burdensome and the disaffirmance or repudiation of which is determined by the FDIC to promote the orderly administration of the depository institution.

In addition, under federal law, the claims of holders of domestic deposit liabilities and certain claims for administrative expenses against an IDI would be afforded a priority over other general unsecured claims against such an institution, including claims of debt holders of the institution, in the "liquidation or other resolution" of such an institution by any receiver. As a result, whether or not the FDIC ever sought to repudiate any debt obligations of The Bank of New York Mellon or BNY Mellon, N.A., the debt holders would be treated differently from, and could receive, if anything, substantially less than, the depositors of the bank.

The Dodd-Frank Act created a new resolution regime (known as the "orderly liquidation authority") for systemically important financial companies, including BHCs and their affiliates. Under the orderly liquidation authority, the FDIC may be appointed as receiver for the systemically important institution, and its failed nonbank subsidiaries, for purposes of liquidating the entity if, among other conditions, it is determined at the time of the institution's failure that it is in default or in danger of default and the failure poses a risk to the stability of the U.S. financial system.

If the FDIC is appointed as receiver under the orderly liquidation authority, then the powers of the receiver, and the rights and obligations of creditors and other parties who have dealt with the institution, would be determined under the Dodd-Frank Act's orderly liquidation authority provisions, and not under the insolvency law that would otherwise apply. The powers of the receiver under the orderly liquidation authority were based on the powers of the FDIC as receiver for depository institutions under the FDI Act. However, the provisions governing the rights of creditors under the orderly liquidation authority were modified in certain respects to reduce disparities with the treatment of creditors' claims under the U.S. Bankruptcy Code as compared to the treatment of those claims under the new authority. Nonetheless, substantial differences in the rights of creditors exist as between these two regimes, including the right of the FDIC to disregard the strict priority of creditor claims in some circumstances, the use of an administrative claims procedure to determine creditors' claims (as opposed to the judicial procedure utilized in bankruptcy proceedings), and the right of the FDIC to transfer assets or liabilities of the institution to a third party or a "bridge" entity.

Depositor Preference

Under U.S. federal law, claims of a receiver of an IDI for administrative expenses and claims of holders of U.S. deposit liabilities (including foreign deposits that are payable in the U.S. as well as in a foreign branch of the depository institution) are afforded priority over claims of other unsecured creditors of the institution, including depositors in non-U.S. branches. As a result, such depositors could receive, if anything, substantially less than the depositors in U.S. offices of the depository institution.

Transactions with Affiliates

Transactions between BNY Mellon's banking subsidiaries, on the one hand, and the Parent and its nonbank subsidiaries and affiliates, on the other, are subject to certain restrictions, limitations and requirements, which include limits on the types and amounts of transactions (including extensions of credit and asset purchases by our banking subsidiaries) that may take place and generally require those transactions to be on arm's-length terms. In general, extensions of credit by a BNY Mellon banking subsidiary to any nonbank affiliate, including the Parent, must be secured by designated amounts of specified collateral and are limited in the aggregate to 10% of the relevant bank's capital and surplus for transactions with a single affiliate and to 20% of the relevant bank's capital and surplus for transactions with all affiliates. There are also limitations on affiliate credit exposures arising from derivative transactions and securities lending and borrowing transactions.

Deposit Insurance

Our U.S. banking subsidiaries, including The Bank of New York Mellon and BNY Mellon, N.A., accept deposits, and those deposits have the benefit of FDIC insurance up to the applicable limit. The current limit for FDIC insurance for deposit accounts is $250,000 per depositor at each insured bank. Under the FDI Act, insurance of deposits may be terminated by the FDIC upon a finding that the IDI has engaged in unsafe and unsound practices, is in an unsafe or unsound condition to continue operations or has violated any applicable law, regulation, rule, order or condition imposed by a bank's federal regulatory agency.

The FDIC's Deposit Insurance Fund (the "DIF") is funded by assessments on IDIs. The FDIC assesses DIF premiums based on a bank's average consolidated total assets, less the average tangible equity of the IDI during the assessment period. For larger institutions, such as The Bank of New York Mellon and BNY Mellon, N.A., assessments are determined based on CAMELS ratings and forward-looking financial measures to calculate the assessment rate, which is subject to adjustments by the FDIC, and the assessment base.

Under the FDIC's regulations, a custody bank, including The Bank of New York Mellon and BNY Mellon, N.A., may deduct from its assessment base 100% of cash and balances due from depository institutions, securities, federal funds sold, and securities purchased under agreement to resell with a Standardized Approach risk-weight of 0% and may deduct 50% of such asset types with a Standardized Approach risk-weight of greater than 0% and up to and including 20%. This assessment base deduction may not exceed the average value of deposits that are classified as transaction accounts and are identified by the bank as being directly linked to a fiduciary or custodial and safekeeping account.

The Dodd-Frank Act requires the DIF reserve ratio to reach a minimum of 1.35% by Sept. 30, 2020, and authorizes the FDIC to implement special assessments on IDIs to reach the required ratio. On Sept. 30, 2018, the FDIC announced that the DIF reserve ratio had reached 1.36%.

Source of Strength and Liability of Commonly Controlled Depository Institutions

BHCs are required by law to act as a source of strength to their bank subsidiaries. Such support may be required by the Federal Reserve at times when we might otherwise determine not to provide it. In addition, any loans by BNY Mellon to its bank subsidiaries would be subordinate in right of payment to depositors and to certain other indebtedness of its banks. In the event of a BHC's bankruptcy, any commitment by the BHC to a federal bank regulator to maintain the capital of a subsidiary bank will be assumed by the bankruptcy trustee and entitled to a priority of payment. In addition, in certain circumstances, BNY Mellon's IDI subsidiaries could be held liable for losses incurred by another BNY Mellon IDI subsidiary. In the event of impairment of the capital stock of one of BNY Mellon's national bank subsidiaries or The Bank of New York Mellon, BNY Mellon, as the banks' stockholder, could be required to pay such deficiency.

Incentive Compensation Arrangements Proposal

Section 956 of the Dodd-Frank Act requires federal regulators to prescribe regulations or guidelines regarding incentive-based compensation practices at certain financial institutions, including BNY Mellon. In April 2016, a joint proposed rule was released, replacing a previous 2011 proposal, which each of six agencies must separately approve. The timeframe for final implementation is currently unknown.

Anti-Money Laundering and the USA PATRIOT Act

A major focus of governmental policy on financial institutions has been aimed at combating money laundering and terrorist financing. The USA PATRIOT Act of 2001 contains numerous anti-money laundering requirements for financial institutions that are applicable to BNY Mellon's bank, broker-dealer and investment adviser subsidiaries and mutual funds and private investment companies advised or sponsored by our subsidiaries. Those regulations impose obligations on financial institutions to maintain a broad anti-money laundering program that includes internal controls, independent testing, compliance management personnel, training, and customer due diligence processes, as well as appropriate policies, procedures and controls to detect, prevent and report money laundering, terrorist financing and other suspicious activity, and to verify the identity of their customers. Certain of those regulations impose specific due diligence requirements on financial institutions that maintain correspondent or private banking relationships with non-U.S. financial institutions or persons.

Financial Crimes Enforcement Network ("FinCEN") Final Customer Due Diligence Rule

Effective July 11, 2016, FinCEN issued final rules under the Bank Secrecy Act to clarify and strengthen customer due diligence ("CDD") requirements, including a new requirement to identify and verify the identity of beneficial owners of legal entity customers. Covered financial institutions, including The Bank of New York Mellon and BNY Mellon, N.A. must comply with these rules. The rule reaffirms four pillars of an effective anti-money laundering ("AML") program (development of internal policies, procedures and related controls; designation of a compliance officer; a thorough and ongoing training program; and independent review for compliance) and adds a fifth: CDD, wherein a covered financial institution is required to implement and maintain risk-based procedures for conducting CDD that include the identification and verification of any beneficial owner(s) of each legal entity customer at the time a new account is opened on or after May 11, 2018.

New York State Department of Financial Services Anti-Money Laundering and Anti-Terrorism Regulations

Effective Jan. 1, 2017, the NYSDFS issued regulations requiring regulated institutions, including The Bank of New York Mellon, to maintain a transaction monitoring program to monitor transactions for potential Bank Secrecy Act ("BSA") and AML violations and suspicious activity reporting, and a watch list filtering program to interdict transactions prohibited by applicable sanctions programs.

The final regulations require a regulated institution to maintain programs to monitor and filter transactions for potential BSA and AML violations and prevent transactions with sanctioned entities. The final regulation requires regulated institutions annually to submit a Board resolution or senior officer compliance finding confirming steps taken to ascertain compliance with the regulation.

Privacy and Data Protection

The privacy provisions of the Gramm-Leach-Bliley Act generally prohibit financial institutions, including BNY Mellon, from disclosing nonpublic personal financial information of consumer customers to third parties for certain purposes (primarily marketing) unless customers have the opportunity to “opt out” of the disclosure. The Fair Credit Reporting Act restricts information sharing among affiliates for marketing purposes.

In the EU, privacy law is primarily regulated by the General Data Protection Regulation (“GDPR”), which has been directly binding and applicable for each EU member state since May 25, 2018. The GDPR contains enhanced compliance obligations and increased penalties for non-compliance compared to prior EU data protection legislation.

Acquisitions/Transactions

Federal and state laws impose notice and approval requirements for mergers and acquisitions involving depository institutions or BHCs. The Bank Holding Company Act of 1956, as amended by the Gramm-Leach-Bliley Act and by the Dodd-Frank Act (the “BHC Act”) requires the prior approval of the Federal Reserve for the direct or indirect acquisition by a BHC of more than 5% of any class of the voting shares or all or substantially all of the assets of a commercial bank, savings and loan association or BHC. In reviewing bank acquisition and merger applications, the bank regulatory authorities will consider, among other things, the competitive effect of the transaction, financial and managerial resources, including the capital position of the combined organization, convenience and needs of the community factors, including the applicant’s record under the Community Reinvestment Act of 1977 (the “CRA”), the effectiveness of the subject organizations in combating money laundering activities and the risk to the stability of the U.S. banking or financial system. In addition, prior Federal Reserve approval would be required for BNY Mellon to acquire direct or indirect ownership or control of any voting shares of a company with assets of $10 billion or more that is engaged in activities that are “financial in nature.”

New Rating System for the Supervision of Large Financial Institutions

On Nov. 2, 2018, the Federal Reserve issued a final rule (the “LFI Rule”) that establishes a new rating system for the supervision of large financial institutions (“LFIs”), including BNY Mellon. The LFI rating system applies to, among other entities, all bank holding companies with total consolidated assets of $100 billion or more. The LFI Rule became effective on Feb. 1, 2019.

The LFI rating system includes a new four-level rating scale and three component ratings. The four levels are: Broadly Meets Expectations; Conditionally Meets Expectations; Deficient-1; and Deficient-2. The component ratings are assigned for: Capital Planning and Positions; Liquidity Risk Management and Positions; and Governance and Controls. A firm must be rated “Broadly Meets Expectations” or “Conditionally Meets Expectations” for each of its component ratings to be considered “well managed” in accordance with various statutes and regulations that permit additional activities, prescribe expedited procedures or provide other benefits for “well managed” firms.

The Federal Reserve is expected to assign initial ratings under the new rating system in 2019 for those bank holding companies that are subject to the Large Institution Supervision Coordinating Committee (“LISCC”) framework, including BNY Mellon.

Regulated Entities of BNY Mellon and Ancillary Regulatory Requirements

BNY Mellon is registered as a financial holding company (“FHC”) under the BHC Act. We are subject to supervision by the Federal Reserve. In general, the BHC Act limits an FHC’s business activities to banking, managing or controlling banks, performing certain servicing activities for subsidiaries, engaging in activities incidental to banking, and engaging in any activity, or acquiring and retaining the shares of any company engaged in any activity, that is either financial in nature or complementary to a financial activity and does not pose a substantial risk to the safety and soundness of depository institutions or the financial system generally.

A BHC's ability to maintain FHC status is dependent on: (i) its U.S. depository institution subsidiaries qualifying on an ongoing basis as "well capitalized" and "well managed" under the prompt corrective regulations of the appropriate regulatory agency (discussed above under "Prompt Corrective Action"); (ii) the BHC itself qualifying on an ongoing basis as "well capitalized" and "well managed" under applicable Federal Reserve regulations; and (iii) its U.S. depository institution subsidiaries continuing to maintain at least a "satisfactory" rating under the CRA.

An FHC that does not continue to meet all the requirements for FHC status will, depending on which requirements it fails to meet, lose the ability to undertake new activities, or make acquisitions, that are not generally permissible for BHCs without FHC status. As of Dec. 31, 2018, BNY Mellon and our U.S. bank subsidiaries were "well capitalized" based on the ratios and rules applicable to them.

The Bank of New York Mellon, BNY Mellon's largest banking subsidiary, is a New York state-chartered bank, and a member of the Federal Reserve System and is subject to regulation, supervision and examination by the Federal Reserve, the FDIC and the NYSDFS. BNY Mellon's national bank subsidiaries, BNY Mellon, N.A. and The Bank of New York Mellon Trust Company, National Association, are chartered as national banking associations subject to primary regulation, supervision and examination by the OCC.

We operate a number of broker-dealers that engage in securities underwriting and other broker-dealer activities in the United States. These companies are SEC-registered broker-dealers and members of Financial Industry Regulatory Authority, Inc. ("FINRA"), a securities industry self-regulatory organization. BNY Mellon's nonbank subsidiaries engaged in securities-related activities are regulated by supervisory agencies in the countries in which they conduct business.

Certain of BNY Mellon's public finance and advisory activities are regulated by the Municipal Securities Rulemaking Board and are required under the SEC's Municipal Advisors Rule to register with the SEC if they provide advice to municipal entities or certain other persons on the issuance of municipal securities, or about certain investment strategies or municipal derivatives.

Certain of BNY Mellon's subsidiaries are registered with the CFTC as commodity pool operators, introducing brokers and/or commodity trading advisors and, as such, are subject to CFTC regulation. The Bank of New York Mellon is provisionally registered as a Swap Dealer (as defined in the Dodd-Frank Act) with the CFTC, and is a member of the National Futures Association ("NFA") in that same capacity. As a Swap Dealer, The Bank of New York Mellon is subject to regulation, supervision and examination by the CFTC and NFA.

Certain of our subsidiaries are registered investment advisors under the Investment Advisers Act of 1940, as amended, and as such are supervised by the SEC. They are also subject to various U.S. federal and state laws and regulations and to the laws and regulations of any countries in which they conduct business. Our subsidiaries advise both public investment companies which are registered with the SEC under the Investment Company Act of 1940 (the "'40 Act"), including the Dreyfus family of mutual funds, and private investment companies which are not registered under the '40 Act.

Certain of our investment management, trust and custody operations provide services to employee benefit plans that are subject to the Employee Retirement Income Security Act of 1974, as amended ("ERISA"), administered by the U.S. Department of Labor ("DOL"). ERISA imposes certain statutory duties, liabilities, disclosure obligations and restrictions on fiduciaries, as applicable, related to the services being performed and fees being paid.

SEC Proposal of Regulation Best Interest

The SEC proposed Regulation Best Interest in May of 2018, which would require a broker-dealer to act in the "best interest" of a retail customer when making a recommendation of any securities transaction or investment strategy to any such customer. Regulation Best Interest is designed to make it clear that a broker-dealer may not put its financial interests ahead of the interests of a retail customer in making recommendations. The SEC also proposed to help address investor confusion about the nature of their relationships with investment professionals through a new short-form disclosure document. Form CRS would provide retail investors with information about the nature of their relationship with their investment professional, and would supplement other more detailed disclosures. In addition, the SEC issued interpretive guidance for broker-dealers and investment advisers and an interpretation regarding the standard of conduct for investment advisers. Comments to these proposals were accepted through August 2018, and the SEC is expected to proceed to final rulemaking in 2019. BNY Mellon is considering Regulation Best Interest and these related developments and evaluating what material impact, if any, they may have on BNY Mellon.

Operations and Regulations Outside the United States

In Europe, branches of The Bank of New York Mellon are subject to regulation in the countries in which they are established, in addition to being subject to oversight by the U.S. regulators referred to above. BNY Mellon SA/NV is a public limited liability company incorporated under the laws of Belgium, holds a banking license issued by the National Bank of Belgium ("NBB") and is authorized to carry out all banking and savings activities as a credit institution. The European Central Bank ("ECB") has responsibility for the direct supervision of significant banks and banking groups in the euro area, including BNY Mellon SA/NV. The ECB's supervision is carried out in conjunction with the relevant national prudential regulator (NBB in BNY Mellon SA/NV's case), as part of the single supervisory mechanism ("SSM"). BNY Mellon SA/NV conducts its activities in Belgium as well as through its branch offices in the UK, Ireland, Italy, Luxembourg, the Netherlands, France and Germany.

Certain of our financial services operations in the UK are subject to regulation and supervision by the Financial Conduct Authority ("FCA") and the Prudential Regulation Authority ("PRA"). The PRA is responsible for the authorization and prudential regulation of firms that carry on PRA-regulated activities, including banks. PRA-authorized firms are also subject to regulation by the FCA for conduct purposes. In contrast, FCA-authorized firms (such as investment management firms) have the FCA as their sole regulator for both prudential and conduct purposes. As a result, FCA-authorized firms must comply with FCA prudential and conduct rules and the FCA's Principles for Businesses, while dual-regulated firms must comply with the FCA conduct rules and FCA Principles, as well as the applicable PRA prudential rules and the PRA's Principles for Businesses.

The PRA regulates The Bank of New York Mellon (International) Limited, our UK-incorporated bank, as well as the London branch of The Bank of New York Mellon. Certain of BNY Mellon's UK-incorporated subsidiaries are authorized to conduct investment business in the UK. Their investment management advisory activities and their sale and marketing of retail investment products are regulated by the FCA. Certain UK investment funds, including investment funds of BNY Mellon, are registered with the FCA and are offered for sale to retail investors in the UK.

Since the financial crisis, the European Union and its Member States have engaged in a significant overhaul of bank regulation and supervision. To increase the resilience of banks and to reduce the impact of potential bank failures, new rules on capital requirements for banks and bank recovery and resolution have been adopted.

Aspects of the European Union's Banking Union have entered into force in most EU jurisdictions. The UK is not participating in the Banking Union. The key components of the Banking Union include the single resolution mechanism ("SRM") and the SSM. The SRM approach endorses the bail-in rules established in the BRRD and is described in more detail above in the section addressing Recovery and Resolution.

In addition, the Capital Requirements Directive IV ("CRD IV") and Capital Requirements Regulation ("CRR") affect BNY Mellon's EU subsidiaries by implementing Basel III and other changes, including the enhancement of the quality of capital, and the strengthening of capital requirements for counterparty credit risk, resulting in higher capital requirements. In the EU Member States, CRD IV/CRR also introduces substantive parts of the new European supervisory architecture, including the development of a single set of harmonized prudential rules for financial services. This set of rules replaces existing separately implemented rules within EU Member States with a harmonized approach to implementation across the EU. Elements of CRD IV/CRR apply not only to BNY Mellon banking branches and subsidiaries but also to investment management and brokerage entities. CRD IV/CRR became effective on Jan. 1, 2014, with certain provisions to be phased in from 2014 to 2019.

In December 2017, the European Commission published legislative proposals for a new harmonized prudential regime for investment firms. Under these proposals, most EU investment firms would be subject to a more tailored, proportionate prudential regime that is separate from the CRD IV/CRR regime. If these proposals are implemented, certain of BNY Mellon's EU investment firms would be expected to become subject to this new prudential regime. The extent to which these proposals will be advanced and implemented is uncertain.

Our Investment Management and Investment Services businesses are subject to significant regulation in numerous jurisdictions around the world relating to, among other things, the safeguarding, administration and management of client assets and client funds.

Various new, revised and/or proposed European Union directives and regulations have or will have a significant impact on our provision of many of our products and services, including the Markets in Financial Instruments Directive II and Markets in Financial Instruments Regulations (collectively, "MiFID II"), the Alternative Investment Fund Managers Directive ("AIFMD"), the Directive on Undertakings for Collective Investments in Transferable Securities ("UCITS V"), the Central Securities Depositories Regulation ("CSDR"), the regulation on OTC derivatives, central counterparties and trade repositories (commonly known as "EMIR"), the Securities Financing Transactions Regulation ("SFTR"), the Payment Services Directive II ("PSD II") and the Benchmarks Regulation. These European Union directives and regulations may impact our operations and risk profile but may also provide new opportunities for the provision of BNY Mellon products and services. Several of these European directives and regulations are still subject to finalization by the legislature and/or substantial secondary legislation. This creates uncertainty as to business impact.

The types of activities in which the foreign branches of our banking subsidiaries and our international subsidiaries may engage are subject to various restrictions imposed by the Federal Reserve. Those foreign branches and international subsidiaries are also subject to the laws and regulatory authorities of the countries in which they operate and, in the case of banking subsidiaries, may be subject to regulatory capital requirements in the jurisdictions in which they operate.

EU Banking Reform Package

In November 2016, the European Commission published the so-called EU Banking Reform Package. This legislative package would amend CRD IV, CRR, BRRD and the Single Resolution Mechanism Regulation ("SRMR").

The proposed amendments to CRD IV include a proposal for non-EU G-SIBs (such as BNY Mellon) and certain other non-EU banking groups to have up to two "EU intermediate parent undertakings" ("EU IPUs"). All EU credit institutions and certain EU investment firms in such non-EU G-SIBs/banking groups would need to fall within a corporate structure headed by one of the EU IPUs. If this proposal is ultimately implemented, BNY Mellon would need to undertake some changes in its corporate structure.

The proposed amendments to CRR include provisions relating to the leverage ratio, NSFR, MREL (including closer alignment to the final FSB TLAC standard), a revised Basel market risk framework, counterparty credit risk, exposures to CCPs, exposures to collective investment undertakings, large exposures and reporting/disclosure requirements.

The EU Banking Reform Package is due to be finalized during 2019. The time frame for implementation of the various elements of the legislative package remains unclear at present.

European Deposit Insurance Scheme

The European Commission has proposed a European Deposit Insurance Scheme ("EDIS") for euro area member states. Under the EDIS proposal, existing national euro area deposit guarantee schemes would transition over a number of years to a mutualized deposit guarantee scheme applicable in the euro area. The EDIS proposal has stalled and it is unclear whether it will be implemented in its current form, or at all.

European Financial Markets and Market Infrastructure

The EU continues to develop proposals and regulations in relation to financial markets and market infrastructures. MiFID II took effect on Jan. 3, 2018. It affects EU Member States and those financial institutions conducting business in the EEA and has required significant change to comply with relevant regulatory requirements, including extensive transaction reporting and market transparency obligations and a heightened focus on how financial institutions conduct business with and disclose information to their clients.

Capital Markets Union

A key policy objective of the 2014-19 European Commission is to develop a Capital Markets Union ("CMU") in the EU. Related initiatives that have already been substantially progressed include a new Prospectus Regulation and a new Securitization Regulation. The Prospectus Regulation applies from July 21, 2019 (with certain elements subject to an earlier phase-in period). The Securitization Regulation has applied to securitization transactions from Jan. 1, 2019.

A number of CMU-related priorities remain to be addressed during 2019. The European Commission proposes to enhance the powers of the European Supervisory Agencies ("ESAs"), including the European Banking Authority ("EBA"), the European Securities and Markets Authority ("ESMA") and the European Insurance and Occupational Pensions Authority ("EIOPA"). In addition, the European Commission wishes to enhance cross-border funds distribution and to promote sustainable finance.

Investment Services and Investment Management in the European Union

The AIFMD has a direct effect on our alternative fund manager clients and our depository business and other products offered across Europe as well as upon our investment management business. AIFMD imposes heightened obligations upon depositories, which have operational effects.

Our businesses servicing regulated funds in Europe and our investment management businesses in Europe are also affected by the revised directive governing UCITS V.

On July 12, 2018, the European Commission adopted regulations for depositary safekeeping duties under AIFMD and UCITS V. The Commission recognized the use of omnibus account structures when accounting for assets in a chain of custody, but determined that depositaries and trustees must maintain their own books and records and will no longer be allowed to rely on a custodian's records. BNY Mellon has initiated a project to implement any changes necessary to comply with these regulations by the Commission's deadline of April 1, 2020.

The European Commission is expected to commence a review of AIFMD and UCITS V legislation during 2019, following the Commission's initiation of an industry survey on AIFMD conducted during 2018.

Making or continuing an investment in securities issued by us involves certain risks that you should carefully consider. The following discussion sets forth the most significant risk factors that could affect our business, financial condition or results of operations. Some of these risks are interrelated and the occurrence of one may exacerbate the effect of others. However, factors other than those discussed below or in other of our reports filed with or furnished to the SEC also could adversely affect our business, financial condition or results of operations. We cannot assure you that the risk factors described below or elsewhere in our reports address all potential risks that we may face. These risk factors also serve to describe factors which may cause our results to differ materially from those described in forward-looking statements included herein or in other documents or statements that make reference to this Annual Report. See "Forward-looking Statements."

Operational Risk

A communications or technology disruption or failure that results in a loss of information, delays our ability to access information or impacts our ability to provide services to our clients may materially adversely affect our business, financial condition and results of operations.

We use communications and information systems to conduct our business. Our businesses are highly dependent on our ability to process large volumes of data that require global capabilities and scale from our technology platforms. If our technology or communications fail, or those of industry utilities or our service providers fail, we could experience, and have in the past experienced, production and system outages or failures or other significant operational delays. Any such outage, failure or delay could adversely affect our ability to effect transactions or service our clients, which could expose us to liability for damages, result in the loss of business, damage our reputation, subject us to regulatory scrutiny or sanctions or expose us to litigation, any of which could have a material adverse effect on our business, financial condition and results of operations. Security or technology disruptions, failures or delays that impact our communications or information systems could also adversely affect our ability to manage our exposure to risk or expand our business.

Upgrading our computer systems, software and networks may also subject us to disruptions, failures or delays due to the complexity and interconnectedness of our systems, software and networks. The failure to upgrade or maintain these computer systems, software and networks could result in greater susceptibility to attacks, unauthorized access and misuse, and could also prevent us from achieving our business continuity and resiliency objectives. There can be no assurance that any such disruptions, failures or delays will not occur or, if they do occur, that they will be adequately addressed.

Third parties with which we do business or that facilitate our business activities, including exchanges, clearing houses, financial intermediaries or vendors that provide services or security solutions for our operations, could also be sources of technology risk to us, including from breakdowns, failures or delays of their own systems or capacity constraints or other services that impair our ability to process transactions and communicate with customers and counterparties. In addition, we are exposed to the risk that a technology disruption or other information security event at a vendor common to our third-party service providers could impede their ability to provide products or services to us. We may not be able to effectively monitor or mitigate operational risks relating to the use of common vendors by third-party service providers.

As our business areas evolve, whether due to the introduction of technology, new service offering requirements for our clients, or changes in regulation relative to these service offerings, unforeseen risks materially impacting our business operations could arise. The technology used can become increasingly complex and rely on the continued effectiveness of the programming code and integrity of the inputted data. Rapid technological changes and competitive pressures require us to make significant and ongoing investments in technology not only to develop competitive new products and services or adopt new technologies, but to sustain our current businesses. Our financial performance depends in part on our ability to develop and market these new products and services in a timely manner at a competitive price and adopt or develop new technologies that differentiate our products or provide cost efficiencies. The failure to ensure adequate review and consideration of critical business changes prior to and during introduction and deployment of key technological systems or failure to adequately align evolving client commitments and expectations with operational capabilities, may adversely impact our ability to service and retain customers and could have a negative impact on our operations. The costs we incur in enhancing our technology could be substantial and may not ultimately improve our competitiveness or profitability.

We continue to evaluate and strengthen our business continuity and operational resiliency capabilities and have increased our investments in technology to steadily enhance those capabilities, including our ability to resume and sustain our operations. There can be no guarantee, however, that a technology outage will not occur or that our business continuity and operational resiliency capabilities will enable us to maintain our operations and appropriately respond to events. For a discussion of operational risk, see "Risk Management - Operational Risk" and "Business Continuity."

As a result of financial entities, central agents, clearing agents and houses, exchanges and technology systems across the globe becoming more interdependent and complex, a technology failure that significantly degrades, deletes or compromises the systems or data of one or more financial entities or suppliers could have a material impact on counterparties or other market participants, including us. A disruptive event or, failure or delay experienced by one institution could disrupt the functioning of the overall financial system.

A cybersecurity incident, or a failure to protect our computer systems, networks and information and our clients' information against cybersecurity threats, could result in the theft, loss, unauthorized access to, disclosure, use or alteration of information, system or network failures, or loss of access to information. Any such incident or failure could adversely impact our ability to conduct our businesses, damage our reputation and cause losses.

Our businesses rely heavily on technology, and are vulnerable to cybersecurity threats and disruptions that are occurring globally with greater frequency. Cybersecurity threats, which can include, among other things, hacker attacks, computer viruses or other malicious software, denial of service efforts, limited availability of services, phishing attacks, cyberattacks on our service providers, and unauthorized access attempts, could adversely impact our business. These cybersecurity risks are expected to continue to increase and intensify. While we deploy a broad range of sophisticated defenses, it is possible we could suffer a material adverse impact or disruption.

Cybersecurity incidents may occur through intentional or unintentional acts by individuals or groups having authorized or unauthorized access to our systems or our clients' or counterparties' information, which may include confidential information. These individuals or groups include employees, vendors and customers, as well as others with malicious intent. Third parties may also attempt to place individuals within BNY Mellon or fraudulently induce employees, vendors, customers or other users of our systems to disclose sensitive information in order to gain access to our data or that of our clients. A cybersecurity incident that results in the theft, loss, unauthorized access to, disclosure, use or alteration of information, system or network failures, or loss of access to information, may require us to reconstruct lost data (which may not be possible), reimburse clients for data and credit monitoring services, result in loss of customer business, or damage to our computers or systems and those of our customers and counterparties. These impacts could be costly and time-consuming and materially negatively impact our business operations, financial condition and reputation.

While we seek to mitigate these risks to ensure the integrity of our systems and information and continuously evolve our cybersecurity capabilities, it is possible that we may not anticipate or implement effective preventive measures against all cybersecurity threats, or detect all such threats, especially because the techniques used change frequently or are not recognized until after they are launched. Moreover, attacks can originate from a wide variety of sources, including outside third parties who are involved with organized crime or who may be linked to terrorist organizations or hostile foreign governments, or from cross-contamination of legitimate parties (clients, utilities, peer institutions, etc).

The failure to maintain an adequate technology infrastructure and applications with effective cybersecurity controls relative to the type, size and complexity of operations, markets and products traded, access to trading venues and our market interconnectedness could impact operations and impede our productivity and growth, which could cause our earnings to decline or could impact our ability to comply with regulatory obligations leading to regulatory fines and sanctions. We may be required to expend significant additional resources to modify, investigate or remediate vulnerabilities or other exposures arising from cybersecurity threats.

A successful cyberattack could occur and persist for an extended period of time before being detected. In addition, because any investigation of a cybersecurity incident would be inherently unpredictable, the extent of a particular cybersecurity incident and the path of investigating the incident may not be immediately clear. It may take a significant amount of time before such an investigation can be completed and full and reliable information about the incident is known. While such an investigation is ongoing, we may not necessarily know the extent of the harm or how best to remediate it, certain errors or actions could be repeated or compounded before they are discovered and remediated, and communication to the public, regulators, clients and other stakeholders may be inaccurate, any or all of which could further increase the costs and consequences of a cybersecurity incident.

Our business may be materially adversely affected by operational risk.

We are required to accurately process large numbers of transactions each day on a timely basis. The transactions we process or execute are operationally complex and can involve numerous parties, jurisdictions, regulations and systems, and as such, are subject to execution and processing errors and failures. As our businesses evolve to even more complex and voluminous transactions, at ever increasing speeds, we must also evolve our processes, controls, workforce and technology, to accurately and timely execute those transactions, which may result in an increased risk of error or significant operational delay. When errors or delays do occur, they may be difficult to detect and fix in a timely manner.

As a result, operational errors or significant operational delays could materially negatively impact our ability to conduct our business or service our clients, which could adversely affect our results of operations due to potentially higher expenses and lower revenues, could lower our capital ratios, create liability for us or our clients or negatively impact our reputation. Recurring operational issues may raise concerns among regulators regarding our governance and control environment and culture.

Affiliates or third parties with which we do business or that facilitate our business activities could also be sources of execution and processing errors, failures or significant operational delays. In certain jurisdictions we may be deemed to be statutorily liable for operational errors, fraud, breakdowns or delays by these affiliates or third parties. Additionally, as a result of regulations, including the Alternative Investment Fund Managers Directive and the Undertakings for Collective Investment in Transferable Securities V, where, in the European Economic Area we act as depositary, the Company could be exposed to restitution risk for, among other things, errors or fraud perpetrated by a sub-custodian resulting in a loss or delay in return of client's securities. Where we are not acting as a European Economic Area depositary, but where we provide custody services to a European Economic Area depositary, we may accept similar liabilities to that depositary as a matter of contract.

We rely on a variety of measures to protect our intellectual property and proprietary information, including copyrights, trademarks, patents and controls on access and distribution. These measures may not prevent misappropriation or infringement of our intellectual property or proprietary information and a resulting loss of competitive advantage. Furthermore, if a third party were to assert a claim of infringement or misappropriation of its proprietary rights, obtained through patents or otherwise, against us, we could be required to spend significant amounts to defend such claims, develop alternative methods of operations, pay substantial money damages, obtain a license from the third party or possibly stop providing one or more products or services.

We are also subject to laws and regulations relating to the privacy of the information of clients, employees or others, and any failure to comply with these laws and regulations could expose us to liability and/or reputational damage. As privacy-related laws and regulations, such as the EU General Data Protection Regulation (or GDPR), the California Consumer Privacy Act of 2018, and the New York Department of Financial Services' cybersecurity regulation, are implemented, the time and resources needed for us to comply with such laws and regulations, as well as our potential liability for non-compliance and reporting obligations in the case of data breaches, may significantly increase. In addition, our businesses are increasingly subject to laws and regulations relating to privacy, surveillance, encryption and data use in the jurisdictions in which we operate. Compliance with these laws and regulations may require us to change our policies, procedures and technology for information security and segregation of data, which could, among other things, make us more vulnerable to operational failures, and to monetary penalties for breach of such laws and regulations.

Our risk management framework may not be effective in mitigating risk and reducing the potential for losses.

Our risk management framework seeks to mitigate risk and loss to us. We have established comprehensive policies and procedures and an internal control framework designed to provide a sound operational environment for the types of risk to which we are subject, including operational risk, credit risk, market risk, liquidity risk and strategic risk. We have also established frameworks to mitigate risk and loss to us as a result of the actions of affiliates or third parties with which we do business or that facilitate our business activities. However, as with any risk management framework, there are inherent limitations to our current and future risk management strategies, including risks that we have not appropriately anticipated or identified.

Our regulators remain focused on ensuring that financial institutions build and maintain robust risk management policies. If our regulators perceive the quality of our risk models and framework to be insufficient, it may negatively impact our regulators' evaluations of our capital plans and stress tests. Accurate and timely enterprise-wide risk information is necessary to enhance management's decision-making in times of crisis. If our risk management framework proves ineffective or if our enterprise-wide management information is incomplete or inaccurate, we could suffer unexpected losses, which could materially adversely affect our results of operations or financial condition.

In certain instances, we rely on models to measure, monitor and predict risks. However, these models are inherently limited because they involve techniques, including the use of historical data, trends, assumptions, and judgments that cannot anticipate every economic and financial outcome in the markets in which we operate, nor can they anticipate the specifics and timing of such outcomes, especially during severe market downturns or stress events. These models may not appropriately capture all relevant risks or accurately predict future events or exposures. The risk of the unsuccessful development or implementation of our models, systems or processes cannot be completely eliminated. The models that we use to assess and control our market risk exposures also reflect assumptions about the degree of correlation among prices of various asset classes or other market indicators. The 2008 financial crisis and resulting regulatory reform highlighted both the importance and some of the limitations of managing unanticipated risks. In times of market stress or other unforeseen circumstances, previously uncorrelated indicators may become correlated, or previously correlated indicators may move in different directions. These types of market movements have at times limited the effectiveness of our hedging strategies and have caused us to incur significant losses, and they may do so in the future.

In addition, our businesses and the markets in which we operate are continuously evolving. We may fail to fully understand the implications of changes in our businesses or the financial markets or fail to adequately or timely enhance our risk framework to address those changes. If our risk framework is ineffective, either because it fails to keep pace with changes in the financial markets, regulatory requirements, our businesses, our counterparties, clients or service providers or for other reasons, we could incur losses, suffer reputational damage or find ourselves out of compliance with applicable regulatory or contractual mandates or expectations.

An important aspect of our risk management framework is creating a risk culture that it is sustainable and appropriate to our role as a major financial institution in which all employees fully understand that there is risk in every aspect of our business and the importance of managing risk as it relates to their job functions. If we fail to create the appropriate environment that sensitizes all of our employees to managing risk, our business could be adversely impacted. For more information on how we monitor and manage our risk management framework, see "Risk Management - Risk management overview."

We are subject to extensive government rulemaking, policies, regulation and supervision. These rules and regulations have, and in the future may, compel us to change how we manage our businesses, which could have a material adverse effect on our business, financial condition and results of operations. In addition, these rules and regulations have increased our compliance and operational risk and costs.

As a large, internationally active financial services company, we operate in a highly regulated environment, and are subject to a comprehensive statutory and regulatory regime, including oversight by governmental agencies both inside and outside the U.S. Regulations and related regulatory guidance and supervisory oversight impact how we analyze certain business opportunities, our regulatory capital and liquidity requirements, the revenue profile of certain of our core activities and the products and services we provide. Any changes to the regulatory frameworks and environment in which we operate and the significant management attention and resources necessary to address those changes could materially adversely affect our business, financial condition and results of operations and have other negative consequences.

The evolving regulatory environment and uncertainty about the timing and scope of future regulations may contribute to decisions we may make to suspend, reduce or withdraw from existing businesses, activities or initiatives, which may result in potential lost revenue or significant restructuring or related costs or exposures.

The monetary, tax and other policies of various governments, agencies and regulatory authorities both in the U.S. and globally have a significant impact on interest rates, currencies, commodity pricing (including oil), the imposition of tariffs or other limitations on international trade and travel, and overall financial market performance, which can impact our business and results of operations. Changes in these policies are beyond our control and can be difficult to predict and we cannot determine the ultimate effect that any such changes would have upon our business, financial condition or results of operations.

Basel III and the Dodd-Frank Act have had a significant impact on the regulatory structure of the global financial markets and have imposed significant operational, compliance and risk management costs, both as an initial matter, as we have had to develop and integrate appropriate systems and procedures, and on a recurring basis, as we monitor, support and refine those systems and procedures. While U.S. regulators have finalized regulations implementing various provisions of the Dodd-Frank Act and Basel III, additional regulations or modifications to existing regulations are expected to continue to occur. In addition, there is uncertainty about the timing and scope of any changes to Basel III and Dodd-Frank Act and other regulations, as well as the cost of complying with any new regulatory regimes. The full impact of these standards on us, our business strategies and financial performance will remain uncertain as long as regulatory reforms continue to be adopted and market practices develop in response to such reforms, and regulatory changes could materially adversely impact us.

The regulatory and supervisory focus of U.S. banking agencies is primarily intended to protect the safety and soundness of the banking system and federally insured deposits, and not to protect investors in our securities. Regulatory and supervisory standards and expectations across jurisdictions may be divergent and otherwise may not conform and/or may be applied in a manner that is not harmonized within a jurisdiction (in relation to national versus non-national financial services providers) and/or across jurisdictions. Additionally, banking regulators have wide supervisory discretion in the ongoing examination and enforcement of applicable banking statutes, regulations, and guidelines, and may restrict our ability to engage in certain activities or acquisitions, or may require us to maintain more capital or highly liquid assets.

The U.S. capital rules subject us and our U.S. banking subsidiaries to more stringent capital requirements, which could restrict growth, activities or operations, trigger divestiture of assets or operations or limit our ability to return capital to shareholders. Failure to meet current or future capital requirements, either at the end of each fiscal quarter or under hypothetical stressed conditions during the annual CCAR exercise, could materially adversely affect our financial condition. Additional impacts relating to compliance with these rules could include, but are not limited to, potential dilution of existing shareholders and competitive disadvantage compared to financial institutions not under the same regulatory framework. In addition, the SLR subjects us to a more stringent leverage requirement, which could restrict growth, activities, operations or could result in certain restrictions on capital distributions and discretionary bonus payments.

The LCR requires us to maintain significant holdings of high quality and potentially lower-yielding liquid assets. In calculating the LCR, we must also determine which deposits should be considered to be stable deposits. Stable deposits must meet a series of requirements and typically receive favorable outflow treatment under the LCR. BNY Mellon uses qualitative and quantitative analysis to identify core stable deposits. It is possible that our LCR could fall below 100% as a consequence of the inherent uncertainties associated with this analysis (including as a result of additional guidance from our regulators). In addition to facing potential regulatory consequences (which could be significant), we may be required to remedy this shortfall by liquidating assets in our investment portfolio or raising additional debt, each of which could materially negatively impact our net interest revenue.

If and when the final rule regarding the NSFR is ultimately implemented in the U.S., those requirements could also require BNY Mellon to further increase its holdings of high quality, and potentially lower-yielding, liquid assets, and to reevaluate the composition of its liabilities structure to include more longer-dated debt.

Our global activities are also subject to extensive regulation by various non-U.S. regulators, including governments, securities exchanges, central banks and other regulatory bodies in the jurisdictions in which we operate, relating to, among other things, the safeguarding, administration and management of client assets and client funds.

Various new, revised and proposed European Union directives and regulations have an impact on our provision of many of our products and services. Implementation of, and revisions to, these directives and regulations have affected our operations and risk profile, including the Capital Requirements Directive/Regulation, the Bank Recovery and Resolution Directive, the Deposit Guarantee Scheme Directive, MiFID II, AIFMD, UCITS V and PSD II.

In addition, we are subject in our global operations to rules and regulations relating to corrupt and illegal payments and money laundering, economic sanctions and embargo programs administered by the U.S. Office of Foreign Assets Control and similar bodies and governmental agencies worldwide, and laws relating to doing business with certain individuals, groups and countries, such as the U.S. Foreign Corrupt Practices Act, the USA PATRIOT Act, the Iran Threat Reduction and Syria Human Rights Act of 2012 and the UK Bribery Act. While we have invested and continue to invest significant resources in training and in compliance monitoring, the geographical diversity of our operations, employees, clients and customers, as well as the vendors and other third parties that we deal with, presents the risk that we may be found in violation of such rules, regulations or laws and any such violation could subject us to significant penalties or adversely affect our reputation. In addition, such rules could impact our ability to engage in business with certain individuals, entities, groups and countries, which could materially adversely affect certain of our businesses and results of operations.

Failure to comply with laws, regulations or policies applicable to our business could result in sanctions by regulatory or governmental authorities, civil money penalties and reputational damage, which could have a material adverse effect on our business, financial condition and results of operations. If violations do occur, they could damage our reputation, increase our legal and compliance costs, and ultimately adversely impact our results of operations. Laws, regulations or policies currently affecting us and our subsidiaries, or regulatory and governmental authorities' interpretation of these statutes and regulations may change at any time, which may adversely impact our business and results of operations.

See "Supervision and Regulation" for additional information regarding the potential impact of the regulatory environment on our business.

Regulatory or enforcement actions or litigation could materially adversely affect our results of operations or harm our businesses or reputation.

Like many major financial institutions, we and our affiliates are the subject of inquiries, investigations, lawsuits and proceedings by counterparties, clients, other third parties and regulatory and other governmental agencies in the U.S. and abroad, as well as the Department of Justice (the "DOJ") and state attorneys general. See "Legal proceedings" in Note 21 of the Notes to Consolidated Financial Statements for a discussion of material legal and regulatory proceedings in which we are involved. The number of these investigations and proceedings, as well as the amount of penalties and fines sought, has remained elevated for many firms in the financial services industry, including us. We may become subject to heightened regulatory scrutiny, inquiries or investigations, and potentially client-related inquiries or claims, relating to broad, industry-wide concerns that could lead to increased expenses or reputational damage. The current trend of large settlements by financial institutions with governmental entities may adversely affect the outcomes for other financial institutions in similar actions, especially where governmental officials have announced that the large settlements will be used as the basis or a template for other settlements. Separately, policy makers in Europe continue to focus on protection of client assets, as well as tax avoidance and evasion.

Regulatory authorities may compel companies to provide investigators with all relevant facts relating to the individuals substantially involved in or responsible for the alleged misconduct in order to qualify for any cooperation credit in criminal investigations of corporate wrongdoing, or maximum cooperation credit in civil investigations of corporate wrongdoing, resulting in increased fines and penalties.

The complexity of the federal and state regulatory and enforcement regimes in the U.S., coupled with the global scope of our operations and the increased aggressiveness of the regulatory environment worldwide, also means that a single event may give rise to a large number of overlapping investigations and regulatory proceedings, either by multiple federal and state agencies in the U.S. or by multiple regulators and other governmental entities in different jurisdictions. Responding to inquiries, investigations, lawsuits and proceedings, regardless of the ultimate outcome of the matter, is time-consuming and expensive and can divert the attention of our senior management from our business. The outcome of such proceedings may be difficult to predict or estimate until late in the proceedings, which may last a number of years.

Certain of our subsidiaries are subject to periodic examination, special inquiries and potential proceedings by regulatory authorities. If compliance failures or other violations are found during an examination, inquiry or proceeding, a regulatory agency could initiate actions and impose sanctions for violations, including, for example, regulatory agreements, cease and desist orders, civil monetary penalties or termination of a license and could lead to litigation by investors or clients, any of which could cause our earnings to decline.

Our businesses involve the risk that clients or others may sue us, claiming that we or third parties for whom they say we are responsible have failed to perform under a contract or otherwise failed to carry out a duty perceived to be owed to them, including perceived fiduciary or contractual duties. This risk may be heightened during periods when credit, equity or other financial markets are deteriorating in value or are particularly volatile, or when clients or investors are experiencing losses. As a publicly held company, we are also subject to the risk of claims under the federal securities laws. Volatility in our stock price increases this risk.

Actions brought against us may result in lawsuits, enforcement actions, injunctions, settlements, damages, fines or penalties, which could have a material adverse effect on our financial condition or results of operations or require changes to our business. Claims for significant monetary damages are asserted in many of these legal actions, while claims for disgorgement, penalties and/or other remedial sanctions may be sought in regulatory matters. Although we establish accruals for our litigation and regulatory matters in accordance with applicable accounting guidance when those matters proceed to a stage where they present loss contingencies that are both probable and reasonably estimable, there may be a material exposure to loss in excess of any amounts accrued, or in excess of any loss contingencies disclosed as reasonably possible. Such loss contingencies may not be probable and reasonably estimable until the proceedings have progressed significantly, which could take several years and occur close to resolution of the matter.

Each of the risks outlined above could result in increased regulatory supervision and affect our ability to attract and retain customers or maintain access to the capital markets.

Our businesses may be negatively affected by adverse events, publicity, government scrutiny or other reputational harm.

We are subject to reputational, legal and regulatory risk in the ordinary course of our business. The public perception of financial institutions remains negative. Harm to our reputation can result from numerous sources, including adverse publicity arising from events occurring at BNY Mellon or in the financial markets, our perceived failure to comply with legal and regulatory requirements or deliver appropriate standards of service and quality by either us or our vendors, or a failure to appropriately describe our products and services, the purported actions of our employees, alleged financial reporting irregularities involving ourselves or other large and well-known companies and perceived conflicts of interest. In particular, a cybersecurity event impacting us or our customers' data could have a negative impact on our reputation and customer confidence in BNY Mellon and its cybersecurity defenses and business continuity and resiliency capabilities. Our reputation could also be harmed by the failure of an affiliate, joint venture or a vendor or other third party with which we do business to comply with laws or regulations. Damage to our reputation could affect the confidence of clients, rating agencies, regulators, employees, stockholders and other stakeholders and could in turn have an impact on our business and results of operations.

Additionally, governmental scrutiny from regulators, legislative bodies and law enforcement agencies with respect to financial services companies has remained at elevated levels. Press coverage and other public statements that assert some form of wrongdoing (including, in some cases, press coverage and public statements that do not directly involve BNY Mellon) often result in some type of investigation or in lawsuits. Certain enforcement authorities have recently required admissions of wrongdoing, and in some cases, criminal pleas, as part of the resolution of matters brought by them against financial institutions. Any such resolution of a matter involving BNY Mellon could lead to increased exposure to civil litigation, could adversely affect our reputation and ability to do business in certain products and in certain jurisdictions and could have other negative effects.

Failure to satisfy regulatory standards, including "well capitalized" and "well managed" status or capital adequacy and liquidity rules more generally, could result in limitations on our activities and adversely affect our business and financial condition.

Under U.S. and international regulatory capital adequacy rules and other regulatory requirements, BNY Mellon and our subsidiary banks must meet thresholds that include quantitative measures of assets, liabilities and certain off-balance sheet items, subject to qualitative judgments by regulators about components, risk weightings and other factors. As discussed in "Supervision and Regulation," BNY Mellon is registered with the Federal Reserve as a BHC and an FHC. An FHC's ability to maintain its status as an FHC is dependent upon a number of factors, including its U.S. bank subsidiaries' qualifying on an ongoing basis as "well capitalized" and "well managed" under the banking agencies' prompt corrective action regulations as well as applicable Federal Reserve regulations. Failure by an FHC or one of its U.S. bank subsidiaries to qualify as "well capitalized" and "well managed", if unremedied over a period of time, would cause it to lose its status as an FHC and could affect the confidence of clients in it, compromising its competitive position. Additionally, an FHC that does not continue to meet all the requirements for FHC status could lose the ability to undertake new activities or make acquisitions that are not generally permissible without FHC status or to continue such activities.

The failure by one of our bank subsidiaries to maintain its status as "well capitalized" could lead to, among other things, higher FDIC assessments and could have reputational and associated business consequences.

If we or our subsidiary banks fail to meet U.S. and international minimum capital rules and other regulatory requirements, we may not be able to deploy capital in the operation of our business or distribute capital to stockholders, which may adversely affect our business.

Failure to meet any current or future capital or liquidity requirements, including those imposed by the U.S. capital rules, the LCR, or by regulators in implementing other portions of the Basel III framework, could materially adversely affect our financial condition. The current regulatory environment is fluid as requirements are introduced and amended. See "Supervision and Regulation." Compliance with U.S. and international regulatory capital and liquidity requirements may impact our ability to return capital to shareholders and may impact our operations by requiring us to liquidate assets, increase borrowings, issue additional equity or other securities, or cease or alter certain operations, which may adversely affect our results of operations.

Finally, our estimated regulatory capital ratios, liquidity metrics, and related components are based on our current interpretation, expectations and understanding of the applicable rules and are subject to, among other things, ongoing regulatory review, regulatory approval of certain statistical models, additional refinements, modifications or enhancements (whether required or otherwise) to our models, and further implementation guidance. Any modifications resulting from these ongoing reviews or the continued implementation of the U.S. capital rules, the LCR, the resolution planning process, and related amendments could result in changes in our risk-weighted assets, capital components, liquidity inflows and outflows, HQLA, or other elements involved in the calculation of these measures, which could impact these ratios. Further, because operational risk is currently measured based not only upon our historical operational loss experience but also upon ongoing events in the banking industry generally, our level of operational risk-weighted assets could significantly increase or otherwise remain elevated and may potentially be subject to significant volatility, negatively impacting our capital and liquidity ratios. The uncertainty caused by these factors could ultimately impact our ability to meet our goals, supervisory requirements, and regulatory standards.

A failure or circumvention of our controls and procedures could have a material adverse effect on our business, reputation, results of operations and financial condition.

Management regularly reviews and updates our internal controls, disclosure controls and procedures, and corporate governance policies and procedures. Any system of controls, however well designed and operated, is based in part on certain assumptions and can provide only reasonable, not absolute, assurances that the objectives of the system will be met. Any failure or circumvention of our controls and procedures or failure to comply with regulations related to controls and procedures could have a material adverse effect on our business, reputation, results of operations and financial condition. If we identify material weaknesses in our internal control over financial reporting or are otherwise required to restate our financial statements, we could be required to implement expensive and time-consuming remedial measures and could lose investor confidence in the accuracy and completeness of our financial reports. In addition, there are risks that individuals, either employees or contractors, may circumvent established control mechanisms in order to, for example, exceed exposure, liquidity, trading or investment management limitations, or commit fraud.

The application of our Title I preferred resolution strategy or resolution under the Title II orderly liquidation authority could adversely affect the Parent's liquidity and financial condition and the Parent's security holders.

In 2017, in connection with our single point of entry resolution strategy under Title I of the Dodd-Frank Act, the Parent entered into a binding support agreement with certain key subsidiaries to facilitate the provision of capital and liquidity resources to them in the event of material financial distress or failure. The support agreement requires the Parent to transfer significant excess liquid financial assets to the IHC on an ongoing basis, subject to certain amounts retained by the Parent to meet its near-term cash needs, in exchange for unsecured subordinated funding notes issued by the IHC as well as a committed line of credit to the Parent to service its near term obligations. The Parent's and the IHC's obligations under the support agreement are secured.

If our projected liquidity resources deteriorate so severely that resolution of the Parent becomes imminent, the committed line of credit the IHC provided to the Parent will automatically terminate, with all amounts outstanding becoming due and payable, and the support agreement will require the Parent to transfer most of its remaining assets (other than stock in subsidiaries and a cash reserve to fund bankruptcy expenses) to the IHC. As a result, during a period of severe financial stress the Parent could become unable to meet its debt and payment obligations (including with respect to its securities), causing the Parent to seek protection under bankruptcy laws earlier than it otherwise would have.

If the Parent were to become subject to a bankruptcy proceeding and our single point of entry strategy is successful, our material entities will not be subject to insolvency proceedings and their creditors would not be expected to suffer losses, while the Parent's security holders, including unsecured debt holders, could face significant losses, potentially including the loss of their entire investment. The single point of entry strategy - in which the Parent would be the only legal entity to enter resolution proceedings - is designed to result in greater risk of loss to holders of our unsecured senior debt securities and other securities than would be the case under a different resolution strategy.

Further, if the single point of entry strategy is not successful, our liquidity and financial condition would be adversely affected and all security holders may, as a consequence, be in a worse position than if the strategy had not been implemented.

In addition, Title II of the Dodd-Frank Act established an orderly liquidation process in the event of the failure of a large systemically important financial institution, such as BNY Mellon, in order to avoid or mitigate serious adverse effects on the U.S. financial system. Specifically, if BNY Mellon is in default or danger of default, and certain specified conditions are met, the FDIC may be appointed receiver under the orderly liquidation authority, and we would be resolved under that authority instead of the U.S. Bankruptcy Code.

U.S. supervisors have indicated that a single point of entry strategy may be a desirable strategy to resolve a large financial institution such as BNY Mellon under Title II in a manner that would, similar to our preferred strategy under our Title I resolution plan, impose losses on shareholders, unsecured debt holders and other unsecured creditors of the Parent, while permitting the holding company's subsidiaries to continue to operate and remain solvent. Under such a strategy, assuming the Parent entered resolution proceedings and its subsidiaries remained solvent, losses at the subsidiary level would be absorbed by the Parent and ultimately borne by the Parent's security holders (including holders of the Parent's unsecured debt securities), while third-party creditors of the Parent's subsidiaries would not be expected to suffer losses. Accordingly, the Parent's security holders (including holders of unsecured debt securities and other unsecured creditors) could face losses in excess of what otherwise would have been the case.

If our resolution plan is determined not to be credible or not to facilitate an orderly resolution under the U.S. Bankruptcy Code, our business, reputation, results of operations and financial condition could be materially negatively impacted.

We must develop and submit to the Federal Reserve and the FDIC for review plans for our rapid and orderly resolution in the event of material financial distress or failure. If the agencies determine that our future submissions are not credible or would not facilitate an orderly resolution under the U.S. Bankruptcy Code, and we fail to address any such deficiencies in a timely manner, the agencies may jointly impose more stringent capital, leverage or liquidity requirements or restrictions on our growth, activities or operations.

Acts of terrorism, impacts from climate change, natural disasters, pandemics, global conflicts and other geopolitical events may have a negative impact on our business and operations.

In conducting our business and maintaining and supporting our global operations, which includes vendors and other third parties, we are subject to risks of loss from the outbreak of hostilities, acts of terrorism, impacts from client change, natural disasters, pandemics, global conflicts or other similar catastrophic events that could have a negative impact on our business and operations. We may also be impacted by unfavorable political, economic, legal or other developments, including but not limited to social or political instability, changes in governmental policies or policies of central banks, sanctions, expropriation, nationalization, confiscation of assets, price, capital and exchange controls, the imposition of tariffs or other limitations on international trade and travel, and changes in laws and regulations.

While we have business continuity and disaster recovery plans in place, such events could still damage our facilities, disrupt or delay normal business operations (including communications and technology), result in harm or cause travel limitations on our employees, with a similar impact on our clients, suppliers and counterparties. Catastrophic events, including those caused by climate change, could also negatively impact the purchase of our products and services if those events result in reduced capital markets activity, lower asset price levels, or disruptions in general economic activity, or in financial market settlement functions, which could negatively impact our business and results of operation. In addition, catastrophic events, including those caused by climate change, war, terror attacks, political unrest, global conflicts, efforts to combat terrorism and other potential military activities and outbreaks of hostilities may lead, and in some cases have led, to an increase in delinquencies, bankruptcies or defaults that could result in our experiencing higher levels of non-performing assets, net charge-offs and provisions for credit losses, negatively impacting our business and operations.

Market Risk

We are dependent on fee-based business for a substantial majority of our revenue and our fee-based revenues could be adversely affected by slowing in market activity, weak financial markets, underperformance and/or negative trends in savings rates or in investment preferences.

Our principal operational focus is on fee-based business, which is distinct from commercial banking institutions that earn most of their revenues from loans and other traditional interest-generating products and services. In 2018, 78% of our total revenue was fee-based. Our fee-based businesses include investment management and performance fees, custody, corporate trust, depositary receipts, clearing, collateral management and treasury services, which are highly competitive businesses.

Fees for many of our products and services are based on the volume of transactions processed, the market value of assets managed and administered, securities lending volume and spreads, and fees for other services rendered. Corporate actions, cross-border investing, global mergers and acquisitions activity, new debt and equity issuances, and secondary trading volumes all affect the level of our revenues. If the volumes of these activities decrease due to weak financial markets or otherwise, our revenues will also decrease, which would negatively impact our results of operations.

Poor investment returns in our investment management business, due to either weak market conditions or underperformance (relative to our competitors or to benchmarks) by funds or accounts that we manage or investment products that we design or sell, could result in reduced market values of portfolios that we manage and/or administer and may affect our ability to retain existing assets and to attract new clients or additional assets from existing clients. Market and regulatory trends have resulted in increased demand for lower fee asset management products, and for performance-based fees. Significant declines in the volume of capital markets activity would reduce the number of transactions we process and the amount of securities we lend and therefore would also have an adverse effect on our results of operations.

Our business generally benefits when individuals invest their savings in mutual funds and other collective funds, unit investment trusts or exchange-traded funds, or contribute more to defined contribution plans. The current shift to lower fee investment products has adversely impacted our fees. When our investment management revenues decline, we may have, and in the past have had, declines in the fair value in our Asset Management reporting unit, one of the two reporting units in our Investment Management segment. If the fair value of the Asset Management reporting unit declines below its carrying value, we would be required to take an impairment charge.

Weakness and volatility in financial markets and the economy generally may materially adversely affect our business, results of operations and financial condition.

As a financial institution, our Investment Management, Depositary Receipts and Markets, including Securities Lending, businesses, are particularly sensitive to economic and market conditions, including in the capital and credit markets. When these markets are volatile or disruptive, we could experience a decline in our marked-to-market assets, including in our securities portfolio and our equity investments, including seed capital. Our results of operations may be materially affected by conditions in the financial markets and the economy generally, both in the U.S. and elsewhere around the world. A variety of factors impact global economies and financial markets, including interest rates and their associated yield curves, commodity pricing, such as a continued weakness in oil prices when compared to historic levels, certain market and political instabilities, volatile debt and equity market values, the strength of the U.S. dollar, the imposition of tariffs or other limitations on international trade or travel, high unemployment and governmental budget deficits (including, in the U.S., at the federal, state and municipal level), contagion risk from possible default by other countries on sovereign debt, declining business and consumer confidence and the risk of increased inflation. Any resulting economic pressure on consumers and lack of confidence in the financial markets may adversely affect certain portions of our business, financial condition and results of operations. In particular, we face the following risks in connection with these factors, some of which are discussed at greater length in separate risk factors:

- Geopolitical tension and economic instability in countries around the world can at times increase the demand for low-risk investments, particularly in U.S. Treasuries and the dollar. A “flight to safety” has historically increased BNY Mellon’s balance sheet, which has negatively impacted, and could continue to negatively impact, our leverage-based regulatory capital measures. A sustained “flight to safety” has historically triggered a decline in trading, capital markets and cross-border activity which would likely decrease our revenue, negatively impacting our results of operations, financial condition and, if sustained in the long term, our business.
- The fees earned by our Investment Management business are higher as assets under management and/or investment performance increase. Those fees are also impacted by the composition of the assets under management, with higher fees for some asset categories as compared to others. Uncertain and volatile capital markets could result in reductions in assets under management

because of investors' decisions to withdraw assets or from simple declines in the value of assets under management as markets decline. At Dec. 31, 2018, we estimate that a 5% change in global equity markets, spread evenly throughout the year, would impact fee revenue by less than 1% and diluted earnings per common share by $0.03 to $0.05.

- Market conditions resulting in lower transaction volumes could have an adverse effect on the revenues and profitability of certain of our businesses such as clearing, settlement, payments and trading.
- Uncertain and volatile capital markets, particularly declines, could reduce the value of our investments in securities, including pension and other post-retirement plan assets and produce downward pressure on our stock price and credit availability without regard to our underlying financial strength.
- Derivative instruments we hold to hedge and manage exposure to market risks including interest rate risk, equity price risk, foreign currency risk and credit risk associated with our products and businesses might not perform as intended or expected, resulting in higher realized losses and unforeseen stresses on liquidity. Our derivative-based hedging strategies also rely on the performance of counterparties to such derivatives. These counterparties may fail to perform for various reasons resulting in losses on under-collateralized positions.
- A decline in oil prices may continue to negatively impact capital markets and may impact the ability of certain of our clients, including oil and gas exploration and production companies and sovereign funds in oil-exporting countries, to continue using our services or repay outstanding loans. Increased defaults among oil and gas exploration and production companies may also negatively impact the high-yield market and our high-yield funds.
- The process we use to estimate our projected credit losses and to ascertain the fair value of securities held by us is subject to uncertainty in that it requires use of statistical models and difficult, subjective and complex judgments, including forecasts of economic conditions and how these conditions might impair the ability of our borrowers and others to meet their obligations. In uncertain and volatile capital markets, our ability to estimate our projected credit losses may be impaired, which could adversely affect our overall profitability and results of operations.

Our international clients accounted for 37% of our revenue in 2018. Given the scope of our global operations, clients and counterparties, persistent disruptions in the global financial markets, or the attempt of a country to abandon the euro or persistent weakness in a leading global currency could have a material adverse impact on our business or results of operations.

For a discussion of our management of market risk, see "Risk Management - Market risk."

Transitions away from, or changes in the calculation of, LIBOR and other benchmark rates could adversely impact our business and results of operations.

In 2017, the UK Financial Conduct Authority announced that it will no longer persuade or compel contributing banks to submit rates for the calculation of LIBOR after 2021. As a result, a transition is underway to move away from LIBOR and other interbank offered rates ("IBORs") to transaction-based alternative risk-free rates. This transition is further supported by the requirements of the EU Benchmarks Regulation ("BMR"), where IBORs which are not anchored in transaction-based data and rely on quotes or estimates submitted by contributing banks would not satisfy the relevant BMR requirements and would either need to be reformed or discontinued after 2019. Any change to any alternative rate or benchmark as a result of the move away from LIBOR or other IBOR or any other proposals for reform or other initiatives or investigations, further uncertainty in the timing and manner of implementation of such changes, or a waning recognition of LIBOR or other IBOR as an acceptable benchmark may cause LIBOR, the applicable or alternative rates or benchmarks to perform differently, or have other consequences which cannot be predicted. In the event any such benchmark or other referenced financial metric is significantly changed or discontinued (for example, in the transition away from LIBOR and other IBORs), or ceases to be recognized as an acceptable benchmark, there may be uncertainty as to the calculation of the applicable interest rate or payment amount, depending on the terms of the governing instrument.

As a result of our business activities and our underlying operations, we may be adversely impacted by the changes involving LIBOR and other benchmark rates. We are responsible for the use of benchmark rates in a variety of agency, trustee and other fiduciary capacities, as well as in our operational functions and could be subject to claims alleging that notwithstanding any uncertainty around the rate environment, we did not correctly discharge our responsibilities.

Fluctuations in interest rates triggered by the transition away from LIBOR and other benchmark rates could adversely affect the availability or cost of floating-rate funding. We could experience losses on a product or have to pay more or receive less on securities that we own or have issued. Mismatches may arise between existing IBOR-based and proposed alternative benchmark rates, based on a number of factors, including differences in currency denominations as between these rates, differences in the extent to which transactions that serve as the basis for such alternative benchmark rates may be secured or unsecured, and differences in the tenor of transactions that serve as the basis for alternative benchmark rates. Divergences between existing IBOR-based and proposed alternative benchmark rates may result in our hedges being ineffective. In addition, uncertainty relating to LIBOR or another benchmark could result in pricing volatility, increased capital requirements, loss of market share in certain products, adverse tax or accounting consequences, higher compliance, legal and operational costs, and risks associated with client disclosures, discretionary actions taken or negotiation of fallback provisions, as well as business continuity and systems and model disruption, all of which may adversely impact our business and results of operations.

The United Kingdom's referendum decision to leave the EU has had and may continue to have negative effects on global economic conditions, global financial markets, and our business and results of operations.

On March 29, 2019, the UK is scheduled to withdraw from the EU. There is a substantial risk that the UK and EU will not have ratified any terms for the UK's withdrawal from the EU by the scheduled withdrawal date. Further, the UK's withdrawal from the EU, and in particular the countries' failure to agree to terms, has created an uncertain political and economic environment in the UK, and may create such environments in other EU member states.

In anticipation of the UK's withdrawal from the EU, we have executed plans adjusting our business and operations so we may continue providing our products and services to our UK and EU clients. Our plans have been, and continue to be, based on the UK exiting the EU on March 29, 2019 without an agreement between the UK and EU on the terms of the withdrawal and therefore with no transition period. Accordingly, our plans assume that our UK subsidiaries will, on March 29, 2019, lose their EU financial services passport and as a result will not be able to provide regulated services into the EU without needing to obtain local authorization. BNY Mellon maintains a presence in the UK through the London branch of The Bank of New York Mellon and through The Bank of New York Mellon (International) Limited, which is a credit institution incorporated and authorized in the UK. BNY Mellon maintains a presence in the EU through The Bank of New York Mellon SA/NV ("BNY Mellon SA/NV"), which is headquartered in Belgium and has a branch network in a number of other EU countries. BNY Mellon SA/NV benefits from a general banking license for the provision of banking and investments services. We have undertaken, and continue to undertake, adjustments to the operations of BNY Mellon SA/NV so that it may provide a wider range of services to clients domiciled in the EU.

If the UK leaves the EU without an agreement, we, including our European affiliates, may face additional operational, regulatory and compliance costs, including costs relating to the transfer of business operations and, potentially, personnel from our UK operations to BNY Mellon SA/NV. The outcome of the UK's decision to exit the EU has also created uncertainty with regard to divergent regulatory standards, which may affect operational capabilities such as the transfer of data between the UK and EU after the UK leaves the EU. The effects of the UK's exit from the EU, including those described above, could adversely affect our business, results of operations and financial condition.

Changes in interest rates and yield curves could have a material adverse effect on our profitability.

We earn revenue, known as "net interest revenue," on the difference between the interest income earned on our interest-earning assets, such as the loans we make and the securities we hold in our investment securities portfolio, and the interest expense incurred on our interest-bearing liabilities, such as deposits and borrowed money. Our net interest margin, which is the result of dividing net interest revenue by average interest-earning assets, and our cash flows, are sensitive to changes in the spread between short-term and long-term interest rates (the "yield curve"). Our net interest margin tends to increase in a positive yield curve environment and decrease when the yield curve flattens or inverts. A flattening of the yield curve, on its own or together with a low interest rate environment, may adversely impact our revenue and results of operations by compressing our net interest spreads, particularly if we are unable to replace our higher-yielding maturing assets with assets of comparable yields, which will constrain our ability to achieve desired net interest margins.

The 100 basis point rise in rates in the past year, or future rate rises, could trigger one or more of the following, which could adversely impact our business, results of operations and financial condition, including:

- less liquidity in bonds and fixed-income funds in the case of a sharp rise in interest rates resulting in lower performance, yield and fees;
- increased number of delinquencies, bankruptcies or defaults and more nonperforming assets and net charge-offs, as borrowers may have more difficulty making higher interest payments;
- difficulty in modeling predicted deposit levels and depositor behavior, which could impact our ability to manage liquidity and capital;
- decreases in deposit levels and higher redemptions from our fixed-income funds or separate accounts, as clients move funds into investments with higher rates of return;
- decreases in stable deposit levels, which may result in further pressure on our LCR measure;
- a decline in our risk-based capital ratios;
- reduction in accumulated other comprehensive income ("OCI") in our shareholders' equity and therefore our tangible common equity due to the impact of rising long term rates on our available-for-sale securities in our investment portfolio; or
- higher funding costs.

A declining short-term rate environment will likely adversely impact our revenue and results of operations by:

- continued compression of our net interest spreads, depending on our balance sheet position;
- constraining our ability to achieve a net interest margin consistent with historical averages;
- sustained weakness of our spread-based revenues, resulting in continued voluntary waiving of particular fees on certain money market mutual funds and related distribution fees by us in order to prevent the yields on such funds from becoming uneconomic; and
- adversely impacting the value of fixed-rate mortgage-backed securities we hold if there are increases in mortgage prepayment speeds, which can be caused by refinancing activity.

Additionally, low short-term rates may result in excess deposits with high potential runoff rates, which in turn would increase our assets and result in further pressure on our LCR measure.

A more detailed discussion of the interest rate and market risks we face is contained in "Risk Management."

We may experience write-downs of securities that we own and other losses related to volatile and illiquid market conditions, reducing our earnings and impacting our financial condition.

We maintain an investment securities portfolio of various holdings, types and maturities. At Dec. 31, 2018, these securities were primarily classified as available-for-sale, which are recorded on our balance sheet at fair value with unrealized gains or losses reported as a component of accumulated other comprehensive income, net of tax. The securities in our held-to-maturity portfolio, recorded on our balance sheet at amortized cost, were $34.0 billion and comprised approximately 28% of our investment securities portfolio at Dec. 31, 2018. To the extent unhedged, the accounting and regulatory treatment of our investment securities portfolio in an available-for-sale accounting environment may have more volatility than a more traditional held-for-investment loan portfolio, or a securities portfolio comprised exclusively of U.S. Treasury securities.

Our investment securities portfolio represents a greater proportion of our consolidated total assets (approximately 33% at Dec. 31, 2018), and our loans represent a smaller proportion of our consolidated total assets (approximately 16% at Dec. 31, 2018), in comparison to many other major U.S. financial institutions due to our custody and trust bank business model. As such, our capital levels and results of operations and financial condition are materially exposed to the risks associated with our investment portfolio.

If any of our available-for-sale securities experience an other-than-temporary impairment, it would negatively impact our earnings. If our held-to-maturity securities experience a loss in fair value, it would negatively impact the fair value of our securities portfolio, although it would not impact our earnings unless a credit event occurred. Many of these securities experienced significant liquidity, valuation and credit quality deterioration during the 2008 financial crisis and could experience a similar deterioration in another financial crisis. U.S. state and municipal bonds have been experiencing stress in light of fiscal concerns.

Under the U.S. capital rules, after-tax changes in the fair value of available-for-sale investment securities are included in CET1 capital. Since loans held for investment, or securities in a held-to-maturity accounting classification, are not subject to a fair-value accounting framework, changes in the fair value of these instruments (other than incurred credit losses) are not similarly included in the determination of CET1 capital. As a result, we may experience increased variability in our CET1 capital relative to those other major financial institutions who maintain a lower proportion of their consolidated total assets in an available-for-sale accounting classification.

Generally, the fair value of available-for-sale securities in the securities portfolio is determined based upon market values available from third-party sources. During periods of market disruption, it may be difficult to value certain of our investment securities if trading becomes less frequent and/or market data becomes less observable. As a result, valuations may include inputs and assumptions that are less observable or require greater estimation and judgment as well as valuation methods which are more complex. These values may not be ultimately realizable in a market transaction, and such values may change very rapidly as market conditions change and valuation assumptions are modified. Decreases in value may have a material adverse effect on our results of operations or financial condition. If any of our securities suffer credit losses, as we experienced with some of our investments in 2009, we may recognize the credit losses as an other-than-temporary impairment which could impact our revenue in the quarter in which we recognize the losses. The decision on whether to record an other-than-temporary impairment or write-down is determined in part by management's assessment of the financial condition and prospects of a particular issuer, projections of future cash flows and recoverability of the particular security. Management's conclusions on such assessments are highly judgmental and include assumptions and projections of future cash flows which may ultimately prove to be incorrect as assumptions, facts and circumstances change. On the other hand, securities held in a held-to-maturity accounting environment are limited in the actions we can take absent a significant deterioration in the issuer's creditworthiness. Therefore, we may be constrained in our ability to liquidate a held-to-maturity security that is deteriorating in value, which would negatively impact the fair value of our securities portfolio. If our determinations change about our intention or ability to not sell securities that have experienced a reduction in fair value below their amortized cost, we could be required to recognize an other-than-temporary loss in earnings for the entire difference between fair value and amortized cost.

For information regarding our investment securities portfolio, refer to "Consolidated balance sheet review - Investment securities" and for information regarding the sensitivity of and risks associated with the market value of portfolio investments and interest rates, refer to "Critical accounting estimates - Fair value - Securities."

Our FX revenue may be adversely affected by decreases in market volatility and the cross-border investment activity of our clients.

Our foreign exchange trading generates revenues which are primarily driven by the volume of client transactions and the spread realized on these transactions, both of which are impacted by market volatility and the impact of foreign exchange hedging activities. Our clients' cross-border investing activity could decrease in reaction to economic and political uncertainties, including changes in laws or regulations governing cross-border transactions, such as currency controls or tariffs. Uncertainties resulting from terrorist attacks, military actions and other events may also negatively affect cross-border investments activity, which could negatively impact revenue.

Volumes and/or spreads in some of our products tend to benefit from currency volatility and are likely to decrease during times of lower currency volatility. Our revenues also depend on our ability to manage the risk associated with the currency transactions we execute and program pricing.

Furthermore, a shift by custody clients from the standing instruction programs to other trading options combined with competitive market pressures on the foreign exchange business may negatively impact our FX revenue. Continued growth of electronic FX trading capabilities is resulting in a shift of volume to lower margin channels.

Credit and Liquidity Risk

The failure or perceived weakness of any of our significant counterparties, many of whom are major financial institutions and sovereign entities, and our assumption of credit and counterparty risk, could expose us to loss and adversely affect our business.

We have exposure to clients and counterparties in many different industries, particularly financial institutions, as a result of trading, clearing and financing, providing custody services, securities lending services or other relationships. We routinely execute transactions with global clients and counterparties in the financial industry as well as sovereigns and other governmental or quasi-governmental entities. Our direct exposure consists of the extension of secured and unsecured credit to clients and use of our balance sheet. In addition to traditional credit activities, we also extend intraday credit in order to facilitate our various processing, settlement and intermediation activities. Our ability to engage in funding or other transactions could be adversely affected by the actions and commercial soundness of other financial institutions or sovereign entities, as defaults or non-performance (or even uncertainty concerning such default or non-performance) by one or more financial institutions, or the financial services industry generally, have in the past led to market-wide liquidity problems and could lead to losses or defaults by us or by other institutions (including our counterparties and/or clients) in the future. The consolidation and failures of financial institutions during the 2008 financial crisis increased the concentration of our client and counterparty risk.

As a result of our membership in several industry clearing or settlement exchanges and central counterparty clearinghouses, we may be required to guarantee obligations and liabilities or provide financial support in the event that other members do not honor their obligations or default. These obligations may be limited to members that dealt with the defaulting member or to the amount (or a multiple of the amount) of our contribution to a clearing or settlement exchange guarantee fund, or, in a few cases, the obligation may be unlimited.

The degree of client demand for short-term credit also tends to increase during periods of market turbulence, exposing us to further credit-related risks. For example, investors in mutual funds for which we act as custodian may engage in significant redemption activity due to adverse market or economic conditions. We may then extend intraday credit to our fund clients in order to facilitate their ability to pay such redemptions. This may negatively impact our leverage-based capital ratios, and in times of sustained market volatility, may result in significant leverage-based ratio declines.

When we provide credit to clients in connection with providing cash management, clearing, custodial and other services, we are exposed to potential loss if the client experiences credit difficulties. We are also generally not able to net exposures across affiliated clients or counterparties and may not be able to net exposures to the same legal entity across multiple products. In addition, we may incur a loss in relation to one entity or product even though our exposure to one of the entities' affiliates is over-collateralized. Moreover, not all of our client or counterparty exposure is secured.

In our agency securities lending program, we act as lender's agent on behalf of our clients, the lenders of securities, in securities lending transactions with our clients' counterparties (including broker-dealers), acting as borrowers, wherein securities are lent by our clients and the securities loans are collateralized by cash or securities posted by such counterparties. Typically, in the case of cash collateral, our clients authorize us as their agent to invest the cash collateral in approved investments pursuant to each client's investment guidelines and instructions. Such approved investments may include reverse repurchase transactions with repo counterparties. In many cases, in the securities loans we enter into on behalf of our clients, we contractually agree to replace the client's loaned securities that the borrower failed to return due to certain defaults by the borrower, mainly the borrower's insolvency. Therefore, in situations where the market value of the loaned securities that the borrower failed to return to a client (which loaned securities we are obligated to replace and return to the client) exceeds the amount of proceeds resulting from the liquidation of the client's approved investments and cash and non-cash collateral of such client, we may be responsible for the shortfall amount necessary to purchase any replacement securities. In addition, in certain cases, we may also undertake the risk of loss in certain circumstances related to approved investments that are reverse repurchase transactions as described above. In these two scenarios, we, rather than our clients, are exposed to the risks of the defaulting counterparty in the securities lending transactions and, where applicable, in the reverse repurchase transactions. For further discussion on our securities lending indemnifications, see "Commitments and contingent liabilities - Off-balance sheet arrangements" in Note 21 of the Notes to Consolidated Financial Statements.

From time to time, we assume concentrated credit risk at the individual obligor, counterparty or group level, potentially exposing us to a single market or political event or a correlated set of events. For example, we may be exposed to defaults by companies located in countries with deteriorating economic conditions or by companies in certain industries. Such concentrations may be material. Our material counterparty exposures change daily, and the counterparties or groups of related counterparties to which our risk exposure is material also vary during any reported period; however, our largest exposures tend to be to other financial institutions, clearing organizations, and governmental entities, both inside and outside the U.S. Concentration of counterparty exposure presents significant risks to us and to our clients because the failure or perceived weakness of our counterparties (or in some cases of our clients' counterparties) has the potential to expose us to risk of financial loss. Changes in market perception of the financial strength of particular financial institutions or sovereign issuers can occur rapidly, are often based on a variety of factors and are difficult to predict.

Although our overall business is subject to these interdependencies, several of our businesses are particularly sensitive to them, including our currency and other trading activities, our securities lending and securities finance businesses and our investment management business. If we experience any of the losses described above, it may materially and adversely affect our results of operations.

We are also subject to the risk that our rights against third parties may not be enforceable in all circumstances. In addition, deterioration in the credit quality of third parties whose securities or obligations we hold, including a deterioration in the value of collateral posted by third parties to secure their obligations to us under derivatives contracts and other agreements, could result in losses and/or adversely affect our ability to rehypothecate or otherwise use those securities or obligations for liquidity purposes. Disputes with clients and counterparties as to the valuation of collateral can significantly increase in times of market stress and illiquidity. In addition, disruptions in the liquidity or transparency of the financial markets may result in our inability to sell, syndicate or realize the value of our positions, thereby leading to increased concentrations. An inability to reduce our positions may not only increase the market and credit risks associated with such positions, but may also increase the level of RWA on our balance sheet, thereby increasing our capital requirements and funding costs, all of which could adversely affect the operations and profitability of our businesses.

Under evolving regulatory restrictions on credit exposure, which include a broadening of the measure of credit exposure, we may be required to limit our exposures to specific obligors or groups, including financial institutions, to levels that we may currently exceed. These credit exposure restrictions under such evolving regulations may adversely affect our businesses and may require us to modify our operating models or the policies and practices we use.

Our business, financial condition and results of operations could be adversely affected if we do not effectively manage our liquidity.

BNY Mellon's operating model and overall strategy rely heavily on our access to financial market utilities and global capital markets. Without such access, it would be difficult to process payments and settle and clear transactions on behalf of our clients. Deterioration in our liquidity position, whether actual or perceived, can impact our market access by affecting participants' willingness to transact with us. Changes to our liquidity can be caused by various factors, such as funding mismatches, market constraints disabling asset to cash conversion, inability to issue debt, run-off of core deposits, and contingent liquidity events such as additional collateral posting. Changes in economic conditions or exposure to credit, market, operational, legal and reputational risks can also affect our liquidity.

Our business is dependent in part on our ability to meet our cash and collateral obligations at a reasonable cost for both expected and unexpected cash flows. We also must manage liquidity risks on an intraday basis, in a manner designed to ensure that we can access required funds during the business day to make payments or settle immediate obligations, often in real time. We receive client deposits through a variety of investment management and investment servicing businesses and we rely on those deposits as a low-cost and stable source of funding. Our ability to continue to receive those deposits, and other short-term funding sources, is subject to variability based on a number of factors, including volume and volatility in the global securities markets, the relative interest rates that we are prepared to pay for those deposits, and the perception of the safety of those deposits or other short-term obligations relative to alternative short-term investments available to our clients. We could lose deposits if we suffer a significant decline in the level of our business activity, our credit ratings are materially downgraded, interest rates rise, or we are subject to significant negative press or significant regulatory action or litigation, among other reasons. If we were to lose a significant amount of deposits we may need to replace such funding with more expensive funding and/or reduce assets, which would reduce our net interest revenue.

In addition, our access to the debt capital markets is a significant source of liquidity. Events or circumstances often outside of our control, such as market disruptions, government fiscal and monetary policies, or loss of confidence by securities purchasers or counterparties in us or in the funds markets, could limit our access to capital markets, increase our cost of borrowing, adversely affect our liquidity, or impair our ability to execute our business plan. In addition, clearing organizations, regulators, clients and financial institutions with which we interact may exercise the right to require additional collateral based on market perceptions or market conditions, which could further impair our access to and cost of funding. Market perception of sovereign default risks can also lead to inefficient money markets and capital markets, which could further impact BNY Mellon's funding availability and cost. Conversely, if we experience excess liquidity inflows, it could increase interest expense, limit our financial flexibility, and increase the size of our total assets in a manner that could have a negative impact on our capital ratios.

Under the U.S. capital rules, the size of the capital surcharge that applies to U.S. G-SIBs is based in part on its reliance on short-term wholesale funding, including certain types of deposit funding, which may increase the cost of such funding. Furthermore, certain non-U.S. authorities, including the European Commission, have proposed legislation or regulations requiring large banks to incorporate a separate subsidiary in countries in which they operate, and to maintain independent capital and liquidity at foreign subsidiaries. If adopted, these requirements could hinder our ability to efficiently manage our funding and liquidity in a centralized manner. There can be no assurances that these measures will be successful in limiting BNY Mellon's liquidity risk.

In addition, our cost of funding could be affected by actions that we may take in order to satisfy applicable LCR and NSFR requirements, to lower our G-SIB surcharge, to satisfy the amount of eligible long-term debt outstanding under the TLAC Rule, to address obligations under our resolution plan or to satisfy regulatory requirements in non-U.S. jurisdictions relating to the pre-positioning of liquidity in certain subsidiaries.

If we are unable to raise funds using the methods described above, we would likely need to finance or liquidate unencumbered assets, such as our central bank deposits and bank placements, or securities in our investment portfolio to meet funding needs. We may be unable to sell some of our assets, or we may have to sell assets at a discount from market value, either of which could adversely affect our financial condition and results of operations. Further, our ability to sell assets may be impaired if other market participants are seeking to sell similar assets at the same time, which could occur in a liquidity or other market crisis. Additionally, if we experience cash flow mismatches, deposit run-off or market constraints resulting from our inability to convert assets to cash or access capital markets, our liquidity could be severely impacted. During periods of market uncertainty, our level of client deposits has in recent years tended to increase; however, because these deposits have high potential run-off rates, we have historically deposited these so-called excess deposits with central banks and in other highly liquid and low-yielding instruments.

If we are unable to continue to fund our assets through deposits or access capital markets on favorable terms or if we suffer an increase in our borrowing costs or otherwise fail to manage our liquidity effectively, our liquidity, net interest margin, financial results and condition may be materially adversely affected. In certain cases, this could require us to raise additional capital through the issuance of preferred or common stock, which could dilute the ownership of existing stockholders, and/or reduce our common stock dividend to preserve capital.

For a further discussion of our liquidity, see "Liquidity and dividends."

We could incur losses if our allowance for credit losses, including loan and lending-related commitments reserves, is inadequate.

When we loan money, commit to loan money or provide credit or enter into another contract with a counterparty, we incur credit risk, or the risk of loss if our borrowers do not repay their loans or our counterparties fail to perform according to the terms of their agreements. Our revenues and profitability are adversely affected when our borrowers default, in whole or in part, on their loan obligations to us or when there is a significant deterioration in the credit quality of our loan portfolio. We reserve for potential future credit losses by recording a provision for credit losses through a charge to earnings. The allowance for loan losses and allowance for lending-related commitments represents management's estimate of probable losses inherent in our credit portfolio. We use a quantitative methodology and qualitative framework for determining the allowance for loan losses and the allowance for lending-related commitments. Within this qualitative framework, management applies judgment when assessing internal risk factors and environmental factors to compute an additional allowance for each component of the loan portfolio. As is the case with any such judgments, we could fail to identify these factors or accurately estimate their impact. We cannot provide any assurance as to whether charge-offs related to our credit exposure may occur in the future. Current and future market and economic developments may increase default and delinquency rates and negatively impact the quality of our credit portfolio, which may impact our charge-offs. Although our current estimates contemplate current conditions and how we expect them to change in the future, it is reasonably possible that actual conditions could be worse than anticipated in those estimates, which could materially affect our results of operations and financial condition. See "Critical accounting estimates."

Any material reduction in our credit ratings or the credit ratings of our principal bank subsidiaries, The Bank of New York Mellon or BNY Mellon, N.A., could increase the cost of funding and borrowing to us and our rated subsidiaries and have a material adverse effect on our results of operations and financial condition and on the value of the securities we issue.

Our debt and preferred stock and the debt and deposits of our principal bank subsidiaries, The Bank of New York Mellon and BNY Mellon, N.A., are currently rated investment grade by the major rating agencies. These rating agencies regularly evaluate us and our rated subsidiaries and their outlook on us and our rated subsidiaries. Their credit ratings are based on a number of factors, including our financial strength, performance, prospects and operations as well as factors not entirely within our control, including conditions affecting the financial services industry generally as well as the U.S. government. Rating agencies employ different models and formulas to assess the financial strength of a rated company, and from time to time rating agencies have, in their discretion, altered these models. Changes to rating agency models, general economic conditions, or other circumstances outside of our control could impact a rating agency's judgment of the rating or outlook it assigns us or our rated subsidiaries. There can be no assurance that we or our rated subsidiaries will maintain our respective credit ratings or outlook on our securities.

A material reduction in our credit ratings or the credit ratings of our rated subsidiaries, which can occur at any time without notice, could have a material adverse effect on our access to credit markets, the related cost of funding and borrowing, our credit spreads, our liquidity and on certain trading revenues, particularly in those businesses where counterparty creditworthiness is critical. In addition, in connection with certain over-the-counter derivatives contracts and other trading agreements, counterparties may require us or our rated subsidiaries to provide additional collateral or to terminate these contracts and agreements and collateral financing arrangements in the event of a credit ratings downgrade below certain ratings levels. The requirement to provide additional collateral or terminate these contracts and agreements could impair our liquidity by requiring us to find other sources of financing or to make significant cash payments or securities movements. A downgrade by any one rating agency, depending on the agency's relative ratings of the firm at the time of the downgrade, may have an impact comparable to the impact of a downgrade by all rating agencies. If a rating agency downgrade were to occur during broader market instability, our options for responding to events may be more limited and more expensive. An increase in the costs of our funding and borrowing, or an impairment of our liquidity, could have a material adverse effect on our results of operations and financial condition. A material reduction in our credit ratings also could decrease the number of investors and counterparties willing or permitted to do business with or lend to us and adversely affect the value of the securities we have issued or may issue in the future.

We cannot predict what actions rating agencies may take, or what actions we may elect or be required to take in response thereto, which may adversely affect us. For further discussion on the impact of a credit rating downgrade, see "Disclosure of contingent features in OTC derivative instruments" in Note 22 of the Notes to Consolidated Financial Statements.

Strategic Risk

New lines of business, new products and services or transformational or strategic project initiatives may subject us to additional risks, and the failure to implement these initiatives could affect our results of operations.

From time to time, we may launch new lines of business, offer new products and services within existing lines of business or undertake transformational or strategic projects. There are substantial risks and uncertainties associated with these efforts. We invest significant time and resources in developing and marketing new lines of business, products and services and executing on our transformational and strategic initiatives. For example, we have devoted considerable resources to developing new technology solutions for our clients. If these technology solutions are not successful, it could adversely impact our reputation, business and results of operations.

Regulatory requirements can affect whether initiatives are able to be brought to market in a manner that is timely and attractive to our customers. Initial timetables for the development and introduction of new lines of business or new products or services and price and profitability targets may not be met. Furthermore, our revenues and costs may fluctuate because new businesses or products and services generally require startup costs while revenues may take time to develop, which may adversely impact our results of operations.

From time to time we undertake transformational or strategic project initiatives. Significant effort and resources are necessary to manage and oversee the successful completion of these initiatives. These initiatives often place significant demands on management and a limited number of employees with subject matter expertise and may involve significant costs to implement as well as increase operational risk as employees learn to process transactions under new systems. The failure to properly execute on these transformational or strategic initiatives could adversely impact our business, reputation and results of operations.

Legal, regulatory and reputational risks may also exist in connection with dealing with new products or markets, or clients and customers whose businesses focus on such products or markets, where there is regulatory uncertainty or different or conflicting regulations depending on the regulator or the jurisdiction.

We are subject to competition in all aspects of our business, which could negatively affect our ability to maintain or increase our profitability.

Many businesses in which we operate are intensely competitive around the world. Competitors include other banks, trading firms, broker-dealers, investment banks, asset managers, insurance companies, financial technology firms and a variety of other financial services and advisory companies whose products and services span the markets in which we operate. We compete on the basis of a number of factors, including transaction execution, capital or access to capital, products and services, innovation, reputation, lending limits, rates and price. Larger and more geographically diverse companies, and financial technology firms that invest substantial resources in developing and designing new technology (in particular digital and mobile technology) and that are not subject to the same level of regulation, may be able to offer financial products and services at more competitive prices than we are able to offer. Pricing pressures, as a result of the willingness of competitors to offer comparable or improved products or services at a lower price, may result in a reduction in the price we can charge for our products and services, which could, and in some cases has, negatively affected our ability to maintain or increase our profitability. Low economic growth may result in clients exiting markets, which could lead to a loss of business for us.

In addition, technological advances have made it possible for other types of non-depository institutions, such as financial technology firms, outsourcing companies and data processing companies, to offer a variety of products and services competitive with certain areas of our business. In the future, financial technology firms may be able to provide additional traditional banking products and services by obtaining a bank-like charter, such as the OCC's fintech charter.

Markets, and the manner in which our clients interact and transact within markets, can evolve quickly, particularly if new or disruptive technologies are introduced. Our failure to either anticipate, or participate in, the transformational change within a given market could result in potential negative financial impact. Competitors may develop technological advances that could negatively impact our transaction execution or the pricing of our clearing, settlement, payments and trading activities. Increased competition in any of these areas may require us to make additional capital investments in our businesses in order to remain competitive. For example, along with other financial institutions, we are researching ways to adapt robotics and distributed ledger technology to bank services. If we are not able to adapt these technologies as successfully as our peers, we may become less competitive. In addition, even if successful from a competitive standpoint, the use and implementation of new and emerging technologies may increase the risk that we experience cybersecurity or other information technology events.

Furthermore, recently implemented and proposed regulations may impact our ability to conduct certain of our businesses in a cost-effective manner or at all. The more restrictive laws and regulations applicable to the largest U.S. financial services institutions, including the U.S. capital rules, can put us at a competitive disadvantage relative to both our non-U.S. competitors and certain U.S. competitors. See "Supervision and Regulation."

Our business may be adversely affected if we are unable to attract and retain employees.

Our success depends, in large part, on our ability to attract new employees, retain and motivate our existing employees, and continue to compensate our employees competitively amid heightened regulatory restrictions. Competition for the most skilled employees in most activities in which we engage can be intense, and we may not be able to recruit and retain key personnel.

We rely on certain employees with subject matter expertise to assist in the implementation of important initiatives. As technology and risk management increase in focus in the financial industry, competition for technologists and risk personnel has intensified, which could constrain our ability to execute on certain of our strategic initiatives.

Our ability to attract and retain key executives and other employees may be negatively affected by recent legislation and other existing restrictions applicable to incentive and other compensation programs, including limits on our ability to deduct for federal income tax purposes compensation in excess of $1 million paid to certain current and former executives, as well as deferral, clawback requirements and other limits on incentive compensation. Some of these restrictions may not apply to some of our competitors and to other institutions with which we compete for talent, in particular as we are more often competing for personnel with financial technology providers and other entities that are not regulated banking organizations that may not have the same limitations on compensation as we do.

The loss of employees' skills, knowledge of the market, industry experience, and the cost of finding replacements may hurt our business. If we are unable to continue to attract and retain highly qualified employees, our performance, including our competitive position, could be adversely affected.

Our strategic transactions present risks and uncertainties and could have an adverse effect on our business, results of operations and financial condition.

From time to time, to achieve our strategic objectives, we have acquired, disposed of, or invested in (including through joint venture relationships) companies and businesses, and may do so in the future. Our ability to pursue or complete strategic transactions is in certain instances subject to regulatory approval and we cannot be certain when or if, or on what terms and conditions, any required regulatory approvals would be granted. Moreover, to the extent we pursue a strategic transaction, there can be no guarantee that the transaction will close when anticipated, or at all. If a strategic transaction does not close, or if the strategic transaction fails to maximize shareholder value or required regulatory approval is not obtained, it could have an adverse effect on our business, results of operations and financial condition.

Each acquisition poses integration challenges, including successfully retaining and assimilating clients and key employees, capitalizing on certain revenue synergies and integrating the acquired company's culture, control functions, systems and technology. In some cases, acquisitions involve entry into new businesses or new geographic or other markets, and these situations also present risks and uncertainties in instances where we may be inexperienced in these new areas. We may be required to spend a significant amount of time and resources to integrate these acquisitions. The anticipated integration benefits may take longer to achieve than projected and the time and cost needed to consolidate control functions, platforms and systems may significantly exceed our estimates. If we fail to successfully integrate strategic acquisitions, including doing so in a timely and cost-effective manner, we may not realize the expected benefits, which could have an adverse impact on our business, financial condition and results of operations. In addition, we may incur expenses, costs, losses, penalties, taxes and other liabilities related to the conduct of the acquired businesses prior to the date of our ownership (including in connection with the defense and/or settlement of legal and regulatory claims, investigations and proceedings) which may not be recoverable through indemnification or otherwise. If the purchase price we pay in an acquisition exceeds the fair value of assets acquired less the liabilities we assume, then we may need to recognize goodwill on our consolidated balance sheet. Goodwill is an intangible asset that is not eligible for inclusion in regulatory capital under applicable requirements. Further, if the value of the acquisition declines, we may be required to record an impairment charge.

Each disposition also poses challenges, including separating the disposed businesses, products and systems in a way that is cost-effective and is not disruptive to us or our customers. In addition, the inherent uncertainty involved in the process of evaluating, negotiating or executing a potential sale of one of our companies or businesses may cause the loss of key clients, employees and business partners which could have an adverse impact on our business, financial condition and results of operations.

Joint ventures and non-controlling investments contain potentially increased financial, legal, reputational, operational, regulatory and/or compliance risks. We may be dependent on joint venture partners, controlling shareholders or management who may have business interests, strategies or goals that are inconsistent with ours. Business decisions or other actions or omissions of the joint venture partner, controlling shareholders or management may adversely affect the value of our investment, impacting our results of operations, result in litigation or regulatory action against us and otherwise damage our reputation and brand.

Other Risks

Tax law changes or challenges to our tax positions with respect to historical transactions may adversely affect our net income, effective tax rate and our overall results of operations and financial condition.

In 2017, U.S. tax legislation was signed into law, resulting in tax benefits to us. We continue to monitor the tax impacts of additional guidance provided by the Internal Revenue Service with respect to this and other tax laws. Future tax laws or the expiration of or changes in existing tax laws, or the interpretation of those laws worldwide, could also have a material impact on our business or net income. Our actions taken in response to, or reliance upon, such changes in the tax laws may impact our tax position in a manner that may result in lower earnings.

In the course of our business, we receive inquiries and challenges from both U.S. and non-U.S. tax authorities on the amount of taxes we owe. If we are not successful in defending these inquiries and challenges, we may be required to adjust the timing or amount of taxable income or deductions or the allocation of income among tax jurisdictions, all of which can require a greater provision for taxes or otherwise negatively affect earnings. Probabilities and outcomes are reviewed as events unfold, and adjustments to the reserves are made when necessary, but the reserves may prove inadequate because we cannot necessarily accurately predict the outcome of any challenge, settlement or litigation or the extent to which it will negatively affect us or our business. See Note 11 of the Notes to Consolidated Financial Statements for further information.

Our ability to return capital to shareholders is subject to the discretion of our Board of Directors and may be limited by U.S. banking laws and regulations, including those governing capital and the approval of our capital plan, applicable provisions of Delaware law or our failure to pay full and timely dividends on our preferred stock.

Holders of our common and preferred stock are only entitled to receive such dividends or other distributions of capital as our Board of Directors may declare out of funds legally available for such payments. Although we have historically declared cash dividends on our common and preferred stock, we are not required to do so. In addition to the Board of Directors' approval, our ability to take certain actions, including our ability to make certain acquisitions, declare dividends or repurchase our common stock, is dependent on, among other things, Federal Reserve non-objection under the annual regulatory review of the results of the CCAR process and the supervisory stress tests required under the Dodd-Frank Act. These evaluations, in turn, are dependent on, among other things, our successful demonstration that we can maintain capital levels above regulatory minimums in the event of a stressed market environment, as well as the Federal Reserve's qualitative assessment of the robustness of our capital adequacy process and the assumptions and analysis underlying the capital plan. There can be no assurance that the Federal Reserve will not object to our future capital plans or that we will perform adequately on our supervisory stress tests. If the Federal Reserve objects to our proposed capital actions or we underperform on our stress tests, we may be required to revise our stress-testing or capital management approaches, resubmit our capital plan or postpone, or cancel or alter our planned capital actions, and we would not be permitted to make any capital distributions other than those to which the Federal Reserve has indicated in writing its non-objection. In addition, if there have been or will be changes in our risk profile (including a material change in business strategy or risk exposure), financial condition or corporate structure, we may be required to resubmit our capital plan to the Federal Reserve.

Our ability to accurately predict or explain the outcome of the CCAR process is influenced by evolving supervisory criteria. The Federal Reserve's annual assessment of our capital adequacy and planning process involves not only a quantitative assessment through the Federal Reserve's proprietary stress test models but also a qualitative assessment. The qualitative assessment involves a number of factors and is expected to continue to evolve on an ongoing basis as a result of the Federal Reserve's horizontal review of capital plan submissions. Similarly, the Federal Reserve may, as part of its stated goal to continually evolve its annual stress testing requirements, adjust several parameters of the annual stress testing process, including the severity of the stress test scenario and the addition of components deemed important by the Federal Reserve (e.g., a counterparty failure). Further, because the Federal Reserve's proprietary stress test models and qualitative assessment may differ from the modeling techniques and capital planning practices employed by us, it is foreseeable that our stress test results (using our own models, estimation methodologies and processes) may not be consistent with those disclosed by the Federal Reserve. In addition, the Federal Reserve has proposed to replace the capital conservation buffer with a "stress capital buffer," which would result in the integration of the G-SIB surcharge with stress-based capital requirements.

The Federal Reserve's instructions for the 2018 CCAR provide that, for large BHCs like BNY Mellon, common stock dividend payout ratios exceeding 30% of after-tax net income available to common shareholders under certain baseline scenarios will receive particularly close scrutiny. A failure to increase dividends along with our competitors, or any reduction of, or elimination of, our common stock dividend would likely adversely affect the market price of our common stock, impact our return on equity and market perceptions of BNY Mellon.

Our ability to declare or pay dividends on, or purchase, redeem or otherwise acquire, shares of our common stock or any of our shares that rank junior to preferred stock as to the payment of dividends and/or the distribution of any assets on any liquidation, dissolution or winding-up of BNY Mellon will be prohibited, subject to certain exceptions, in the event that we do not declare and pay in full dividends for the then-current dividend period of our Series A preferred stock or the last preceding dividend period of our Series C, Series D, Series E or Series F preferred stock.

In addition, regulatory capital rules that are or will be applicable to us including the U.S. capital rules risk-based capital requirements, the SLR, enhanced SLR, the TLAC Rule and the U.S. G-SIB surcharge may limit or otherwise restrict how we utilize our capital, including common stock dividends and stock repurchases, and may require us to increase or alter the mix of our outstanding regulatory capital instruments.

Any requirement to increase our regulatory capital ratios or alter the composition of our capital could require us to liquidate assets or otherwise change our business and/or investment plans, which may negatively affect our financial results. Further, any requirement to maintain higher levels of capital may constrain our ability to return capital to shareholders either in the form of common stock dividends or stock repurchases.

The Parent is a non-operating holding company, and as a result, is dependent on dividends from its subsidiaries and extensions of credit from its IHC to meet its obligations, including with respect to its securities, and to provide funds for share repurchases and payment of dividends to its stockholders.

The Parent is a non-operating holding company, whose principal assets and sources of income are its principal U.S. bank subsidiaries - The Bank of New York Mellon and BNY Mellon, N.A. - and its other subsidiaries, including the IHC. The Parent is a legal entity separate and distinct from the IHC, as well as its banks and other subsidiaries. Therefore, the Parent primarily relies on dividends, interest, distributions, and other payments from its subsidiaries, including extensions of credit from the IHC, to meet its obligations, including its obligations with respect to its securities, and to provide funds for share repurchases and payment of common and preferred dividends to its stockholders, to the extent declared by the Board of Directors.

There are various limitations on the extent to which our bank and other subsidiaries can finance or otherwise supply funds to the Parent (by dividend or otherwise) and certain of our affiliates. Each of these restrictions can reduce the amount of funds available to meet the Parent's obligations. Many of our subsidiaries, including our bank subsidiaries, are subject to laws and regulations that restrict dividend payments or authorize regulatory bodies to block or reduce the flow of funds from those subsidiaries to the Parent or other subsidiaries. In addition, our bank subsidiaries would not be permitted to distribute a dividend if doing so would constitute an unsafe and unsound practice or if the payment would reduce their capital to an inadequate level. Our subsidiaries may also choose to restrict dividend payments to the Parent in order increase their own capital or liquidity levels. Our bank subsidiaries are also subject to restrictions on their ability to lend to or transact with non-bank affiliates, minimum regulatory capital and liquidity requirements, and restrictions on their ability to use funds deposited with them in bank or brokerage accounts to fund their businesses. See "Supervision and Regulation" and "Liquidity and dividends" and Note 18 of the Notes to Consolidated Financial Statements. Further, we evaluate and manage liquidity on a legal entity basis, which may place legal and other limitations on our ability to utilize liquidity from one legal entity to satisfy the liquidity requirements of another, including the Parent.

There are also limitations specific to the IHC's ability to make distributions or extend credit to the Parent. The IHC is not permitted to pay dividends to the Parent if certain key capital, liquidity and operational risk indicators are breached, and if the resolution of the Parent is imminent, the committed lines of credit provided by the IHC to the Parent will automatically terminate, with all outstanding amounts becoming due. See "The application of our Title I preferred resolution strategy or resolution under the Title II orderly liquidation authority could adversely affect the Parent's liquidity and financial condition and the Parent's security holders."

Because the Parent is a holding company, its rights and the rights of its creditors, including the holders of its securities, to a share of the assets of any subsidiary upon the liquidation or recapitalization of the subsidiary will be subject to the prior claims of the subsidiary's creditors (including, in the case of our banking subsidiaries, their depositors) except to the extent that the Parent may itself be a creditor with recognized claims against the subsidiary. The rights of holders of securities issued by the Parent to benefit from those distributions will also be junior to those prior claims. Consequently, securities issued by the Parent will be effectively subordinated to all existing and future liabilities of our subsidiaries.

Changes in accounting standards governing the preparation of our financial statements and future events could have a material impact on our reported financial condition, results of operations, cash flows and other financial data.

From time to time, the FASB, the SEC and bank regulators change the financial accounting and reporting standards governing the preparation of our financial statements or the interpretation of those standards. These changes are difficult to predict and can materially impact how we record and report our financial condition, results of operations, cash flows and other financial data. In some cases, we may be required to apply a new or revised standard retrospectively or to apply an existing standard differently, also retrospectively, in each case potentially resulting in the restatement of our prior period financial statements and our related disclosures.

Additionally, our accounting policies and methods are fundamental to how we record and report our financial condition and results of operations. The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates based upon assumptions about future economic and market conditions which affect reported amounts and related disclosures in our financial statements. Amounts subject to estimates are items such as the allowance for loan losses and lending-related commitments, the fair value of financial instruments and derivatives, goodwill and other intangibles and litigation and regulatory contingencies. Among other effects, such changes in estimates could result in future impairments of, goodwill and intangible assets and establishment of allowances for loan losses and lending-related commitments as well as litigation and regulatory contingencies. If subsequent events occur that are materially different than the assumptions and estimates we used, our reported financial condition, results of operation and cash flows may be materially negatively impacted. See "Recent Accounting Developments" for a discussion of recent developments to our accounting standards.

Recently issued accounting standards

The following ASUs issued by the Financial Accounting Standards Board ("FASB") have not yet been adopted.

ASU 2016-02, Leases

In February 2016, the FASB issued an ASU, *Leases*. The primary objective of this ASU is to increase transparency and comparability by recognizing lease assets and liabilities on the balance sheet and expand related disclosures. This ASU requires a "right-of-use" asset and a payment obligation liability on the balance sheet for most leases and subleases. Additionally, depending on the lease classification under the standard, it may result in different expense recognition patterns and classification than under existing accounting principles. For leases classified as finance leases, it will result in higher expense recognition in the earlier periods and lower expense in the later periods of the lease.

The Company adopted this guidance on Jan. 1, 2019 using the alternative transition method, which allows the adoption of the accounting standard prospectively without adjusting comparative prior period financial information. We recognized right-of-use assets of $1.3 billion and lease liabilities of $1.5 billion on the consolidated balance sheet, both based on the present value of the expected remaining lease payments.

ASU 2018-02, Income Statement—Reporting Comprehensive Income: Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income

In February 2018, the FASB issued an ASU, *Income Statement—Reporting Comprehensive Income: Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income.* This ASU permits a reclassification from accumulated other comprehensive income to retained earnings for the tax effects of items within accumulated other comprehensive income that do not reflect the lower statutory tax rate which was enacted by the U.S. tax legislation. BNY Mellon adopted this guidance in the first quarter of 2019, which resulted in a $90 million reclassification from accumulated other comprehensive income to retained earnings.

ASU 2016-13, Financial Instruments – Credit Losses: Measurement of Credit Losses on Financial Instruments

In June 2016, the FASB issued an ASU, *Financial Instruments – Credit Losses: Measurement of Credit Losses on Financial Instruments*. This ASU introduces a new current expected credit losses model, which will apply to financial assets subject to credit losses and measured at amortized cost, including held-to-maturity securities and certain off-balance sheet credit exposures. The guidance will also change current practice for the impairment model for available-for-sale debt securities. The available-for-sale debt securities model will require the use of an allowance to record estimated credit losses and subsequent recoveries.

The standard requires a cumulative effect of initial application to be recognized in retained earnings at the date of initial application. BNY Mellon has developed expected credit loss models and approaches that include forecasting and other methodologies, and our focus for the remainder of 2019 is on model validation as well as business process refinements and testing to ensure the expected credit losses are calculated in accordance with the standard. We are continuing to assess the impact of the standard on our consolidated financial statements, disclosures and internal control. The adoption impact will depend on several factors including the composition and remaining expected lives of financial instruments at the time of adoption, the establishment of an allowance for expected credit losses on held-to-maturity securities, and the macroeconomic conditions and forecasts that exist at that date. We plan to adopt the new standard on Jan. 1, 2020.

Business continuity and operational resiliency are priorities for the Company. Core elements of our business continuity and operational resiliency strategies include advance planning, maintaining multiple data centers, testing our capabilities, maintaining diversity of business operations and telecommunications infrastructure, and reviewing the business continuity and information security capabilities of our service providers. These capabilities are intended to enable the Company to maintain its operations and appropriately respond to events that could damage our physical facilities, cause delays or disruptions to operational functions (including telecommunications networks), or impair the ability of our employees to work, of our vendors to provide services to us, or of our clients and counterparties to communicate and transact with us. Those events include information security incidents, technology disruptions, acts of terrorism, natural disasters, pandemics and global conflicts.

We continue to evaluate and strengthen our business continuity and operational resiliency capabilities and have increased our investments in technology to steadily enhance those capabilities, including our ability to resume and sustain our operations.

Explanation of GAAP and Non-GAAP financial measures

BNY Mellon has included in this Annual Report certain Non-GAAP financial measures on a tangible basis, as a supplement to generally accepted accounting principles ("GAAP") information. Tangible common shareholders' equity excludes goodwill and intangible assets, net of deferred tax liabilities. BNY Mellon believes that the return on tangible common equity measure is an additional useful measure for investors because it presents a measure of those assets that can generate income. BNY Mellon has provided a measure of tangible book value per common share, which it believes provides additional useful information as to the level of tangible assets in relation to shares of common stock outstanding.

The presentation of the growth rates of investment management and performance fees on a constant currency basis permits investors to assess the significance of changes in foreign currency exchange rates. Growth rates on a constant currency basis were determined by applying the current period foreign currency exchange rates to the prior period revenue. BNY Mellon believes that this presentation, as a supplement to GAAP information, gives investors a clearer picture of the related revenue results without the variability caused by fluctuations in foreign currency exchange rates.

BNY Mellon has presented the operating margin for the Investment Management business net of distribution and servicing expense that was passed to third parties who distribute or service our managed funds. BNY Mellon believes that this measure is useful when evaluating the performance of the Investment Management business relative to industry competitors.

The following table presents the reconciliation of the return on common equity and tangible common equity.

Return on common equity and tangible common equity reconciliation *(dollars in millions)*	**2018**	2017	2016	2015	2014
Net income applicable to common shareholders of The Bank of New York Mellon Corporation – GAAP	**$ 4,097**	$ 3,915	$ 3,425	$ 3,053	$ 2,494
Add: Amortization of intangible assets	**180**	209	237	261	298
Less: Tax impact of amortization of intangible assets	**42**	72	81	89	104
Adjusted net income applicable to common shareholders of The Bank of New York Mellon Corporation, excluding amortization of intangible assets – Non-GAAP	**$ 4,235**	$ 4,052	$ 3,581	$ 3,225	$ 2,688
Average common shareholders' equity	**$ 37,818**	$ 36,145	$ 35,504	$ 35,564	$ 36,618
Less: Average goodwill	**17,458**	17,441	17,497	17,731	18,063
Average intangible assets	**3,314**	3,508	3,737	3,992	4,305
Add: Deferred tax liability – tax deductible goodwill *(a)*	**1,072**	1,034	1,497	1,401	1,340
Deferred tax liability – intangible assets *(a)*	**692**	718	1,105	1,148	1,216
Average tangible common shareholders' equity – Non-GAAP	**$ 18,810**	$ 16,948	$ 16,872	$ 16,390	$ 16,806
Return on common shareholders' equity – GAAP	**10.8%**	10.8%	9.6%	8.6%	6.8%
Return on tangible common shareholders' equity – Non-GAAP	**22.5%**	23.9%	21.2%	19.7%	16.0%

(a) Deferred tax liabilities are based on fully phased-in U.S. capital rules.

The following table presents the reconciliation of book value and tangible book value per common share.

Book value and tangible book value per common share reconciliation	Dec. 31,				
(dollars in millions, unless otherwise noted)	**2018**	2017	2016	2015	2014
BNY Mellon shareholders' equity at year end – GAAP	**$ 40,638**	$ 41,251	$ 38,811	$ 38,037	$ 37,441
Less: Preferred stock	**3,542**	3,542	3,542	2,552	1,562
BNY Mellon common shareholders' equity at year end – GAAP	**37,096**	37,709	35,269	35,485	35,879
Less: Goodwill	**17,350**	17,564	17,316	17,618	17,869
Intangible assets	**3,220**	3,411	3,598	3,842	4,127
Add: Deferred tax liability – tax deductible goodwill *(a)*	**1,072**	1,034	1,497	1,401	1,340
Deferred tax liability – intangible assets *(a)*	**692**	718	1,105	1,148	1,216
BNY Mellon tangible common shareholders' equity at year end – Non-GAAP	**$ 18,290**	$ 18,486	$ 16,957	$ 16,574	$ 16,439
Year-end common shares outstanding *(in thousands)*	**960,426**	1,013,442	1,047,488	1,085,343	1,118,228
Book value per common share – GAAP	**$ 38.63**	$ 37.21	$ 33.67	$ 32.69	$ 32.09
Tangible book value per common share – Non-GAAP	**$ 19.04**	$ 18.24	$ 16.19	$ 15.27	$ 14.70

(a) Deferred tax liabilities are based on fully phased-in U.S. capital rules.

The following table presents the impact of changes in foreign currency exchange rates on our consolidated investment management and performance fees.

Constant currency reconciliation – Consolidated			**2018 vs.**
(dollars in millions)	**2018**	2017	**2017**
Investment management and performance fees	**$ 3,685**	$ 3,584	**3%**
Impact of changes in foreign currency exchange rates	**—**	34	
Adjusted investment management and performance fees – Non-GAAP	**$ 3,685**	$ 3,618	**2%**

The following table presents the impact of changes in foreign currency exchange rates on investment management and performance fees reported in the Investment Management business.

Constant currency reconciliation - Investment Management business			**2018 vs.**
(dollars in millions)	**2018**	2017	**2017**
Investment management and performance fees	**$ 3,632**	$ 3,522	**3%**
Impact of changes in foreign currency exchange rates	**—**	34	
Adjusted investment management and performance fees – Non-GAAP	**$ 3,632**	$ 3,556	**2%**

The following table presents the reconciliation of the pre-tax operating margin for the Investment Management business.

Pre-tax operating margin reconciliation - Investment Management business			
(dollars in millions)	**2018**	2017	2016
Income before income taxes – GAAP	**$ 1,263**	$ 1,141	$ 967
Total revenue – GAAP	**$ 4,084**	$ 3,997	$ 3,751
Less: Distribution and servicing expense	**407**	422	404
Adjusted total revenue, net of distribution and servicing expense – Non-GAAP	**$ 3,677**	$ 3,575	$ 3,347
Pre-tax operating margin – GAAP *(a)*	**31%**	29%	26%
Adjusted pre-tax operating margin, net of distribution and servicing expense – Non-GAAP *(a)*	**34%**	32%	29%

(a) Income before taxes divided by total revenue.

Rate/volume analysis

Rate/volume analysis *(a)*	**2018 over (under) 2017**			2017 over (under) 2016		
	Due to change in			Due to change in		
(dollar amounts in millions, presented on an FTE basis)	**Average balance**	**Average rate**	**Net change**	Average balance	Average rate	Net change
Interest revenue						
Interest-earning assets:						
Interest-bearing deposits with banks (primarily foreign banks)	**$ (1)**	**$ 100**	**$ 99**	$ 1	$ 15	$ 16
Interest-bearing deposits with the Federal Reserve and other central banks	**(9)**	**221**	**212**	(28)	149	121
Federal funds sold and securities purchased under resale agreements	**11**	**682**	**693**	14	176	190
Margin loans	**(2)**	**169**	**167**	(62)	140	78
Non-margin loans:						
Domestic offices:						
Consumer	**8**	**13**	**21**	33	6	39
Commercial	**(29)**	**209**	**180**	(17)	121	104
Foreign offices	**(25)**	**103**	**78**	(4)	65	61
Total non-margin loans	**(46)**	**325**	**279**	12	192	204
Securities:						
U.S. government obligations	**(31)**	**92**	**61**	9	38	47
U.S. government agency obligations	**76**	**247**	**323**	71	138	209
State and political subdivisions - tax exempt	**(19)**	**(12)**	**(31)**	(15)	5	(10)
Other securities:						
Domestic offices	**(25)**	**151**	**126**	(62)	67	5
Foreign offices	**3**	**26**	**29**	(11)	(45)	(56)
Total other securities	**(22)**	**177**	**155**	(73)	22	(51)
Trading securities (primarily domestic)	**60**	**5**	**65**	(1)	—	(1)
Total securities	**64**	**509**	**573**	(9)	203	194
Total interest revenue	**$ 17**	**$ 2,006**	**$ 2,023**	$ (72)	$ 875	$ 803
Interest expense						
Interest-bearing liabilities:						
Interest-bearing deposits:						
Domestic offices	**$ 35**	**$ 395**	**$ 430**	$ (1)	$ 67	$ 66
Foreign offices	**—**	**285**	**285**	3	77	80
Total interest-bearing deposits	**35**	**680**	**715**	2	144	146
Federal funds purchased and securities sold under repurchase agreements	**(56)**	**589**	**533**	17	172	189
Trading liabilities	**—**	**22**	**22**	4	(3)	1
Other borrowed funds:						
Domestic offices	**24**	**10**	**34**	20	(3)	17
Foreign offices	**(2)**	**—**	**(2)**	—	1	1
Total other borrowed funds	**22**	**10**	**32**	20	(2)	18
Commercial paper	**—**	**22**	**22**	8	16	24
Payables to customers and broker-dealers	**(10)**	**137**	**127**	2	50	52
Long-term debt	**18**	**278**	**296**	69	138	207
Total interest expense	**$ 9**	**$ 1,738**	**$ 1,747**	$ 122	$ 515	$ 637
Changes in net interest revenue	**$ 8**	**$ 268**	**$ 276**	$ (194)	$ 360	$ 166

(a) Changes which are solely due to balance changes or rate changes are allocated to such categories on the basis of the respective percentage changes in average balances and average rates. Changes in interest revenue or interest expense arising from the combination of rate and volume variances are allocated proportionately to rate and volume based on their relative absolute magnitudes.

Selected Quarterly Data	Quarter ended							
	2018				2017			
(dollar amounts in millions, except per share amounts)	**Dec. 31**	**Sept. 30**	**June 30**	**March 31**	Dec. 31	Sept. 30	June 30	March 31
Consolidated income statement								
Fee and other revenue	**$ 3,146**	**$ 3,168**	**$ 3,210**	**$ 3,270**	$ 2,860	$ 3,167	$ 3,120	$ 3,018
(Loss) income from consolidated investment management funds	**(24)**	**10**	**12**	**(11)**	17	10	10	33
Net interest revenue	**885**	**891**	**916**	**919**	851	839	826	792
Total revenue	**4,007**	**4,069**	**4,138**	**4,178**	3,728	4,016	3,956	3,843
Provision for credit losses	**—**	**(3)**	**(3)**	**(5)**	(6)	(6)	(7)	(5)
Noninterest expense	**2,987**	**2,738**	**2,747**	**2,739**	3,006	2,654	2,655	2,642
Income before taxes	**1,020**	**1,334**	**1,394**	**1,444**	728	1,368	1,308	1,206
Provision (benefit) for income taxes	**150**	**220**	**286**	**282**	(453)	348	332	269
Net income	**870**	**1,114**	**1,108**	**1,162**	1,181	1,020	976	937
Net loss (income) attributable to noncontrolling interests	**11**	**(3)**	**(5)**	**9**	(6)	(2)	(1)	(15)
Net income applicable to shareholders of The Bank of New York Mellon Corporation	**881**	**1,111**	**1,103**	**1,171**	1,175	1,018	975	922
Preferred stock dividends	**(49)**	**(36)**	**(48)**	**(36)**	(49)	(35)	(49)	(42)
Net income applicable to common shareholders of The Bank of New York Mellon Corporation	**$ 832**	**$ 1,075**	**$ 1,055**	**$ 1,135**	$ 1,126	$ 983	$ 926	$ 880
Basic earnings per common share	**$ 0.84**	**$ 1.07**	**$ 1.04**	**$ 1.11**	$ 1.09	$ 0.94	$ 0.88	$ 0.83
Diluted earnings per common share	**0.84**	**1.06**	**1.03**	**1.10**	1.08	0.94	0.88	0.83
Average balances								
Interest-bearing deposits with banks	**$ 78,582**	**$ 75,907**	**$ 85,424**	**$ 92,918**	$ 89,029	$ 86,329	$ 84,148	$ 80,757
Securities	**118,904**	**118,505**	**117,761**	**118,459**	120,225	119,089	117,227	114,786
Trading securities	**5,543**	**4,261**	**3,784**	**4,183**	2,723	2,359	2,455	2,254
Loans	**53,834**	**53,807**	**57,066**	**58,606**	56,772	55,944	58,793	60,312
Total interest-earning assets	**285,706**	**279,218**	**292,086**	**302,069**	297,166	291,841	289,496	283,421
Total assets	**338,591**	**332,341**	**346,328**	**358,175**	350,786	345,709	342,515	336,200
Deposits	**220,635**	**209,313**	**217,567**	**226,709**	216,874	212,658	216,222	213,375
Long-term debt	**28,201**	**28,074**	**28,349**	**28,407**	28,245	28,138	27,398	25,882
Preferred stock	**3,542**	**3,542**	**3,542**	**3,542**	3,542	3,542	3,542	3,542
Total The Bank of New York Mellon Corporation common shareholders' equity	**37,886**	**38,036**	**37,750**	**37,593**	36,952	36,780	35,862	34,965
Net interest margin	**1.24%**	**1.27%**	**1.26%**	**1.22%**	1.14%	1.15%	1.14%	1.13%
Annualized return on common equity	**8.7%**	**11.2%**	**11.2%**	**12.2%**	12.1%	10.6%	10.4%	10.2%
Pre-tax operating margin	**25%**	**33%**	**34%**	**35%**	20%	34%	33%	31%
Common stock data *(a)*								
Closing price per share	**$ 47.07**	**$ 50.99**	**$ 53.93**	**$ 51.53**	$ 53.86	$ 53.02	$ 51.02	$ 47.23
Cash dividends per share	**0.28**	**0.28**	**0.24**	**0.24**	0.24	0.24	0.19	0.19
Market capitalization *(b)*	**45,207**	**50,418**	**53,927**	**52,080**	54,584	54,294	52,712	49,113

(a) At Dec. 31, 2018, there were 27,805 shareholders registered with our stock transfer agent, compared with 29,472 at Dec. 31, 2017 and 28,015 at Dec. 31, 2016. In addition, there were 45,395 of BNY Mellon's current and former employees at Dec. 31, 2018 who participate in BNY Mellon's 401(k) Retirement Savings Plan. All shares of BNY Mellon's common stock held by the Plan for its participants are registered in the name of The Bank of New York Mellon, as trustee.

(b) At period end.

Some statements in this document are forward-looking. These include all statements about the usefulness of Non-GAAP measures, the future results of BNY Mellon, our businesses, financial, liquidity and capital condition, results of operations, liquidity, risk and capital management and processes, goals, strategies, outlook, objectives, expectations (including those regarding our performance results, expenses, nonperforming assets, seasonality in our businesses, impacts of currency fluctuations, impacts of trends on our businesses, regulatory, technology, market, economic or accounting developments, legal proceedings and other contingencies), effective tax rate, estimates (including those regarding expenses, losses inherent in our credit portfolios, capital ratios and the tax benefit related to U.S. tax legislation), intentions (including those regarding our capital returns and investment in technology), targets, opportunities, growth and initiatives.

In this report, any other report, any press release or any written or oral statement that BNY Mellon or its executives may make, words, such as “estimate,” “forecast,” “project,” “anticipate,” “likely,” “target,” “expect,” “intend,” “continue,” “seek,” “believe,” “plan,” “goal,” “could,” “should,” “would,” “may,” “might,” “will,” “strategy,” “synergies,” “opportunities,” “trends,” “future” and words of similar meaning, may signify forward-looking statements.

Actual results may differ materially from those expressed or implied as a result of a number of factors, including those discussed in “Risk Factors,” such as:

- a communications or technology disruption or failure that results in a loss of information, delays our ability to access information or impacts our ability to provide services to our clients may materially adversely affect our business, financial condition and results of operations;
- a cybersecurity incident, or a failure to protect our computer systems, networks and information and our clients’ information against cybersecurity threats, could result in the theft, loss, unauthorized access to, disclosure, use or alteration of information, system or network failures, or loss of access to information; any such incident or failure could adversely impact our ability to conduct our businesses, damage our reputation and cause losses;
- our business may be materially adversely affected by operational risk;
- our risk management framework may not be effective in mitigating risk and reducing the potential for losses;
- we are subject to extensive government rulemaking, regulation and supervision; these rules and regulations have, and in the future may, compel us to change how we manage our businesses, which could have a material adverse effect on our business, financial condition and results of operations; in addition, these rules and regulations have increased our compliance and operational risk and costs;
- regulatory or enforcement actions or litigation could materially adversely affect our results of operations or harm our businesses or reputation;
- our businesses may be negatively affected by adverse events, publicity, government scrutiny or other reputational harm;
- failure to satisfy regulatory standards, including “well capitalized” and “well managed” status or capital adequacy and liquidity rules more generally, could result in limitations on our activities and adversely affect our business and financial condition;
- a failure or circumvention of our controls and procedures could have a material adverse effect on our business, reputation, results of operations and financial condition;
- the application of our Title I preferred resolution strategy or resolution under the Title II orderly liquidation authority could adversely affect the Parent’s liquidity and financial condition and the Parent’s security holders;
- if our resolution plan is determined not to be credible or not to facilitate an orderly resolution under the U.S. Bankruptcy Code, our business, reputation, results of operations and financial condition could be materially negatively impacted;
- acts of terrorism, impacts from climate change, natural disasters, pandemics, global conflicts and other geopolitical events may have a negative impact on our business and operations;
- we are dependent on fee-based business for a substantial majority of our revenue and our fee-based revenues could be adversely affected by slowing in market activity, weak financial markets, underperformance and/or negative trends in savings rates or in investment preferences;

- weakness and volatility in financial markets and the economy generally may materially adversely affect our business, results of operations and financial condition;
- transitions away from, or changes in the calculation of, LIBOR and other benchmark rates could adversely impact our business and results of operations;
- the United Kingdom's referendum decision to leave the EU has had and may continue to have negative effects on global economic conditions, global financial markets, and our business and results of operations;
- changes in interest rates and yield curves could have a material adverse effect on our profitability;
- we may experience write-downs of securities that we own and other losses related to volatile and illiquid market conditions, reducing our earnings and impacting our financial condition;
- our FX revenue may be adversely affected by decreases in market volatility and the cross-border investment activity of our clients;
- the failure or perceived weakness of any of our significant counterparties, many of whom are major financial institutions and sovereign entities, and our assumption of credit and counterparty risk, could expose us to loss and adversely affect our business;
- our business, financial condition and results of operations could be adversely affected if we do not effectively manage our liquidity;
- we could incur losses if our allowance for credit losses, including loan and lending-related commitments reserves, is inadequate;
- any material reduction in our credit ratings or the credit ratings of our principal bank subsidiaries, The Bank of New York Mellon or BNY Mellon, N.A., could increase the cost of funding and borrowing to us and our rated subsidiaries and have a material adverse effect on our results of operations and financial condition and on the value of the securities we issue;
- new lines of business, new products and services or transformational or strategic project initiatives may subject us to additional risks, and the failure to implement these initiatives could affect our results of operations;
- we are subject to competition in all aspects of our business, which could negatively affect our ability to maintain or increase our profitability;
- our business may be adversely affected if we are unable to attract and retain employees;
- our strategic transactions present risks and uncertainties and could have an adverse effect on our business, results of operations and financial condition;
- tax law changes or challenges to our tax positions with respect to historical transactions may adversely affect our net income, effective tax rate and our overall results of operations and financial condition;
- our ability to return capital to shareholders is subject to the discretion of our Board of Directors and may be limited by U.S. banking laws and regulations, including those governing capital and the approval of our capital plan, applicable provisions of Delaware law or our failure to pay full and timely dividends on our preferred stock;
- the Parent is a non-operating holding company, and as a result, is dependent on dividends from its subsidiaries and extensions of credit from its IHC to meet its obligations, including with respect to its securities, and to provide funds for share repurchases and payment of dividends to its stockholders; and
- changes in accounting standards governing the preparation of our financial statements and future events could have a material impact on our reported financial condition, results of operations, cash flows and other financial data.

Investors should consider all risk factors discussed in our 2018 Annual Report and any subsequent reports filed with the SEC by BNY Mellon pursuant to the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All forward-looking statements speak only as of the date on which such statements are made, and BNY Mellon undertakes no obligation to update any statement to reflect events or circumstances after the date on which such forward-looking statement is made or to reflect the occurrence of unanticipated events. The contents of BNY Mellon's website or any other websites referenced herein are not part of this report.

ABS	Asset-backed security
APAC	Asia-Pacific region
ASC	Accounting Standards Codification
ASU	Accounting Standards Update
AUC/A	Assets under custody and/or administration
AUM	Assets under management
BCBS	Basel Committee on Banking Supervision
BHCs	Bank holding companies
bps	basis points
CCAR	Comprehensive Capital Analysis and Review
CDs	Certificates of deposit
CET1	Common Equity Tier 1 capital
CFTC	Commodity Futures Trading Commission
CLO	Collateralized loan obligation
CVA	Credit valuation adjustment
DVA	Debit valuation adjustment
EMEA	Europe, the Middle East and Africa
ERISA	Employee Retirement Income Security Act of 1974
ESOP	Employee Stock Ownership Plan
EVE	Economic value of equity
FASB	Financial Accounting Standards Board
FCA	Financial Conduct Authority
FDIC	Federal Deposit Insurance Corporation
FHC	Financial holding company
FINRA	Financial Industry Regulatory Authority, Inc.
FTE	Fully taxable equivalent
FX	Foreign exchange
GAAP	Generally accepted accounting principles
G-SIBs	Global systemically important banks
HQLA	High-quality liquid assets
IDI	Insured depository institution
IHC	Intermediate holding company
LCR	Liquidity coverage ratio
LIBOR	London Interbank Offered Rate
LTD	External eligible long-term debt
M&I	Merger and integration
MBS	Mortgage-backed security
MMF	Money market funds
N/A	Not applicable or Not available
NAV	Net asset value
N/M	Not meaningful
NSFR	Net stable funding ratio
NYSE	New York Stock Exchange
OCC	Office of the Comptroller of the Currency
OCI	Other comprehensive income
OTC	Over-the-counter
OTTI	Other-than-temporary impairment
PRA	Prudential Regulation Authority
PSUs	Performance share units
REIT	Real estate investment trust
RMBS	Residential mortgage-backed security
RSUs	Restricted stock units
RWAs	Risk-weighted assets
S&P	Standard & Poor’s
SBIC	Small business investment company
SBLC	Standby letters of credit
SEC	Securities and Exchange Commission
SIFIs	Systemically important financial institutions
SLR	Supplementary Leverage Ratio
TDR	Troubled debt restructuring
TLAC	Total loss-absorbing capacity
VaR	Value-at-risk
VIE	Variable interest entity
VME	Voting model entity

Accumulated benefit obligation - The actuarial present value of benefits (vested and non-vested) attributed to employee services rendered.

Alternative investments - Usually refers to investments in hedge funds, leveraged loans, subordinated and distressed debt, real estate and foreign currency overlay. Examples of alternative investment strategies are: long-short equity, event-driven, statistical arbitrage, fixed-income arbitrage, convertible arbitrage, short bias, global macro and equity market neutral.

Asset-backed security ("ABS") - A financial security backed by a loan, lease or receivables against assets other than real estate and mortgage-backed securities.

Assets under custody and/or administration ("AUC/A") - Assets that we hold directly or indirectly on behalf of clients under a safekeeping or custody arrangement or for which we provide administrative services for clients. The following types of assets under administration are not and historically have not been included in AUC/A: performance and risk analytics, transfer agency and asset aggregation services. To the extent that we provide more than one AUC/A service for a client's assets, the value of the asset is only counted once in the total amount of AUC/A.

Assets under management ("AUM") - Includes assets beneficially owned by our clients or customers which we hold in various capacities that are either actively or passively managed, as well as the value of hedges supporting customer liabilities. These assets and liabilities are not on our balance sheet.

Book value per share - The per share value of a company based on common shareholders' equity.

CAMELS - An international bank-rating system where bank supervisory authorities rate institutions according to six factors. The six factors are Capital adequacy, Asset quality, Management quality, Earnings, Liquidity and Sensitivity to Market Risk.

Collateral management - A comprehensive program designed to simplify collateralization and expedite securities transfers for buyers and sellers.

Collateralized loan obligation ("CLO") - A debt security backed by a pool of commercial loans.

Collective trust fund - An investment fund formed from the pooling of investments by investors.

Common Equity Tier 1 capital ("CET1") - The sum of surplus (net of treasury stock), retained earnings, accumulated other comprehensive income (loss), and common equity Tier 1 minority interest subject to certain limitations, minus certain regulatory adjustments and deductions.

Counterparty risk (default risk) - The risk that a counterparty will not pay as obligated on a contract, trade or transaction.

Credit derivatives - Contractual agreements that provide insurance against a credit event of one or more referenced credits. Such events include bankruptcy, insolvency and failure to meet payment obligations when due.

Credit risk - The risk of loss due to borrower or counterparty default.

Credit valuation adjustment ("CVA") - The market value of counterparty credit risk on OTC derivative transactions.

Currency swaps - An agreement to exchange stipulated amounts of one currency for another currency.

Debit valuation adjustment ("DVA") - The market value of our credit risk on OTC derivative transactions.

Depositary Receipts - A negotiable security that generally represents a non-U.S. company's publicly traded equity.

Derivative - A contract or agreement whose value is derived from changes in interest rates, foreign exchange rates, prices of securities or commodities, credit worthiness for credit default swaps or financial or commodity indices.

Earnings allocated to participating securities - Amount of undistributed earnings, after payment of taxes, preferred stock dividends and the required adjustment for common stock dividends declared, that is allocated to securities that are eligible to receive a portion of the Company's earnings.

Economic capital - The amount of capital required to absorb potential losses and reflects the probability of remaining solvent with a target debt rating over a one-year time horizon.

Economic value of equity ("EVE") - An aggregation of discounted future cash flows of assets and liabilities over a long-term horizon.

Eurozone - Formed by European Union Member States whose currency is the euro (€) and in which a single monetary policy is conducted under the responsibility of the Governing Council of the European Central Bank. The Eurozone currently includes Germany, France, Belgium, the Netherlands, Luxembourg, Austria, Finland, Italy, Ireland, Spain, Portugal, Greece, Estonia, Cyprus, Malta, Slovenia, Slovakia, Latvia and Lithuania.

Fiduciary risk - The risk arising from our role as trustee, executor, investment agent or guardian in accordance with governing documents, prudent person principles and applicable laws, rules and regulations.

Fixed Income Clearing Corporation ("FICC") - An agency that deals with the confirmation, settlement and delivery of fixed-income assets in the U.S. The agency ensures the systematic and efficient settlement of U.S. government securities and mortgage-backed security transactions in the market.

Foreign currency options - Similar to interest rate options except they are based on foreign exchange rates. Also, see interest rate options in this glossary.

Foreign currency swaps - An agreement to exchange stipulated amounts of one currency for another currency at one or more future dates.

Foreign exchange contracts - Contracts that provide for the future receipt or delivery of foreign currency at previously agreed-upon terms.

Forward rate agreements - Contracts to exchange payments on a specified future date, based on a market change in interest rates from trade date to contract settlement date.

Fully taxable equivalent ("FTE") - Basis for comparison of yields on assets having ordinary taxability with assets for which special tax exemptions apply. The FTE adjustment reflects an increase in the interest yield or return on a tax-exempt asset to a level that would be comparable had the asset been fully taxable.

Generally accepted accounting principles ("GAAP") - Accounting rules and conventions defining acceptable practices in preparing financial statements in the U.S. The FASB is the primary source of accounting rules.

Global systemically important bank ("G-SIB") - A financial institution whose distress or disorderly failure, because of its size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity.

Grantor Trust - A legal, passive entity through which pass-through securities are sold to investors.

Hedge fund - A fund which is allowed to use diverse strategies that are unavailable to mutual funds, including selling short, leverage, program trading, swaps, arbitrage and derivatives.

High-quality liquid assets ("HQLA") - Unencumbered assets of the types identified in the U.S. LCR rule, which the U.S. banking agencies describe as able to be convertible into cash with little or no expected loss of value during a period of liquidity stress.

Impairment - When an asset's market value is less than its carrying value.

Interest rate options - Contracts to modify interest rate risk in exchange for the payment of a premium when the contract is initiated. As a writer of interest rate options, we receive a premium in exchange for bearing the risk of unfavorable changes in interest rates. Conversely, as a purchaser of an option, we pay a premium for the right, but not the obligation, to buy or sell a financial instrument or currency at predetermined terms in the future.

Interest rate sensitivity - The exposure of net interest revenue to interest rate movements.

Interest rate swaps - Contracts in which a series of interest rate flows in a single currency are exchanged over a prescribed period. Interest rate swaps are the most common type of derivative contract that we use in our asset/liability management activities.

Investment grade - Represents Moody's long-term rating of Baa3 or better; and/or a Standard & Poor's, Fitch or DBRS long-term rating of BBB- or better; or if unrated, an equivalent rating using our internal risk ratings. Instruments that fall below these levels are considered to be non-investment grade.

Joint venture - A company or entity owned and operated by a group of companies for a specific business purpose, no one of which has a majority interest.

Liquidity coverage ratio ("LCR") - A Basel III framework requirement for banks and BHCs to measure liquidity. It is designed to ensure that certain banking organizations, including BNY Mellon, maintain a minimum amount of unencumbered HQLA sufficient to withstand the net cash outflow under a hypothetical standardized acute liquidity stress scenario for a 30-day time horizon.

Litigation risk - Arises when, in the ordinary course of business, we are named as defendants or made parties to legal actions.

Master netting agreement - An agreement between two counterparties that have multiple contracts with each other that provides for the net settlement of all contracts through a single payment in the event of default or termination of any one contract.

Mortgage-backed security ("MBS") - An asset-backed security whose cash flows are backed by the principal and interest payments of a set of mortgage loans.

Net interest margin - The result of dividing net interest revenue by average interest-earning assets.

Other-than-temporary impairment ("OTTI") - An impairment charge taken on a security whose fair value has fallen below the carrying value on the balance sheet and its value is not expected to recover through the holding period of the security.

Performance fees - Fees received by an investment advisor based upon the fund's performance for the period relative to various predetermined benchmarks.

Pre-tax operating margin - Income before taxes for a period divided by total revenue for that period.

Private equity/venture capital - Investment in start-up companies or those in the early processes of developing products and services with perceived, long-term growth potential.

Projected benefit obligation - The actuarial present value of all benefits accrued on employee service rendered prior to the calculation date, including allowance for future salary increases if the pension benefit is based on future compensation levels.

Rating agency - An independent agency that assesses the credit quality and likelihood of default of an issue or issuer and assigns a rating to that issue or issuer.

Real estate investment trust ("REIT") - An investor-owned corporation, trust or association that sells shares to investors and invests in income-producing property.

Repurchase agreement ("Repo") - An instrument used to raise short-term funds whereby securities are sold with an agreement for the seller to buy back the securities at a later date.

Reputational risk - Arises when events or actions that negatively impact our reputation lead to a loss of existing clients and could make it more challenging to acquire new business.

Residential mortgage-backed security ("RMBS") - An asset-backed security whose cash flows are backed by principal and interest payments of a set of residential mortgage loans.

Restricted cash and/or securities - Cash and/or securities that are segregated under federal and other regulatory requirements and consists of excess client funds held by our broker-dealer entities.

Return on average assets - Net income applicable to common shareholders divided by average assets.

Return on common equity - Net income applicable to common shareholders divided by average common shareholders' equity.

Return on tangible common equity - Net income applicable to common shareholders, excluding amortization of intangible assets, divided by average tangible common shareholders' equity.

Reverse repurchase agreement - The purchase of securities with the agreement to sell them at a higher price at a specific future date.

Securities lending transaction - A fully collateralized transaction in which the owner of a security agrees to lend the security typically through an agent (such as The Bank of New York Mellon) to a borrower, usually a broker-dealer or bank, on an open, overnight or term basis, under the terms of a prearranged contract.

Sub-custodian - A local provider (e.g., a bank) contracted to provide specific custodial-related services in a selected country or geographic area.

Supplementary Leverage Ratio ("SLR") - An Advanced Approach banking organization's Basel III SLR is the simple arithmetic mean of the ratio of its Tier 1 capital to total leverage exposure (which is broadly defined to capture both on- and off-balance sheet exposures).

Tangible book value per share - Amount per share that common shareholders can expect to receive if the company goes bankrupt and all of its tangible assets are liquidated at their book value.

Tangible common shareholders' equity - Common equity less goodwill and intangible assets adjusted for deferred tax liabilities associated with non-tax deductible intangible assets and tax deductible goodwill.

Tier 1 leverage ratio - Tier 1 capital divided by quarterly average total assets, as defined by the regulators.

Unfunded commitments - Legally binding agreements to provide a defined level of financing until a specified future date.

Value-at-risk ("VaR") - A measure of the dollar amount of potential loss in value due to adverse market movements over a defined time horizon with a specified confidence level.

Variable interest entity ("VIE") - An entity that: (1) lacks enough equity investment at risk to permit the entity to finance its activities without additional financial support from other parties; (2) has equity owners that lack the right to make significant decisions affecting the entity's operations; and/or (3) has equity owners that do not have an obligation to absorb, or the right to receive, the entity's losses or returns.

Management of BNY Mellon is responsible for establishing and maintaining adequate internal control over financial reporting for BNY Mellon, as such term is defined in Rule 13a-15(f) under the Exchange Act.

BNY Mellon's management, including its principal executive officer and principal financial officer, has assessed the effectiveness of BNY Mellon's internal control over financial reporting as of December 31, 2018. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control - Integrated Framework (2013). Based upon such assessment, management believes that, as of December 31, 2018, BNY Mellon's internal control over financial reporting is effective based upon those criteria.

KPMG LLP, the independent registered public accounting firm that audited BNY Mellon's 2018 financial statements included in this Annual Report under "Financial Statements" and "Notes to Consolidated Financial Statements," has issued a report with respect to the effectiveness of BNY Mellon's internal control over financial reporting. This report appears on page 117.

To the Stockholders and Board of Directors
The Bank of New York Mellon Corporation:

Opinion on Internal Control Over Financial Reporting

We have audited The Bank of New York Mellon Corporation and subsidiaries' (BNY Mellon) internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, BNY Mellon maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of BNY Mellon as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes (collectively, the consolidated financial statements), and our report dated February 27, 2019 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

BNY Mellon's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Report of Management on Internal Control over Financial Reporting. Our responsibility is to express an opinion on BNY Mellon's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to BNY Mellon in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

New York, New York
February 27, 2019

Consolidated Income Statement

	Year ended Dec. 31,		
(in millions)	**2018**	2017	2016
Fee and other revenue			
Investment services fees:			
Asset servicing	**$ 4,608**	$ 4,383	$ 4,244
Clearing services	**1,578**	1,553	1,404
Issuer services	**1,099**	977	1,026
Treasury services	**554**	557	547
Total investment services fees	**7,839**	7,470	7,221
Investment management and performance fees	**3,685**	3,584	3,350
Foreign exchange and other trading revenue	**732**	668	701
Financing-related fees	**207**	216	219
Distribution and servicing	**139**	160	166
Investment and other income	**240**	64	341
Total fee revenue	**12,842**	12,162	11,998
Net securities (losses) gains — including other-than-temporary impairment	**(47)**	6	79
Noncredit-related portion of other-than-temporary impairment (recognized in other comprehensive income)	**1**	3	4
Net securities (losses) gains	**(48)**	3	75
Total fee and other revenue	**12,794**	12,165	12,073
Operations of consolidated investment management funds			
Investment (loss) income	**(12)**	74	35
Interest of investment management fund note holders	**1**	4	9
(Loss) income from consolidated investment management funds	**(13)**	70	26
Net interest revenue			
Interest revenue	**6,432**	4,382	3,575
Interest expense	**2,821**	1,074	437
Net interest revenue	**3,611**	3,308	3,138
Total revenue	**16,392**	15,543	15,237
Provision for credit losses	**(11)**	(24)	(11)
Noninterest expense			
Staff *(a)*	**6,145**	6,033	5,809
Professional, legal and other purchased services	**1,334**	1,276	1,186
Software	**772**	744	647
Net occupancy	**630**	570	592
Sub-custodian and clearing *(b)*	**450**	414	400
Distribution and servicing	**406**	419	405
Furniture and equipment	**290**	241	247
Business development	**228**	229	245
Bank assessment charges	**170**	220	219
Amortization of intangible assets	**180**	209	237
Other *(a)(b)(c)*	**606**	602	536
Total noninterest expense	**11,211**	10,957	10,523
Income			
Income before income taxes	**5,192**	4,610	4,725
Provision for income taxes	**938**	496	1,177
Net income	**4,254**	4,114	3,548
Net loss (income) attributable to noncontrolling interests (includes $12, $(33) and $(10) related to consolidated investment management funds, respectively)	**12**	(24)	(1)
Net income applicable to shareholders of The Bank of New York Mellon Corporation	**4,266**	4,090	3,547
Preferred stock dividends	**(169)**	(175)	(122)
Net income applicable to common shareholders of The Bank of New York Mellon Corporation	**$ 4,097**	$ 3,915	$ 3,425

(a) In 2018, we adopted new accounting guidance included in ASU 2017-07, Compensation-Retirement Benefits: Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, which required the reclassification of the components of pension and other postretirement costs, other than the service cost component. As a result, staff expense increased and other expense decreased. Prior periods have been reclassified. See Note 2 of the Notes to Consolidated Financial Statements for additional information.

(b) Beginning in 2018, clearing expense, which was previously included in other expense, was included with sub-custodian expense. Prior periods have been reclassified.

(c) Beginning in 2018, M&I, litigation and restructuring charges are no longer separately disclosed. Expenses previously reported in this line have been reclassified to existing expense categories, primarily other expense.

Consolidated Income Statement (continued)

Net income applicable to common shareholders of The Bank of New York Mellon Corporation used for the earnings per share calculation	Year ended Dec. 31,		
(in millions)	**2018**	2017	2016
Net income applicable to common shareholders of The Bank of New York Mellon Corporation	**$ 4,097**	$ 3,915	$ 3,425
Less: Earnings allocated to participating securities	**27**	43	52
Net income applicable to common shareholders of The Bank of New York Mellon Corporation after required adjustment for the calculation of basic and diluted earnings per common share	**$ 4,070**	$ 3,872	$ 3,373

Average common shares and equivalents outstanding of The Bank of New York Mellon Corporation	Year ended Dec. 31,		
(in thousands)	**2018**	2017	2016
Basic	**1,002,922**	1,034,281	1,066,286
Common stock equivalents	**6,801**	13,030	15,672
Less: Participating securities	**(2,582)**	(7,021)	(9,945)
Diluted	**1,007,141**	1,040,290	1,072,013
Anti-dilutive securities *(a)*	**6,804**	12,383	31,695

Earnings per share applicable to common shareholders of The Bank of New York Mellon Corporation	Year ended Dec. 31,		
(in dollars)	**2018**	2017	2016
Basic	**$ 4.06**	$ 3.74	$ 3.16
Diluted	**$ 4.04**	$ 3.72	$ 3.15

(a) Represents stock options, restricted stock, restricted stock units and participating securities outstanding but not included in the computation of diluted average common shares because their effect would be anti-dilutive.

See accompanying Notes to Consolidated Financial Statements.

Consolidated Comprehensive Income Statement

	Year ended Dec. 31,		
(in millions)	**2018**	2017	2016
Net income	**$ 4,254**	$ 4,114	$ 3,548
Other comprehensive income, net of tax:			
Foreign currency translation adjustments	**(313)**	853	(850)
Unrealized (loss) gain on assets available-for-sale:			
Unrealized (loss) gain arising during the period	**(416)**	153	(242)
Reclassification adjustment	**36**	(3)	(49)
Total unrealized (loss) gain on assets available-for-sale	**(380)**	150	(291)
Defined benefit plans:			
Net (loss) gain arising during the period	**(189)**	342	(108)
Foreign exchange adjustment	**—**	1	—
Amortization of prior service credit, net loss and initial obligation included in net periodic benefit cost	**69**	68	57
Total defined benefit plans	**(120)**	411	(51)
Net unrealized (loss) gain on cash flow hedges	**(10)**	9	(4)
Total other comprehensive (loss) income, net of tax *(a)*	**(823)**	1,423	(1,196)
Total comprehensive income	**3,431**	5,537	2,352
Net loss (income) attributable to noncontrolling interests	**12**	(24)	(1)
Other comprehensive loss (income) attributable to noncontrolling interests	**11**	(15)	31
Comprehensive income applicable to shareholders of The Bank of New York Mellon Corporation	**$ 3,454**	$ 5,498	$ 2,382

(a) Other comprehensive (loss) income attributable to The Bank of New York Mellon Corporation shareholders was $(812) million for the year ended Dec. 31, 2018, $1,408 million for the year ended Dec. 31, 2017 and $(1,165) million for the year ended Dec. 31, 2016.

See accompanying Notes to Consolidated Financial Statements.

Consolidated Balance Sheet

(dollars in millions, except per share amounts)	Dec. 31, 2018	2017
Assets		
Cash and due from:		
Banks	**$ 5,864**	$ 5,382
Interest-bearing deposits with the Federal Reserve and other central banks	**67,988**	91,510
Interest-bearing deposits with banks ($2,394 and $1,751 is restricted)	**14,148**	11,979
Federal funds sold and securities purchased under resale agreements	**46,795**	28,135
Securities:		
Held-to-maturity (fair value of $33,302 and $40,512)	**33,982**	40,827
Available-for-sale	**85,809**	79,543
Total securities	**119,791**	120,370
Trading assets	**7,035**	6,022
Loans	**56,564**	61,540
Allowance for loan losses	**(146)**	(159)
Net loans	**56,418**	61,381
Premises and equipment	**1,832**	1,634
Accrued interest receivable	**671**	610
Goodwill	**17,350**	17,564
Intangible assets	**3,220**	3,411
Other assets (includes $742 and $791, at fair value)	**21,298**	23,029
Subtotal assets of operations	**362,410**	371,027
Assets of consolidated investment management funds, at fair value	**463**	731
Total assets	**$ 362,873**	$ 371,758
Liabilities		
Deposits:		
Noninterest-bearing (principally U.S. offices)	**$ 70,783**	$ 82,716
Interest-bearing deposits in U.S. offices	**74,904**	52,294
Interest-bearing deposits in non-U.S. offices	**93,091**	109,312
Total deposits	**238,778**	244,322
Federal funds purchased and securities sold under repurchase agreements	**14,243**	15,163
Trading liabilities	**3,479**	3,984
Payables to customers and broker-dealers	**19,731**	20,184
Commercial paper	**1,939**	3,075
Other borrowed funds	**3,227**	3,028
Accrued taxes and other expenses	**5,669**	6,225
Other liabilities (including allowance for lending-related commitments of $106 and $102, also includes $88 and $800, at fair value)	**5,774**	6,050
Long-term debt (includes $371 and $367, at fair value)	**29,163**	27,979
Subtotal liabilities of operations	**322,003**	330,010
Liabilities of consolidated investment management funds, at fair value	**2**	2
Total liabilities	**322,005**	330,012
Temporary equity		
Redeemable noncontrolling interests	**129**	179
Permanent equity		
Preferred stock – par value $0.01 per share; authorized 100,000,000 shares; issued 35,826 and 35,826 shares	**3,542**	3,542
Common stock – par value $0.01 per share; authorized 3,500,000,000 shares; issued 1,364,877,915 and 1,354,163,581 shares	**14**	14
Additional paid-in capital	**27,118**	26,665
Retained earnings	**28,652**	25,635
Accumulated other comprehensive loss, net of tax	**(3,171)**	(2,357)
Less: Treasury stock of 404,452,246 and 340,721,136 common shares, at cost	**(15,517)**	(12,248)
Total The Bank of New York Mellon Corporation shareholders' equity	**40,638**	41,251
Nonredeemable noncontrolling interests of consolidated investment management funds	**101**	316
Total permanent equity	**40,739**	41,567
Total liabilities, temporary equity and permanent equity	**$ 362,873**	$ 371,758

See accompanying Notes to Consolidated Financial Statements.

Consolidated Statement of Cash Flows

	Year ended Dec. 31,		
(in millions)	**2018**	2017	2016
Operating activities			
Net income	**$ 4,254**	$ 4,114	$ 3,548
Net loss (income) attributable to noncontrolling interests	**12**	(24)	(1)
Net income applicable to shareholders of The Bank of New York Mellon Corporation	**4,266**	4,090	3,547
Adjustments to reconcile net income to net cash provided by operating activities:			
Provision for credit losses	**(11)**	(24)	(11)
Pension plan contributions	**(55)**	(114)	(108)
Depreciation and amortization	**1,339**	1,474	1,502
Deferred tax (benefit) expense	**(525)**	133	(126)
Net securities losses (gains)	**48**	(3)	(75)
Change in trading assets and liabilities	**(574)**	(694)	1,522
Originations of loans held-for-sale	**—**	—	(350)
Proceeds from the sales of loans originated for sale	**—**	—	831
Change in accruals and other, net *(a)*	**1,508**	(195)	(465)
Net cash provided by operating activities *(a)*	**5,996**	4,667	6,267
Investing activities			
Change in interest-bearing deposits with banks *(a)*	**(2,011)**	2,199	(1,225)
Change in interest-bearing deposits with the Federal Reserve and other central banks	**21,954**	(29,613)	53,347
Purchases of securities held-to-maturity	**(5,055)**	(8,329)	(6,673)
Paydowns of securities held-to-maturity	**4,346**	4,448	4,907
Maturities of securities held-to-maturity	**6,317**	3,992	3,738
Purchases of securities available-for-sale	**(32,404)**	(26,151)	(27,470)
Sales of securities available-for-sale	**8,247**	6,001	7,580
Paydowns of securities available-for-sale	**7,716**	9,129	8,826
Maturities of securities available-for-sale	**9,063**	6,319	11,347
Net change in loans	**4,620**	2,794	(1,483)
Sales of loans and other real estate	**263**	392	173
Change in federal funds sold and securities purchased under resale agreements *(a)*	**(18,662)**	(2,334)	(1,407)
Net change in seed capital investments	**59**	(124)	(114)
Purchases of premises and equipment/capitalized software	**(1,108)**	(1,197)	(825)
Proceeds from the sale of premises and equipment	**23**	—	65
Acquisitions, net of cash	**—**	—	(42)
Dispositions, net of cash	**84**	—	1
Other, net *(a)*	**(153)**	(231)	(461)
Net cash provided by (used for) investing activities *(a)*	**3,299**	(32,705)	50,284
Financing activities			
Change in deposits	**(2,874)**	17,069	(54,738)
Change in federal funds purchased and securities sold under repurchase agreements	**(920)**	5,174	(5,013)
Change in payables to customers and broker-dealers	**(433)**	(813)	(911)
Change in other borrowed funds	**164**	1,852	225
Change in commercial paper	**(1,136)**	3,075	—
Net proceeds from the issuance of long-term debt	**5,143**	4,738	6,229
Repayments of long-term debt	**(3,650)**	(1,046)	(2,953)
Proceeds from the exercise of stock options	**80**	431	438
Issuance of common stock	**40**	34	27
Issuance of preferred stock	**—**	—	990
Treasury stock acquired	**(3,269)**	(2,686)	(2,398)
Common cash dividends paid	**(1,052)**	(901)	(778)
Preferred cash dividends paid	**(169)**	(175)	(122)
Other, net	**(22)**	26	(46)
Net cash (used for) provided by financing activities	**(8,098)**	26,778	(59,050)
Effect of exchange rate changes on cash	**(72)**	189	(114)
Change in cash and due from banks and restricted cash *(a)*			
Change in cash and due from banks and restricted cash	**1,125**	(1,071)	(2,613)
Cash and due from banks and restricted cash at beginning of period	**7,133**	8,204	10,817
Cash and due from banks and restricted cash at end of period	**$ 8,258**	$ 7,133	$ 8,204
Cash and due from banks and restricted cash: *(a)*			
Cash and due from banks at end of period (unrestricted cash)	**$ 5,864**	$ 5,382	$ 4,822
Restricted cash at end of period	**2,394**	1,751	3,382
Cash and due from banks and restricted cash at end of period	**$ 8,258**	$ 7,133	$ 8,204
Supplemental disclosures			
Interest paid	**$ 2,711**	$ 1,033	$ 406
Income taxes paid	**983**	498	1,010
Income taxes refunded	**175**	20	307

(a) *Reflects the impact of adopting new accounting guidance included in ASU 2016-15 and ASU 2016-18. Prior periods have been restated. See Note 2 of the Notes to Consolidated Financial Statements for additional information.*

See accompanying Notes to Consolidated Financial Statements.

Consolidated Statement of Changes in Equity

(in millions, except per share amount)	The Bank of New York Mellon Corporation shareholders: Preferred stock	Common stock	Additional paid-in capital	Retained earnings	Accumulated other comprehensive (loss), net of tax	Treasury stock	Non-redeemable noncontrolling interests of consolidated investment management funds	Total permanent equity	Redeemable non-controlling interests/ temporary equity
Balance at Dec. 31, 2017	$ 3,542	$ 14	$ 26,665	$ 25,635	$ (2,357)	$(12,248)	$ 316	$ 41,567 *(a)*	$ 179
Adjustment for the cumulative effect of applying ASU 2014-09 for contract revenue	—	—	—	**(55)**	—	—	—	**(55)**	—
Adjustment for the cumulative effect of applying ASU 2017-12 for derivatives and hedging	—	—	—	**27**	**(2)**	—	—	**25**	—
Adjusted balance at Jan. 1, 2018	**3,542**	**14**	**26,665**	**25,607**	**(2,359)**	**(12,248)**	**316**	**41,537**	**179**
Shares issued to shareholders of noncontrolling interests	—	—	—	—	—	—	—	—	**61**
Redemption of subsidiary shares from noncontrolling interests	—	—	—	—	—	—	—	—	**(92)**
Other net changes in noncontrolling interests	—	—	**12**	—	—	—	**(203)**	**(191)**	**(8)**
Net income (loss)	—	—	—	**4,266**	—	—	**(12)**	**4,254**	—
Other comprehensive (loss)	—	—	—	—	**(812)**	—	—	**(812)**	**(11)**
Dividends:									
Common stock at $1.04 per share	—	—	—	**(1,052)**	—	—	—	**(1,052)**	—
Preferred stock	—	—	—	**(169)**	—	—	—	**(169)**	—
Repurchase of common stock	—	—	—	—	—	**(3,269)**	—	**(3,269)**	—
Common stock issued under:									
Employee benefit plans	—	—	**31**	—	—	—	—	**31**	—
Direct stock purchase and dividend reinvestment plan	—	—	**30**	—	—	—	—	**30**	—
Stock awards and options exercised	—	—	**380**	—	—	—	—	**380**	—
Balance at Dec. 31, 2018	**$ 3,542**	**$ 14**	**$ 27,118**	**$ 28,652**	**$ (3,171)**	**$(15,517)**	**$ 101**	**$ 40,739** *(a)*	**$ 129**

(a) Includes total The Bank of New York Mellon Corporation common shareholders' equity of $37,709 million at Dec. 31, 2017 and $37,096 million at Dec. 31, 2018.

Consolidated Statement of Changes in Equity (continued)

	The Bank of New York Mellon Corporation shareholders								
(in millions, except per share amount)	Preferred stock	Common stock	Additional paid-in capital	Retained earnings	Accumulated other comprehensive (loss) income, net of tax	Treasury stock	Non-redeemable noncontrolling interests of consolidated investment management funds	Total permanent equity	Redeemable non-controlling interests/ temporary equity
Balance at Dec. 31, 2016	$ 3,542	$ 13	$ 25,962	$ 22,621	$ (3,765)	$ (9,562)	$ 618	$ 39,429 *(a)*	$ 151
Shares issued to shareholders of noncontrolling interests	—	—	—	—	—	—	—	—	56
Redemption of subsidiary shares from noncontrolling interests	—	—	—	—	—	—	—	—	(70)
Other net changes in noncontrolling interests	—	—	(35)	—	—	—	(335)	(370)	36
Net income (loss)	—	—	—	4,090	—	—	33	4,123	(9)
Other comprehensive income	—	—	—	—	1,408	—	—	1,408	15
Dividends:									
Common stock at $0.86 per share	—	—	—	(901)	—	—	—	(901)	—
Preferred stock	—	—	—	(175)	—	—	—	(175)	—
Repurchase of common stock	—	—	—	—	—	(2,686)	—	(2,686)	—
Common stock issued under:									
Employee benefit plans	—	—	28	—	—	—	—	28	—
Direct stock purchase and dividend reinvestment plan	—	—	26	—	—	—	—	26	—
Stock awards and options exercised	—	1	684	—	—	—	—	685	—
Balance at Dec. 31, 2017	$ 3,542	$ 14	$ 26,665	$ 25,635	$ (2,357)	$(12,248)	$ 316	$ 41,567 *(a)*	$ 179

(a) Includes total The Bank of New York Mellon Corporation common shareholders' equity of $35,269 million at Dec. 31, 2016 and $37,709 million at Dec. 31, 2017.

	The Bank of New York Mellon Corporation shareholders								
(in millions, except per share amounts)	Preferred stock	Common stock	Additional paid-in capital	Retained earnings	Accumulated other comprehensive (loss) income, net of tax	Treasury stock	Non-redeemable noncontrolling interests of consolidated investment management funds	Total permanent equity	Redeemable non-controlling interests/ temporary equity
Balance at Dec. 31, 2015	$ 2,552	$ 13	$ 25,262	$ 19,974	$ (2,600)	$ (7,164)	$ 738	$ 38,775 *(a)*	$ 200
Shares issued to shareholders of noncontrolling interests	—	—	—	—	—	—	—	—	55
Redemption of subsidiary shares from noncontrolling interests	—	—	—	—	—	—	—	—	(102)
Other net changes in noncontrolling interests	—	—	(24)	—	—	—	(130)	(154)	38
Net income (loss)	—	—	—	3,547	—	—	10	3,557	(9)
Other comprehensive (loss)	—	—	—	—	(1,165)	—	—	(1,165)	(31)
Dividends:									
Common stock at $0.72 per share	—	—	—	(778)	—	—	—	(778)	—
Preferred stock	—	—	—	(122)	—	—	—	(122)	—
Repurchase of common stock	—	—	—	—	—	(2,398)	—	(2,398)	—
Common stock issued under:									
Employee benefit plans	—	—	27	—	—	—	—	27	—
Direct stock purchase and dividend reinvestment plan	—	—	21	—	—	—	—	21	—
Preferred stock issued	990	—	—	—	—	—	—	990	—
Stock awards and options exercised	—	—	676	—	—	—	—	676	—
Balance at Dec. 31, 2016	$ 3,542	$ 13	$ 25,962	$ 22,621	$ (3,765)	$ (9,562)	$ 618	$ 39,429 *(a)*	$ 151

(a) Includes total The Bank of New York Mellon Corporation common shareholders' equity of $35,485 million at Dec. 31, 2015 and $35,269 million at Dec. 31, 2016.

See accompanying unaudited Notes to Consolidated Financial Statements.

Note 1–Summary of significant accounting and reporting policies

Nature of operations

BNY Mellon is a global leader in providing a broad range of financial products and services in domestic and international markets. Through our two principal businesses, Investment Management and Investment Services, we serve the following major classes of customers - institutions, corporations and high net worth individuals. For institutions and corporations, we provide the following services:

- investment management;
- custody;
- foreign exchange;
- fund services;
- broker-dealer services;
- securities finance;
- collateral and liquidity services;
- clearing services;
- depositary receipts;
- corporate trust;
- global payments;
- trade finance; and
- cash management.

For individuals, we provide mutual funds, separate accounts, wealth management and private banking services. BNY Mellon's investment management businesses provide investment products in many asset classes and investment styles on a global basis.

Basis of presentation

The accounting and financial reporting policies of BNY Mellon, a global financial services company, conform to U.S. GAAP and prevailing industry practices.

In the opinion of management, all adjustments necessary for a fair presentation of financial position, results of operations and cash flows for the periods presented have been made. Certain immaterial reclassifications have been made to prior periods to place them on a basis comparable with current period presentation.

Use of estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates based upon assumptions about future economic and market conditions which affect reported amounts and related disclosures in our financial statements. Although our current estimates contemplate current conditions and how we expect them to change in the future, it is reasonably possible that actual conditions could be worse than anticipated in those estimates, which could materially affect our results of operations and financial condition. Amounts subject to estimates are items such as allowance for loan losses and lending-related commitments, fair value of financial instruments and derivatives, goodwill and other intangibles and litigation and regulatory contingencies. Among other effects, such changes in estimates could result in future impairments of investment securities, goodwill and intangible assets and establishment of allowances for loan losses and lending-related commitments as well as accruals for litigation and regulatory contingencies.

Changes in accounting

See Note 2 for the new accounting standards adopted in 2018.

Effective Oct. 1, 2016, we changed the accounting method for the amortization of premiums and accretion of discounts on mortgage-backed securities from the prepayment method (also referred to as the retrospective method) to the contractual method, which are both acceptable methods under ASC 310, *Receivables*. The calculation performed under the prepayment method was based on estimating principal prepayment assumptions, principally driven by interest rates, and estimating the remaining lives of securities. This method resulted in retrospective adjustments each period to reflect changes in those estimates as if the updated estimated lives had been applied since the acquisition of the securities. Under the contractual method, no assumption is made concerning prepayments. As principal prepayments occur, a portion of the unamortized premium or discount is recorded in interest revenue such that the effective yield of a security remains constant throughout the life of the security.

We have determined that the contractual method is the preferable method of accounting as it is more aligned with our approach to asset/liability management, it reduces reliance on complex estimates and judgments, and it is consistent with the method predominantly used by our peers. The impact of this change was not considered material to prior periods and, as a result, the cumulative effect of the change of approximately $15 million was reflected as a positive adjustment to net interest revenue in the fourth quarter of 2016. We estimate that net interest revenue for 2016 would have been higher had we continued to use the prepayment method, but have not specifically quantified the impact subsequent to the effective date, as the estimated amortization is also immaterial.

Parent financial statements

The Parent financial statements in Note 18 include the accounts of the Parent; those of a wholly owned financing subsidiary that functions as a financing entity for BNY Mellon and its subsidiaries; and MIPA, LLC, a single-member limited liability company, created to hold and administer corporate-owned life insurance. Financial data for the Parent, the financing subsidiary and the single-member limited liability company are combined for financial reporting purposes because of the limited function of these entities and the unconditional guarantee by BNY Mellon of their obligations.

Acquired businesses

The income statement and balance sheet include results of acquired businesses accounted for under the acquisition method of accounting pursuant to ASC 805, *Business Combinations* and equity investments from the dates of acquisition. Contingent purchase consideration was measured at its fair value and recorded on the purchase date. Any subsequent changes in the fair value of a contingent consideration liability are recorded through the income statement.

Equity method investments, including renewable energy investments

The consolidated financial statements include the accounts of BNY Mellon and its subsidiaries. Equity investments of less than a majority but at least 20% ownership are accounted for by the equity method and classified as other assets. Earnings on these investments are reflected in fee and other revenue as investment services fees, investment management and performance fees or investment and other income, as appropriate, in the period earned.

A loss in value of an equity investment that is determined to be other-than-temporary is recognized by reducing the carrying value of the equity investment down to its fair value.

Renewable energy investment projects through limited liability companies are accounted for using the equity method of accounting. The hypothetical liquidation at book value ("HLBV") methodology is used to determine the loss that is recognized in each quarter. HLBV estimates the liquidation value at the beginning and end of each quarter, with the difference recognized as the amount of loss under the equity method.

The pre-tax losses are reported in investment and other income section of the income statement. The corresponding tax benefits and credits are recorded as a reduction to provision for income taxes on the income statement. The pre-tax losses, tax benefits and credits are included in our projected annual effective tax rate.

See Note 7 for the amount of our renewable energy investments. Below are our most significant equity method investments, other than the investments in renewable energy.

Equity method investments at Dec. 31, 2018

(dollars in millions)	Percentage ownership	Book value
CIBC Mellon	**50.0%**	**$ 548**
Siguler Guff	**20.0%**	**$ 244**

Variable interest and voting model entities

We evaluate an entity for possible consolidation in accordance with ASC 810, *Consolidation*. We first determine whether or not we have variable interests in the entity, which are investments or other interests that absorb portions of an entity's expected losses or receive portions of the entity's expected returns. Our variable interests may include decision-maker or service provider fees, direct and indirect investments and investments made by related parties, including related parties under common control. If it is determined that we do not have a variable interest in the entity, no further analysis is required and the entity is not consolidated.

If we hold a variable interest in the entity, further analysis is performed to determine if the entity is a VIE or a voting model entity ("VME").

We consider the underlying facts and circumstances of individual entities when assessing whether or not an entity is a VIE. An entity is determined to be a VIE if the equity investors:

- do not have sufficient equity at risk for the entity to finance its activities without additional subordinated financial support; or
- lack one or more of the following characteristics of a controlling financial interest:
  - the power, through voting rights or similar rights, to direct the activities of an entity that most significantly impact the entity's economic performance;
  - the obligation to absorb the expected losses of the entity; and
  - the right to receive the expected residual returns of the entity.

We reconsider and reassess whether or not we are the primary beneficiary of a VIE when governing documents or contractual arrangements are changed that would reallocate the obligation to absorb expected losses or receive expected residual returns between BNY Mellon and the other investors. This could occur when BNY Mellon disposes of its variable interests in the fund, when additional variable interests are issued to other investors or when we acquire additional variable interests in the VIE.

We consolidate a VIE if it is determined that we have a controlling financial interest in the entity. We have a controlling financial interest in a VIE when we have both (1) the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and (2) the obligation to absorb losses or the right to receive benefits of the VIE that could potentially be significant to that VIE.

For entities that do not meet the definition of a VIE, the entity is considered a VME. We consolidate these entities if we can exert control over the financial and operating policies of an investee, which can occur if we have a 50% or more voting interest in the entity.

Restricted cash and securities

Cash and securities may be segregated under federal and other regulatory requirements and consists of excess client funds held by our broker-dealer entities. Restricted cash is included in interest-bearing deposits with banks on the consolidated balance sheet and with cash and due from banks when reconciling the beginning and end-of-period balances on the consolidated statement of cash flows.

Securities purchased under resale agreements and securities sold under repurchase agreements

Securities purchased under resale agreements and securities sold under repurchase agreements are accounted for as collateralized financings. Generally, these agreements are recorded at the amounts at which the securities will be subsequently resold or repurchased, plus accrued interest.

Securities purchased under resale agreements are fully collateralized with high-quality liquid securities. Collateral requirements are monitored and additional collateral is received or provided, as required. As such, these transactions carry minimal credit risk and are not allocated an allowance for credit losses.

Where an enforceable netting agreement exists, resale and repurchase agreements executed with the same counterparty and the same maturity date are reported on a net basis.

Available-for-sale securities and held-to-maturity securities and trading securities

Securities are classified as trading, available-for-sale or held-to-maturity securities when they are purchased. Securities are classified as available-for-sale securities when we intend to hold the securities for an indefinite period of time or when the securities may be used for tactical asset/liability purposes and may be sold from time to time to effectively manage interest rate exposure, prepayment risk and liquidity needs. Securities are classified as held-to-maturity securities when we intend and have the ability to hold them until maturity. Securities are classified as trading securities when our intention is to resell the securities.

Trading securities are measured at fair value and included in trading assets on the balance sheet. Trading revenue includes both realized and unrealized gains and losses. The liability incurred on short-sale transactions, representing the obligation to deliver securities, is included in trading liabilities at fair value.

Available-for-sale securities are measured at fair value. The difference between fair value and amortized cost representing unrealized gains or losses on assets classified as available-for-sale, are recorded net of tax as an addition to or deduction from OCI, unless a security is deemed to have other-than-temporary impairment ("OTTI"). Gains and losses on sales of available-for-sale securities are reported in the income statement. The cost of debt and equity securities sold is determined on a specific identification and average cost method, respectively. Held-to-maturity securities are measured at amortized cost.

Income on securities purchased is adjusted for amortization of premium and accretion of discount on a level yield basis, generally over their contractual life.

We routinely conduct periodic reviews to identify and evaluate each security to determine whether OTTI has occurred. We examine various factors when determining whether an impairment, representing the fair value of a security being below its amortized cost, is other-than-temporary. The following are examples of factors that we consider:

- The length of time and the extent to which the fair value has been less than the amortized cost basis;
- Whether management has an intent to sell the security;
- Whether the decline in fair value is attributable to specific conditions, such as conditions in an industry or in a geographic area, affecting a particular investment;
- Whether a debt security has been downgraded by a rating agency;
- Whether a debt security exhibits cash flow deterioration; and
- For each non-agency RMBS, we compare the remaining credit enhancement that protects the individual security from losses against the projected losses of principal and/or interest expected to come from the underlying mortgage collateral, to determine whether such credit losses might directly impact the relevant security.

When we do not intend to sell the security and it is more likely than not that we will not be required to sell the security prior to recovery of its cost basis, the credit component of an OTTI of a debt security is recognized in earnings and the non-credit component is recognized in OCI.

The determination of whether a credit loss exists is based on the best estimate of the present value of cash flows to be collected from the debt security. Generally, cash flows are discounted at the effective interest rate implicit in the debt security at the time of acquisition. For debt securities that are beneficial interests in securitized financial assets and are not high credit quality, ASC 325, *Investments - Other,* provides that cash flows be discounted at the current yield used to accrete the beneficial interest.

If we intend to sell the security or it is more likely than not that we will be required to sell the security prior to recovery of its cost basis, the non-credit component of OTTI is recognized in earnings and subsequently accreted to interest income on an effective yield basis over the life of the security.

For held-to-maturity debt securities, the amount of OTTI recorded in OCI for the non-credit portion of a previous OTTI is amortized prospectively, as an increase to the carrying amount of the security, over the remaining life of the security on the basis of the timing of future estimated cash flows of the securities.

The accounting policy for the determination of the fair value of financial instruments has been identified as a "critical accounting estimate" as it requires us to make numerous assumptions based on available market data. See Note 4 for these disclosures.

Loans and leases

Loans are reported net of any unearned income and deferred fees and costs. Certain loan origination and upfront commitment fees, as well as certain direct loan origination and commitment costs, are deferred and amortized as a yield adjustment over the lives of the related loans. Loans held for sale are carried at the lower of cost or fair value.

Unearned revenue on direct financing leases is accreted over the lives of the leases in decreasing amounts to provide a constant rate of return on the net investment in the leases. Revenue on leveraged leases is recognized on a basis to achieve a constant yield on the outstanding investment in the lease, net of the related deferred tax liability, in the years in which the net investment is positive. Gains and losses on residual values of leased equipment sold are included in investment and other income. Impairment of leveraged lease residual values is reflected in net interest revenue. Considering the nature of these leases and the number of significant assumptions, there is risk associated with the income recognition on these leases should any of the assumptions change materially in future periods.

A modified loan is considered a troubled debt restructuring ("TDR") if the debtor is experiencing financial difficulties and the creditor grants a concession to the debtor that would not otherwise be considered. A TDR may include a transfer of real estate or other assets from the debtor to the creditor, or a modification of the term of the loan. TDRs are accounted for as impaired loans (see the Nonperforming assets policy).

Nonperforming assets

Commercial loans are placed on nonaccrual status when principal or interest is past due 90 days or more, or when there is reasonable doubt that interest or principal will be collected.

When a first lien residential mortgage loan reaches 90 days delinquent, it is subject to an impairment test and may be placed on nonaccrual status. At 180 days delinquent, the loan is subject to further impairment testing. The loan will remain on accrual status if the realizable value of the collateral exceeds the unpaid principal balance plus accrued interest. If the loan is impaired, a charge-off is taken and the loan is placed on nonaccrual status. At 270 days delinquent, all first lien mortgages are placed on nonaccrual status. Second lien mortgages are automatically placed on nonaccrual status when they reach 90 days delinquent.

When a loan is placed on nonaccrual status, previously accrued and uncollected interest is reversed against current period interest revenue. Interest receipts on nonaccrual and impaired loans are recognized as interest revenue or are applied to principal when we believe the ultimate collectability of principal is in doubt. Nonaccrual loans generally are restored to an accrual basis when principal and interest become current and remain current for a specified period.

A loan is considered to be impaired when it is probable that we will be unable to collect all principal and interest amounts due according to the contractual terms of the loan agreement. An impairment allowance is measured based upon the loan's market value, the present value of expected future cash flows, discounted at the loan's initial effective interest rate, or at fair value of the collateral if the loan is collateral dependent. If the loan valuation is less than the recorded value of the loan, an impairment allowance is established by a provision for credit loss. Impairment allowances are not needed when the recorded investment in an impaired loan is less than the loan valuation.

Allowance for loan losses and allowance for lending-related commitments

The allowance for loan losses, shown as a valuation allowance to loans, and the allowance for lending-related commitments recorded in other liabilities, are referred to as BNY Mellon's allowance for credit losses. The accounting policy for the determination of the adequacy of the allowances has been identified as a "critical accounting estimate" as it requires us to make numerous complex and subjective estimates and assumptions relating to amounts which are inherently uncertain.

The allowance for loan losses is maintained to absorb losses inherent in the loan portfolio as of the balance sheet date based on our judgment. The allowance determination methodology is designed to provide procedural discipline in assessing the appropriateness of the allowance. Credit losses are charged against the allowance. Recoveries are added to the allowance.

The methodology for determining the allowance for lending-related commitments considers the same factors as the allowance for loan losses, as well as an estimate of the probability of drawdown at default. We utilize a quantitative methodology and qualitative framework for determining the allowance for loan losses and the allowance for lending-related commitments. Within this qualitative framework, management applies judgment when assessing internal risk factors and environmental factors to compute an additional allowance for each component of the loan portfolio.

The components of the allowance for loan losses and the allowance for lending-related commitments are inclusive of the qualitative allowance framework and consist of the following three elements:

- an allowance for impaired credits of $1 million or greater;
- an allowance for higher risk-rated credits and pass-rated credits; and
- an allowance for residential mortgage loans.

Our lending is primarily to institutional customers. As a result, our loans are generally larger than $1 million. Therefore, the first element, impaired credits, is based on individual analysis of all impaired loans of $1 million and greater. The allowance is measured by the difference between the recorded value of impaired loans and their impaired value. Impaired value is either the present value of the expected future cash flows from the borrower, the market value of the loan, or the fair value of the collateral, if the loan is collateral dependent.

The second element, higher risk-rated credits and pass-rated credits, is based on our incurred loss model. Individual credit analyses are performed on such loans before being assigned a credit rating. All borrowers are collectively evaluated based on their credit rating. The loss inherent in each loan incorporates the borrower's credit rating, facility rating and maturity. The loss given default, derived from the facility rating, incorporates a recovery expectation and an estimate of the use of the facility at default (usage given default). The borrower's probability of default is derived from the associated credit rating. Borrower ratings are reviewed at least annually and are periodically mapped to third-party databases, including rating agency and default and recovery databases, to ensure ongoing consistency and validity. Higher risk-rated credits are reviewed quarterly.

The third element, the allowance for residential mortgage loans, is determined by segregating six mortgage pools into delinquency periods ranging from current through foreclosure. Each of these delinquency periods is assigned a probability of default. A specific loss given default is assigned for each mortgage pool. BNY Mellon assigns all residential mortgage pools, except home equity lines of credit, a probability of default and loss given default based on default and loss data derived from internal historical data related to our residential mortgage portfolio. The resulting incurred loss factor (the probability of default multiplied by the loss given default) is applied against the loan balance to determine the allowance held for each pool. For home equity lines of credit, probability of default and loss given default are based on external data from third-party databases due to the small size of the portfolio and insufficient internal data.

The qualitative framework is used to determine an additional allowance for each portfolio based on the factors below:

Internal risk factors:

- Ratio of nonperforming loans to total non-margin loans;
- Ratio of criticized assets to total loans and lending-related commitments;
- Borrower concentration; and
- Significant concentrations in high risk industries and countries.

Environmental risk factors:

- U.S. non-investment grade default rate;
- Unemployment rate; and
- Change in real gross domestic product.

The objective of the qualitative framework is to capture incurred losses that may not have been fully captured in the quantitative reserve, which is based primarily on historical data. Management determines the qualitative allowance for each period based on judgment informed by consideration of internal and external risk factors and other considerations that may be deemed relevant during the period. Once determined in the aggregate, our qualitative allowance is then allocated to each of our loan classes based on the respective classes' quantitative allowance balances with the allocations adjusted, when necessary, for class specific risk factors.

For each risk factor, we calculate the minimum and maximum values, and percentiles in-between, to evaluate the distribution of our historical experience. The distribution of historical experience is compared to the risk factor's current quarter observed experience to assess the current risk inherent in the portfolio and overall direction/trend of a risk factor relative to our historical experience.

Based on this analysis, we assign a risk level - no impact, low, moderate, high and elevated - to each risk factor for the current quarter. Management assesses the impact of each risk factor to determine an aggregate risk level. We do not quantify the impact of any particular risk factor. Management's assessment of the risk factors, as well as the trend in the quantitative allowance, supports management's judgment for the overall required qualitative allowance. A smaller qualitative allowance may be required when our quantitative allowance has reflected incurred losses associated with the aggregate risk level. A greater qualitative allowance may be required if our quantitative allowance does not yet reflect the incurred losses associated with the aggregate risk level.

The allocation of the allowance for credit losses is inherently judgmental, and the entire allowance for credit losses is available to absorb credit losses regardless of the nature of the loss.

Premises and equipment

Premises and equipment are carried at cost less accumulated depreciation and amortization. Depreciation and amortization is computed using the straight-line method over the estimated useful life of the owned asset and, for leasehold improvements, over the lesser of the remaining term of the leased facility or the estimated economic life of the improvement. For owned and capitalized assets, estimated useful lives range from 2 to 40 years. Maintenance and repairs are charged to expense as incurred, while major improvements are capitalized and amortized to operating expense over their identified useful lives.

Software

BNY Mellon capitalizes costs relating to acquired software and internal-use software development projects that provide new or significantly improved functionality. We capitalize projects that are expected to result in longer-term operational benefits, such as replacement systems or new applications that result in significantly increased operational efficiencies or functionality. All other costs incurred in connection with an internal-use software project are expensed as incurred. Capitalized software is recorded in other assets.

Identified intangible assets and goodwill

Identified intangible assets with estimable lives are amortized in a pattern consistent with the assets' identifiable cash flows or using a straight-line method over their remaining estimated benefit periods if the pattern of cash flows is not estimable. Intangible assets with estimable lives are reviewed for possible impairment when events or changed circumstances may affect the underlying basis of the asset. Goodwill and intangibles with indefinite lives are not amortized, but are assessed annually for impairment, or more often if events and circumstances indicate it is more likely than not they may be impaired and to determine if the lives are no longer indefinite and should be amortized. The amount of goodwill impairment is determined by the excess of the carrying value of the reporting unit over its fair value. The accounting policy for valuing and impairment testing of identified intangible assets and goodwill has been identified as a "critical accounting estimate" as it requires us to make numerous complex and subjective estimates. See Note 6 for additional disclosures related to goodwill and intangible assets.

Investments in qualified affordable housing projects

Investments in qualified affordable housing projects through a limited liability entity are accounted for utilizing the proportional amortization method. Under the proportional amortization method, the initial cost of the investment is amortized to the provision for income taxes in proportion to the tax credits and other tax benefits received. The net investment performance, including tax credits and other benefits received, is recognized in the income statement as a component of income tax expense. Additionally, the value of the commitments to fund qualified affordable housing projects is included in other assets on the balance sheet and a liability is recorded for the unfunded portion.

Seed capital

Seed capital investments are generally classified as other assets and carried at fair value. Unrealized gains and losses on seed capital investments are recorded in investment and other income. Certain risk retention investments in our collateralized loan obligations ("CLOs") are classified as available-for-sale securities. Any unrealized gains and losses are recorded net of tax as an addition to or deduction from other comprehensive income, unless the investment is deemed to have OTTI.

Noncontrolling interests

Noncontrolling interests included in permanent equity are adjusted for the income or (loss) attributable to the noncontrolling interest holders and any distributions to those shareholders. Redeemable noncontrolling interests are reported as temporary equity. BNY Mellon recognizes changes in the redemption value of the redeemable noncontrolling interests as they occur and adjusts the carrying value to be equal to the redemption value.

Fee revenue

Investment Services and Investment Management revenue is based on terms specified in a contract with a customer, and excludes any amounts collected on behalf of third parties. Revenue is recognized when, or as, a performance obligation is satisfied by transferring control of a good or service to a customer. A performance obligation may be satisfied over time or at a point in time. Revenue from a performance obligation satisfied over time is recognized by measuring our progress in satisfying the performance obligation in a manner that reflects the transfer of goods and services to the customer. Revenue from a performance obligation satisfied at a point in time is recognized at the point in time the customer obtains control of the promised good or service. The amount of revenue recognized reflects the consideration we expect to be entitled to in exchange for the promised goods and services. Taxes assessed by a governmental authority, that are both imposed on, and concurrent with, a specific revenue-producing transaction, are collected from a customer and are excluded from revenue.

Performance fees are recognized in the period in which the performance fees are earned and become determinable. Performance fees are constrained until all uncertainties are resolved and reversal of previously recorded amounts is not probable. Performance fees are generally calculated as a percentage of the applicable portfolio's performance in excess of a benchmark index or a peer group's performance. When a portfolio underperforms its benchmark or fails to generate positive performance, subsequent years' performance must generally exceed this shortfall prior to fees being earned. Amounts billable, which are subject to a clawback if future performance thresholds in current or future years are not met, are not recognized since the fees are potentially uncollectible. These fees are recognized when it is determined that they will be collected. When a multi-year performance contract provides that fees earned are billed ratably over the performance period, only the portion of the fees earned that are non-refundable are recognized.

Additionally, we recognize revenue from non-refundable, implementation fees under outsourcing contracts using a straight-line method, commencing in the period the ongoing services are performed through the expected term of the contractual relationship. Incremental direct set-up costs of implementation, up to the related customer margin or minimum fee revenue amount, are deferred and amortized over the same period that the related implementation fees are recognized. If a client terminates an outsourcing contract prematurely, the unamortized deferred incremental direct set-up costs and the unamortized deferred implementation fees related to that contract are recognized in the period the contract is terminated.

We record foreign exchange and other trading revenue, financing-related fees and other revenue when the services are provided and earned based on contractual terms, when amounts are determined and collectability is reasonably assured.

Net interest revenue

Revenue on interest-earning assets and expense on interest-bearing liabilities are recognized based on the effective yield of the related financial instrument. The amortization of premiums and accretion of discounts are included in interest revenue and are adjusted for prepayments when they occur, such that, the effective yield remains constant throughout the contractual life of the security. Negative interest incurred on assets or charged on liabilities is presented as contra interest income and contra expense, respectively.

Foreign currency translation

Assets and liabilities denominated in foreign currencies are translated to U.S. dollars at the rate of exchange on the balance sheet date. Transaction gains and losses are included in the income statement. Translation gains and losses on investments in foreign entities with functional currencies that are not the

U.S. dollar are recorded as foreign currency translation adjustments in OCI. Revenue and expense transactions are translated at the applicable daily rate or the weighted average monthly exchange rate when applying the daily rate is not practical.

Pension

The measurement date for BNY Mellon's pension plans is December 31. Plan assets are determined based on fair value generally representing observable market prices. The projected benefit obligation is determined based on the present value of projected benefit distributions at an assumed discount rate. The discount rate utilized is based on the yield curves of high-quality corporate bonds available in the marketplace. The net periodic pension expense or credit includes service costs (if applicable), interest costs based on an assumed discount rate, an expected return on plan assets based on an actuarially derived market-related value, amortization of prior service cost and amortization of prior years' actuarial gains and losses.

Actuarial gains and losses include gains or losses related to changes in the amount of the projected benefit obligation or plan assets resulting from demographic or investment experience different than assumed, changes in the discount rate or other assumptions. To the extent an actuarial gain or loss exceeds 10% of the greater of the projected benefit obligation or the market-related value of plan assets, the excess is generally recognized over the future service periods of active employees. Benefit accruals under the U.S. pension plans are frozen. Future unrecognized actuarial gains and losses for the U.S. plans that exceed a threshold amount are amortized over the average future life expectancy of plan participants with a maximum of 15 years.

Our expected long-term rate of return on plan assets is based on anticipated returns for each applicable asset class. Anticipated returns are weighted for the expected allocation for each asset class and are based on forecasts for prospective returns in the equity and fixed-income markets, which should track the long-term historical returns for these markets. We also consider the growth outlook for U.S. and global economies, as well as current and prospective interest rates.

The market-related value utilized to determine the expected return on plan assets is based on the fair value of plan assets adjusted for the difference between expected returns and actual performance of plan assets. The difference between actual experience and expected returns on plan assets is included as an adjustment in the market-related value over a five-year period.

See Note 17 for additional disclosures related to pensions.

Severance

BNY Mellon provides separation benefits for U.S.-based employees through The Bank of New York Mellon Corporation Supplemental Unemployment Benefit Plan. These benefits are provided to eligible employees separated from their jobs for business reasons not related to individual performance. Basic separation benefits are generally based on the employee's years of continuous benefited service. Severance for employees based outside of the U.S. is determined in accordance with local agreements and legal requirements. Severance expense is recorded when management commits to an action that will result in separation and the amount of the liability can be reasonably estimated.

Income taxes

We record current tax liabilities or assets through charges or credits to the current tax provision for the estimated taxes payable or refundable for the current year. Deferred tax assets and liabilities are recorded for future tax consequences attributable to differences between the financial statement carrying amounts of assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. A deferred tax valuation allowance is established if it is more likely than not that all or a portion of the deferred tax assets will not be realized. A tax position that fails to meet a more-likely-than-not recognition threshold will result in either reduction of current or deferred tax assets, and/or recording of current or deferred tax liabilities. Interest and penalties related to income taxes are recorded as income tax expense.

Derivative financial instruments

Derivatives are recorded on the balance sheet at fair value and include futures, forwards, interest rate swaps, foreign currency swaps and options and similar products. Derivatives in an unrealized gain position are recognized as assets while derivatives in unrealized loss position are recognized as liabilities. Derivatives are reported net by counterparty and after consideration of cash collateral, to the extent subject to legally enforceable netting agreements. Derivatives designated and effective in qualifying hedging relationships are classified in other assets or other liabilities on the balance sheet. All other derivatives are classified within trading assets or trading liabilities on the balance sheet. Gains and losses on trading derivatives are generally included in foreign exchange and other trading revenue.

We enter into various derivative financial instruments for non-trading purposes primarily as part of our asset/liability management process. These derivatives are designated as either fair value or cash flow hedges of certain assets and liabilities or forecasted transactions when we enter into the derivative contracts. Gains and losses associated with fair value hedges are recorded in income as well as any change in the value of the related hedged item associated with the designated risks being hedged. Gains and losses on cash flow hedges are recorded in OCI, until reclassified into earnings in the same period the hedged item impacts earnings. Foreign currency transaction gains and losses related to a hedged net investment in a foreign operation, net of their tax effect, are recorded with cumulative foreign currency translation adjustments within OCI.

To qualify for hedge accounting each hedge relationship is required to be highly effective at reducing the risk associated with the exposure being hedged, both prospectively and retrospectively. We formally document all relationships between hedging instruments and hedged items, as well as our risk-management objectives and strategy for undertaking various hedging transactions. At inception, the potential cause of ineffectiveness related to each of our hedges is assessed to determine if we can expect the hedge to be highly effective over the life of the transaction. At hedge inception, we document the methodology to be utilized for evaluating effectiveness on an ongoing basis, and we monitor ongoing hedge effectiveness at least quarterly.

For qualifying fair value hedges, changes in the fair value of the derivative, and changes in the value of the hedged item associated with the designated risks being hedged, are recognized in earnings. Certain amounts excluded from the assessment of effectiveness are recorded in OCI and recognized in earnings through an amortization approach over the life of the derivative. We discontinue hedge accounting prospectively when we determine that the hedge is no longer effective or the derivative expires, is sold, or management discontinues the derivative's hedge designation. Subsequent gains and losses on these derivatives are included in foreign exchange and other trading revenue. For discontinued fair value hedges, the accumulated gain or loss on the hedged item is amortized on a yield basis over the remaining life of the hedged item.

For qualifying cash flow hedges, changes in the fair value of the derivative are recorded in OCI, until reclassified into earnings in the same period the hedged item impacts earnings. If the hedge relationship is terminated, then the change in value will be reclassified from OCI to earnings when the cash flows that were previously hedged affect earnings. If cash flow hedge accounting is discontinued as a result of a forecasted transaction no longer being probable to occur, then the amount reported in OCI is immediately reclassified to current earnings.

Derivative amounts affecting earnings are recognized in the same income statement line as the hedged item affects earnings, principally interest income, interest expense and other revenue.

Foreign currency transaction gains and losses related to qualifying hedges of net investments in a foreign operation are recorded with cumulative foreign currency translation adjustments within OCI net of their tax effect. The Company evaluates effectiveness of its foreign currency derivatives designated as hedges of its net investments utilizing the forward rate method.

The determination of fair value of derivative financial instruments has been identified as a "critical accounting estimate." See Note 22 for additional disclosures related to derivative financial instruments.

Earnings per common share

Earnings per common share is calculated using the two-class method under which earnings are allocated to common shareholders and holders of participating securities. Unvested stock-based compensation awards that contain non-forfeitable rights to dividends or dividend equivalents are considered participating securities under the two-class method.

Basic earnings per share is calculated by dividing net income allocated to common shareholders of BNY Mellon by the average number of common shares outstanding and vested stock-based compensation awards where recipients have satisfied either the explicit vesting terms or retirement-eligibility requirements.

Diluted earnings per common share is computed under the more dilutive of either the treasury stock method or the two-class method. We increase the average number of shares of common stock outstanding by the assumed number of shares of common stock that would be issued assuming the exercise of stock options and the issuance of shares related to stock-based compensation awards using the treasury stock method, if dilutive. Diluted earnings per share is calculated by dividing net income allocated to common shareholders of BNY Mellon by the adjusted average number of common shares outstanding.

Statement of cash flows

We have defined cash as cash and due from banks. Cash flows from hedging activities are classified in the same category as the items hedged. Distributions received from equity method investees are classified as cash inflows from operating activities on the consolidated statement of cash flows. Excess returns on investments of equity method investments are classified as cash flows from investing activities on the consolidated statement of cash flows.

Stock-based compensation

Compensation expense relating to share-based payments is recognized in the income statement, on a straight-line basis, over the applicable vesting period.

Certain of our stock compensation grants vest when the employee retires. New grants with this feature are expensed by the first date the employee is eligible to retire. We estimate forfeitures when recording compensation cost related to share-based payment awards.

Note 2–Accounting changes and new accounting guidance

The following accounting changes and new accounting guidance were adopted in 2018.

ASU 2017-12, Derivatives and Hedging: Targeted Improvements to Accounting for Hedging Activities

In August 2017, the FASB issued an ASU, *Derivatives and Hedging: Targeted Improvements to Accounting for Hedging Activities*. The objective of this ASU is to improve the financial reporting of hedging relationships to better portray the economic results of an entity's risk management activities and to simplify the application of hedge accounting guidance.

The most significant impact of the new guidance to the Company relates to the new accounting alternatives for fair value hedges of interest rate risk, specifically, the ability to hedge only the benchmark component of the contractual cash flows and partial-term hedging. The guidance also changed presentation and disclosure requirements and made changes to how the shortcut method is applied, which resulted in the Company using that method going forward for certain hedging relationships.

BNY Mellon elected to early adopt this ASU on Jan. 31, 2018, which is the "as of" date for which the Company was permitted to make certain elections and the measurement date for recording the adoption impact for certain hedge modifications. As part of the adoption, we elected to reclassify approximately $1.1 billion of debt securities from held-to-maturity to available-for-sale which resulted in a decrease of $47 million pre-tax to accumulated other comprehensive income. The Company also elected to modify certain hedge relationships as of the adoption date primarily to utilize the benchmark component method of measuring hedge effectiveness, as such method is deemed to more closely match risk management objectives with accounting results. The Company recognized a $27 million after-tax increase in retained earnings as of Jan. 1, 2018 associated with the adoption impact of these hedge modifications.

ASU 2017-07, Compensation - Retirement Benefits: Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost

In March 2017, the FASB issued an ASU, *Compensation - Retirement Benefits: Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*. This ASU requires the disaggregation of the service cost component from the other components of the net benefit cost in the consolidated income statement. This ASU also permits only the service cost component of net benefit cost to be eligible for capitalization. BNY Mellon adopted this ASU in the first quarter of 2018, and applied the guidance retrospectively for the presentation of the service cost component and the other components in the consolidated income statement, and prospectively for the capitalization of the service cost component in assets. The adoption of this standard increased staff expense and decreased other expense by $62 million in 2017 and $75 million in 2016.

ASU 2016-18, Statement of Cash Flows: Restricted Cash

In November 2016, the FASB issued an ASU, *Statement of Cash Flows: Restricted Cash*. This ASU provides guidance on the presentation of restricted cash or restricted cash equivalents in the consolidated statement of cash flows. Restricted cash consists of excess client funds held by our broker-dealer business and totaled $2.4 billion at Dec. 31, 2018 and $1.8 billion at Dec. 31, 2017. Restricted cash is included in interest-bearing deposits with banks on the consolidated balance sheet and with cash and due from banks when reconciling the beginning and end-of-period balances on the consolidated statement of cash flows.

We adopted the guidance in this ASU retrospectively. As a result, the change in interest-bearing deposits with banks, which is included in investing activities on the consolidated statement of cash flows, was restated to reflect the decrease in restricted cash of $1,631 million in 2017 and $898 million in 2016. The increase in restricted cash was $643 million in 2018.

ASU 2016-15, Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments

In August 2016, the FASB issued an ASU, *Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments*. This ASU provides guidance on eight specific cash flow presentation issues. The most significant impact for BNY Mellon relates to distributions received from equity method investees. For equity method investments, BNY Mellon elected to report distributions received from equity method investees using the cumulative earnings approach. Distributions received are considered returns on investment and classified as cash inflows from operating activities on the consolidated statement of cash flows. To the extent the returns on investment exceeded the cumulative equity in earnings recognized, the excess would be considered a return of investment and classified as cash inflows from investing activities on the consolidated statement of cash flows. We adopted the guidance in this ASU retrospectively. As a result, the change in accruals and other, net, which is included in operating activities on the consolidated statement of cash flows, was restated to reflect distributions received of $24 million in 2017 and $17 million in 2016. The distributions were previously included in other, net in investing activities on the consolidated statement of cash flows. Distributions received in 2018 were $24 million. The remaining seven specific cash flow presentation issues do not materially impact BNY Mellon.

ASU 2014-09, Revenue from Contracts with Customers

In May 2014, the FASB issued an ASU, *Revenue from Contracts with Customers*. This ASU, as amended, provides guidance on the recognition of revenue related to the transfer of promised goods or services to customers and guidance on accounting for certain contract costs. The standard provides a single revenue model to be applied by reporting companies under U.S. GAAP and supersedes most existing revenue recognition guidance.

The Company adopted the guidance on Jan. 1, 2018 using the cumulative effect transition method applied to contracts not completed as of Dec. 31, 2017, which resulted in a $55 million after-tax reduction to retained earnings. The comparative financial information for 2017 and 2016 has not been restated and continues to be reported under the accounting standards in effect for that period.

Although the impact of the adoption of this ASU was not material, the most significant changes and quantitative impact of the changes are disclosed below.

Payments to customers

The timing of recognizing the reduction in revenue for certain payments made to depositary receipts customers has changed. Prior to adoption, annual payments to customers were capitalized and amortized as contra revenue over the remaining contract period, subject to impairment reviews.

Under the new guidance, annual payments are recorded as a reduction in revenue in proportion to the expected annual revenue generated from the related customer contract.

Costs to obtain a customer contract

Prior to adoption, costs to obtain a customer contract, primarily sales incentives, were expensed as incurred. Under the new guidance, an asset is recognized for the incremental sales incentives that are considered costs of obtaining a contract with a customer, if those costs are expected to be recovered.

The table below presents the cumulative effect of the adoption of the new guidance on the consolidated balance sheet as of Dec. 31, 2017.

Impact on the consolidated balance sheet *(in millions)*	Dec. 31, 2017	Impact of adoption	Jan. 1, 2018
Assets			
Other assets	$ 23,029	$ (9)	$ 23,020
Liabilities			
Accrued tax and other expenses	$ 6,225	$ (18)	$ 6,207
Other liabilities	6,050	64	6,114
Equity			
Retained earnings	$ 25,635	$ (55)	$ 25,580

The impact of the new guidance on the consolidated income statement for 2018 and the consolidated balance sheet as of Dec. 31, 2018 was de minimis. See Note 9 for additional revenue and contract costs disclosures.

ASU 2016-01, Financial Instruments - Overall: Recognition and Measurement of Financial Assets and Financial Liabilities

In January 2016, the FASB issued an ASU, *Financial Instruments—Overall: Recognition and Measurement of Financial Assets and Financial Liabilities*. This ASU requires investments in equity securities that do not result in consolidation and are not accounted for under the equity method to be measured at fair value with changes in the fair value recognized through net income, unless one of two available exceptions applies. The first exception, a scope exception, allows Federal Reserve Bank stock, FHLB stock and exchange memberships to remain accounted for at cost, less impairment. The second practicability exception is an election available for equity investments that do not have readily determinable fair values. For certain investments where the Company has chosen the practicability exception, such investments are accounted for at cost adjusted for impairment, if any, plus or minus observable price changes.

The Company adopted this guidance in the first quarter of 2018 using the cumulative effect method of adoption, with a de minimis impact to retained earnings. As part of the adoption, we reclassified money market fund investments of approximately $1 billion to trading assets, primarily from available-for-sale securities.

We have non-readily marketable equity securities where we are utilizing the practicability exception of $55 million at Dec. 31, 2018. We recognized $27 million of net upward adjustments on these securities in 2018, driven by activity that resulted in observable price changes.

ASU 2018-13, Fair Value Measurement: Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement

In August 2018, the FASB issued an ASU, *Fair Value Measurement: Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement*. This ASU requires disclosure of the changes in unrealized gains or losses included in OCI for Level 3 assets or liabilities held at the end of the period and the range and weighted-average of the significant unobservable inputs used in determining the fair value of Level 3 assets and liabilities. This ASU removes the requirement to disclose the transfers between Level 1 and Level 2 of the fair value hierarchy and the valuation process for determining Level 3 fair value measurements. BNY Mellon adopted this ASU in the third quarter of 2018 and applied the guidance prospectively for the new disclosure requirements and retrospectively for disclosure requirements that have been removed.

ASU 2018-14, Compensation - Retirement Benefits - Defined Benefit Plans - General: Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans

In August 2018, the FASB issued an ASU, *Compensation - Retirement Benefits - Defined Benefit Plans - General: Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans*. This ASU added the requirement to disclose the weighted-average interest crediting rates for cash balance plans and an explanation of the reasons for significant gains and losses related to changes in the benefit obligation for the period. This ASU clarified the requirement to disclose the projected benefit obligation ("PBO") and fair value of plan assets for plans with PBOs in excess of plan assets, and the accumulated benefit obligation ("ABO") and fair value of plan assets for plans with ABOs in excess of plan assets. Additionally, this ASU removed the requirement to disclose the amounts in accumulated OCI expected to be recognized as components of net periodic benefit cost over the next year and the sensitivity analysis of changes in the assumed health care cost trend rate. BNY Mellon early adopted this ASU in the fourth quarter of 2018 and applied the guidance retrospectively.

Note 3–Acquisitions and dispositions

We sometimes structure our acquisitions with both an initial payment and later contingent payments tied to post-closing revenue or income growth. There were no contingent payments in 2018.

At Dec. 31, 2018, we are potentially obligated to pay additional consideration which, using reasonable assumptions, could range from $4 million to $21 million over the next three years, but could be higher as certain of the arrangements do not contain a contractual maximum.

The transactions described below did not have a material impact on BNY Mellon's results of operations.

Transactions in 2018

On Jan. 2, 2018, BNY Mellon completed the sale of CenterSquare, one of our Investment Management boutiques, and recorded a gain on this transaction. CenterSquare had approximately $10 billion in AUM in U.S. and global real estate and infrastructure investments. In addition, goodwill of $52 million was removed from the consolidated balance sheet as a result of this sale.

On June 29, 2018, BNY Mellon completed the exchange of its majority equity interest in Amherst Capital Management LLC for a minority equity stake in Amherst Holdings LLC. Goodwill of $13 million was removed from the consolidated balance sheet and a gain was recorded as a result of this sale.

Transactions in 2016

On April 1, 2016, BNY Mellon acquired the assets of Atherton Lane Advisers, LLC, a U.S.-based investment manager with approximately $2.45 billion in AUM and servicer for approximately 700 high-net-worth clients, for cash of $38 million, plus contingent payments measured at $22 million. Goodwill related to this acquisition totaled $29 million and is included in the Investment Management business. The customer relationship intangible asset related to this acquisition is included in the Investment Management business, with an estimated life of 14 years, and totaled $30 million at acquisition.

Note 4–Securities

The following tables present the amortized cost, the gross unrealized gains and losses and the fair value of securities at Dec. 31, 2018, Dec. 31, 2017 and Dec. 31, 2016, respectively.

Securities at Dec. 31, 2018 (in millions)	Amortized cost	Gross unrealized Gains	Gross unrealized Losses	Fair value
Available-for-sale:				
Agency RMBS	**$ 25,594**	**$ 83**	**$ 369**	**$ 25,308**
U.S. Treasury	**20,190**	**96**	**210**	**20,076**
Sovereign debt/sovereign guaranteed	**10,663**	**108**	**21**	**10,750**
Agency commercial MBS	**9,836**	**16**	**161**	**9,691**
CLOs	**3,410**	**—**	**46**	**3,364**
Supranational	**2,985**	**7**	**8**	**2,984**
Foreign covered bonds	**2,890**	**7**	**19**	**2,878**
State and political subdivisions	**2,251**	**18**	**22**	**2,247**
Other ABS	**1,776**	**1**	**4**	**1,773**
U.S. government agencies	**1,676**	**5**	**24**	**1,657**
Non-agency commercial MBS	**1,491**	**1**	**28**	**1,464**
Non-agency RMBS *(a)*	**1,095**	**241**	**11**	**1,325**
Corporate bonds	**1,074**	**6**	**26**	**1,054**
Other debt securities	**1,236**	**6**	**4**	**1,238**
Total securities available-for-sale *(b)*	**$ 86,167**	**$ 595**	**$ 953**	**$ 85,809**
Held-to-maturity:				
Agency RMBS	**$ 25,507**	**$ 32**	**$ 632**	**$ 24,907**
U.S. Treasury	**4,727**	**3**	**77**	**4,653**
U.S. government agencies	**1,497**	**—**	**10**	**1,487**
Agency commercial MBS	**1,195**	**—**	**26**	**1,169**
Sovereign debt/sovereign guaranteed	**833**	**26**	**—**	**859**
Non-agency RMBS	**100**	**4**	**2**	**102**
Foreign covered bonds	**80**	**1**	**—**	**81**
Supranational	**26**	**1**	**—**	**27**
State and political subdivisions	**17**	**—**	**—**	**17**
Total securities held-to-maturity	**$ 33,982**	**$ 67**	**$ 747**	**$ 33,302**
Total securities	**$ 120,149**	**$ 662**	**$1,700**	**$ 119,111**

(a) Includes $832 million that was included in the former Grantor Trust.

(b) Includes gross unrealized gains of $39 million and gross unrealized losses of $87 million recorded in accumulated other comprehensive income related to securities that were transferred from available-for-sale to held-to-maturity. The unrealized gains and losses are primarily related to Agency RMBS and will be amortized into net interest revenue over the contractual lives of the securities.

Securities at Dec. 31, 2017 (in millions)	Amortized cost	Gross unrealized Gains	Gross unrealized Losses	Fair value
Available-for-sale:				
Agency RMBS	$ 24,002	$ 108	$ 291	$ 23,819
U.S. Treasury	15,159	264	160	15,263
Sovereign debt/sovereign guaranteed	12,405	175	23	12,557
Agency commercial MBS	8,793	36	67	8,762
State and political subdivisions	2,949	31	23	2,957
CLOs	2,898	12	1	2,909
Foreign covered bonds	2,520	18	9	2,529
Supranational	2,085	5	11	2,079
Non-agency RMBS *(a)*	1,265	317	4	1,578
Non-agency commercial MBS	1,360	6	6	1,360
Corporate bonds	1,249	17	11	1,255
Other ABS	1,040	3	—	1,043
U.S. government agencies	917	1	10	908
Other RMBS	152	3	6	149
Other debt securities	1,409	4	1	1,412
Money market funds	963	—	—	963
Total securities available-for-sale *(b)*	$ 79,166	$1,000	$ 623	$ 79,543
Held-to-maturity:				
Agency RMBS	$ 26,208	$ 51	$ 332	$ 25,927
U.S. Treasury	9,792	6	56	9,742
U.S. government agencies	1,653	—	12	1,641
Sovereign debt/sovereign guaranteed	1,593	30	—	1,623
Agency commercial MBS	1,324	2	9	1,317
Foreign covered bonds	84	2	—	86
Other RMBS	65	—	1	64
Non-agency RMBS	57	5	—	62
Supranational	28	—	—	28
State and political subdivisions	17	—	1	16
Non-agency commercial MBS	6	—	—	6
Total securities held-to-maturity	$ 40,827	$ 96	$ 411	$ 40,512
Total securities	$ 119,993	$1,096	$1,034	$ 120,055

(a) Includes $1,091 million that was included in the former Grantor Trust.

(b) Includes gross unrealized gains of $50 million and gross unrealized losses of $144 million recorded in accumulated other comprehensive income related to securities that were transferred from available-for-sale to held-to-maturity. The unrealized gains and losses are primarily related to Agency RMBS and will be amortized into net interest revenue over the contractual lives of the securities.

Securities at Dec. 31, 2016 *(in millions)*	Amortized cost	Gross unrealized Gains	Gross unrealized Losses	Fair value
Available-for-sale:				
Agency RMBS	$ 22,929	$ 148	$ 341	$ 22,736
U.S. Treasury	14,373	115	181	14,307
Sovereign debt/sovereign guaranteed	12,248	261	20	12,489
Agency commercial MBS	6,505	28	84	6,449
State and political subdivisions	3,392	38	52	3,378
CLOs	2,593	6	1	2,598
Foreign covered bonds	2,126	24	9	2,141
Non-agency RMBS *(a)*	1,700	317	22	1,995
Other ABS	1,729	4	6	1,727
Corporate bonds	1,391	22	17	1,396
Non-agency commercial MBS	931	8	11	928
Other RMBS	517	4	8	513
U.S. government agencies	366	2	9	359
Other debt securities	1,952	19	10	1,961
Equity securities	2	1	—	3
Money market funds	842	—	—	842
Total securities available-for-sale *(b)*	$ 73,596	$ 997	$ 771	$ 73,822
Held-to-maturity:				
Agency RMBS	$ 25,221	$ 57	$ 299	$ 24,979
U.S. Treasury	11,117	22	41	11,098
Sovereign debt/sovereign guaranteed	1,911	42	—	1,953
U.S. government agencies	1,589	—	6	1,583
Agency commercial MBS	721	1	10	712
Other RMBS	142	—	4	138
Non-agency RMBS	78	4	2	80
Foreign covered bonds	74	1	—	75
State and political subdivisions	19	—	1	18
Non-agency commercial MBS	7	—	—	7
Other debt securities	26	—	—	26
Total securities held-to-maturity	$ 40,905	$ 127	$ 363	$ 40,669
Total securities	$ 114,501	$1,124	$1,134	$ 114,491

(a) Includes $1,357 million that was included in the former Grantor Trust.

(b) Includes gross unrealized gains of $62 million and gross unrealized losses of $190 million recorded in accumulated other comprehensive income related to investment securities that were transferred from available-for-sale to held-to-maturity. The unrealized gains and losses are primarily related to Agency RMBS and will be amortized into net interest revenue over the contractual lives of the securities.

The following table presents the realized gains, losses and impairments, on a gross basis.

Net securities (losses) gains *(in millions)*	**2018**	2017	2016
Realized gross gains	**$ 8**	$ 47	$ 86
Realized gross losses	**(55)**	(40)	(4)
Recognized gross impairments	**(1)**	(4)	(7)
Total net securities (losses) gains	**$ (48)**	$ 3	$ 75

In 2018, we adopted the new accounting guidance included in ASU 2016-01, *Financial Instruments—Overall: Recognition and Measurement of Financial Assets and Financial Liabilities*. As a result, money market fund investments were reclassified to trading assets, primarily from available-for-sale securities.

In 2018, certain debt securities with an aggregate amortized cost of $1,117 million and fair value of $1,070 million were transferred from held-to-maturity securities to available-for-sale securities as part of the adoption of ASU 2017-12, *Derivatives and Hedging: Targeted Improvements to Accounting for Hedging Activities*.

In 2017, other RMBS with an aggregate amortized cost of $74 million and fair value of $76 million were transferred from held-to-maturity securities to available-for-sale securities. Due to ratings downgrades, the Company no longer intends to hold these securities to maturity.

Temporarily impaired securities

At Dec. 31, 2018, the unrealized losses on the securities portfolio were primarily attributable to an increase in interest rates from date of purchase, and for certain securities that were transferred from available-for-sale to held-to-maturity, an increase in interest rates through the date they were transferred. Specifically, $87 million of the unrealized losses at Dec. 31, 2018 and $144 million at Dec. 31, 2017 reflected in the available-for-sale sections of the tables below relate to certain securities (primarily Agency RMBS) that were transferred in prior periods from available-for-sale to held-to-maturity. The unrealized losses will be amortized into net interest revenue over the contractual lives of the securities. The transfer created a new cost basis for the securities. As a result, if these securities have experienced unrealized losses since the date of transfer, the corresponding fair value and unrealized losses would be reflected in the held-to-maturity sections of the following tables. We do not intend to sell these securities, and it is not more likely than not that we will have to sell these securities.

The following tables show the aggregate fair value of securities with a continuous unrealized loss position for less than 12 months and those that have been in a continuous unrealized loss position for 12 months or more.

Temporarily impaired securities at Dec. 31, 2018	Less than 12 months		12 months or more		Total	
(in millions)	Fair value	Unrealized losses	Fair value	Unrealized losses	Fair value	Unrealized losses
Available-for-sale:						
Agency RMBS	**$ 6,678**	**$ 30**	**$ 9,250**	**$ 339**	**$ 15,928**	**$ 369**
U.S. Treasury	**6,126**	**23**	**6,880**	**187**	**13,006**	**210**
Sovereign debt/sovereign guaranteed	**2,185**	**8**	**988**	**13**	**3,173**	**21**
Agency commercial MBS	**4,505**	**50**	**3,082**	**111**	**7,587**	**161**
CLOs	**3,280**	**46**	**2**	**—**	**3,282**	**46**
Supranational	**974**	**2**	**481**	**6**	**1,455**	**8**
Foreign covered bonds	**1,058**	**7**	**736**	**12**	**1,794**	**19**
State and political subdivisions	**316**	**1**	**668**	**21**	**984**	**22**
Other ABS	**1,289**	**4**	**23**	**—**	**1,312**	**4**
U.S. government agencies	**513**	**4**	**673**	**20**	**1,186**	**24**
Non-agency commercial MBS	**1,015**	**14**	**362**	**14**	**1,377**	**28**
Non-agency RMBS *(a)*	**94**	**1**	**157**	**10**	**251**	**11**
Corporate bonds	**685**	**24**	**50**	**2**	**735**	**26**
Other debt securities	**397**	**1**	**256**	**3**	**653**	**4**
Total securities available-for-sale *(b)*	**$ 29,115**	**$ 215**	**$ 23,608**	**$ 738**	**$ 52,723**	**$ 953**
Held-to-maturity:						
Agency RMBS	**$ 4,602**	**$ 56**	**$ 17,107**	**$ 576**	**$ 21,709**	**$ 632**
U.S. Treasury	**157**	**2**	**4,343**	**75**	**4,500**	**77**
U.S. government agencies	**—**	**—**	**1,111**	**10**	**1,111**	**10**
Agency commercial MBS	**477**	**7**	**654**	**19**	**1,131**	**26**
Non-agency RMBS	**22**	**1**	**31**	**1**	**53**	**2**
Total securities held-to-maturity	**$ 5,258**	**$ 66**	**$ 23,246**	**$ 681**	**$ 28,504**	**$ 747**
Total temporarily impaired securities	**$ 34,373**	**$ 281**	**$ 46,854**	**$ 1,419**	**$ 81,227**	**$ 1,700**

(a) *Includes $22 million with an unrealized loss of less than $1 million for less than 12 months and $3 million with an unrealized loss of less than $1 million for 12 months or more that were included in the former Grantor Trust.*

(b) *Includes gross unrealized losses of $87 million for 12 months or more recorded in accumulated other comprehensive income related to securities that were transferred from available-for-sale to held-to-maturity. The unrealized losses are primarily related to Agency RMBS and will be amortized into net interest revenue over the contractual lives of the securities. There were no gross unrealized losses for less than 12 months.*

Temporarily impaired securities at Dec. 31, 2017	Less than 12 months		12 months or more		Total	
(in millions)	Fair value	Unrealized losses	Fair value	Unrealized losses	Fair value	Unrealized losses
Available-for-sale:						
Agency RMBS	$ 8,567	$ 66	$ 5,834	$ 225	$ 14,401	$ 291
U.S. Treasury	7,429	131	2,175	29	9,604	160
Sovereign debt/sovereign guaranteed	1,880	12	559	11	2,439	23
Agency commercial MBS	3,077	28	1,332	39	4,409	67
State and political subdivisions	732	3	518	20	1,250	23
CLOs	260	1	—	—	260	1
Foreign covered bonds	953	7	116	2	1,069	9
Supranational	700	6	333	5	1,033	11
Non-agency RMBS *(a)*	20	—	149	4	169	4
Non-agency commercial MBS	476	3	122	3	598	6
Corporate bonds	274	2	288	9	562	11
U.S. government agencies	588	6	160	4	748	10
Other RMBS	71	4	45	2	116	6
Other debt securities	1,155	1	35	—	1,190	1
Total securities available-for-sale *(b)*	$ 26,182	$ 270	$ 11,666	$ 353	$ 37,848	$ 623
Held-to-maturity:						
Agency RMBS	$ 9,458	$ 81	$ 12,305	$ 251	$ 21,763	$ 332
U.S. Treasury	6,389	41	2,909	15	9,298	56
U.S. government agencies	791	4	850	8	1,641	12
Agency commercial MBS	737	7	60	2	797	9
Other RMBS	—	—	50	1	50	1
State and political subdivisions	—	—	4	1	4	1
Total securities held-to-maturity	$ 17,375	$ 133	$ 16,178	$ 278	$ 33,553	$ 411
Total temporarily impaired securities	$ 43,557	$ 403	$ 27,844	$ 631	$ 71,401	$ 1,034

(a) Includes $7 million with an unrealized loss of less than $1 million for less than 12 months and $12 million with an unrealized loss of $1 million for 12 months or more that were included in the former Grantor Trust.

(b) Includes gross unrealized losses of $144 million for 12 months or more recorded in accumulated other comprehensive income related to securities that were transferred from available-for-sale to held-to-maturity. The unrealized losses are primarily related to Agency RMBS and will be amortized into net interest revenue over the contractual lives of the securities. There were no gross unrealized losses for less than 12 months.

The following table shows the maturity distribution by carrying amount and yield (on a tax equivalent basis) of our securities portfolio.

Maturity distribution and yields on securities at Dec. 31, 2018	U.S. Treasury		U.S. government agencies		State and political subdivisions		Other bonds, notes and debentures		Mortgage/ asset-backed		
(dollars in millions)	Amount	Yield *(a)*	Amount	Yield *(a)*	Amount	Yield *(a)*	Amount	Yield *(a)*	Amount	Yield *(a)*	Total
Securities available-for-sale:											
One year or less	$ 7,682	2.14%	$ 245	1.88%	$ 402	2.54%	$ 6,032	1.50%	$ —	—%	**$ 14,361**
Over 1 through 5 years	6,753	2.07	317	2.54	1,121	2.97	10,761	1.29	—	—	**18,952**
Over 5 through 10 years	2,460	2.25	1,095	2.78	531	2.23	1,930	0.88	—	—	**6,016**
Over 10 years	3,181	3.12	—	—	193	3.06	181	1.68	—	—	**3,555**
Mortgage-backed securities	—	—	—	—	—	—	—	—	37,788	3.23	**37,788**
Asset-backed securities	—	—	—	—	—	—	—	—	5,137	3.35	**5,137**
Total	$ 20,076	2.28%	$ 1,657	2.60%	$ 2,247	2.73%	$ 18,904	1.32%	$ 42,925	3.25%	**$ 85,809**
Securities held-to-maturity:											
One year or less	$ 936	1.41%	$ 597	1.26%	$ —	—%	$ 57	0.38%	$ —	—%	**$ 1,590**
Over 1 through 5 years	3,480	1.83	900	2.52	3	5.66	373	0.47	—	—	**4,756**
Over 5 through 10 years	311	2.18	—	—	—	—	509	0.85	—	—	**820**
Over 10 years	—	—	—	—	14	4.76	—	—	—	—	**14**
Mortgage-backed securities	—	—	—	—	—	—	—	—	26,802	2.92	**26,802**
Total	$ 4,727	1.77%	$ 1,497	2.01%	$ 17	4.95%	$ 939	0.67%	$ 26,802	2.92%	**$ 33,982**

(a) Yields are based upon the amortized cost of securities.

Other-than-temporary impairment

For each security in the securities portfolio, a quarterly review is conducted to determine if an OTTI has occurred. See Note 1 for a discussion of the determination of OTTI.

The following table reflects securities credit losses recorded in earnings. The beginning balance represents the credit loss component for which OTTI occurred on debt securities in the prior year. The additions represent the first time a debt security was credit impaired or when subsequent credit impairments have occurred. The deductions represent credit losses on securities that have been sold, are required to be sold, or for which it is our intention to sell.

Debt securities credit loss roll forward *(in millions)*	**2018**	2017
Beginning balance as of Dec. 31	**$ 84**	$ 88
Add: Subsequent OTTI credit losses	**1**	4
Less: Realized losses for securities sold	**7**	8
Ending balance as of Dec. 31	**$ 78**	$ 84

The following table presents pre-tax net securities (losses) gains by type.

Net securities (losses) gains *(in millions)*	**2018**	2017	2016
Agency RMBS	**$ (42)**	$ (12)	$ 22
U.S. Treasury	**(4)**	(16)	4
Foreign covered bonds	**(1)**	—	10
Non-agency RMBS	**—**	4	8
Other	**(1)**	27	31
Total net securities (losses) gains	**$ (48)**	$ 3	$ 75

Pledged assets

At Dec. 31, 2018, BNY Mellon had pledged assets of $120 billion, including $96 billion pledged as collateral for potential borrowings at the Federal Reserve Discount Window and $7 billion pledged as collateral for borrowing at the FHLB. The components of the assets pledged at Dec. 31, 2018 included $100 billion of securities, $15 billion of loans, $4 billion of trading assets and $1 billion of interest-bearing deposits with banks.

If there has been no borrowing at the Federal Reserve Discount Window, the Federal Reserve generally allows banks to freely move assets in and out of their pledged assets account to sell or repledge the assets for other purposes. BNY Mellon regularly moves assets in and out of its pledged assets account at the Federal Reserve.

At Dec. 31, 2017, BNY Mellon had pledged assets of $111 billion, including $92 billion pledged as collateral for potential borrowing at the Federal Reserve Discount Window and $5 billion pledged as collateral for borrowing at the FHLB. The components of the assets pledged at Dec. 31, 2017 included $96 billion of securities, $13 billion of loans and $2 billion of trading assets.

At Dec. 31, 2018 and Dec. 31, 2017, pledged assets included $13 billion and $10 billion, respectively, for which the recipients were permitted to sell or repledge the assets delivered.

We also obtain securities as collateral, including receipts under resale agreements, securities borrowed, derivative contracts and custody agreements on terms which permit us to sell or repledge the securities to others. At Dec. 31, 2018 and Dec. 31, 2017, the market value of the securities received that can be sold or repledged was $151 billion and $86 billion, respectively. We routinely sell or repledge these securities through delivery to third parties. As of Dec. 31, 2018 and Dec. 31, 2017, the market value of securities collateral sold or repledged was $101 billion and $49 billion, respectively.

Restricted cash and securities

Cash and securities may be segregated under federal and other regulations or requirements. At Dec. 31, 2018 and Dec. 31, 2017, cash segregated under federal and other regulations or requirements was $2 billion and $2 billion, respectively. Restricted cash is included in interest-bearing deposits with banks on the consolidated balance sheet. Securities segregated for these purposes were $2 billion at Dec. 31, 2018 and $1 billion at Dec. 31, 2017. Restricted securities were sourced from securities purchased under resale agreements at Dec. 31, 2018 and Dec. 31, 2017 and are included in federal funds sold and securities purchased under resale agreements on the consolidated balance sheet.

Note 5–Loans and asset quality

Loans

The table below provides the details of our loan portfolio and industry concentrations of credit risk at Dec. 31, 2018 and Dec. 31, 2017.

Loans *(in millions)*	Dec. 31, **2018**	2017
Domestic:		
Commercial	**$ 1,949**	$ 2,744
Commercial real estate	**4,787**	4,900
Financial institutions	**5,091**	5,568
Lease financings	**706**	772
Wealth management loans and mortgages	**15,843**	16,420
Other residential mortgages	**594**	708
Overdrafts	**1,550**	963
Other	**1,181**	1,131
Margin loans	**13,343**	15,689
Total domestic	**45,044**	48,895
Foreign:		
Commercial	**183**	167
Financial institutions	**6,492**	7,483
Lease financings	**551**	527
Wealth management loans and mortgages	**122**	108
Other (primarily overdrafts)	**4,031**	4,264
Margin loans	**141**	96
Total foreign	**11,520**	12,645
Total loans *(a)*	**$ 56,564**	$ 61,540

(a) Net of unearned income of $358 million at Dec. 31, 2018 and $394 million at Dec. 31, 2017 primarily related to domestic and foreign lease financings.

Our loan portfolio consists of three portfolio segments: commercial, lease financings and mortgages. We manage our portfolio at the class level, which consists of six classes of financing receivables: commercial, commercial real estate, financial institutions, lease financings, wealth management loans and mortgages, and other residential mortgages.

The following tables are presented for each class of financing receivable and provide additional information about our credit risks and the adequacy of our allowance for credit losses.

Allowance for credit losses

Activity in the allowance for credit losses is summarized as follows.

Allowance for credit losses activity for the year ended Dec. 31, 2018 *(in millions)*	Commercial	Commercial real estate	Financial institutions	Lease financings	Wealth management loans and mortgages	Other residential mortgages	All other	Foreign	Total
Beginning balance	$ 77	$ 76	$ 23	$ 8	$ 22	$ 20	$ —	$ 35	$ 261
Charge-offs	—	—	—	—	—	(1)	—	—	(1)
Recoveries	—	—	—	—	—	2	—	1	3
Net recoveries	—	—	—	—	—	1	—	1	2
Provision	4	(1)	(1)	(3)	(1)	(5)	—	(4)	(11)
Ending balance	**$ 81**	**$ 75**	**$ 22**	**$ 5**	**$ 21**	**$ 16**	**$ —**	**$ 32**	**$ 252**
Allowance for:									
Loan losses	$ 24	$ 56	$ 7	$ 5	$ 18	$ 16	$ —	$ 20	$ 146
Lending-related commitments	57	19	15	—	3	—	—	12	106
Individually evaluated for impairment:									
Loan balance	$ —	$ —	$ —	$ —	$ 4	$ —	$ —	$ —	$ 4
Allowance for loan losses	—	—	—	—	—	—	—	—	—
Collectively evaluated for impairment:									
Loan balance	$ 1,949	$ 4,787	$ 5,091	$ 706	$ 15,839	$ 594	$ 16,074 *(a)*	$ 11,520	$ 56,560
Allowance for loan losses	24	56	7	5	18	16	—	20	146

(a) Includes $1,550 million of domestic overdrafts, $13,343 million of margin loans and $1,181 million of other loans at Dec. 31, 2018.

Allowance for credit losses activity for the year ended Dec. 31, 2017 *(in millions)*	Commercial	Commercial real estate	Financial institutions	Lease financings	Wealth management loans and mortgages	Other residential mortgages	All other	Foreign	Total
Beginning balance	$ 82	$ 73	$ 26	$ 13	$ 23	$ 28	$ —	$ 36	$ 281
Charge-offs	—	—	—	—	—	(1)	—	—	(1)
Recoveries	—	—	—	—	—	5	—	—	5
Net recoveries	—	—	—	—	—	4	—	—	4
Provision	(5)	3	(3)	(5)	(1)	(12)	—	(1)	(24)
Ending balance	$ 77	$ 76	$ 23	$ 8	$ 22	$ 20	$ —	$ 35	$ 261
Allowance for:									
Loan losses	$ 24	$ 58	$ 7	$ 8	$ 18	$ 20	$ —	$ 24	$ 159
Lending-related commitments	53	18	16	—	4	—	—	11	102
Individually evaluated for impairment:									
Loan balance	$ —	$ —	$ 1	$ —	$ 5	$ —	$ —	$ —	$ 6
Allowance for loan losses	—	—	—	—	1	—	—	—	1
Collectively evaluated for impairment:									
Loan balance	$ 2,744	$ 4,900	$ 5,567	$ 772	$ 16,415	$ 708	$ 17,783 *(a)*	$ 12,645	$ 61,534
Allowance for loan losses	24	58	7	8	17	20	—	24	158

(a) Includes $963 million of domestic overdrafts, $15,689 million of margin loans and $1,131 million of other loans at Dec. 31, 2017.

Allowance for credit losses activity for the year ended Dec. 31, 2016 (in millions)	Commercial	Commercial real estate	Financial institutions	Lease financings	Wealth management loans and mortgages	Other residential mortgages	All other		Foreign	Total
Beginning balance	$ 82	$ 59	$ 31	$ 15	$ 19	$ 34	$ —		$ 35	$ 275
Charge-offs	—	—	—	—	—	(2)	—		—	(2)
Recoveries	—	—	13	—	—	5	—		1	19
Net recoveries	—	—	13	—	—	3	—		1	17
Provision	—	14	(18)	(2)	4	(9)	—		—	(11)
Ending balance	$ 82	$ 73	$ 26	$ 13	$ 23	$ 28	$ —		$ 36	$ 281
Allowance for:										
Loans losses	$ 25	$ 52	$ 8	$ 13	$ 19	$ 28	$ —		$ 24	$ 169
Unfunded commitments	57	21	18	—	4	—	—		12	112
Individually evaluated for impairment:										
Loan balance	$ —	$ —	$ —	$ 4	$ 5	$ —	$ —		$ —	$ 9
Allowance for loan losses	—	—	—	2	3	—	—		—	5
Collectively evaluated for impairment:										
Loan balance	$ 2,286	$ 4,639	$ 6,342	$ 985	$ 15,550	$ 854	$ 19,760	(a)	$ 14,033	$ 64,449
Allowance for loan losses	25	52	8	11	16	28	—		24	164

(a) Includes $1,055 million of domestic overdrafts, $17,503 million of margin loans and $1,202 million of other loans at Dec. 31, 2016.

Nonperforming assets

The table below presents our nonperforming assets.

Nonperforming assets (in millions)	Dec. 31, 2018	2017
Nonperforming loans:		
Other residential mortgages	**$ 67**	$ 78
Wealth management loans and mortgages	**9**	7
Commercial real estate	**—**	1
Total nonperforming loans	**76**	86
Other assets owned	**3**	4
Total nonperforming assets	**$ 79**	$ 90

At Dec. 31, 2018, undrawn commitments to borrowers whose loans were classified as nonaccrual or reduced rate were not material.

Lost interest

The table below presents the amount of lost interest income.

Lost interest (in millions)	2018	2017	2016
Amount by which interest income recognized on nonperforming loans exceeded reversals			
Total	**$ —**	$ —	$ —
Foreign	**—**	—	—
Amount by which interest income would have increased if nonperforming loans at year-end had been performing for the entire year			
Total	**$ 5**	$ 5	$ 6
Foreign	**—**	—	—

Impaired loans

The tables below present information about our impaired loans. We use the discounted cash flow method as the primary method for valuing impaired loans.

Impaired loans	**2018**		2017		2016	
(in millions)	Average recorded investment	Interest income recognized	Average recorded investment	Interest income recognized	Average recorded investment	Interest income recognized
Impaired loans with an allowance:						
Commercial real estate	**$ —**	**$ —**	$ —	$ —	$ 1	$ —
Financial institutions	**—**	**—**	1	—	—	—
Wealth management loans and mortgages	**1**	**—**	2	—	5	—
Lease financings	**—**	**—**	1	—	3	—
Total impaired loans with an allowance	**1**	**—**	4	—	9	—
Impaired loans without an allowance:						
Commercial real estate	**—**	**—**	—	—	1	—
Financial institutions	**—**	**—**	—	—	102	—
Wealth management loans and mortgages	**4**	**—**	3	—	2	—
Total impaired loans without an allowance *(a)*	**4**	**—**	3	—	105	—
Total impaired loans	**$ 5**	**$ —**	$ 7	$ —	$ 114	$ —

(a) When the discounted cash flows, collateral value or market price equals or exceeds the carrying value of the loan, then the loan does not require an allowance under the accounting standard related to impaired loans.

Impaired loans	**Dec. 31, 2018**			Dec. 31, 2017		
(in millions)	Recorded investment	Unpaid principal balance	Related allowance *(a)*	Recorded investment	Unpaid principal balance	Related allowance *(a)*
Impaired loans with an allowance:						
Commercial real estate	**$ —**	**$ —**	**$ —**	$ —	$ 3	$ —
Financial institutions	**—**	**—**	**—**	1	1	—
Wealth management loans and mortgages	**—**	**—**	**—**	1	1	1
Total impaired loans with an allowance	**—**	**—**	**—**	2	5	1
Impaired loans without an allowance:						
Wealth management loans and mortgages	**4**	**4**	**N/A**	4	4	N/A
Total impaired loans without an allowance *(b)*	**4**	**4**	**N/A**	4	4	N/A
Total impaired loans *(c)*	**$ 4**	**$ 4**	**$ —**	$ 6	$ 9	$ 1

(a) The allowance for impaired loans is included in the allowance for loan losses.
(b) When the discounted cash flows, collateral value or market price equals or exceeds the carrying value of the loan, then the loan does not require an allowance under the accounting standard related to impaired loans.
(c) Excludes an aggregate of less than $1 million of impaired loans in amounts individually less than $1 million at both Dec. 31, 2018 and Dec. 31, 2017, respectively. The allowance for loan losses associated with these loans totaled less than $1 million at both Dec. 31, 2018 and Dec. 31, 2017, respectively.

Past due loans

The table below presents our past due loans.

Past due loans and still accruing interest	**Dec. 31, 2018**				Dec. 31, 2017			
	Days past due			Total	Days past due			Total
(in millions)	30-59	60-89	≥90	past due	30-59	60-89	≥90	past due
Wealth management loans and mortgages	**$ 22**	**$ 1**	**$ 5**	**$ 28**	$ 39	$ 5	$ —	$ 44
Other residential mortgages	**12**	**6**	**7**	**25**	18	5	5	28
Commercial real estate	**1**	**—**	**—**	**1**	44	—	—	44
Financial institutions	**3**	**3**	**—**	**6**	1	—	—	1
Total past due loans	**$ 38**	**$ 10**	**$ 12**	**$ 60**	$ 102	$ 10	$ 5	$ 117

Troubled debt restructurings

A modified loan is considered a TDR if the debtor is experiencing financial difficulties and the creditor grants a concession to the debtor that would not otherwise be considered. A TDR may include a transfer of real estate or other assets from the debtor to the creditor, or a modification of the term of the loan. Not all modified loans are considered TDRs.

The following table presents our TDRs.

TDRs	**2018**			2017		
	Number of contracts	Outstanding recorded investment		Number of contracts	Outstanding recorded investment	
(dollars in millions)		Pre-modification	Post-modification		Pre-modification	Post-modification
Other residential mortgages	**17**	**$ 4**	**$ 4**	50	$ 13	$ 14
Wealth management loans and mortgages	**—**	**—**	**—**	2	6	6
Total TDRs	**17**	**$ 4**	**$ 4**	52	$ 19	$ 20

The modifications of the other residential mortgage loans in 2018 and 2017 consisted of reducing the stated interest rates and, in certain cases, a forbearance of default and extending the maturity dates. The modified loans are primarily collateral dependent for which the value is based on the fair value of the collateral.

TDRs that subsequently defaulted

There were six residential mortgage loans and one wealth management loan, with an aggregate recorded investment of $1 million, which were restructured in a TDR during the previous 12 months and subsequently defaulted in 2018.

Credit quality indicators

Our credit strategy is to focus on investment-grade clients that are active users of our non-credit services. Each customer is assigned an internal credit rating, which is mapped to an external rating agency grade equivalent, if possible, based upon a number of dimensions, which are continually evaluated and may change over time.

The following tables present information about credit quality indicators.

Commercial loan portfolio

Commercial loan portfolio – Credit risk profile by creditworthiness category	Commercial		Commercial real estate		Financial institutions	
	Dec. 31,		Dec. 31,		Dec. 31,	
(in millions)	**2018**	2017	**2018**	2017	**2018**	2017
Investment grade	**$ 2,036**	$ 2,685	**$ 4,184**	$ 4,277	**$ 9,586**	$ 10,021
Non-investment grade	**96**	226	**603**	623	**1,997**	3,030
Total	**$ 2,132**	$ 2,911	**$ 4,787**	$ 4,900	**$ 11,583**	$ 13,051

The commercial loan portfolio is divided into investment grade and non-investment grade categories based on the assigned internal credit ratings, which are generally consistent with those of the public rating agencies.

Customers with ratings consistent with BBB- (S&P)/ Baa3 (Moody's) or better are considered to be investment grade. Those clients with ratings lower than this threshold are considered to be non-investment grade.

Wealth management loans and mortgages

Wealth management loans and mortgages – Credit risk profile by internally assigned grade

	Dec. 31,	
(in millions)	**2018**	2017
Wealth management loans:		
Investment grade	**$ 6,901**	$ 7,042
Non-investment grade	**106**	185
Wealth management mortgages	**8,958**	9,301
Total	**$ 15,965**	$ 16,528

Wealth management non-mortgage loans are not typically rated by external rating agencies. A majority of the wealth management loans are secured by the customers' investment management accounts or custody accounts. Eligible assets pledged for these loans are typically investment grade fixed-income securities, equities and/or mutual funds. Internal ratings for this portion of the wealth management portfolio, therefore, would equate to investment-grade external ratings. Wealth management loans are provided to select customers based on the pledge of other types of assets, including business assets, fixed assets or a modest amount of commercial real estate. For the loans collateralized by other assets, the credit quality of the obligor is carefully analyzed, but we do not consider this portfolio of loans to be investment grade.

Credit quality indicators for wealth management mortgages are not correlated to external ratings. Wealth management mortgages are typically loans to high-net-worth individuals, which are secured primarily by residential property. These loans are primarily interest-only, adjustable rate mortgages with a weighted-average loan-to-value ratio of 62% at origination. In the wealth management portfolio, less than 1% of the mortgages were past due at Dec. 31, 2018.

At Dec. 31, 2018, the wealth management mortgage portfolio consisted of the following geographic concentrations: California - 24%; New York - 18%; Massachusetts - 10%; Florida - 8%; and other - 40%.

Other residential mortgages

The other residential mortgage portfolio primarily consists of 1-4 family residential mortgage loans and totaled $594 million at Dec. 31, 2018 and $708 million at Dec. 31, 2017. These loans are not typically correlated to external ratings. Included in this portfolio at Dec. 31, 2018 were $128 million of mortgage loans purchased in 2005, 2006 and the first quarter of 2007, of which, 11% of the serviced loan balance was at least 60 days delinquent.

Overdrafts

Overdrafts primarily relate to custody and securities clearance clients and totaled $5.5 billion at Dec. 31, 2018 and $5.1 billion at Dec. 31, 2017. Overdrafts occur on a daily basis primarily in the custody and securities clearance business and are generally repaid within two business days.

Other loans

Other loans primarily include loans to consumers that are fully collateralized with equities, mutual funds and fixed-income securities.

Margin loans

We had $13.5 billion of secured margin loans on our consolidated balance sheet at Dec. 31, 2018 compared with $15.8 billion at Dec. 31, 2017. Margin loans are collateralized with marketable securities, and borrowers are required to maintain a daily collateral margin in excess of 100% of the value of the loan. We have rarely suffered a loss on these types of loans and do not allocate any of our allowance for credit losses to margin loans.

Reverse repurchase agreements

Reverse repurchase agreements are transactions fully collateralized with high-quality liquid securities. These transactions carry minimal credit risk and therefore are not allocated an allowance for credit losses.

Note 6–Goodwill and intangible assets

Goodwill

The table below provides a breakdown of goodwill by business.

Goodwill by business *(in millions)*	Investment Services	Investment Management	Other	Consolidated
Balance at Dec. 31, 2016	$ 8,269	$ 9,000	$ 47	$ 17,316
Foreign currency translation	120	128	—	248
Balance at Dec. 31, 2017	$ 8,389	$ 9,128	$ 47	$ 17,564
Dispositions	—	(65)	—	(65)
Foreign currency translation	(56)	(93)	—	(149)
Balance at Dec. 31, 2018	**$ 8,333**	**$ 8,970**	**$ 47**	**$ 17,350**

Total goodwill decreased in 2018 compared with 2017 reflecting the impact of foreign exchange translation on non-U.S. dollar denominated goodwill and dispositions in the Investment Management business.

Intangible assets

The table below provides a breakdown of intangible assets by business.

Intangible assets – net carrying amount by business *(in millions)*	Investment Services	Investment Management	Other	Consolidated
Balance at Dec. 31, 2016	$ 1,032	$ 1,717	$ 849	$ 3,598
Amortization	(149)	(60)	—	(209)
Foreign currency translation	5	17	—	22
Balance at Dec. 31, 2017	$ 888	$ 1,674	$ 849	$ 3,411
Amortization	(129)	(51)	—	(180)
Foreign currency translation	(1)	(10)	—	(11)
Balance at Dec. 31, 2018	**$ 758**	**$ 1,613**	**$ 849**	**$ 3,220**

Intangible assets decreased in 2018 compared with 2017 primarily reflecting amortization.

The table below provides a breakdown of intangible assets by type.

Intangible assets	**Dec. 31, 2018**				Dec. 31, 2017		
(in millions)	Gross carrying amount	Accumulated amortization	Net carrying amount	Remaining weighted-average amortization period	Gross carrying amount	Accumulated amortization	Net carrying amount
Subject to amortization: *(a)*							
Customer contracts—Investment Services	**$ 1,572**	**$ (1,186)**	**$ 386**	**10 years**	$ 2,260	$ (1,744)	$ 516
Customer relationships—Investment Management	**899**	**(699)**	**200**	**11 years**	1,262	(1,015)	247
Other	**26**	**(12)**	**14**	**4 years**	42	(23)	19
Total subject to amortization	**2,497**	**(1,897)**	**600**	**10 years**	3,564	(2,782)	782
Not subject to amortization: *(b)*							
Tradenames	**1,332**	**N/A**	**1,332**	**N/A**	1,334	N/A	1,334
Customer relationships	**1,288**	**N/A**	**1,288**	**N/A**	1,295	N/A	1,295
Total not subject to amortization	**2,620**	**N/A**	**2,620**	**N/A**	2,629	N/A	2,629
Total intangible assets	**$ 5,117**	**$ (1,897)**	**$ 3,220**	**N/A**	$ 6,193	$ (2,782)	$ 3,411

(a) *Excludes fully amortized intangible assets.*
(b) *Intangible assets not subject to amortization have an indefinite life.*

Estimated annual amortization expense for current intangibles for the next five years is as follows:

For the year ended Dec. 31,		Estimated amortization expense *(in millions)*
2019	**$**	**115**
2020		**102**
2021		**78**
2022		**60**
2023		**50**

Impairment testing

The goodwill impairment test is performed at least annually at the reporting unit level. Intangible assets not subject to amortization are tested for impairment annually or more often if events or circumstances indicate they may be impaired.

BNY Mellon's three business segments include seven reporting units for which goodwill impairment testing is performed on an annual basis. The Investment Services segment is comprised of four reporting units; the Investment Management segment is comprised of two reporting units and one reporting unit is included in the Other segment. As a result of the annual goodwill impairment test of the seven reporting units conducted in the second quarter of 2018, no goodwill impairment was recognized.

Note 7–Other assets

The following table provides the components of other assets presented on the consolidated balance sheet.

Other assets	Dec. 31,			
(in millions)		**2018**		2017
Corporate/bank-owned life insurance	**$**	**4,937**	$	4,857
Accounts receivable		**3,692**		4,590
Fails to deliver		**2,274**		2,817
Software		**1,652**		1,499
Prepaid pension assets		**1,357**		1,416
Renewable energy investments		**1,264**		1,368
Income taxes receivable		**1,125**		1,533
Equity in a joint venture and other investments		**1,064**		1,083
Qualified affordable housing project investments		**999**		1,014
Federal Reserve Bank stock		**484**		477
Prepaid expense		**385**		395
Fair value of hedging derivatives		**289**		323
Seed capital		**224**		288
Other *(a)*		**1,552**		1,369
Total other assets	**$**	**21,298**	$	23,029

(a) At Dec. 31, 2018 and Dec. 31, 2017, other assets include $111 million and $82 million, respectively, of Federal Home Loan Bank stock, at cost.

Qualified affordable housing project investments

We invest in affordable housing projects primarily to satisfy the Company's requirements under the Community Reinvestment Act. Our total investment in qualified affordable housing projects totaled $1.0 billion at Dec. 31, 2018 and $1.0 billion at Dec. 31, 2017. Commitments to fund future investments in qualified affordable housing projects totaled $479 million at Dec. 31, 2018 and $486 million at Dec. 31, 2017 and are recorded in other liabilities. A summary of the commitments to fund future investments is as follows: 2019 – $201 million; 2020 – $108 million; 2021 – $122 million; 2022 – $29 million; 2023 – $1 million; and 2024 and thereafter – $18 million.

Tax credits and other tax benefits recognized were $163 million in 2018, $156 million in 2017 and $155 million in 2016.

Amortization expense included in the provision for income taxes was $136 million in 2018, $153 million in 2017 and $115 million in 2016.

Investments valued using net asset value per share

In our Investment Management business, we manage investment assets, including equities, fixed income, money market and multi-asset and alternative investment funds for institutions and other investors. As part of that activity, we make seed capital investments in certain funds. We also hold private equity investments, specifically SBICs, which are compliant with the Volcker Rule, and certain other corporate investments. Seed capital, private equity and other corporate investments are included in other assets on the consolidated balance sheet. The fair value of these investments was estimated using the net asset value ("NAV") per share for BNY Mellon's ownership interest in the funds.

The table below presents information on our investments valued using NAV.

Other assets valued using NAV	**Dec. 31, 2018**				Dec. 31, 2017			
(dollars in millions)	Fair value	Unfunded commitments	Redemption frequency	Redemption notice period	Fair value	Unfunded commitments	Redemption frequency	Redemption notice period
Seed capital	**$ 54**	**$ —**	**Daily-quarterly**	**1-90 days**	$ 40	$ 1	Daily-quarterly	1-90 days
Private equity investments (SBICs) *(a)*	**74**	**41**	**N/A**	**N/A**	55	42	N/A	N/A
Other *(b)*	**87**	**—**	**Daily-quarterly**	**1-95 days**	59	—	Daily-quarterly	1-95 days
Total	**$ 215**	**$ 41**			$ 154	$ 43		

(a) Private equity investments include Volcker Rule-compliant investments in SBICs that invest in various sectors of the economy. Private equity investments do not have redemption rights. Distributions from such investments will be received as the underlying investments in the private equity investments, which have a life of 10 years, are liquidated.
(b) Primarily relates to investments in funds that relate to deferred compensation arrangements with employees.

Note 8–Deposits

Total time deposits in denominations of $250,000 or more were $32.1 billion at Dec. 31, 2018 and $37.3 billion at Dec. 31, 2017. At Dec. 31, 2018, the scheduled maturities of all time deposits are as follows: 2019 – $40.5 billion; 2020 – $47 million; 2021 – $1 million; 2022 – $- million; 2023 – $- million; and 2024 and thereafter – $1 million.

Note 9–Contract revenue

Nature of services and revenue recognition

Fee revenue in Investment Services and Investment Management is primarily variable, based on levels of AUC/A, AUM and the level of client-driven transactions, as specified in fee schedules.

Investment Services fees are based primarily on the market value of AUC/A; client accounts, balances and the volume of transactions; securities lending volume and spreads; and fees for other services. Certain fees based on the market value of assets are calculated in arrears on a monthly or quarterly basis.

Substantially all services within the Investment Services business are provided over time. Revenue on these services is recognized using the time elapsed method, equal to the expected invoice amount, which typically represents the value provided to the customer for our performance completed to date.

Clearing services revenue includes multiple types of fees, some of which are driven by customer actions and are delivered at a point-in-time. These transaction-based fees are generally recognized on trade date. Other contractual clearing services fees are driven by the amount of AUC/A or the number of accounts or securities positions and are billed on a monthly or quarterly basis.

Investment management fees are dependent on the overall level and mix of AUM. The management fees, expressed in basis points, are charged for managing those assets. Management fees are typically subject to fee schedules based on the overall level of assets managed and products in which those assets are invested.

Investment management fee revenue also includes transactional- and account-based fees. These fees along with distribution and servicing fees are recognized when the services have been completed. Clients are generally billed for services performed on a monthly or quarterly basis.

Performance fees are generally calculated as a percentage of the applicable portfolio's performance in excess of a benchmark index or a peer group's performance. Performance fees are recognized at the end of the measurement period when they are determinable.

See Note 23 for additional information on our principal businesses, Investment Services and Investment Management, and the primary services provided.

Disaggregation of contract revenue

Contract revenue is included in fee revenue on the consolidated income statement. The following table presents fee revenue related to contracts with customers, disaggregated by type, for each business segment.

Disaggregation of contract revenue by business segment *(a)*

	Year ended Dec. 31, 2018			
(in millions)	Investment Services	Investment Management	Other	Total
Fee revenue - contract revenue:				
Investment services fees:				
Asset servicing	$ 4,395	$ 88	$ 1	$ 4,484
Clearing services	1,577	—	—	1,577
Issuer services	1,099	—	—	1,099
Treasury services	553	1	—	554
Total investment services fees	7,624	89	1	7,714
Investment management and performance fees	54	3,619	—	3,673
Financing-related fees	61	1	(2)	60
Distribution and servicing	(51)	191	—	140
Investment and other income	279	(202)	2	79
Total fee revenue - contract revenue	7,967	3,698	1	11,666
Fee and other revenue - not in scope of ASC 606 *(b)(c)*	959	83	84	1,126
Total fee and other revenue	$ 8,926	$ 3,781	$ 85	$12,792

(a) Business segment data has been determined on an internal management basis of accounting, rather than the generally accepted accounting principles used for consolidated financial reporting.
(b) Primarily includes foreign exchange and other trading revenue, investment and other income, financing-related fees and net securities losses, all of which are accounted for using other accounting guidance.
(c) The Investment Management business includes a loss from consolidated investment management funds, net of noncontrolling interests of $1 million in 2018.

Contract balances

Our clients are billed based on fee schedules that are agreed upon in each customer contract. Receivable from customers were $3.9 billion at Jan. 1, 2018 and $2.5 billion at Dec. 31, 2018. An allowance is maintained for accounts receivables which is generally based on the number of days outstanding. Adjustments to the allowance are recorded in other expense in the consolidated income statement. A provision of $11 million was recorded in 2018.

Contract assets represent accrued revenues that have not yet been billed to the customers due to certain contractual terms other than the passage of time and were $30 million at Jan. 1, 2018 and $36 million at Dec. 31, 2018. Accrued revenues recorded as contract assets are usually billed on an annual basis. There were no impairments recorded on contract assets in 2018.

Both receivables from customers and contract assets are included in other assets on the consolidated balance sheet.

Contract liabilities represent payments received in advance of providing services under certain contracts and were $167 million at Jan. 1, 2018 and $171 million at Dec. 31, 2018. Contract liabilities are included in other liabilities on the consolidated balance sheet. Revenue recognized in 2018 relating to contract liabilities as of Jan. 1, 2018 was $96 million.

Changes in contract assets and liabilities primarily relate to either party's performance under the contracts.

Contract costs

Incremental costs for obtaining contracts that are deemed recoverable are capitalized as contract costs. Such costs result from the payment of sales incentives, primarily in the Wealth Management business, and totaled $98 million at Dec. 31, 2018. Capitalized sales incentives are amortized based on the transfer of goods or services to which the assets relate and typically average nine years. The amortization of capitalized sales incentives, which is primarily included in staff expense, totaled $22 million in 2018.

Costs to fulfill a contract are capitalized when they relate directly to an existing contract or specific anticipated contract, generate or enhance resources that will be used to fulfill performance obligations and are recoverable. Such costs generally represent set-up costs, which include any direct cost incurred at inception of a contract which enables the fulfillment of the performance obligation and totaled $20 million at Dec. 31, 2018. These capitalized costs are amortized on a straight-line basis over the expected contract period which generally range from seven to nine years. The amortization is included in other expense and totaled $5 million in 2018.

There were no impairments recorded on capitalized contract costs in 2018.

Unsatisfied performance obligations

We do not have any unsatisfied performance obligations other than those that are subject to a practical expedient election under ASC 606, *Revenue From Contracts With Customers*. The practical expedient election applies to (i) contracts with an original expected length of one year or less, and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed.

Note 10–Net interest revenue

The following table provides the components of net interest revenue presented on the consolidated income statement.

Net interest revenue	Year ended Dec. 31,		
(in millions)	**2018**	2017	2016
Interest revenue			
Deposits with banks	**$ 219**	$ 120	$ 104
Deposits with the Federal Reserve and other central banks	**531**	319	198
Federal funds sold and securities purchased under resale agreements	**1,116**	423	233
Margin loans	**510**	343	265
Non-margin loans	**1,356**	1,077	873
Securities:			
Taxable	**2,520**	1,977	1,772
Exempt from federal income taxes	**54**	64	70
Total securities	**2,574**	2,041	1,842
Trading securities	**126**	59	60
Total interest revenue	**6,432**	4,382	3,575
Interest expense			
Deposits in domestic offices	**537**	107	41
Deposits in foreign offices	**340**	55	(25)
Federal funds purchased and securities sold under repurchase agreements	**758**	225	36
Trading liabilities	**29**	7	6
Other borrowed funds	**58**	26	8
Commercial paper	**51**	29	5
Customer payables	**191**	64	12
Long-term debt	**857**	561	354
Total interest expense	**2,821**	1,074	437
Net interest revenue	**3,611**	3,308	3,138
Provision for credit losses	**(11)**	(24)	(11)
Net interest revenue after provision for credit losses	**$ 3,622**	$ 3,332	$ 3,149

Note 11–Income taxes

The components of the income tax provision are as follows:

Provision for income taxes	Year ended Dec. 31,		
(in millions)	**2018**	2017	2016
Current tax expense (benefit):			
Federal	**$ 902**	$ (99)	$ 823
Foreign	**442**	388	327
State and local	**119**	74	153
Total current tax expense	**1,463**	363	1,303
Deferred tax (benefit) expense:			
Federal	**(556)**	36	(75)
Foreign	**9**	14	(14)
State and local	**22**	83	(37)
Total deferred tax (benefit) expense:	**(525)**	133	(126)
Provision for income taxes	**$ 938**	$ 496	$ 1,177

In December 2017, the Tax Cuts and Jobs Act of 2017 ("U.S. tax legislation") was signed into law in the United States. U.S. GAAP requires companies to recognize the effect of tax law changes on deferred tax assets and liabilities and other recognized assets in the period of enactment. Also in December 2017, the Securities and Exchange Commission staff issued Staff Accounting Bulletin No.118 ("SAB 118"). SAB 118 allows the recording of a provisional estimate to reflect the income tax impact of the U.S. tax legislation and provides a measurement period up to one year from the enactment date. Due to the timing of the enactment and the complexity involved in applying the provisions of the U.S. tax legislation, we recorded a provisional tax benefit of $710 million in the fourth quarter of 2017.

In 2018, we completed our analysis of the U.S. tax legislation and filed our 2017 income tax returns, taking into account new Internal Revenue Service ("IRS") guidance. Accordingly we recorded an additional $70 million tax benefit for remeasurement of our net deferred tax liability.

The U.S. tax legislation provided a one-time deemed repatriation tax on undistributed foreign earnings and profits ("repatriation tax"). In 2017, we recorded $723 million provisional repatriation tax. In 2018, we completed our analysis of foreign earnings taking into account new IRS guidance and reduced the repatriation tax by $36 million.

The components of U.S. tax legislation are as follows:

Income tax (benefit) expense *(estimated in millions)*	**2018**	2017
Remeasurement of net deferred tax liabilities	**$ (70)**	$ (1,472)
Repatriation tax	**(36)**	723
Other items	**—**	39
Net income tax (benefit)	**$ (106)**	$ (710)

The components of income before taxes are as follows:

Income before taxes	Year ended Dec. 31,		
(in millions)	**2018**	2017	2016
Domestic	**$ 3,008**	$ 2,699	$ 3,147
Foreign	**2,184**	1,911	1,578
Income before taxes	**$ 5,192**	$ 4,610	$ 4,725

The components of our net deferred tax liability are as follows:

Net deferred tax liability	Dec. 31,	
(in millions)	**2018**	2017
Depreciation and amortization	**$ 2,060**	$ 1,960
Pension obligation	**300**	283
Renewable energy investment	**295**	278
Lease financings	**130**	151
Equity investments	**65**	65
Repatriation	**—**	617
Securities valuation	**(15)**	11
Credit losses on loans	**(54)**	(55)
Reserves not deducted for tax	**(143)**	(103)
Employee benefits	**(266)**	(287)
Other assets	**(65)**	(85)
Other liabilities	**189**	186
Net deferred tax liability	**$ 2,496**	$ 3,021

We believe it is more likely than not that we will fully realize our deferred tax assets. This conclusion is based on financial results and profit forecasts.

We have completed our analysis of the U.S. tax legislation's impact to foreign earnings and the amount of foreign earnings considered permanently reinvested abroad. As of Dec. 31, 2018, we had approximately $250 million of earnings attributable to foreign subsidiaries that have been permanently reinvested abroad and for which no local distribution tax provision has been recorded. If these earnings were to be repatriated, the estimated tax liability as of Dec. 31, 2018 would be up to $50 million.

The statutory federal income tax rate is reconciled to our effective income tax rate below:

Effective tax rate	Year ended Dec. 31,		
	2018	2017	2016
Federal rate	**21.0%**	35.0%	35.0%
State and local income taxes, net of federal income tax benefit	**2.1**	1.8	1.6
Foreign operations	**0.5**	(4.2)	(5.6)
Tax credits	**(3.3)**	(3.7)	(2.2)
Tax-exempt income	**(0.8)**	(1.9)	(1.8)
Leverage lease adjustment	**—**	(1.4)	(0.9)
FDIC Assessment	**0.5**	—	—
Stock compensation	**(0.6)**	(1.1)	—
U.S. tax legislation	**(1.7)**	(13.3)	—
Other – net	**0.4**	(0.4)	(1.2)
Effective tax rate	**18.1%**	10.8%	24.9%

Unrecognized tax positions *(in millions)*	**2018**	2017	2016
Beginning balance at Jan. 1, – gross	**$ 128**	$ 146	$ 649
Prior period tax positions:			
Increases	**6**	20	8
Decreases	**(8)**	(4)	(40)
Current period tax positions	**9**	10	16
Settlements	**(32)**	(44)	(477)
Statute expiration	**—**	—	(10)
Ending balance at Dec. 31, – gross	**$ 103**	$ 128	$ 146

Our total tax reserves as of Dec. 31, 2018 were $103 million compared with $128 million at Dec. 31, 2017. If these tax reserves were unnecessary, $103 million would affect the effective tax rate in future periods. We recognize accrued interest and penalties, if applicable, related to income taxes in income tax expense. Included in the balance sheet at Dec. 31, 2018 is accrued interest, where applicable, of $22 million. The additional tax expense related to interest for the year ended Dec. 31, 2018 was $8 million, compared with $12 million for the year ended Dec. 31, 2017.

It is reasonably possible the total reserve for uncertain tax positions could decrease within the next 12 months by approximately $20 million as a result of adjustments related to tax years that are still subject to examination.

Our federal income tax returns are closed to examination through 2013. Our New York State, New York City and UK income tax returns are closed to examination through 2012.

Note 12–Long-term debt

Long-term debt	**Dec. 31, 2018**			Dec. 31, 2017	
(in millions)	**Rate**	**Maturity**	**Amount**	Rate	Amount
Senior debt:					
Fixed rate	**2.05 - 5.45%**	**2019 - 2028**	**$ 24,995**	1.30 - 5.45%	$ 23,329
Floating rate	**2.61 - 3.86%**	**2019 - 2038**	**2,628**	1.49 - 2.74%	2,829
Subordinated debt *(a)*	**3.00 - 7.50%**	**2021 - 2029**	**1,540**	3.00 - 7.50%	1,821
Total			**$ 29,163**		$ 27,979

(a) Fixed rate.

Total long-term debt maturing during the next five years for BNY Mellon is as follows: 2019 – $4.3 billion, 2020 – $5.0 billion, 2021 – $4.6 billion, 2022 – $1.3 billion and 2023 – $5.5 billion.

Note 13–Variable interest entities and securitization

BNY Mellon has variable interests in VIEs, which include investments in retail, institutional and alternative investment funds, including CLO structures in which we provide asset management services, some of which are consolidated. The investment funds are offered to our retail and institutional clients to provide them with access to investment vehicles with specific investment objectives and strategies that address the client's investment needs.

BNY Mellon earns management fees from these funds as well as performance fees in certain funds and may also provide start-up capital for its new funds. The funds are primarily financed by our customers' investments in the funds' equity or debt.

Additionally, BNY Mellon invests in qualified affordable housing and renewable energy projects, which are designed to generate a return primarily through the realization of tax credits by the Company. The projects, which are structured as limited partnerships and LLCs, are also VIEs, but are not consolidated.

The following table presents the incremental assets and liabilities included in BNY Mellon's consolidated financial statements as of Dec. 31, 2018 and Dec. 31, 2017. The net assets of any consolidated VIE are solely available to settle the liabilities of the VIE and to settle any investors' ownership liquidation requests, including any seed capital invested in the VIE by BNY Mellon.

Consolidated investments	**Dec. 31, 2018**			Dec. 31, 2017		
(in millions)	Investment Management funds	Securitization	Total consolidated investments	Investment Management funds	Securitization	Total consolidated investments
Securities - Available-for-sale	**$ —**	**$ —**	**$ —**	$ —	$ 400	$ 400
Trading assets	**243**	**400**	**643**	516	—	516
Other assets	**220**	**—**	**220**	215	—	215
Total assets	**$ 463** *(a)*	**$ 400**	**$ 863**	$ 731 *(b)*	$ 400	$ 1,131
Other liabilities	**$ 2**	**$ 371**	**$ 373**	$ 2	$ 367	$ 369
Total liabilities	**$ 2** *(a)*	**$ 371**	**$ 373**	$ 2 *(b)*	$ 367	$ 369
Nonredeemable noncontrolling interests	**$ 101** *(a)*	**$ —**	**$ 101**	$ 316 *(b)*	$ —	$ 316

(a) Includes VMEs with assets of $253 million, liabilities of $2 million and nonredeemable noncontrolling interests of less than $1 million.
(b) Includes VMEs with assets of $84 million, liabilities of $1 million and nonredeemable noncontrolling interests of $1 million.

BNY Mellon has not provided financial or other support that was not otherwise contractually required to be provided to our VIEs. Additionally, creditors of any consolidated VIEs do not have any recourse to the general credit of BNY Mellon.

Non-consolidated VIEs

As of Dec. 31, 2018 and Dec. 31, 2017, the following assets and liabilities related to the VIEs where BNY Mellon is not the primary beneficiary are included in our consolidated financial statements and primarily relate to accounting for our investments in qualified affordable housing and renewable energy projects.

The maximum loss exposure indicated in the table below relates solely to BNY Mellon's investments in, and unfunded commitments to, the VIEs.

Non-consolidated VIEs

	Dec. 31, 2018			Dec. 31, 2017		
(in millions)	Assets	Liabilities	Maximum loss exposure	Assets	Liabilities	Maximum loss exposure
Securities - Available-for-sale *(a)*	**$ 214**	**$ —**	**$ 214**	$ 203	$ —	$ 203
Other	**2,450**	**479**	**2,929**	2,592	486	3,078

(a) Includes investments in the Company's sponsored CLOs.

Note 14–Shareholders' equity

Common stock

BNY Mellon has 3.5 billion authorized shares of common stock with a par value of $0.01 per share. At Dec. 31, 2018, 960,425,669 shares of common stock were outstanding.

Common stock repurchase program

In June 2017, in connection with the Federal Reserve's non-objection to our 2017 capital plan, BNY Mellon announced a share repurchase plan providing for the repurchase of up to $2.6 billion of common stock. The 2017 capital plan began in the third quarter of 2017 and continued through the second quarter of 2018. In June 2018, in connection with the Federal Reserve's non-objection to our 2018 capital plan, BNY Mellon announced a share repurchase plan providing for the repurchase of up to $2.4 billion of common stock starting in the third quarter of 2018 and continuing through the second quarter of 2019. This new share repurchase plan replaces all previously authorized share repurchase plans.

In December 2018, BNY Mellon announced that the Federal Reserve approved the repurchase of $830 million of additional common stock. Our Board of Directors approved the additional share repurchases, which were completed in the fourth quarter of 2018. These repurchases were in addition to the Company's repurchase of $2.4 billion of common stock previously approved by the Board and announced in June 2018.

Share repurchases may be executed through open market repurchases, in privately negotiated transactions or by other means, including through repurchase plans designed to comply with Rule 10b5-1 and other derivative, accelerated share repurchase and other structured transactions. In 2018, we repurchased 63.7 million common shares at an average price of $51.29 per common share for a total of $3.3 billion. At Dec. 31, 2018, the maximum dollar value of shares that may yet be purchased under the June 2018 program, including employee benefit plan repurchases, totaled $1.3 billion.

Preferred stock

BNY Mellon has 100 million authorized shares of preferred stock with a par value of $0.01 per share. The following table summarizes BNY Mellon's preferred stock issued and outstanding at Dec. 31, 2018 and Dec. 31, 2017.

Preferred stock summary *(a)*		**Total shares issued and outstanding**		**Carrying value** *(b)* *(in millions)*	
		Dec. 31,		Dec. 31,	
	Per annum dividend rate	**2018**	2017	**2018**	2017
Series A	Greater of (i) three-month LIBOR plus 0.565% for the related distribution period; or (ii) 4.000%	**5,001**	5,001	**$ 500**	$ 500
Series C	5.2%	**5,825**	5,825	**568**	568
Series D	4.50% to but excluding June 20, 2023, then a floating rate equal to the three-month LIBOR plus 2.46%	**5,000**	5,000	**494**	494
Series E	4.95% to and including June 20, 2020, then a floating rate equal to the three-month LIBOR plus 3.42%	**10,000**	10,000	**990**	990
Series F	4.625% to and including Sept. 20, 2026, then a floating rate equal to the three-month LIBOR plus 3.131%	**10,000**	10,000	**990**	990
Total		**35,826**	35,826	**$ 3,542**	$ 3,542

(a) All outstanding preferred stock is noncumulative perpetual preferred stock with a liquidation preference of $100,000 per share.
(b) The carrying value of the Series C, Series D, Series E and Series F preferred stock is recorded net of issuance costs.

Holders of both the Series A and Series C preferred stock are entitled to receive dividends on each dividend payment date (March 20, June 20, September 20 and December 20 of each year), if declared by BNY Mellon's Board of Directors. Holders of the Series D preferred stock are entitled to receive dividends, if declared by BNY Mellon's Board of Directors, on each June 20 and December 20, to but excluding June 20, 2023; and on each March 20, June 20, September 20 and December 20, from and including June 20, 2023. Holders of the Series E preferred stock are entitled to receive dividends, if declared by BNY Mellon's Board of Directors, on each June 20 and December 20, to and including June 20, 2020; and on each March 20, June 20, September 20 and December 20, from and including Sept. 20, 2020. Holders of the Series F preferred stock are entitled to receive dividends, if declared by BNY Mellon's Board of Directors, on each March 20 and September 20, commencing March 20, 2017, to and including Sept. 20, 2026; and on each March 20, June 20, September 20 and December 20, commencing Dec. 20, 2026. BNY Mellon's ability to declare or pay dividends on, or purchase, redeem or otherwise acquire, shares of our common stock or any of our shares that rank junior to the preferred stock as to the payment of dividends and/or the distribution of any assets on any liquidation, dissolution or winding-up of BNY Mellon will be prohibited, subject to certain restrictions, in the event that we do not declare and pay in full preferred dividends for the then current dividend period of the Series A preferred stock or the last preceding dividend period of the Series C, Series D, Series E and Series F preferred stock.

All of the outstanding shares of the Series A preferred stock are owned by Mellon Capital IV, which will pass through any dividend on the Series A preferred stock to the holders of its Normal Preferred Capital Securities. All of the outstanding shares of the Series C, Series D, Series E and Series F preferred stock are held by the depositary of the depositary shares, which will pass through the applicable portion of any dividend on the Series C, Series D, Series E and Series F preferred stock to the holders of record of their respective depositary shares.

The table below presents the dividends paid on our preferred stock.

Dividend paid per preferred share	Depositary shares per share	**2018**		2017		2016	
		per share	*in millions*	*per share*	*in millions*	*per share*	*in millions*
Series A	**100** *(a)*	**$ 4,055.55**	**$ 20**	$ 4,055.55	$ 20	$ 4,055.55	$ 20
Series C	**4,000**	**5,200.00**	**31**	5,200.00	31	5,200.00	30
Series D	**100**	**4,500.00**	**22**	4,500.00	22	4,500.00	22
Series E	**100**	**4,950.00**	**50**	4,950.00	50	4,950.00	50
Series F	**100**	**4,625.00**	**46**	5,254.51	52	N/A	—
Total			**$ 169**		$ 175		$ 122

(a) Represents Normal Preferred Capital Securities.

The preferred stock is not subject to the operation of a sinking fund and is not convertible into, or exchangeable for, shares of our common stock or any other class or series of our other securities. We may redeem the Series A or Series C preferred stock, in whole or in part, at our option. We may also, at our option, redeem the shares of the Series D preferred stock, in whole or in part, on or after the dividend payment date in June 2023, the Series E preferred stock, in whole or in part, on or after the dividend payment date in June 2020, and the Series F preferred stock, in whole or in part, on or after the dividend payment date in September 2026. The Series C, Series D, Series E or Series F preferred stock can be redeemed, in whole but not in part, at any time within 90 days following a regulatory capital treatment event (as defined in each of the Series C, Series D, Series E and Series F's Certificates of Designation). Redemption of the preferred stock is subject to the prior approval of the Federal Reserve.

Terms of the Series A, Series C, Series D, Series E and Series F preferred stock are more fully described in each of their Certificates of Designations, each of which is filed as an Exhibit to BNY Mellon's Annual Report on Form 10-K for the year ended Dec. 31, 2018.

Temporary equity

Temporary equity was $129 million at Dec. 31, 2018 and $179 million at Dec. 31, 2017. Temporary equity represents the redemption value recorded for redeemable noncontrolling interests resulting from equity-classified share-based payment arrangements that are currently redeemable or are expected to become redeemable.

Capital adequacy

Regulators establish certain levels of capital for BHCs and banks, including BNY Mellon and our bank subsidiaries, in accordance with established quantitative measurements. For the Parent to maintain its status as a FHC, our bank subsidiaries and BNY Mellon must, among other things, qualify as "well capitalized."

As of Dec. 31, 2018 and Dec. 31, 2017, BNY Mellon and our U.S. bank subsidiaries were "well capitalized."

Our consolidated and largest bank subsidiary, The Bank of New York Mellon, regulatory capital ratios are shown below.

Consolidated and largest bank subsidiary regulatory capital ratios *(a)*	Dec. 31,	
	2018	2017 *(b)*
Consolidated regulatory capital ratios:		
CET1 ratio	**10.7%**	10.7%
Tier 1 capital ratio	**12.8**	12.7
Total capital ratio	**13.6**	13.4
Tier 1 leverage ratio	**6.6**	6.6
SLR *(c)*	**6.0**	N/A
The Bank of New York Mellon regulatory capital ratios:		
CET1 ratio	**14.0%**	14.1%
Tier 1 capital ratio	**14.3**	14.4
Total capital ratio	**14.7**	14.7
Tier 1 leverage ratio	**7.6**	7.6
SLR *(c)*	**6.8**	N/A

(a) For our CET1, Tier 1 capital and Total capital ratios, our effective capital ratios under U.S. capital rules are the lower of the ratios as calculated under the Standardized and Advanced Approaches, which for the periods noted above was the Advanced Approaches. The Tier 1 leverage ratio is based on Tier 1 capital and quarterly average total assets. For BNY Mellon to qualify as "well capitalized," its Tier 1 capital and Total capital ratios must be at least 6% and 10%, respectively. For The Bank of New York Mellon, our largest bank subsidiary, to qualify as "well capitalized," its CET1, Tier 1 capital, Total capital and Tier 1 leverage ratios must be at least 6.5%, 8%, 10% and 5%, respectively.

(b) Reflects transitional adjustments required in 2017 under the U.S. capital rules.

(c) The SLR is based on Tier 1 capital and total leverage exposure, which includes certain off-balance sheet exposures and became a binding measure on Jan. 1, 2018. For The Bank of New York Mellon to qualify as "well capitalized," its SLR must be at least 6%.

Failure to satisfy regulatory standards, including "well capitalized" status or capital adequacy rules more generally, could result in limitations on our activities and adversely affect our financial condition. If a BHC such as BNY Mellon or bank such as The Bank of New York Mellon or BNY Mellon, N.A. fails to qualify as "adequately capitalized," regulatory sanctions and limitations are imposed.

The following table presents our capital components and RWAs determined under the Standardized and Advanced Approaches and the average assets used for leverage capital purposes.

Capital components and risk-weighted assets *(in millions)*	Dec. 31, **2018**	2017 *(a)*
CET1:		
Common shareholders' equity	**$ 37,096**	$ 37,859
Adjustments for:		
Goodwill and intangible assets *(b)*	**(18,806)**	(18,684)
Net pension fund assets	**(320)**	(169)
Equity method investments	**(361)**	(372)
Deferred tax assets	**(42)**	(33)
Other	**—**	(8)
Total CET1	**17,567**	18,593
Other Tier 1 capital:		
Preferred stock	**3,542**	3,542
Deferred tax assets	**—**	(8)
Net pension fund assets	**—**	(42)
Other	**(65)**	(41)
Total Tier 1 capital	**$ 21,044**	$ 22,044
Tier 2 capital:		
Subordinated debt	**$ 1,250**	$ 1,250
Allowance for credit losses	**252**	261
Other	**(10)**	(12)
Total Tier 2 capital – Standardized Approach	**1,492**	1,499
Excess of expected credit losses	**65**	31
Less: Allowance for credit losses	**252**	261
Total Tier 2 capital – Advanced Approach	**$ 1,305**	$ 1,269
Total capital:		
Standardized Approach	**$ 22,536**	$ 23,543
Advanced Approach	**$ 22,349**	$ 23,313
Risk-weighted assets:		
Standardized Approach	**$ 149,618**	$ 155,621
Advanced Approach:		
Credit Risk	**$ 92,917**	$ 101,681
Market Risk	**3,454**	3,657
Operational Risk	**68,300**	68,688
Total Advanced Approach	**$ 164,671**	$ 174,026
Average assets for Tier 1 leverage ratio	**$ 319,007**	$ 331,600
Total leverage exposure for SLR purposes *(c)*	**$ 347,943**	N/A

(a) Reflects transitional adjustments to CET1, Tier 1 capital and Tier 2 capital required in 2017 under the U.S. capital rules.
(b) Reduced by deferred tax liabilities associated with intangible assets and tax deductible goodwill.
(c) SLR became a binding measure on Jan. 1, 2018.

The following table presents the amount of capital by which BNY Mellon and our largest bank subsidiary, The Bank of New York Mellon, exceeded the capital thresholds determined under U.S. capital rules.

Capital above thresholds at Dec. 31, 2018 *(in millions)*	**Consolidated** *(a)*	**The Bank of New York Mellon** *(b)*
CET1	$ 5,217	$ 10,036
Tier 1 capital	6,224	8,372
Total capital	4,235	6,273
Tier 1 leverage ratio	8,284	6,441
SLR *(c)*	3,647	2,336

(a) Based on minimum required standards, with applicable buffers.
(b) Based on well capitalized standards.
(c) SLR became a binding measure on Jan. 1, 2018.

Note 15–Other comprehensive income (loss)

Components of other comprehensive income (loss)	Year ended Dec. 31,								
	2018			2017			2016		
(in millions)	Pre-tax amount	Tax (expense) benefit	After-tax amount	Pre-tax amount	Tax benefit (expense)	After-tax amount	Pre-tax amount	Tax (expense) benefit	After-tax amount
Foreign currency translation:									
Foreign currency translation adjustments arising during the period *(a)*	**$ (157)**	**$ (156)**	**$ (313)**	$ 659	$ 194	$ 853	$ (518)	$ (332)	$ (850)
Total foreign currency translation	**(157)**	**(156)**	**(313)**	659	194	853	(518)	(332)	(850)
Unrealized (loss) gain on assets available-for-sale:									
Unrealized (loss) gain arising during period	**(542)**	**126**	**(416)**	237	(84)	153	(388)	146	(242)
Reclassification adjustment *(b)*	**48**	**(12)**	**36**	(3)	—	(3)	(75)	26	(49)
Net unrealized (loss) gain on assets available-for-sale	**(494)**	**114**	**(380)**	234	(84)	150	(463)	172	(291)
Defined benefit plans:									
Net (loss) gain arising during the period	**(244)**	**55**	**(189)**	454	(112)	342	(151)	43	(108)
Foreign exchange adjustment	**—**	**—**	**—**	1	—	1	(1)	1	—
Amortization of prior service credit, net loss and initial obligation included in net periodic benefit cost *(b)*	**93**	**(24)**	**69**	100	(32)	68	88	(31)	57
Total defined benefit plans	**(151)**	**31**	**(120)**	555	(144)	411	(64)	13	(51)
Unrealized (loss) gain on cash flow hedges:									
Unrealized hedge (loss) gain arising during period	**(15)**	**4**	**(11)**	33	(9)	24	(52)	18	(34)
Reclassification of net (gain) loss to net income:									
FX contracts - trading revenue	**—**	**—**	**—**	(2)	1	(1)	16	(6)	10
FX contracts - other revenue	**(2)**	**—**	**(2)**	(8)	2	(6)	—	—	—
FX contracts - net interest revenue	**—**	**—**	**—**	—	—	—	18	(6)	12
FX contracts - staff expense	**4**	**(1)**	**3**	(10)	2	(8)	11	(3)	8
Total reclassifications to net income *(b)*	**2**	**(1)**	**1**	(20)	5	(15)	45	(15)	30
Net unrealized (loss) gain on cash flow hedges	**(13)**	**3**	**(10)**	13	(4)	9	(7)	3	(4)
Total other comprehensive (loss) income	**$ (815)**	**$ (8)**	**$ (823)**	$ 1,461	$ (38)	$ 1,423	$ (1,052)	$ (144)	$ (1,196)

(a) Includes the impact of hedges of net investments in foreign subsidiaries. See Note 22 for additional information.

(b) The reclassification adjustment related to the unrealized gain (loss) on assets available-for-sale is recorded as net securities gains on the consolidated income statement. The amortization of prior service credit, net loss and initial obligation included in net periodic benefit cost is recorded as staff expense on the consolidated income statement. See Note 22 for the location of the reclassification adjustment related to cash flow hedges on the consolidated income statement.

Changes in accumulated other comprehensive income (loss) attributable to The Bank of New York Mellon Corporation shareholders

		ASC 820 Adjustments				
(in millions)	Foreign currency translation	Pensions	Other post-retirement benefits	Unrealized gain (loss) on assets available-for-sale	Unrealized gain (loss) on cash flow hedges	Total accumulated other comprehensive income (loss), net of tax
2015 ending balance	$ (1,632)	$ (1,250)	$ (47)	$ 327	$ 2	$ (2,600)
Change in 2016	(819)	(56)	5	(291)	(4)	(1,165)
2016 ending balance	$ (2,451)	$ (1,306)	$ (42)	$ 36	$ (2)	$ (3,765)
Change in 2017	838	419	(8)	150	9	1,408
2017 ending balance	$ (1,613)	$ (887)	$ (50)	$ 186	$ 7	$ (2,357)
Adjustment for the cumulative effect of applying ASU 2017-12 for derivatives and hedging	—	—	—	**(2)**	—	**(2)**
Adjusted balance at Jan. 1, 2018	**(1,613)**	**(887)**	**(50)**	**184**	**7**	**(2,359)**
Change in 2018	**(302)**	**(118)**	**(2)**	**(380)**	**(10)**	**(812)**
2018 ending balance	**$ (1,915)**	**$ (1,005)**	**$ (52)**	**$ (196)**	**$ (3)**	**$ (3,171)**

Note 16–Stock-based compensation

Our Long-Term Incentive Plans provide for the issuance of stock options, restricted stock, restricted stock units ("RSUs") and other stock-based awards to employees and directors of BNY Mellon. At Dec. 31, 2018, under the Long-Term Incentive Plan approved in April 2014, we may issue 23,524,349 new stock-based awards. Of this amount, 8,761,715 shares (subject to potential increase as provided in the Long-Term Incentive Plan) may be issued as restricted stock or RSUs. Stock-based compensation expense related to retirement eligibility vesting totaled $93 million in 2018, $109 million in 2017 and $106 million in 2016.

Stock options

Our Long-Term Incentive Plans provide for the issuance of stock options at fair market value at the date of grant to officers and employees of BNY Mellon. Generally, each option granted is exercisable between one and 10 years from the date of grant. No stock options were granted in 2018, 2017 and 2016.

Compensation costs that were charged against income were less than $1 million in both 2018 and 2017 and $2 million in 2016. The income tax benefit recognized in the consolidated income statement related to compensation costs was less than $1 million in 2018 and 2017 and $1 million in 2016.

A summary of the status of our options as of Dec. 31, 2018, and changes during the year, is presented below:

Stock option activity	Shares subject to option	Weighted-average exercise price	Weighted-average remaining contractual term *(in years)*
Balance at Dec. 31, 2017	9,302,140	$ 27.27	2.7
Granted	—	—	
Exercised	(2,539,135)	31.29	
Canceled/Expired	(48,722)	37.56	
Balance at Dec. 31, 2018	**6,714,283**	**$ 25.67**	**2.0**
Vested and expected to vest at Dec. 31, 2018	**6,714,283**	**25.67**	**2.0**
Exercisable at Dec. 31, 2018	**6,714,283**	**25.67**	**2.0**

Stock options outstanding at Dec. 31, 2018	Options outstanding			Options exercisable *(a)*	
Range of exercise prices	Outstanding	Weighted-average remaining contractual life *(in years)*	Weighted-average exercise price	Exercisable	Weighted-average exercise price
$ 18 to 31	6,714,283	2.0	$ 25.67	6,714,283	$ 25.67

(a) *At Dec. 31, 2017 and Dec. 31, 2016, 9,302,140 and 21,241,568 options were exercisable at a weighted-average price per common share of $27.27 and $32.57, respectively.*

Aggregate intrinsic value of options *(in millions)*	**2018**	2017	2016
Outstanding at Dec. 31,	**$ 144**	$ 247	$ 315
Exercisable at Dec. 31,	**$ 144**	$ 247	$ 315

The total intrinsic value of options exercised was $61 million in 2018, $159 million in 2017 and $122 million in 2016.

Cash received from option exercises totaled $80 million in 2018, $431 million in 2017 and $438 million in 2016. The actual excess tax benefit realized for the tax deductions from options exercised totaled $10 million in 2018, $16 million in 2017 and $3 million in 2016. Consistent with the adoption of ASU 2016-09, the tax benefits in 2018 and 2017 were recognized in the provision for income taxes and in 2016 were recorded to additional paid-in capital.

Restricted stock, RSUs and Performance share units

Restricted stock and RSUs are granted under our long-term incentive plans at no cost to the recipient. These awards are subject to forfeiture until certain restrictions have lapsed, including continued employment, for a specified period. The recipient of a share of restricted stock is entitled to voting rights and generally is entitled to dividends on the common stock. An RSU entitles the recipient to receive a share of common stock after the applicable restrictions lapse. The recipient generally is entitled to receive cash payments equivalent to any dividends paid on the underlying common stock during the period the RSU is outstanding but does not receive voting rights.

The fair value of restricted stock and RSUs is equal to the fair market value of our common stock on the date of grant. The expense is recognized over the vesting period, which is generally zero to four years. The total compensation expense recognized for restricted stock and RSUs was $270 million in 2018, $273 million in 2017 and $256 million in 2016. The total income tax benefit recognized in the consolidated income statement related to compensation costs was $65 million in 2018, $66 million in 2017 and $91 million in 2016.

BNY Mellon's Executive Committee members were granted a target award of 362,798 performance share units ("PSUs") in 2018, 793,847 in 2017 and 548,391 in 2016. The 2018 awards cliff vest in 3 years based on average revenue growth and average operating margin, both as adjusted. These awards are classified as equity and marked-to-market to earnings as the earnout percentages are determined at the discretion of the Human Resources Compensation Committee based on a payout table. The 2017 and 2016 awards cliff vest in 3 years based on operating earnings per share with the potential of a risk modifier based on appropriate growth in RWAs. These awards are liability classified as they contain an interest rate condition that is not linked to performance or market and marked-to-market to earnings as the earnout percentages are determined at the discretion of the Human Resources Compensation Committee based on a payout table.

The following table summarizes our non-vested PSU, restricted stock and RSU activity for 2018.

Non-vested PSU, restricted stock and RSU activity	Number of shares	Weighted-average fair value at grant date
Non-vested PSUs, restricted stock and RSUs at Dec. 31, 2017	16,731,332	$ 42.42
Granted	**5,125,001**	**57.67**
Vested	**(7,005,313)**	**39.06**
Forfeited	**(639,308)**	**45.90**
Non-vested PSUs, restricted stock and RSUs at Dec. 31, 2018	**14,211,712**	**$ 49.43**

As of Dec. 31, 2018, $207 million of total unrecognized compensation costs related to non-vested PSUs, restricted stock and RSUs is expected to be recognized over a weighted-average period of 2.1 years.

The total fair value of restricted stock, RSUs and PSUs that vested was $289 million in 2018, $260 million in 2017 and $236 million in 2016. The actual excess tax benefit realized for the tax deductions from shares vested totaled $26 million in 2018, $34 million in 2017 and $8 million in 2016. Consistent with the adoption of ASU 2016-09, the tax benefits in 2018 and 2017 were recognized in the provision for income taxes and in 2016 were recorded to additional paid-in capital.

Subsidiary Long-Term Incentive Plans

BNY Mellon also has several subsidiary Long-Term Incentive Plans which have issued restricted subsidiary shares to certain employees. These share awards are subject to forfeiture until certain restrictions have lapsed, including continued employment for a specified period of time. The shares are non-voting and non-dividend paying. Once the restrictions lapse, which generally occurs in three to five years, the shares can only be sold, at the option of the employee, to BNY Mellon at a price based generally on the fair value of the subsidiary at the time of repurchase. In certain instances BNY Mellon has an election to call the shares.

Note 17–Employee benefit plans

BNY Mellon has defined benefit and/or defined contribution retirement plans and other post-retirement plans providing healthcare benefits.

The defined benefit pension plans cover approximately 12,400 U.S. employees and approximately 14,700 non-U.S. employees.

BNY Mellon has one qualified and several non-qualified defined benefit pension plans in the U.S. and several pension plans overseas.

Effective June 30, 2015, the benefit accruals under the U.S. qualified and nonqualified defined benefit plans were frozen. This change resulted in no additional benefits being earned by participants in those plans based on service or pay after June 30, 2015. These plans were previously closed to new participants effective Dec. 31, 2010, at which time a non-elective contribution was added to the Company's defined contribution plan for employees not eligible to join the pension plan. Employees previously participating in the pension plan received this non-elective contribution starting July 1, 2015.

Effective Dec. 31, 2018, the benefit accruals were frozen under our largest foreign plan, which covers certain UK employees. This change results in no additional benefits being earned by participants in that plan based on service or pay after Dec. 31, 2018. Most UK employees currently earn benefits only on a defined contribution basis. UK employees impacted by the pension plan freeze will begin earning benefits on a defined contribution basis in 2019.

Pension and post-retirement healthcare plans

The following tables report the combined data for our domestic and foreign defined benefit pension and post-retirement healthcare plans.

	Pension Benefits				Healthcare Benefits			
	Domestic		Foreign		Domestic		Foreign	
(dollar amounts in millions)	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017
Weighted-average assumptions used to determine benefit obligations								
Discount rate	**4.45%**	3.97%	**2.95%**	2.45%	**4.45%**	3.97%	**3.10%**	2.50%
Rate of compensation increase	**N/A**	N/A	**2.98**	3.02	**3.00**	3.00	**N/A**	N/A
Cash balance interest crediting rate	**4.00**	4.00	**N/A**	N/A	**N/A**	N/A	**N/A**	N/A
Change in benefit obligation *(a)*								
Benefit obligation at beginning of period	**$ (4,405)**	$ (4,274)	**$ (1,322)**	$ (1,248)	**$ (175)**	$ (169)	**$ (4)**	$ (2)
Service cost	**—**	—	**(28)**	(31)	**(1)**	(1)	**—**	—
Interest cost	**(169)**	(180)	**(32)**	(33)	**(7)**	(7)	**—**	—
Employee contributions	**—**	—	**—**	(1)	**—**	—	**—**	—
Actuarial gain (loss)	**219**	(165)	**173**	88	**22**	(10)	**(1)**	(1)
Curtailments	**—**	—	**11**	—	**—**	—	**—**	—
Benefits paid	**232**	214	**25**	31	**12**	12	**—**	—
Foreign exchange adjustment	**N/A**	N/A	**69**	(128)	**N/A**	N/A	**—**	(1)
Benefit obligation at end of period	**(4,123)**	(4,405)	**(1,104)**	(1,322)	**(149)**	(175)	**(5)**	(4)
Change in fair value of plan assets								
Fair value at beginning of period	**5,496**	4,906	**1,393**	1,090	**107**	97	**—**	—
Actual return on plan assets	**(257)**	783	**1**	128	**(8)**	10	**—**	—
Employer contributions	**33**	21	**22**	93	**12**	12	**—**	—
Employee contributions	**—**	—	**—**	1	**—**	—	**—**	—
Benefit payments	**(232)**	(214)	**(25)**	(31)	**(12)**	(12)	**—**	—
Foreign exchange adjustment	**N/A**	N/A	**(75)**	112	**N/A**	N/A	**—**	—
Fair value at end of period	**5,040**	5,496	**1,316**	1,393	**99**	107	**—**	—
Funded status at end of period	**$ 917**	$ 1,091	**$ 212**	$ 71	**$ (50)**	$ (68)	**$ (5)**	$ (4)
Amounts recognized in accumulated other comprehensive loss (income) consist of:								
Net loss (gain)	**$ 1,598**	$ 1,294	**$ 105**	$ 255	**$ 84**	$ 97	**$ —**	$ (1)
Prior service cost (credit)	**—**	—	**1**	1	**(40)**	(49)	**—**	—
Total (before tax effects)	**$ 1,598**	$ 1,294	**$ 106**	$ 256	**$ 44**	$ 48	**$ —**	$ (1)

(a) The benefit obligation for pension benefits is the projected benefit obligation, and for healthcare benefits, it is the accumulated benefit obligation.

A number of key assumptions and measurement date values determine pension expense. The key elements include the long-term rate of return on plan assets, the discount rate, the market-related value of plan assets and the price used to value stock in the Employee Stock Ownership Plan ("ESOP").

The discount rate for U.S. pension plans was determined after reviewing equivalent rates obtained by discounting the pension plans' expected cash flows using various high-quality, long-term corporate bond yield curves. We also reviewed the results of several models that matched bonds to our pension cash flows. After reviewing the various indices and models, we selected a discount rate of 4.45% as of Dec. 31, 2018.

The discount rates for foreign pension plans are based on high-quality corporate bond rates in countries that have an active corporate bond market. In those countries with no active corporate bond market, discount rates are based on local government bond rates plus a credit spread.

Actuarial gains (loss) on the benefit obligation for both the domestic and foreign pension plans in 2018, as well as the domestic pension plans in 2017, were primarily attributable to changes in discount rates. The actuarial gain on the benefit obligation for foreign pension plans in 2017 was primarily attributable to a decrease in assumed inflation rates for pension plans in the UK.

Net periodic benefit (credit) cost	Pension Benefits						Healthcare Benefits					
	Domestic			Foreign			Domestic			Foreign		
(dollar amounts in millions)	**2018**	2017	2016	**2018**	2017	2016	**2018**	2017	2016	**2018**	2017	2016
Weighted-average assumptions as of Jan. 1:												
Market-related value of plan assets	**$ 5,238**	$ 5,026	$ 4,830	**$ 1,266**	$ 994	$ 994	**$ 108**	$ 102	$ 97	**N/A**	N/A	N/A
Discount rate	**3.97%**	4.35%	4.48%	**2.45%**	2.53%	3.45%	**3.97%**	4.35%	4.48%	**2.50%**	2.60%	3.60%
Expected rate of return on plan assets	**6.625**	6.625	7.00	**4.56**	4.61	5.35	**6.625**	6.625	7.00	**N/A**	N/A	N/A
Rate of compensation increase	**N/A**	N/A	N/A	**3.02**	3.60	3.51	**3.00**	3.00	3.00	**N/A**	N/A	N/A
Cash balance interest crediting rate	**4.00**	4.00	4.00	**N/A**	N/A	N/A	**N/A**	N/A	N/A	**N/A**	N/A	N/A
Components of net periodic benefit (credit) cost :												
Service cost	**$ —**	$ —	$ —	**$ 28**	$ 31	$ 29	**$ 1**	$ 1	$ 1	**$ —**	$ —	$ —
Interest cost	**169**	180	182	**32**	33	36	**7**	7	8	**—**	—	—
Expected return on assets	**(339)**	(325)	(330)	**(57)**	(50)	(51)	**(8)**	(7)	(7)	**—**	—	—
Amortization of:												
Prior service cost (credit)	**—**	—	—	**—**	—	1	**(9)**	(10)	(10)	**—**	—	—
Net actuarial loss	**68**	67	69	**22**	35	17	**7**	6	8	**—**	—	—
Settlement loss	**5**	2	2	**—**	—	1	**—**	—	—	**—**	—	—
Net periodic benefit (credit) cost	**$ (97)**	$ (76)	$ (77)	**$ 25**	$ 49	$ 33	**$ (2)**	$ (3)	$ —	**$ —**	$ —	$ —

Changes in other comprehensive loss (income) in 2018	Pension Benefits		Healthcare Benefits	
(in millions)	Domestic	Foreign	Domestic	Foreign
Net loss (gain) arising during period	**$ 377**	**$ (128)**	**$ (6)**	**$ 1**
Recognition of prior years' net (loss)	**(73)**	**(22)**	**(7)**	**—**
Recognition of prior years' service credit	**—**	**—**	**9**	**—**
Total recognized in other comprehensive (income) loss (before tax effects)	**$ 304**	**$ (150)**	**$ (4)**	**$ 1**

	Domestic		Foreign	
(in millions)	**2018**	2017	**2018**	2017
Pension benefits:				
Prepaid benefit cost	**$ 1,077**	$ 1,282	**$ 280**	$ 134
Accrued benefit cost	**(160)**	(191)	**(68)**	(63)
Total pension benefits	**$ 917**	$ 1,091	**$ 212**	$ 71
Healthcare benefits:				
Accrued benefit cost	**$ (50)**	$ (68)	**$ (5)**	$ (4)
Total healthcare benefits	**$ (50)**	$ (68)	**$ (5)**	$ (4)

The accumulated benefit obligation for all defined benefit plans was $5.2 billion at Dec. 31, 2018 and $5.7 billion at Dec. 31, 2017.

Plans with obligations in excess of plan assets	Pension Benefits					Healthcare Benefits			
	Domestic		Foreign			Domestic		Foreign	
(in millions)	**2018**	2017	**2018**	2017		**2018**	2017	**2018**	2017
Projected benefit obligation	**$ 160**	$ 191	**$ 245**	$ 244	*(a)*	**N/A**	N/A	**N/A**	N/A
Fair value of plan assets	**—**	—	**177**	181	*(a)*	**N/A**	N/A	**N/A**	N/A
Accumulated benefit obligation	**160**	191	**67**	61		**80**	88	**5**	4
Fair value of plan assets	**—**	—	**27**	25		**—**	—	**—**	—

(a) Amounts reported in 2017 have been revised based on the clarification provided in ASU 2018-14.

Assumed healthcare cost trend

The assumed healthcare cost trend rate used in determining domestic benefit expense for 2019 is 6.00%, decreasing to 4.75% in 2024 for pre-Medicare costs and 5.50% decreasing to 4.75% in 2022 for Medicare costs. This projection is based on various economic models that forecast a decreasing growth rate of healthcare expenses over time. The underlying assumption is that healthcare expense growth cannot outpace gross national product growth indefinitely, and over time a lower equilibrium growth rate will be achieved. Further, the ultimate growth rate of 4.75% bears a reasonable relationship to the discount rate. In addition, 2020 costs are assumed to increase beyond the assumed health care cost trend rate for 2019 due to the assumed reinstatement of the health insurer fee which was waived.

The following benefit payments for BNY Mellon's pension and healthcare plans, which reflect expected future service as appropriate, are expected to be paid over the next 10 years:

Expected benefit payments *(in millions)*	**Domestic**	**Foreign**
Pension benefits:		
Year 2019	$ 265	$ 19
2020	266	20
2021	264	20
2022	261	22
2023	266	24
2024-2028	1,297	130
Total pension benefits	$ 2,619	$ 235
Healthcare benefits:		
Year 2019	$ 11	$ —
2020	12	—
2021	12	—
2022	11	—
2023	11	—
2024-2028	50	1
Total healthcare benefits	$ 107	$ 1

Plan contributions

BNY Mellon expects to make cash contributions to fund its defined benefit pension plans in 2019 of $14 million for the domestic plans and $19 million for the foreign plans.

BNY Mellon expects to make cash contributions to fund its post-retirement healthcare plans in 2019 of $11 million for the domestic plans and less than $1 million for the foreign plans.

Investment strategy and asset allocation

BNY Mellon is responsible for the administration of various employee pension and healthcare post-retirement benefits plans, both domestically and internationally. The domestic plans are administered by BNY Mellon's Benefits Administration Committee, a named fiduciary. Subject to the following, at all relevant times, BNY Mellon's Benefits Investment Committee, another named fiduciary to the domestic plans, is responsible for the investment of plan assets. The Benefits Investment Committee's responsibilities include the investment of all domestic defined benefit plan assets, as well as the determination of investment options offered to participants in all domestic defined contribution plans. The Benefits Investment Committee conducts periodic reviews of investment performance, asset allocation and investment manager suitability. In addition, the Benefits Investment Committee has oversight of the Regional Governance Committees for the foreign defined benefit plans.

Our investment objective for U.S. and foreign plans is to maximize total return while maintaining a broadly diversified portfolio for the primary purpose of satisfying obligations for future benefit payments.

Equities are the main holding of the plans. Alternative investments (including private equities) and fixed-income securities provide diversification and, in certain cases, lower the volatility of returns. In general, equity securities and alternative investments within any domestic plan's portfolio can be maintained in the range of 30% to 70% of total plan assets, fixed-income securities can range from 20% to 50% of plan assets and cash equivalents can be held in amounts ranging from 0% to 5% of plan assets. Actual asset allocation within the approved ranges varies from time to time based on economic conditions (both current and forecast) and the advice of professional advisors.

Our pension assets were invested as follows at Dec. 31, 2018 and Dec. 31, 2017:

Asset allocations	Domestic		Foreign	
	2018	2017	**2018**	2017
Equities	**52%**	63%	**48%**	51%
Fixed income	**45**	33	**36**	33
Alternative investment	**2**	2	**9**	9
Private equities	**1**	1	**—**	—
Real estate	**—**	—	**4**	4
Cash	**—**	1	**3**	3
Total pension benefits	**100%**	100%	**100%**	100%

We held no The Bank of New York Mellon Corporation stock in our pension plans at Dec. 31, 2018 and Dec. 31, 2017. Assets of the U.S. post-retirement healthcare plan are invested in an insurance contract.

Fair value measurement of plan assets

In accordance with ASC 715, *Compensation - Retirement Benefits*, BNY Mellon has established a three-level hierarchy for fair value measurements of its pension plan assets based upon the transparency of inputs to the valuation of an asset as of the measurement date. The valuation hierarchy is consistent with guidance in ASC 820, *Fair Value Measurement*, which is detailed in Note 19.

The following is a description of the valuation methodologies used for assets measured at fair value, as well as the general classification of such assets pursuant to the valuation hierarchy.

Cash and currency

This category consists primarily of foreign currency balances and is included in Level 1 of the valuation hierarchy. Foreign currency is translated monthly based on current exchange rates.

Common and preferred stock and mutual funds

These investments include equities and mutual funds and are valued at the closing price reported in the active market in which the individual securities are traded, if available. Where there are no readily available market quotations, we determine fair value primarily based on pricing sources with reasonable levels of price transparency. Common and preferred stock and mutual funds are included in Level 1 of the valuation hierarchy.

Collective trust funds

Collective trust funds include commingled and U.S. equity funds that have no readily available market quotations. The fair value of the funds is based on the securities in the portfolio, which typically are the amount that the fund might reasonably expect to receive for the securities upon a sale. These funds are valued using observable inputs on either a daily or monthly basis. Collective trust funds are included in Level 2 of the valuation hierarchy.

Fixed-income investments

Fixed-income investments include U.S. Treasury securities, U.S. government agencies, sovereign government obligations, U.S. corporate bonds and foreign corporate debt funds. U.S. Treasury securities are valued at the closing price reported in the active market in which the individual security is traded and included as Level 1 of the valuation hierarchy. U.S. government agencies, sovereign government obligations, U.S. corporate bonds and foreign corporate debt funds are valued based on quoted prices for comparable securities with similar yields and credit ratings. When quoted prices are not available for identical or similar bonds, the bonds are valued using discounted cash flows that maximize observable inputs, such as current yields of similar instruments, but includes adjustments for certain risks that may not be observable, such as credit and liquidity risks. U.S. government agencies, sovereign government obligations, U.S. corporate bonds and foreign corporate debt funds are primarily included in Level 2 of the valuation hierarchy.

Other assets measured at NAV

Other assets measured at NAV include funds of funds and venture capital and partnership interests, property funds and other funds. There are no readily available market quotations for these funds. The fair value of the funds of funds is based on NAVs of the funds in the portfolio, which reflects the value of the underlying securities. The fair value of the underlying securities is typically the amount that the fund might reasonably expect to receive upon selling those hard to value or illiquid securities within the portfolios. These funds are either valued on a daily or monthly basis. The fair value of the venture capital and partnership interests is based on the pension plan's ownership percentage of the fair value of the underlying funds as provided by the fund managers. These funds are typically valued on a quarterly basis. The pension plan's venture capital and partnership interests are valued at NAV as a practical expedient for fair value.

The following tables present the fair value of each major category of plan assets as of Dec. 31, 2018 and Dec. 31, 2017, by captions and by ASC 820, *Fair Value Measurement,* valuation hierarchy.

Plan assets measured at fair value on a recurring basis—domestic plans at Dec. 31, 2018

(in millions)	Level 1	Level 2	Level 3	Total fair value
Common and preferred stock:				
U.S. equity	**$ 1,514**	**$ —**	**$ —**	**$ 1,514**
Non-U.S. equity	**160**	**—**	**—**	**160**
Collective trust funds:				
Commingled	**—**	**435**	**—**	**435**
U.S. equity	**—**	**934**	**—**	**934**
Fixed income:				
U.S. Treasury securities	**630**	**—**	**—**	**630**
U.S. government agencies	**—**	**44**	**—**	**44**
Sovereign government obligations	**3**	**5**	**—**	**8**
U.S. corporate bonds	**—**	**972**	**—**	**972**
Other	**—**	**69**	**—**	**69**
Mutual funds	**114**	**—**	**—**	**114**
Total domestic plan assets in the fair value hierarchy	**$ 2,421**	**$ 2,459**	**$ —**	**$ 4,880**
Other assets measured at NAV:				
Funds of funds				**130**
Venture capital and partnership interests				**30**
Total domestic plan assets, at fair value				**$ 5,040**

Plan assets measured at fair value on a recurring basis—foreign plans at Dec. 31, 2018

(in millions)	Level 1	Level 2	Level 3	Total fair value
Equity funds	**$ —**	**$ 194**	**$ —**	**$ 194**
Sovereign/government obligation funds	**—**	**126**	**—**	**126**
Corporate debt funds	**—**	**418**	**—**	**418**
Cash and currency	**356**	**—**	**—**	**356**
Total foreign plan assets in the fair value hierarchy	**$ 356**	**$ 738**	**$ —**	**$ 1,094**
Other assets measured at NAV				**222**
Total foreign plan assets, at fair value				**$ 1,316**

Plan assets measured at fair value on a recurring basis—domestic plans at Dec. 31, 2017

(in millions)	Level 1	Level 2	Level 3	Total fair value
Common and preferred stock:				
U.S. equity	$ 1,815	$ —	$ —	$ 1,815
Non-U.S. equity	243	—	—	243
Collective trust funds:				
Commingled	—	193	—	193
U.S. equity	—	1,389	—	1,389
Fixed income:				
U.S. Treasury securities	452	—	—	452
U.S. government agencies	—	48	—	48
Sovereign government obligations	5	6	—	11
U.S. corporate bonds	—	910	—	910
Other	—	100	—	100
Mutual funds	163	—	—	163
Total domestic plan assets in the fair value hierarchy	$ 2,678	$ 2,646	$ —	$ 5,324
Other assets measured at NAV:				
Funds of funds				129
Venture capital and partnership interests				43
Total domestic plan assets, at fair value				$ 5,496

Plan assets measured at fair value on a recurring basis—foreign plans at Dec. 31, 2017

(in millions)	Level 1	Level 2	Level 3	Total fair value
Equity funds	$ 434	$ 277	$ —	$ 711
Sovereign/government obligation funds	—	104	—	104
Corporate debt funds	—	345	—	345
Cash and currency	41	—	—	41
Total foreign plan assets in the fair value hierarchy	$ 475	$ 726	$ —	$ 1,201
Other assets measured at NAV				192
Total foreign plan assets, at fair value				$ 1,393

Changes in Level 3 fair value measurements

The table below presents a rollforward of the plan assets, for the year ended Dec. 31, 2017 (including the change in fair value), for financial instruments classified in Level 3 of the valuation hierarchy.

Fair value measurements using significant unobservable inputs—foreign plans—for the year ended Dec. 31, 2017	
(in millions)	Corporate debt funds
Fair value at Dec. 31, 2016	$ 17
Transfers out of Level 3	(20)
Total gains included in plan assets	3
Fair value at Dec. 31, 2017	$ —
Change in unrealized gains or (losses) for the period included in earnings for assets held at the end of the reporting period	$ —

Funds of funds and venture capital and partnership interests valued using NAV per share

BNY Mellon had pension and post-retirement plan assets invested in funds of funds, venture capital and partnership interests, property funds and other contracts valued using NAV. The funds of funds investments are redeemable at NAV under agreements with the funds of funds managers.

Assets valued using NAV at Dec. 31, 2018				
(dollar amounts in millions)	Fair value	Unfunded commitments	Redemption frequency	Redemption notice period
Funds of funds *(a)*	$ 147	$ —	Monthly	30-45 days
Venture capital and partnership interests *(b)*	148	—	N/A	N/A
Property funds *(c)*	52	—	Monthly	0-90 days
Corporate debt	19	—	N/A	N/A
Other contracts *(d)*	16	—	N/A	N/A
Total	**$ 382**	**$ —**		

Assets valued using NAV at Dec. 31, 2017				
(dollar amounts in millions)	Fair value	Unfunded commitments	Redemption frequency	Redemption notice period
Funds of funds *(a)*	$ 152	$ —	Monthly	30-45 days
Venture capital and partnership interests *(b)*	128	49	N/A	N/A
Property funds *(c)*	51	—	Monthly	0-90 days
Corporate debt	20	—	N/A	N/A
Other contracts *(d)*	13	—	N/A	N/A
Total	$ 364	$ 49		

(a) Funds of funds include multi-strategy hedge funds that utilize investment strategies that invest over both long-term investment and short-term investment horizons.

(b) Venture capital and partnership interests do not have redemption rights. Distributions from such funds will be received as the underlying investments are liquidated.

(c) Property funds include funds invested in regional real estate vehicles that hold direct interest in real estate properties.

(d) Other contracts include assets invested in pooled accounts at insurance companies that are privately valued by the asset manager.

Defined contribution plans

BNY Mellon sponsors defined contribution plans in the U.S. and in certain non-U.S. locations, all of which are administered in accordance with local laws. The most significant defined contribution plan is The Bank of New York Mellon Corporation 401(k) Savings Plan sponsored by the Company in the U.S. and covers substantially all U.S. employees.

Under The Bank of New York Mellon Corporation 401(k) Savings Plan, the Company matched 100% of the first 4% of an employee's eligible base pay plus 50% of the next 2% of eligible pay contributed by the participant for a maximum matching contribution of 5% for 2018, 2017 and 2016, subject to statutory limits.

The U.S. qualified and nonqualified defined benefit plans were closed to new participants effective Dec. 31, 2010, at which time an annual non-elective contribution equal to 2% of eligible base pay was added to The Bank of New York Mellon Corporation 401(k) Savings Plan.

At Dec. 31, 2018 and Dec. 31, 2017, The Bank of New York Mellon Corporation 401(k) Savings Plan owned 12.7 million and 13.2 million shares of our common stock, respectively. The fair value of total assets was $6.2 billion at Dec. 31, 2018 and $6.6 billion at Dec. 31, 2017. We recorded expense of $244 million in 2018, $232 million in 2017 and $224 million in 2016 primarily for contributions to our defined contribution plans.

We also have an ESOP covering certain domestic full-time employees hired on or before July 1, 2008. The ESOP works in conjunction with the defined benefit pension plan. Employees are entitled to the higher of their benefit under the ESOP or such defined benefit pension plan at retirement. Benefits payable under the defined benefit pension plan are offset by the equivalent value of benefits earned under the ESOP.

At Dec. 31, 2018 and Dec. 31, 2017, the ESOP owned 5.0 million and 5.4 million shares of our common stock, respectively. The fair value of total ESOP assets was $236 million at Dec. 31, 2018 and $293 million at Dec. 31, 2017. The Company is not permitted to make contributions to the ESOP.

The Benefits Investment Committee appointed Fiduciary Counselors, Inc. to serve as the independent fiduciary to (i) make all fiduciary decisions related to the continued prudence of offering the common stock of BNY Mellon or its affiliates as an investment option under the plans, other than plan sponsor decisions, and (ii) select and monitor any actively or passively managed investments of BNY Mellon or its affiliates to be offered to participants as investment options under the plans, excluding self-directed accounts.

Note 18–Company financial information (Parent Corporation)

In connection with our single point of entry resolution strategy, we have established an IHC to facilitate the provision of capital and liquidity resources to certain key subsidiaries in the event of material financial distress or failure. In 2017, we entered into a binding support agreement with those key subsidiaries and other related entities that requires the IHC to provide that support. The support agreement requires the Parent to transfer cash and other liquid financial assets to the IHC, subject to certain amounts retained by the Parent to meet its near-term cash needs. The Parent's and the IHC's obligations under the support agreement are secured. The IHC has provided the Parent with a committed line of credit that allows the Parent to draw funds necessary to service near-term obligations. As a result, during business-as-usual circumstances, the Parent is expected to continue to have access to the funds necessary to pay dividends, repurchase common stock, service its debt and satisfy its other obligations. If our projected liquidity resources deteriorate so severely that resolution of the Parent becomes imminent, the committed line of credit the IHC provided to the Parent will automatically terminate, with all amounts outstanding becoming due and payable, and the support agreement will require the Parent to transfer most of its remaining assets (other than stock in subsidiaries and a cash reserve to fund bankruptcy expenses) to the IHC. As a result, during a period of severe financial stress, the Parent could become unable to meet its debt and payment obligations (including with respect to its securities), causing the Parent to seek protection under bankruptcy laws earlier than it otherwise would have.

Our bank subsidiaries are subject to dividend limitations under the Federal Reserve Act, as well as national and state banking laws. Under these statutes, prior regulatory consent is required for dividends in any year that would exceed the bank's net profits for such year combined with retained net profits for the prior two years. Additionally, such bank subsidiaries may not declare dividends in excess of net profits on hand, as defined, after deducting the amount by which the principal amount of all loans, on which interest is past due for a period of six months or more, exceeds the allowance for credit losses.

The payment of dividends also is limited by minimum capital requirements imposed on banks. As of Dec. 31, 2018, BNY Mellon's bank subsidiaries exceeded these minimum requirements.

Subsequent to Dec. 31, 2018, our U.S. bank subsidiaries could declare dividends to the Parent of approximately $3.7 billion, without the need for a regulatory waiver. In addition, at Dec. 31, 2018, non-bank subsidiaries of the Parent had liquid assets of approximately $1.7 billion.

The bank subsidiaries declared dividends of $3.8 billion in 2018, $1.3 billion in 2017 and $160 million in 2016. The Federal Reserve and the OCC have issued additional guidelines that require BHCs and national banks to continually evaluate the level of cash dividends in relation to their respective operating income, capital needs, asset quality and overall financial condition.

The Federal Reserve policy with respect to the payment of cash dividends by BHCs provides that, as a matter of prudent banking, a BHC should not maintain a rate of cash dividends unless its net income available to common shareholders has been sufficient to fully fund the dividends, and the prospective rate of earnings retention appears to be consistent with the holding company's capital needs, asset quality and overall financial condition. The Federal Reserve can also prohibit a dividend if payment would constitute an unsafe or unsound banking practice. Any increase in BNY Mellon's ongoing quarterly dividends would require approval from the Federal Reserve.

BNY Mellon and other affected BHCs may pay dividends, repurchase stock, and make other capital distributions only in accordance with a capital plan that has been reviewed by the Federal Reserve and as to which the Federal Reserve has not objected. The Federal Reserve may object to a capital plan if the plan does not show that the covered BHC will meet, for each quarter throughout the nine-quarter planning horizon covered by the capital plan, all minimum regulatory capital ratios under applicable capital rules as in effect for that quarter on a *pro forma* basis under the base case and stressed scenarios (including a severely adverse scenario provided by the Federal Reserve). The capital plan rules also stipulate that a covered BHC may not make a capital distribution unless after giving effect to the distribution it will meet all minimum regulatory capital ratios. As part of this process, BNY Mellon also provides the Federal Reserve with estimates of the composition and levels of regulatory capital, RWAs and other measures under Basel III under an identified scenario.

In June 2018, in connection with the Federal Reserve's non-objection to our 2018 capital plan, BNY Mellon announced a share repurchase plan providing for the repurchase of up to $2.4 billion of common stock starting in the third quarter of 2018 and continuing through the second quarter of 2019. This new share repurchase plan replaces all previously authorized share repurchase plans.

On Dec. 10, 2018, BNY Mellon announced that the Federal Reserve approved the repurchase of up to $830 million of additional common stock. Our Board of Directors approved the additional share repurchases, all of which were repurchased in the fourth quarter of 2018. These repurchases were in addition to the Company's repurchase of $2.4 billion of common stock previously approved by the Board and announced in June 2018.

The Federal Reserve Act limits, and requires collateral for, extensions of credit by our insured subsidiary banks to BNY Mellon and certain of its non-bank affiliates. Also, there are restrictions on the amounts of investments by such banks in stock and other securities of BNY Mellon and such affiliates, and restrictions on the acceptance of their securities as collateral for loans by such banks. Extensions of credit by the banks to each of our affiliates are limited to 10% of such bank's regulatory capital, and in the aggregate for BNY Mellon and all such affiliates to 20%, and collateral must be between 100% and 130% of the amount of the credit, depending on the type of collateral.

Our insured subsidiary banks are required to maintain reserve balances with Federal Reserve Banks under the Federal Reserve Act and Regulation D. Required balances averaged $6.1 billion and $5.6 billion for the years 2018 and 2017, respectively.

In the event of impairment of the capital stock of one of the Parent's national banks or The Bank of New York Mellon, the Parent, as the banks' stockholder, could be required to pay such deficiency.

The Parent guarantees the debt issued by Mellon Funding Corporation, a wholly owned financing subsidiary of the Company. The Parent also guarantees committed and uncommitted lines of credit of Pershing LLC and Pershing Limited subsidiaries. The Parent guarantees described above are full and unconditional and contain the standard provisions relating to parent guarantees of subsidiary debt. Additionally, the Parent guarantees or indemnifies obligations of its consolidated subsidiaries as needed. Generally, there are no stated notional amounts included in these indemnifications and the contingencies triggering the obligation for indemnification are not expected to occur. As a result, we are unable to develop an estimate of the maximum payout under these indemnifications. However, we believe the possibility is remote that we will have to make any material payment under these guarantees and indemnifications.

The condensed financial statements of the Parent include the accounts of the Parent; Mellon Funding Corporation and MIPA, LLC, a single-member limited liability company, created to hold and administer corporate-owned life insurance. Financial data for the Parent, the financing subsidiary and the single-member limited liability company are combined for financial reporting purposes because of the limited function of these entities and the unconditional guarantee by BNY Mellon of their obligations.

The Parent's condensed financial statements are as follows:

Condensed Income Statement—The Bank of New York Mellon Corporation (Parent Corporation)

	Year ended Dec. 31,		
(in millions)	**2018**	2017	2016
Dividends from bank subsidiaries	**$ 3,874**	$ 1,405	$ 125
Dividends from nonbank subsidiaries	**1,869**	382	798
Interest revenue from bank subsidiaries	**13**	25	70
Interest revenue from nonbank subsidiaries	**200**	171	121
Gain on securities held for sale	**1**	—	—
Other revenue	**36**	67	39
Total revenue	**5,993**	2,050	1,153
Interest (including, $59, $73, $88, to subsidiaries, respectively)	**658**	663	427
Other expense	**439**	254	262
Total expense	**1,097**	917	689
Income before income taxes and equity in undistributed net income of subsidiaries	**4,896**	1,133	464
(Benefit) for income taxes	**(165)**	(526)	(333)
Equity in undistributed net income:			
Bank subsidiaries	**(508)**	1,524	2,474
Nonbank subsidiaries	**(287)**	907	276
Net income	**4,266**	4,090	3,547
Preferred stock dividends	**(169)**	(175)	(122)
Net income applicable to common shareholders of The Bank of New York Mellon Corporation	**$ 4,097**	$ 3,915	$ 3,425

Condensed Balance Sheet—The Bank of New York Mellon Corporation (Parent Corporation)

	Dec. 31,	
(in millions)	**2018**	2017
Assets:		
Cash and due from banks	**$ 909**	$ 1,301
Securities	**27**	40
Investment in and advances to subsidiaries and associated companies:		
Banks	**31,285**	32,967
Other	**37,986**	37,660
Subtotal	**69,271**	70,627
Corporate-owned life insurance	**761**	756
Other assets	**740**	1,135
Total assets	**$ 71,708**	$ 73,859
Liabilities:		
Deferred compensation	**$ 445**	$ 476
Affiliate borrowings	**1,616**	3,177
Other liabilities	**1,246**	1,373
Long-term debt	**27,763**	27,582
Total liabilities	**31,070**	32,608
Shareholders' equity	**40,638**	41,251
Total liabilities and shareholders' equity	**$ 71,708**	$ 73,859

Condensed Statement of Cash Flows—The Bank of New York Mellon Corporation (Parent Corporation)

	Year ended Dec. 31,		
(in millions)	**2018**	2017	2016
Operating activities:			
Net income	**$ 4,266**	$ 4,090	$ 3,547
Adjustments to reconcile net income to net cash provided by operating activities:			
Equity in undistributed net loss (income) of subsidiaries	**795**	(2,431)	(2,750)
Change in accrued interest receivable	**27**	(6)	2
Change in accrued interest payable	**29**	42	4
Change in taxes payable *(a)*	**224**	(600)	452
Other, net	**(257)**	38	(31)
Net cash provided by operating activities	**5,084**	1,133	1,224
Investing activities:			
Purchases of securities	—	(991)	(1,739)
Proceeds from sales of securities	**13**	2,729	—
Change in loans	—	7	13
Acquisitions of, investments in, and advances to subsidiaries *(b)*	**(53)**	(7,208)	(317)
Other, net	**1**	—	—
Net cash (used for) investing activities	**(39)**	(5,463)	(2,043)
Financing activities:			
Proceeds from issuance of long-term debt	**4,144**	4,738	6,229
Repayments of long-term debt	**(3,650)**	(997)	(2,700)
Change in advances from subsidiaries	**(1,561)**	(3,930)	(1,136)
Issuance of common stock	**120**	465	465
Treasury stock acquired	**(3,269)**	(2,686)	(2,398)
Issuance of preferred stock	—	—	990
Cash dividends paid	**(1,221)**	(1,076)	(900)
Tax benefit realized on share-based payment awards	—	—	3
Net cash (used for) provided by financing activities	**(5,437)**	(3,486)	553
Change in cash and due from banks	**(392)**	(7,816)	(266)
Cash and due from banks at beginning of year	**1,301**	9,117	9,383
Cash and due from banks at end of year	**$ 909**	$ 1,301	$ 9,117
Supplemental disclosures			
Interest paid	**$ 629**	$ 705	$ 409
Income taxes paid	**12**	61	1
Income taxes refunded	**7**	15	12

(a) *Includes payments received from subsidiaries for taxes of $837 million in 2018, $189 million in 2017 and $189 million in 2016.*
(b) *Includes $2,807 million of cash outflows, net of $2,754 million of cash inflows in 2018 and $10,296 million of cash outflows, net of $3,088 million of cash inflows in 2017.*

Note 19–Fair value measurement

Fair value is defined as the price that would be received to sell an asset, or paid to transfer a liability, in an orderly transaction between market participants at the measurement date. A three-level hierarchy for fair value measurements is utilized based upon the transparency of inputs to the valuation of an asset or liability as of the measurement date. BNY Mellon's own creditworthiness is considered when valuing liabilities.

Fair value focuses on exit price in an orderly transaction (that is, not a forced liquidation or distressed sale) between market participants at the measurement date under current market conditions. If there has been a significant decrease in the volume and level of activity for the asset or liability, a change in valuation technique or the use of multiple valuation techniques may be appropriate. In such instances, determining the price at which willing market participants would transact at the measurement date under current market conditions depends on the facts and circumstances and requires the use of significant judgment. The objective is to determine from weighted indicators of fair value a reasonable point within the range that is most representative of fair value under current market conditions.

Determination of fair value

We have established processes for determining fair values. Fair value is based upon quoted market prices in active markets, where available. For financial instruments where quotes from recent exchange transactions are not available, we determine fair value based on discounted cash flow analysis, comparison to similar instruments and the use of financial models. Discounted cash flow analysis is dependent upon estimated future cash flows and the level of interest rates. Model-based pricing uses inputs of observable prices, where available, for interest rates, foreign exchange rates, option volatilities and other factors. Models are benchmarked and validated by an independent internal risk management function. Our valuation process takes into consideration factors such as counterparty credit quality, liquidity, concentration concerns and observability of model parameters. Valuation adjustments may be made to record financial instruments at fair value.

Most derivative contracts are valued using internally developed models which are calibrated to observable market data and employ standard market pricing theory for their valuations. Valuation models incorporate counterparty credit risk by discounting each trade's expected exposures to the counterparty using the counterparty's credit spreads, as implied by the credit default swap market. We also adjust expected liabilities to the counterparty using BNY Mellon's own credit spreads, as implied by the credit default swap market. Accordingly, the valuation of our derivative positions is sensitive to the current changes in our own credit spreads as well as those of our counterparties.

In certain cases, recent prices may not be observable for instruments that trade in inactive or less active markets. Upon evaluating the uncertainty in valuing financial instruments subject to liquidity issues, we make an adjustment to their value. The determination of the liquidity adjustment includes the availability of external quotes, the time since the latest available quote and the price volatility of the instrument.

Certain parameters in some financial models are not directly observable and, therefore, are based on management's estimates and judgments. These financial instruments are normally traded less actively. We apply valuation adjustments to mitigate the possibility of error and revision in the model based estimate value. Examples include products where parameters such as correlation and recovery rates are unobservable.

The methods described above for instruments that trade in inactive or less active markets may produce a current fair value calculation that may not be indicative of net realizable value or reflective of future fair values. We believe our methods of determining fair value are appropriate and consistent with other market participants. However, the use of different methodologies or different assumptions to value certain financial instruments could result in a different estimate of fair value.

Valuation hierarchy

A three-level valuation hierarchy is used for disclosure of fair value measurements based upon the transparency of inputs to the valuation of an asset or liability as of the measurement date. The three levels are described below.

Level 1: Inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets. Level 1 assets and liabilities include certain debt and equity securities, derivative financial instruments actively traded on exchanges and highly liquid government bonds.

Level 2: Observable inputs other than Level 1 prices, for example, quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, and inputs that are observable or can be corroborated, either directly or indirectly, for substantially the full term of the financial instrument. Level 2 assets and liabilities include debt instruments that are traded less frequently than exchange-traded securities and derivative financial instruments whose model inputs are observable in the market or can be corroborated by market-observable data. Examples in this category are mortgage-backed securities, corporate debt securities and OTC derivative contracts.

Level 3: Inputs to the valuation methodology are unobservable and significant to the fair value measurement.

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

Valuation methodology

Following is a description of the valuation methodologies used for instruments measured at fair value, as well as the general classification of such instruments pursuant to the valuation hierarchy.

Securities

We determine fair value primarily based on pricing sources with reasonable levels of price transparency. Where quoted prices are available in an active market, we classify the securities within Level 1 of the valuation hierarchy. Securities include both long and short positions. Level 1 securities include U.S. Treasury and certain sovereign debt securities that are actively traded in highly liquid OTC markets, money market funds and exchange-traded equities.

If quoted market prices are not available, fair values are primarily determined using pricing models using observable trade data, market data, quoted prices of securities with similar characteristics or discounted cash flows. Examples of such instruments, which would generally be classified within Level 2 of the valuation hierarchy, include mortgage-backed securities, state and political subdivisions, certain sovereign debt, corporate bonds and foreign covered bonds.

Specifically, the pricing sources obtain recent transactions for similar types of securities (e.g., vintage, position in the securitization structure) and ascertain variables such as discount rate and speed of prepayment for the types of transaction and apply such variables to similar types of bonds. We view these as observable transactions in the current marketplace and classify such securities as Level 2. Pricing sources discontinue pricing any specific security whenever they determine there is insufficient observable data to provide a good faith opinion on price.

In certain cases where there is limited activity or less transparency around inputs to the valuation, we classify those securities in Level 3 of the valuation hierarchy. We have no instruments included in Level 3 of the valuation hierarchy.

At Dec. 31, 2018, approximately 99% of our securities were valued by pricing sources with reasonable levels of price transparency. Additional disclosures of securities are provided in Note 4.

Derivative financial instruments

We classify exchange-traded derivative financial instruments valued using quoted prices in Level 1 of the valuation hierarchy. Examples include exchange-traded equity and foreign exchange options. Since few other classes of derivative contracts are listed on an exchange, most of our derivative positions are valued using internally developed models that use as their basis readily observable market parameters, and we classify them in Level 2 of the valuation hierarchy. Such derivative financial instruments include swaps and options, foreign exchange spot and forward contracts and credit default swaps.

Derivatives valued using models with significant unobservable market parameters in markets that lack two-way flow are classified in Level 3 of the valuation hierarchy. Examples may include long-dated swaps and options, where parameters may be unobservable for longer maturities; and certain highly structured products, where correlation risk is unobservable. As of Dec. 31, 2018 we have no Level 3 derivatives. Additional disclosures of derivative instruments are provided in Note 22.

Seed capital

In our Investment Management business, we manage investment assets, including equities, fixed income, money market and multi-asset and alternative investment funds for institutions and other investors. As part of that activity, we make seed capital investments in certain funds. Seed capital is generally included in other assets on the consolidated balance sheet. When applicable, we value seed capital based on the published NAV of the fund.

For other types of investments in funds, we consider all of the rights and obligations inherent in our ownership interest, including the reported NAV as well as other factors that affect the fair value of our interest in the fund.

Interests in securitizations

For the interests in securitizations that are classified in securities available-for-sale, trading assets and long-term debt, we use discounted cash flow models, which generally include assumptions of projected finance charges related to the securitized assets, estimated net credit losses, prepayment assumptions and estimates of payments to third-party investors. When available, we compare our fair value estimates and assumptions to market activity and to the actual results of the securitized portfolio.

Other assets measured at NAV

BNY Mellon holds private equity investments, specifically SBICs, which are compliant with the Volcker Rule. There are no readily available market quotations for these investment partnerships. The fair value of the SBICs is based on our ownership percentage of the fair value of the underlying investments as provided by the partnership managers. These investments are typically valued on a quarterly basis. Our SBIC private equity investments are valued at NAV as a practical expedient for fair value.

The following tables present the financial instruments carried at fair value at Dec. 31, 2018 and Dec. 31, 2017, by caption on the consolidated balance sheet and by the three-level valuation hierarchy. We have included credit ratings information in certain of the tables because the information indicates the degree of credit risk to which we are exposed, and significant changes in ratings classifications could result in increased risk for us.

Assets measured at fair value on a recurring basis at Dec. 31, 2018 *(dollars in millions)*	Level 1	Level 2	Level 3	Netting *(a)*	Total carrying value
Available-for-sale securities:					
Agency RMBS	$ —	$ 25,308	$ —	$ —	$ 25,308
U.S. Treasury	20,076	—	—	—	20,076
Sovereign debt/sovereign guaranteed	6,613	4,137	—	—	10,750
Agency commercial MBS	—	9,691	—	—	9,691
CLOs	—	3,364	—	—	3,364
Supranational	—	2,984	—	—	2,984
Foreign covered bonds	—	2,878	—	—	2,878
State and political subdivisions	—	2,247	—	—	2,247
Other asset-backed securities	—	1,773	—	—	1,773
U.S. government agencies	—	1,657	—	—	1,657
Non-agency commercial MBS	—	1,464	—	—	1,464
Non-agency RMBS *(b)*	—	1,325	—	—	1,325
Corporate bonds	—	1,054	—	—	1,054
Other debt securities	—	1,238	—	—	1,238
Total available-for-sale securities	26,689	59,120	—	—	85,809
Trading assets:					
Debt instruments	801	2,594	—	—	3,395
Equity instruments *(c)*	1,114	—	—	—	1,114
Derivative assets not designated as hedging:					
Interest rate	7	3,583	—	(2,202)	1,388
Foreign exchange	—	4,807	—	(3,724)	1,083
Equity and other contracts	9	59	—	(13)	55
Total derivative assets not designated as hedging	16	8,449	—	(5,939)	2,526
Total trading assets	1,931	11,043	—	(5,939)	7,035
Other assets:					
Derivative assets designated as hedging:					
Interest rate	—	23	—	—	23
Foreign exchange	—	266	—	—	266
Total derivative assets designated as hedging	—	289	—	—	289
Other assets *(d)*	68	170	—	—	238
Other assets measured at NAV *(d)*					215
Total other assets	68	459	—	—	742
Subtotal assets of operations at fair value	**28,688**	**70,622**	**—**	**(5,939)**	**93,586**
Percentage of assets of operations prior to netting	29%	71%	—%		
Assets of consolidated investment management funds	210	253	—	—	463
Total assets	**$ 28,898**	**$ 70,875**	**$ —**	**$ (5,939)**	**$ 94,049**
Percentage of total assets prior to netting	29%	71%	—%		

Liabilities measured at fair value on a recurring basis at Dec. 31, 2018 *(dollars in millions)*	Level 1	Level 2	Level 3	Netting *(a)*	Total carrying value
Trading liabilities:					
Debt instruments	$ 1,006	$ 118	$ —	$ —	$ 1,124
Equity instruments	75	—	—	—	75
Derivative liabilities not designated as hedging:					
Interest rate	12	3,104	—	(2,508)	608
Foreign exchange	—	5,215	—	(3,626)	1,589
Equity and other contracts	1	118	—	(36)	83
Total derivative liabilities not designated as hedging	13	8,437	—	(6,170)	2,280
Total trading liabilities	1,094	8,555	—	(6,170)	3,479
Long-term debt *(c)*	—	371	—	—	371
Other liabilities – derivative liabilities designated as hedging:					
Interest rate	—	74	—	—	74
Foreign exchange	—	14	—	—	14
Total other liabilities – derivative liabilities designated as hedging	—	88	—	—	88
Subtotal liabilities of operations at fair value	**1,094**	**9,014**	**—**	**(6,170)**	**3,938**
Percentage of liabilities of operations prior to netting	11%	89%	—%		
Liabilities of consolidated investment management funds	2	—	—	—	2
Total liabilities	**$ 1,096**	**$ 9,014**	**$ —**	**$ (6,170)**	**$ 3,940**
Percentage of total liabilities prior to netting	11%	89%	—%		

(a) ASC 815, Derivatives and Hedging, permits the netting of derivative receivables and derivative payables under legally enforceable master netting agreements and permits the netting of cash collateral. Netting is applicable to derivatives not designated as hedging instruments included in trading assets or trading liabilities and derivatives designated as hedging instruments included in other assets or other liabilities. Netting is allocated to the derivative products based on the net fair value of each product.

(b) Includes $832 million in Level 2 that was included in the former Grantor Trust.

(c) Includes certain interests in securitizations.

(d) Includes seed capital, private equity investments and other assets.

Assets measured at fair value on a recurring basis at Dec. 31, 2017 *(dollars in millions)*	Level 1	Level 2	Level 3	Netting *(a)*	Total carrying value
Available-for-sale securities:					
Agency RMBS	$ —	$ 23,819	$ —	$ —	$ 23,819
U.S. Treasury	15,263	—	—	—	15,263
Sovereign debt/sovereign guaranteed	9,919	2,638	—	—	12,557
Agency commercial MBS	—	8,762	—	—	8,762
State and political subdivisions	—	2,957	—	—	2,957
CLOs	—	2,909	—	—	2,909
Foreign covered bonds	—	2,529	—	—	2,529
Supranational	—	2,079	—	—	2,079
Non-agency RMBS *(b)*	—	1,578	—	—	1,578
Non-agency commercial MBS	—	1,360	—	—	1,360
Corporate bonds	—	1,255	—	—	1,255
Other asset-backed securities	—	1,043	—	—	1,043
U.S. government agencies	—	908	—	—	908
Other RMBS	—	149	—	—	149
Other debt securities	—	1,412	—	—	1,412
Money market funds *(c)*	963	—	—	—	963
Total available-for-sale securities	26,145	53,398	—	—	79,543
Trading assets:					
Debt instruments	690	1,910	—	—	2,600
Equity instruments *(c)*	654	—	—	—	654
Derivative assets not designated as hedging:					
Interest rate	9	6,430	—	(5,075)	1,364
Foreign exchange	—	5,104	—	(3,720)	1,384
Equity and other contracts	—	70	—	(50)	20
Total derivative assets not designated as hedging	9	11,604	—	(8,845)	2,768
Total trading assets	1,353	13,514	—	(8,845)	6,022
Other assets*:*					
Derivative assets designated as hedging:					
Interest rate	—	278	—	—	278
Foreign exchange	—	45	—	—	45
Total derivative assets designated as hedging	—	323	—	—	323
Other assets *(d)*	144	170	—	—	314
Other assets measured at NAV *(d)*					154
Total other assets	144	493	—	—	791
Subtotal assets of operations at fair value	27,642	67,405	—	(8,845)	86,356
Percentage of assets of operations prior to netting	29%	71%	—%		
Assets of consolidated investment management funds	322	409	—	—	731
Total assets	$ 27,964	$ 67,814	$ —	$ (8,845)	$ 87,087
Percentage of total assets prior to netting	29%	71%	—%		

Liabilities measured at fair value on a recurring basis at Dec. 31, 2017 *(dollars in millions)*	Level 1	Level 2	Level 3	Netting *(a)*	Total carrying value
Trading liabilities:					
Debt instruments	$ 979	$ 80	$ —	$ —	$ 1,059
Equity instruments	149	—	—	—	149
Derivative liabilities not designated as hedging:					
Interest rate	4	6,349	—	(5,495)	858
Foreign exchange	—	5,067	—	(3,221)	1,846
Equity and other contracts	—	153	—	(81)	72
Total derivative liabilities not designated as hedging	4	11,569	—	(8,797)	2,776
Total trading liabilities	1,132	11,649	—	(8,797)	3,984
Long-term debt (*c*)	—	367	—	—	367
Other liabilities – derivative liabilities designated as hedging:					
Interest rate	—	534	—	—	534
Foreign exchange	—	266	—	—	266
Total other liabilities – derivative liabilities designated as hedging	—	800	—	—	800
Subtotal liabilities of operations at fair value	1,132	12,816	—	(8,797)	5,151
Percentage of liabilities of operations prior to netting	8%	92%	—%		
Liabilities of consolidated investment management funds	1	1	—	—	2
Total liabilities	$ 1,133	$ 12,817	$ —	$ (8,797)	$ 5,153
Percentage of total liabilities prior to netting	8%	92%	—%		

(a) ASC 815, Derivatives and Hedging, permits the netting of derivative receivables and derivative payables under legally enforceable master netting agreements and permits the netting of cash collateral. Netting is applicable to derivatives not designated as hedging instruments included in trading assets or trading liabilities and derivatives designated as hedging instruments included in other assets or other liabilities. Netting is allocated to the derivative products based on the net fair value of each product.

(b) Includes $1,091 million in Level 2 that was included in the former Grantor Trust.

(c) Includes certain interests in securitizations.

(d) Includes private equity investments and seed capital.

Details of certain available-for-sale securities measured at fair value on a recurring basis (dollars in millions)	Dec. 31, 2018 Total carrying value (b)	Ratings (a) AAA/ AA-	A+/ A-	BBB+/ BBB-	BB+ and lower	Dec. 31, 2017 Total carrying value (b)	Ratings (a) AAA/ AA-	A+/ A-	BBB+/ BBB-	BB+ and lower
Non-agency RMBS *(c)*, originated in:										
2007	$ 315	15%	2%	3%	80%	$ 419	13%	3%	—%	84%
2006	363	—	19	—	81	467	—	17	—	83
2005	396	9	1	7	83	509	6	2	6	86
2004 and earlier	251	16	24	11	49	332	3	2	31	64
Total non-agency RMBS	$ 1,325	9%	11%	5%	75%	$ 1,727 *(d)*	6%	6%	8%	80%
Non-agency commercial MBS, originated in:										
2009-2018	$ 1,464	96%	4%	—%	—%	$ 1,309	94%	6%	—%	—%
2005	—	—	—	—	—	51	100	—	—	—
Total non-agency commercial MBS	$ 1,464	96%	4%	—%	—%	$ 1,360	94%	6%	—%	—%
Foreign covered bonds:										
Canada	$ 1,524	100%	—%	—%	—%	$ 1,659	100%	—%	—%	—%
United Kingdom	529	100	—	—	—	103	100	—	—	—
Australia	333	100	—	—	—	265	100	—	—	—
Sweden	187	100	—	—	—	136	100	—	—	—
Other	305	100	—	—	—	366	100	—	—	—
Total foreign covered bonds	$ 2,878	100%	—%	—%	—%	$ 2,529	100%	—%	—%	—%
Sovereign debt/sovereign guaranteed:										
United Kingdom	$ 2,153	100%	—%	—%	—%	$ 3,052	100%	—%	—%	—%
Germany	1,826	100	—	—	—	1,586	100	—	—	—
France	1,548	100	—	—	—	2,046	100	—	—	—
Spain	1,365	—	—	100	—	1,635	—	—	100	—
Italy	939	—	—	100	—	1,292	—	—	100	—
Netherlands	875	100	—	—	—	1,027	100	—	—	—
Ireland	625	—	100	—	—	843	—	100	—	—
Hong Kong	450	100	—	—	—	—	—	—	—	—
Canada	378	100	—	—	—	—	—	—	—	—
Belgium	260	100	—	—	—	803	100	—	—	—
Other *(e)*	331	68	—	—	32	273	50	—	—	50
Total sovereign debt/sovereign guaranteed	$ 10,750	72%	6%	21%	1%	$ 12,557	69%	7%	23%	1%

(a) Represents ratings by S&P or the equivalent.
(b) At Dec. 31, 2018 and Dec. 31, 2017, sovereign debt/sovereign guaranteed securities were included in Level 1 and Level 2 in the valuation hierarchy. All other assets in the table are Level 2 assets in the valuation hierarchy.
(c) Includes $832 million at Dec. 31, 2018 and $1,091 million at Dec. 31, 2017 that were included in the former Grantor Trust.
(d) Includes other RMBS.
(e) Includes non-investment grade sovereign debt/sovereign guaranteed securities related to Brazil of $107 million at Dec. 31, 2018 and $136 million at Dec. 31, 2017.

Assets and liabilities measured at fair value on a nonrecurring basis

Under certain circumstances, we make adjustments to fair value our assets, liabilities and unfunded lending-related commitments although they are not measured at fair value on an ongoing basis. Examples would be the recording of an impairment of an asset and non-readily marketable equity securities carried at cost with upward or downward adjustments.

The following table presents the financial instruments carried on the consolidated balance sheet by caption and level in the fair value hierarchy as of Dec. 31, 2018 and Dec. 31, 2017, for which a nonrecurring change in fair value has been recorded in the respective year.

Assets measured at fair value on a nonrecurring basis (in millions)	Dec. 31, 2018 Level 1	Level 2	Level 3	Total carrying value	Dec. 31, 2017 Level 1	Level 2	Level 3	Total carrying value
Loans *(a)*	$ —	$ 64	$ 4	$ 68	$ —	$ 73	$ 6	$ 79
Other assets *(b)*	—	57	—	57	—	4	—	4
Total assets at fair value on a nonrecurring basis	$ —	$ 121	$ 4	$ 125	$ —	$ 77	$ 6	$ 83

(a) The fair value of these loans decreased $1 million in both 2018 and 2017, based on the fair value of the underlying collateral, as required by guidance in ASC 310, Receivables, with an offset to the allowance for credit losses.
(b) Includes non-readily marketable equity securities carried at cost with upward or downward adjustments and other assets received in satisfaction of debt.

Estimated fair value of financial instruments

The following tables present the estimated fair value and the carrying amount of financial instruments not carried at fair value on the consolidated balance sheet at Dec. 31, 2018 and Dec. 31, 2017, by caption on the consolidated balance sheet and by the valuation hierarchy.

Summary of financial instruments	**Dec. 31, 2018**				
(in millions)	**Level 1**	**Level 2**	**Level 3**	**Total estimated fair value**	**Carrying amount**
Assets:					
Interest-bearing deposits with the Federal Reserve and other central banks	**$ —**	**$ 67,988**	**$ —**	**$ 67,988**	**$ 67,988**
Interest-bearing deposits with banks	**—**	**14,168**	**—**	**14,168**	**14,148**
Federal funds sold and securities purchased under resale agreements	**—**	**46,795**	**—**	**46,795**	**46,795**
Securities held-to-maturity	**5,512**	**27,790**	**—**	**33,302**	**33,982**
Loans *(a)*	**—**	**55,142**	**—**	**55,142**	**55,161**
Other financial assets	**5,864**	**1,383**	**—**	**7,247**	**7,247**
Total	**$ 11,376**	**$ 213,266**	**$ —**	**$ 224,642**	**$ 225,321**
Liabilities:					
Noninterest-bearing deposits	**$ —**	**$ 70,783**	**$ —**	**$ 70,783**	**$ 70,783**
Interest-bearing deposits	**—**	**165,914**	**—**	**165,914**	**167,995**
Federal funds purchased and securities sold under repurchase agreements	**—**	**14,243**	**—**	**14,243**	**14,243**
Payables to customers and broker-dealers	**—**	**19,731**	**—**	**19,731**	**19,731**
Commercial paper	**—**	**1,939**	**—**	**1,939**	**1,939**
Borrowings	**—**	**3,584**	**—**	**3,584**	**3,584**
Long-term debt	**—**	**28,347**	**—**	**28,347**	**28,792**
Total	**$ —**	**$ 304,541**	**$ —**	**$ 304,541**	**$ 307,067**

(a) *Does not include the leasing portfolio.*

Summary of financial instruments	Dec. 31, 2017				
(in millions)	Level 1	Level 2	Level 3	Total estimated fair value	Carrying amount
Assets:					
Interest-bearing deposits with the Federal Reserve and other central banks	$ —	$ 91,510	$ —	$ 91,510	$ 91,510
Interest-bearing deposits with banks	—	11,982	—	11,982	11,979
Federal funds sold and securities purchased under resale agreements	—	28,135	—	28,135	28,135
Securities held-to-maturity	11,365	29,147	—	40,512	40,827
Loans *(a)*	—	60,219	—	60,219	60,082
Other financial assets	5,382	1,244	—	6,626	6,626
Total	$ 16,747	$ 222,237	$ —	$ 238,984	$ 239,159
Liabilities:					
Noninterest-bearing deposits	$ —	$ 82,716	$ —	$ 82,716	$ 82,716
Interest-bearing deposits	—	160,042	—	160,042	161,606
Federal funds purchased and securities sold under repurchase agreements	—	15,163	—	15,163	15,163
Payables to customers and broker-dealers	—	20,184	—	20,184	20,184
Commercial paper	—	3,075	—	3,075	3,075
Borrowings	—	2,931	—	2,931	2,931
Long-term debt	—	27,789	—	27,789	27,612
Total	$ —	$ 311,900	$ —	$ 311,900	$ 313,287

(a) *Does not include the leasing portfolio.*

The table below summarizes the carrying amount of the hedged financial instruments, the notional amount of the hedge and the unrealized gain (loss) (estimated fair value) of the derivatives.

Hedged financial instruments *(in millions)*	Carrying amount	Notional amount of hedge	Unrealized *(a)* Gain	Unrealized *(a)* (Loss)
Dec. 31, 2018				
Securities available-for-sale *(b)*	**$ 19,349**	**$ 19,437**	**$ 24**	**$ (74)**
Long-term debt	**16,147**	**16,600**	**—**	**—**
Dec. 31, 2017				
Securities available-for-sale	$ 12,307	$ 12,365	$ 102	$ (301)
Long-term debt	23,821	23,950	175	(233)

(a) Unrealized gain/loss amounts reflect the fact that certain of the derivatives are cleared and settled through central clearing counterparties where cash collateral received and paid is deemed a settlement of the derivative.
(b) Includes foreign exchange fair value hedges with a carrying value of $148 million, a notional amount of $147 million and unrealized gains of $1 million.

Note 20–Fair value option

We elected fair value as an alternative measurement for selected financial assets and liabilities. The following table presents the assets and liabilities of consolidated investment management funds, at fair value.

Assets and liabilities of consolidated investment management funds, at fair value *(in millions)*	Dec. 31, **2018**	Dec. 31, 2017
Assets of consolidated investment management funds:		
Trading assets	**$ 243**	$ 516
Other assets	**220**	215
Total assets of consolidated investment management funds	**$ 463**	$ 731
Liabilities of consolidated investment management funds:		
Other liabilities	**$ 2**	$ 2
Total liabilities of consolidated investment management funds	**$ 2**	$ 2

BNY Mellon values the assets and liabilities of its consolidated investment management funds using quoted prices for identical assets or liabilities in active markets or observable inputs such as quoted prices for similar assets or liabilities. Quoted prices for either identical or similar assets or liabilities in inactive markets may also be used. Accordingly, fair value best reflects the interests BNY Mellon holds in the economic performance of the consolidated investment management funds. Changes in the value of the assets and liabilities are recorded in the consolidated income statement as investment income of consolidated investment management funds and in the interest of investment management fund note holders, respectively.

We have elected the fair value option on $240 million of long-term debt. The fair value of this long-term debt was $371 million at Dec. 31, 2018 and $367 million at Dec. 31, 2017. The long-term debt is valued using observable market inputs and is included in Level 2 of the valuation hierarchy.

The following table presents the changes in fair value of long-term debt and certain loans for which we elected the fair value option that we previously held in 2016, and the location of the changes in the consolidated income statement. There were no loans valued under the fair value option election at Dec. 31, 2018, Dec. 31, 2017 and Dec. 31, 2016.

Impact of changes in fair value in the income statement *(a)* *(in millions)*	Year ended Dec. 31, **2018**	2017	2016
Loans:			
Investment and other income	**$ —**	$ —	$ 12
Long-term debt:			
Foreign exchange and other trading revenue	**$ (4)**	$ (4)	$ (4)

(a) The changes in fair value of the loans and long-term debt are approximately offset by economic hedges included in foreign exchange and other trading revenue.

Note 21–Commitments and contingent liabilities

Off-balance sheet arrangements

In the normal course of business, various commitments and contingent liabilities are outstanding that are not reflected in the accompanying consolidated balance sheets.

Our significant trading and off-balance sheet risks are securities, foreign currency and interest rate risk management products, commercial lending commitments, letters of credit and securities lending indemnifications. We assume these risks to reduce interest rate and foreign currency risks, to provide customers with the ability to meet credit and liquidity needs and to hedge foreign currency and interest rate risks. These items involve, to varying degrees, credit, foreign currency and interest rate risks not recognized on the balance sheet. Our off-balance sheet risks are managed and monitored in manners similar to those used for on-balance sheet risks.

The following table presents a summary of our off-balance sheet credit risks.

Off-balance sheet credit risks	Dec. 31,	
(in millions)	**2018**	2017
Lending commitments	**$ 50,631**	$ 51,467
Standby letters of credit *(a)*	**2,817**	3,531
Commercial letters of credit	**165**	122
Securities lending indemnifications *(b)(c)*	**401,504**	432,084

(a) Net of participations totaling $163 million at Dec. 31, 2018 and $672 million at Dec. 31, 2017.
(b) Excludes the indemnification for securities for which BNY Mellon acts as an agent on behalf of CIBC Mellon clients, which totaled $56 billion at Dec. 31, 2018 and $69 billion at Dec. 31, 2017.
(c) Includes cash collateral, invested in indemnified repurchase agreements, held by us as securities lending agent of $35 billion at Dec. 31, 2018 and $33 billion at Dec. 31, 2017.

The total potential loss on undrawn lending commitments, standby and commercial letters of credit, and securities lending indemnifications is equal to the total notional amount if drawn upon, which does not consider the value of any collateral.

Since many of the lending commitments are expected to expire without being drawn upon, the total amount does not necessarily represent future cash requirements. A summary of lending commitment maturities is as follows: $29.8 billion in less than one year, $20.3 billion in one to five years and $570 million over five years.

SBLCs principally support obligations of corporate clients and were collateralized with cash and securities of $223 million at Dec. 31, 2018 and $160 million at Dec. 31, 2017. At Dec. 31, 2018, $2.0 billion of the SBLCs will expire within one year and $845 million in one to five years.

We must recognize, at the inception of an SBLC and foreign and other guarantees, a liability for the fair value of the obligation undertaken in issuing the guarantee. The fair value of the liability, which was recorded with a corresponding asset in other assets, was estimated as the present value of contractual customer fees. The estimated liability for losses related to SBLCs and foreign and other guarantees, if any, is included in the allowance for lending-related commitments. The allowance for lending-related commitments was $106 million at Dec. 31, 2018 and $102 million at Dec. 31, 2017.

Payment/performance risk of SBLCs is monitored using both historical performance and internal ratings criteria. BNY Mellon's historical experience is that SBLCs typically expire without being funded. SBLCs below investment grade are monitored closely for payment/performance risk. The table below shows SBLCs by investment grade:

Standby letters of credit	Dec. 31,	
	2018	2017
Investment grade	**89%**	84%
Non-investment grade	**11%**	16%

A commercial letter of credit is normally a short-term instrument used to finance a commercial contract for the shipment of goods from a seller to a buyer. Although the commercial letter of credit is contingent upon the satisfaction of specified conditions, it represents a credit exposure if the buyer defaults on the underlying transaction. As a result, the total contractual amounts do not necessarily represent future cash requirements. Commercial letters of credit totaled $165 million at Dec. 31, 2018 and $122 million at Dec. 31, 2017.

We expect many of the lending commitments and letters of credit to expire without the need to advance any cash. The revenue associated with guarantees frequently depends on the credit rating of the obligor and the structure of the transaction, including collateral, if any.

A securities lending transaction is a fully collateralized transaction in which the owner of a security agrees to lend the security (typically through an agent, in our case, The Bank of New York Mellon), to a borrower, usually a broker-dealer or bank, on an open, overnight or term basis, under the terms of a prearranged contract.

We typically lend securities with indemnification against borrower default. We generally require the borrower to provide collateral with a minimum value of 102% of the fair value of the securities borrowed, which is monitored on a daily basis, thus reducing credit risk. Market risk can also arise in securities lending transactions. These risks are controlled through policies limiting the level of risk that can be undertaken. Securities lending transactions are generally entered into only with highly rated counterparties. Securities lending indemnifications were secured by collateral of $420 billion at Dec. 31, 2018 and $451 billion at Dec. 31, 2017.

CIBC Mellon, a joint venture between BNY Mellon and the Canadian Imperial Bank of Commerce ("CIBC"), engages in securities lending activities. CIBC Mellon, BNY Mellon and CIBC jointly and severally indemnify securities lenders against specific types of borrower default. At Dec. 31, 2018 and Dec. 31, 2017, $56 billion and $69 billion, respectively, of borrowings at CIBC Mellon, for which BNY Mellon acts as agent on behalf of CIBC Mellon clients, were secured by collateral of $59 billion and $73 billion, respectively. If, upon a default, a borrower's collateral was not sufficient to cover its related obligations, certain losses related to the indemnification could be covered by the indemnitors.

Industry concentrations

We have significant industry concentrations related to credit exposure at Dec. 31, 2018. The tables below present our credit exposure in the financial institutions and commercial portfolios.

Financial institutions portfolio exposure *(in billions)*	**Dec. 31, 2018**		
	Loans	**Unfunded commitments**	**Total exposure**
Securities industry	**$ 3.1**	**$ 22.5**	**$ 25.6**
Banks	**6.3**	**1.6**	**7.9**
Asset managers	**1.3**	**6.1**	**7.4**
Insurance	**0.1**	**2.5**	**2.6**
Government	**0.1**	**0.5**	**0.6**
Other	**0.7**	**0.8**	**1.5**
Total	**$ 11.6**	**$ 34.0**	**$ 45.6**

Commercial portfolio exposure *(in billions)*	**Dec. 31, 2018**		
	Loans	**Unfunded commitments**	**Total exposure**
Manufacturing	**$ 0.8**	**$ 5.1**	**$ 5.9**
Services and other	**0.7**	**4.8**	**5.5**
Energy and utilities	**0.5**	**4.1**	**4.6**
Media and telecom	**0.1**	**1.2**	**1.3**
Total	**$ 2.1**	**$ 15.2**	**$ 17.3**

Major concentrations in securities lending are primarily to broker-dealers and are generally collateralized with cash and/or securities.

Operating leases

Net rent expense for premises and equipment was $295 million in 2018, $285 million in 2017 and $301 million in 2016.

At Dec. 31, 2018, we were obligated under various noncancelable lease agreements, some of which provide for additional rents based upon real estate taxes, insurance and maintenance and for various renewal options. A summary of the future minimum rental commitments under noncancelable operating leases, net of related sublease revenue, is as follows: 2019—$264 million; 2020—$244 million; 2021—$211 million; 2022—$172 million; 2023—$136 million and 2024 and thereafter—$432 million.

Exposure for certain administrative errors

In connection with certain offshore tax-exempt funds that we manage, we may be liable to the funds for certain administrative errors. The errors relate to the resident status of such funds, potentially exposing the Company to a tax liability related to the funds' earnings. The Company is in discussions with tax authorities regarding the funds. We believe we are appropriately accrued and the additional reasonably possible exposure is not significant.

Indemnification arrangements

We have provided standard representations for underwriting agreements, acquisition and divestiture agreements, sales of loans and commitments, and other similar types of arrangements and customary indemnification for claims and legal proceedings related to providing financial services that are not otherwise included above. Insurance has been purchased to mitigate certain of these risks. Generally, there are no stated or notional amounts included in these indemnifications and the contingencies triggering the obligation for indemnification are not expected to occur. Furthermore, often counterparties to these transactions provide us with comparable indemnifications. We are unable to develop an estimate of the maximum payout under these indemnifications for several reasons. In addition to the lack of a stated or notional amount in a majority of such indemnifications, we are unable to predict the nature of events that would trigger indemnification or the level of indemnification for a certain event. We believe, however, that the possibility that we will have to make any material payments for these indemnifications is remote. At Dec. 31, 2018 and Dec. 31, 2017, we have not recorded any material liabilities under these arrangements.

Clearing and settlement exchanges

We are a noncontrolling equity investor in, and/or member of, several industry clearing or settlement exchanges through which foreign exchange, securities, derivatives or other transactions settle. Certain of these industry clearing and settlement exchanges require their members to guarantee their obligations and liabilities and/or to provide liquidity support in the event other members do not honor their obligations. We believe the likelihood that a clearing or settlement exchange (of which we are a member) would become insolvent is remote. Additionally, certain settlement exchanges have implemented loss allocation policies that enable the exchange to allocate settlement losses to the members of the exchange. It is not possible to quantify such mark-to-market loss until the loss occurs. Any ancillary costs that occur as a result of any mark-to-market loss cannot be quantified. In addition, we also sponsor clients as members on clearing and settlement exchanges and guarantee their obligations. At Dec. 31, 2018 and Dec. 31, 2017, we have not recorded any material liabilities under these arrangements.

Legal proceedings

In the ordinary course of business, BNY Mellon and its subsidiaries are routinely named as defendants in or made parties to pending and potential legal actions. We also are subject to governmental and regulatory examinations, information-gathering requests, investigations and proceedings (both formal and informal). Claims for significant monetary damages are often asserted in many of these legal actions, while claims for disgorgement, restitution, penalties and/or other remedial actions or sanctions may be sought in governmental and regulatory matters. It is inherently difficult to predict the eventual outcomes of such matters given their complexity and the particular facts and circumstances at issue in each of these matters. However, on the basis of our current knowledge and understanding, we do not believe that judgments, settlements or orders, if any, arising from these matters (either individually or in the aggregate, after giving effect to applicable reserves and insurance coverage) will have a material adverse effect on the consolidated financial position or liquidity of BNY Mellon, although they could have a material effect on our results of operations in a given period.

In view of the inherent unpredictability of outcomes in litigation and regulatory matters, particularly where (i) the damages sought are substantial or indeterminate, (ii) the proceedings are in the early stages, or (iii) the matters involve novel legal theories or a large number of parties, as a matter of course there is considerable uncertainty surrounding the timing or ultimate resolution of litigation and regulatory matters, including a possible eventual loss, fine, penalty or business impact, if any, associated with each such matter. In accordance with applicable accounting guidance, BNY Mellon establishes accruals for litigation and regulatory matters when those matters proceed to a stage where they present loss contingencies that are both probable and reasonably estimable. In such cases, there may be a possible exposure to loss in excess of any amounts accrued. BNY Mellon regularly monitors such matters for developments that could affect the amount of the accrual, and will adjust the accrual amount as appropriate. If the loss contingency in question is not both probable and reasonably estimable, BNY Mellon does not establish an accrual and the matter continues to be monitored for any developments that would make the loss contingency both probable and reasonably estimable. BNY Mellon believes that its accruals for legal proceedings are appropriate and, in the aggregate, are not material to the consolidated financial position of BNY Mellon, although future accruals could have a material effect on the results of operations in a given period.

For certain of those matters described here for which a loss contingency may, in the future, be reasonably possible (whether in excess of a related accrued liability or where there is no accrued liability), BNY Mellon is currently unable to estimate a range of reasonably possible loss. For those matters described here where BNY Mellon is able to estimate a reasonably possible loss, the aggregate range of such reasonably possible loss is up to $900 million in excess of the accrued liability (if any) related to those matters.

The following describes certain judicial, regulatory and arbitration proceedings involving BNY Mellon:

Mortgage-Securitization Trusts Proceedings

The Bank of New York Mellon has been named as a defendant in a number of legal actions brought by MBS investors alleging that the trustee has expansive duties under the governing agreements, including the duty to investigate and pursue breach of representation and warranty claims against other parties to the MBS transactions. These actions include a lawsuit brought in New York State court on June 18, 2014, and later re-filed in federal court, by a group of institutional investors who purport to sue on behalf of 233 MBS trusts.

Matters Related to R. Allen Stanford

In late December 2005, Pershing LLC ("Pershing") became a clearing firm for Stanford Group Co. ("SGC"), a registered broker-dealer that was part of a group of entities ultimately controlled by R. Allen Stanford ("Stanford"). Stanford International Bank ("SIB"), also controlled by Stanford, issued certificates of deposit ("CDs"). Some investors allegedly wired funds from their SGC accounts to purchase CDs. In 2009, the SEC charged Stanford with operating a Ponzi scheme in connection with the sale of CDs, and SGC was placed into receivership. Alleged purchasers of CDs have filed 15 lawsuits against Pershing that are pending in Texas, including two putative class actions. The purchasers allege that Pershing, as SGC's clearing firm, assisted Stanford in a fraudulent scheme and assert contractual, statutory and common law claims. On July 12, 2018, a federal district court dismissed six of the individual lawsuits and those cases are on appeal. A series of FINRA arbitration proceedings also have been initiated by alleged purchasers asserting similar claims.

Brazilian Postalis Litigation

BNY Mellon Servicos Financeiros DTVM S.A. ("DTVM"), a subsidiary that provides asset services in Brazil, acts as administrator for certain investment funds in which a public pension fund for postal workers called Postalis-Instituto de Seguridade Social dos Correios e Telégrafos ("Postalis") invested. On Aug. 22, 2014, Postalis sued DTVM in Rio de Janeiro, Brazil for losses related to a Postalis fund for which DTVM is administrator. Postalis alleges that DTVM failed to properly perform duties, including to conduct due diligence of and exert control over the manager. On March 12, 2015, Postalis filed a lawsuit in Rio de Janeiro against DTVM and BNY Mellon Administração de Ativos Ltda. ("Ativos") alleging failure to properly perform duties relating to another fund of which DTVM is administrator and Ativos is manager. On Dec. 14, 2015, Associacão dos Profissionais dos Correiros ("ADCAP"), a Brazilian postal workers association, filed a lawsuit in São Paulo against DTVM and other defendants alleging that DTVM improperly contributed to Postalis investment losses. On March 20, 2017, the lawsuit was dismissed without prejudice, and ADCAP has appealed that decision. On Dec. 17, 2015, Postalis filed three lawsuits in Rio de Janeiro against DTVM and Ativos alleging failure to properly perform duties with respect to investments in several other funds. On Feb. 4, 2016, Postalis filed a lawsuit in Brasilia against DTVM, Ativos and BNY Mellon Alocação de Patrimônio Ltda., an investment management subsidiary, alleging failure to properly perform duties and liability for losses with respect to investments in various funds of which the defendants were administrator and/or manager. On Jan. 16, 2018, the Brazilian Federal Prosecution Service ("MPF") filed a civil lawsuit in São Paulo against DTVM alleging liability for Postalis losses based on alleged failures to properly perform certain duties as administrator to certain funds in which Postalis invested or controller of Postalis's own investment portfolio. On April 18, 2018, the court dismissed the lawsuit without prejudice, and the MPF has appealed that decision. On Oct. 31, 2018, Postalis filed an application in federal court in the Southern District of New York seeking an order authorizing it to take discovery from The Bank of New York Mellon Corporation and its U.S. subsidiaries, purportedly for use in the Brazilian proceedings. On Dec. 20, 2018, the court denied Postalis's application in its entirety.

Depositary Receipt Litigation
Between late December 2015 and February 2016, four putative class action lawsuits were filed against BNY Mellon asserting claims relating to BNY Mellon's foreign exchange pricing when converting dividends and other distributions from non-U.S. companies in its role as depositary bank to Depositary Receipt issuers. The claims are for breach of contract and violations of ERISA. The lawsuits have been consolidated into two suits that are pending in federal court in the Southern District of New York. The parties in the lawsuits have entered into settlement agreements to resolve the suits, which are subject to court approval.

Brazilian Silverado Litigation
DTVM acts as administrator for the Fundo de Investimento em Direitos Creditórios Multisetorial Silverado Maximum ("Silverado Maximum Fund"), which invests in commercial credit receivables. On June 2, 2016, the Silverado Maximum Fund sued DTVM in its capacity as administrator, along with Deutsche Bank S.A. - Banco Alemão in its capacity as custodian and Silverado Gestão e Investimentos Ltda. in its capacity as investment manager. The Fund alleges that each of the defendants failed to fulfill its respective duty, and caused losses to the Fund for which the defendants are jointly and severally liable.

Depositary Receipt Pre-Release Inquiry
In March 2014, the Staff of the U.S. Securities and Exchange Commission's Enforcement Division (the "Staff") commenced an investigation into certain issuers of American Depositary Receipts ("ADRs"), including BNY Mellon, for the period of 2011 to 2015. The Staff issued several requests to BNY Mellon for information relating to the pre-release of ADRs. BNY Mellon fully cooperated with the investigation. On Dec. 17, 2018, the SEC announced that BNY Mellon had settled an administrative proceeding to resolve the investigation of BNY Mellon's pre-release activity, in which BNY Mellon did not admit or deny the SEC's findings.

Note 22–Derivative instruments

We use derivatives to manage exposure to market risk, including interest rate risk, equity price risk and foreign currency risk, as well as credit risk. Our trading activities are focused on acting as a market-maker for our customers and facilitating customer trades in compliance with the Volcker Rule.

The notional amounts for derivative financial instruments express the dollar volume of the transactions; however, credit risk is much smaller. We perform credit reviews and enter into netting agreements and collateral arrangements to minimize the credit risk of derivative financial instruments. We enter into offsetting positions to reduce exposure to foreign currency, interest rate and equity price risk.

Use of derivative financial instruments involves reliance on counterparties. Failure of a counterparty to honor its obligation under a derivative contract is a risk we assume whenever we engage in a derivative contract. There were no counterparty default losses recorded in 2018 or 2017.

Hedging derivatives

We utilize interest rate swap agreements to manage our exposure to interest rate fluctuations. We enter into fair value hedges as an interest rate risk management strategy to reduce fair value variability by converting certain fixed rate interest payments associated with available-for-sale securities and long-term debt to LIBOR.

The available-for-sale securities hedged consist of U.S. Treasury bonds, agency and non-agency commercial MBS, sovereign debt, corporate bonds and covered bonds that had original maturities of 30 years or less at initial purchase. At Dec. 31, 2018, $19.2 billion face amount of available-for-sale securities were hedged with interest rate swaps designated as fair value hedges that had notional values of $19.3 billion.

The fixed rate long-term debt instruments hedged generally have original maturities of five to 30 years. We issue both callable and non-callable debt. The debt is hedged with "receive fixed rate, pay variable rate" swaps. At Dec. 31, 2018, $16.6 billion par value of debt was hedged with interest rate swaps designated as fair value hedges that had notional values of $16.6 billion.

In addition, we utilize forward foreign exchange contracts as hedges to mitigate foreign exchange exposures. We use forward foreign exchange contracts as cash flow hedges to convert certain forecasted non-U.S. dollar revenue and expenses into

U.S. dollars. We use forward foreign exchange contracts with maturities of 15 months or less as cash flow hedges to hedge our foreign exchange exposure to Indian rupee, British pound, Hong Kong dollar, Singapore dollar and Polish zloty revenue and expense transactions in entities that have the U.S. dollar as their functional currency. As of Dec. 31, 2018, the hedged forecasted foreign currency transactions and designated forward foreign exchange contract hedges were $234 million (notional), with a pre-tax loss of $1 million recorded in accumulated OCI. This loss will be reclassified to earnings over the next 12 months.

We also utilize forward foreign exchange contracts as fair value hedges of the foreign exchange risk associated with available-for-sale securities. Forward points are designated as an excluded component, and amortized into earnings over the hedge period. The unamortized derivative value associated with the excluded component is recognized in accumulated OCI. At Dec. 31, 2018, $147 million face amount of available-for-sale securities were hedged with foreign currency forward contracts that had a notional value of $147 million.

Forward foreign exchange contracts are also used to hedge the value of our net investments in foreign subsidiaries. These forward foreign exchange contracts have maturities of less than one year. The derivatives employed are designated as hedges of changes in value of our foreign investments due to exchange rates. Changes in the value of the forward foreign exchange contracts offset the changes in value of the foreign investments due to changes in foreign exchange rates. The change in fair market value of these forward foreign exchange contracts is reported within foreign currency translation adjustments in shareholders' equity, net of tax. At Dec. 31, 2018, forward foreign exchange contracts with notional amounts totaling $5.9 billion were designated as net investment hedges.

In addition to forward foreign exchange contracts, we also designate non-derivative financial instruments as hedges of our net investments in foreign subsidiaries. Those non-derivative financial instruments designated as hedges of our net investments in foreign subsidiaries were all long-term liabilities of BNY Mellon in various currencies, and, at Dec. 31, 2018, had a combined U.S. dollar equivalent value of $175 million.

The following table presents the gains (losses) related to our hedging derivative portfolio recognized in the consolidated income statement.

Income statement impact of fair value and cash flow hedges		Year ended Dec. 31,		
(in millions)	Location of gains (losses)	**2018**	2017	2016
Interest rate fair value hedges of available-for-sale securities				
Derivative	Interest income	**$ 284**	$ 82	$ 49
Hedged item	Interest income	**(273)**	(97)	(50)
Interest rate fair value hedges of long-term debt				
Derivative	Interest expense	**(328)**	(197)	(323)
Hedged item	Interest expense	**330**	190	320
Foreign exchange fair value hedges of available-for-sale securities				
Derivative *(a)*	Other revenue	**(2)**	—	—
Hedged item	Other revenue	**2**	—	—
Cash flow hedges of forecasted FX exposures				
Gain (loss) reclassified from OCI into income	Trading revenue	**—**	2	(16)
Gain reclassified from OCI into income	Other revenue	**2**	8	—
(Loss) reclassified from OCI into income	Net interest revenue	**—**	—	(18)
(Loss) gain reclassified from OCI into income	Staff expense	**(4)**	10	(11)
Gains (losses) recognized in the consolidated income statement due to fair value and cash flow hedging relationships		**$ 11**	$ (2)	$ (49)

(a) Includes $1 million associated with the amortization of the excluded component. At Dec. 31, 2018, the remaining accumulated OCI balance associated with the excluded component was de minimis.

The following table presents the impact of hedging derivatives used in net investment hedging relationships in the consolidated income statement.

Impact of derivative instruments used in net investment hedging relationships in the income statement							
(in millions)	Gain or (loss) recognized in accumulated OCI on derivatives Year ended Dec. 31,				Gain or (loss) reclassified from accumulated OCI into income Year ended Dec. 31,		
Derivatives in net investment hedging relationships	**2018**	2017	2016	Location of gain or (loss) reclassified from accumulated OCI into income	**2018**	2017	2016
FX contracts	**$ 535**	$ (625)	$ 652	Net interest revenue	**$ —**	$ —	$ —

The following table presents information on the hedged items in fair value hedging relationships.

Hedged items in fair value hedging relationships at Dec. 31, 2018 *(in millions)*	Carrying amount of hedged asset or liability	Hedge accounting basis adjustment (decrease)
Available-for-sale securities *(a)*	$ 19,201	$ (125)
Long-term debt	16,147	(453) *(b)*

(a) Excludes hedged items where only foreign currency risk is the designated hedged risk, as the basis adjustments related to foreign currency hedges will not reverse through the consolidated income statement in future periods. The carrying amount excluded for available-for-sale securities was $148 million at Dec. 31, 2018.

(b) Includes $284 million of basis adjustment on long-term debt associated with terminated hedges.

The following table summarizes the notional amount and credit exposure of our total derivative portfolio at Dec. 31, 2018 and Dec. 31, 2017.

Impact of derivative instruments on the balance sheet	Notional value		Asset derivatives fair value		Liability derivatives fair value	
	Dec. 31,		Dec. 31,		Dec. 31,	
(in millions)	**2018**	2017	**2018**	2017	**2018**	2017
Derivatives designated as hedging instruments: *(a)(b)*						
Interest rate contracts	**$ 35,890**	$ 36,315	**$ 23**	$ 278	**$ 74**	$ 534
Foreign exchange contracts	**6,330**	8,923	**266**	45	**14**	266
Total derivatives designated as hedging instruments			**$ 289**	$ 323	**$ 88**	$ 800
Derivatives not designated as hedging instruments: *(b)(c)*						
Interest rate contracts	**$ 248,534**	$ 267,485	**$ 3,590**	$ 6,439	**$ 3,116**	$ 6,353
Foreign exchange contracts	**831,730**	767,999	**4,807**	5,104	**5,215**	5,067
Equity contracts	**927**	1,698	**68**	70	**118**	149
Credit contracts	**150**	180	**—**	—	**1**	4
Total derivatives not designated as hedging instruments			**$ 8,465**	$ 11,613	**$ 8,450**	$ 11,573
Total derivatives fair value *(d)*			**$ 8,754**	$ 11,936	**$ 8,538**	$ 12,373
Effect of master netting agreements *(e)*			**(5,939)**	(8,845)	**(6,170)**	(8,797)
Fair value after effect of master netting agreements			**$ 2,815**	$ 3,091	**$ 2,368**	$ 3,576

(a) The fair value of asset derivatives and liability derivatives designated as hedging instruments is recorded as other assets and other liabilities, respectively, on the consolidated balance sheet.

(b) Pursuant to a rule change at a clearing organization in 2018, cash collateral exchanged is deemed a settlement of the derivative each day. The impact of the change reduced the gross fair value of derivative assets and liabilities and a corresponding decrease in effect of master netting agreements, with no impact to the consolidated balance sheet.

(c) The fair value of asset derivatives and liability derivatives not designated as hedging instruments is recorded as trading assets and trading liabilities, respectively, on the consolidated balance sheet.

(d) Fair values are on a gross basis, before consideration of master netting agreements, as required by ASC 815, Derivatives and Hedging.

(e) Effect of master netting agreements includes cash collateral received and paid of $809 million and $1,040 million, respectively, at Dec. 31, 2018, and $925 million and $877 million, respectively, at Dec. 31, 2017.

Trading activities (including trading derivatives)

Our trading activities are focused on acting as a market-maker for our customers, facilitating customer trades and risk mitigating economic hedging in compliance with the Volcker Rule. The change in the fair value of the derivatives utilized in our trading activities is recorded in foreign exchange and other trading revenue on the consolidated income statement.

The following table presents our foreign exchange and other trading revenue.

Foreign exchange and other trading revenue	Year ended Dec. 31,		
(in millions)	**2018**	2017	2016
Foreign exchange	**$ 663**	$ 638	$ 687
Other trading revenue	**69**	30	14
Total foreign exchange and other trading revenue	**$ 732**	$ 668	$ 701

Foreign exchange revenue includes income from purchasing and selling foreign currencies and currency forwards, futures and options. Other trading revenue reflects results from trading in cash instruments including fixed income and equity securities and non-foreign exchange derivatives.

We also use derivative financial instruments as risk mitigating economic hedges, which are not formally designated as accounting hedges. This includes hedging the foreign currency, interest rate or market risks inherent in some of our balance sheet exposures, such as seed capital investments and deposits, as well as certain investment management fee revenue streams. We also use total return swaps to economically hedge obligations arising from the company's deferred compensation plan whereby the participants defer compensation and earn a return linked to the performance of investments they select. The gains or losses on these total return swaps are recorded in staff expense on the consolidated income statement and was a loss of $20 million in 2018, a gain of $26 million in 2017 and a gain of $14 million in 2016.

We manage trading risk through a system of position limits, a VaR methodology based on historical simulation and other market sensitivity measures. Risk is monitored and reported to senior management by a separate unit, independent from trading, on a daily basis. Based on certain assumptions, the VaR methodology is designed to capture the potential overnight pre-tax dollar loss from adverse changes in fair values of all trading positions. The calculation assumes a one-day holding period, utilizes a 99% confidence level and incorporates non-linear product characteristics. The VaR model is one of several statistical models used to develop economic capital results, which are allocated to lines of business for computing risk-adjusted performance.

VaR methodology does not evaluate risk attributable to extraordinary financial, economic or other occurrences. As a result, the risk assessment process includes a number of stress scenarios based upon the risk factors in the portfolio and management's assessment of market conditions. Additional stress scenarios based upon historical market events are also performed. Stress tests may incorporate the impact of reduced market liquidity and the breakdown of historically observed correlations and extreme scenarios. VaR and other statistical measures, stress testing and sensitivity analysis are incorporated in other risk management materials.

Counterparty credit risk and collateral

We assess credit risk of our counterparties through regular examination of their financial statements, confidential communication with the management of those counterparties and regular monitoring of publicly available credit rating information. This and other information is used to develop proprietary credit rating metrics used to assess credit quality.

Collateral requirements are determined after a comprehensive review of the credit quality of each counterparty. Collateral is generally held or pledged in the form of cash and/or highly liquid government securities. Collateral requirements are monitored and adjusted daily.

Additional disclosures concerning derivative financial instruments are provided in Note 19.

Disclosure of contingent features in OTC derivative instruments

Certain OTC derivative contracts and/or collateral agreements contain credit-risk contingent features triggered upon a rating downgrade in which the counterparty has the right to request additional collateral or the right to terminate the contracts in a net liability position.

The following table shows the aggregate fair value of OTC derivative contracts in net liability positions that contained credit-risk contingent features and the value of collateral that has been posted.

(in millions)	Dec. 31, 2018	2017
Aggregate fair value of OTC derivatives in net liability positions *(a)*	**$ 2,877**	$ 2,393
Collateral posted	**$ 2,801**	$ 2,115

(a) *Before consideration of cash collateral.*

The aggregate fair value of OTC derivative contracts containing credit-risk contingent features can fluctuate from quarter to quarter due to changes in market conditions, composition of counterparty trades, new business or changes to the contingent features.

The Bank of New York Mellon, our largest banking subsidiary, enters into the substantial majority of our OTC derivative contracts and/or collateral agreements. As such, the contingent features may be triggered if The Bank of New York Mellon's long-term issuer rating was downgraded.

The following table shows the fair value of contracts falling under early termination provisions that were in net liability positions for three key ratings triggers.

Potential close-out exposures (fair value) *(a)* *(in millions)*	**Dec. 31, 2018**	Dec. 31, 2017
If The Bank of New York Mellon's rating changed to: *(b)*		
A3/A-	**$ 15**	$ 92
Baa2/BBB	**$ 116**	$ 748
Ba1/BB+	**$ 1,041**	$ 2,007

(a) *The amounts represent potential total close-out values if The Bank of New York Mellon's long-term issuer rating were to immediately drop to the indicated levels, and do not reflect collateral posted.*

(b) *Represents rating by Moody's/S&P.*

If The Bank of New York Mellon's debt rating had fallen below investment grade on Dec. 31, 2018 and Dec. 31, 2017, existing collateral arrangements would have required us to post additional collateral of $100 million and $102 million, respectively.

Offsetting assets and liabilities

The following tables present derivative instruments and financial instruments that are either subject to an enforceable netting agreement or offset by collateral arrangements. There were no derivative instruments or financial instruments subject to a legally enforceable netting agreement for which we are not currently netting.

Offsetting of derivative assets and financial assets at Dec. 31, 2018 *(in millions)*	Gross assets recognized	Gross amounts offset in the balance sheet *(a)*	Net assets recognized in the balance sheet	Gross amounts not offset in the balance sheet: Financial instruments	Gross amounts not offset in the balance sheet: Cash collateral received	Net amount
Derivatives subject to netting arrangements:						
Interest rate contracts	**$ 2,654**	**$ 2,202**	**$ 452**	**$ 133**	**$ —**	**$ 319**
Foreign exchange contracts	**4,409**	**3,724**	**685**	**70**	**—**	**615**
Equity and other contracts	**38**	**13**	**25**	**—**	**—**	**25**
Total derivatives subject to netting arrangements	**7,101**	**5,939**	**1,162**	**203**	**—**	**959**
Total derivatives not subject to netting arrangements	**1,653**	**—**	**1,653**	**—**	**—**	**1,653**
Total derivatives	**8,754**	**5,939**	**2,815**	**203**	**—**	**2,612**
Reverse repurchase agreements	**112,245**	**76,040** *(b)*	**36,205**	**36,205**	**—**	**—**
Securities borrowing	**10,588**	**—**	**10,588**	**10,286**	**—**	**302**
Total	**$ 131,587**	**$ 81,979**	**$ 49,608**	**$ 46,694**	**$ —**	**$ 2,914**

(a) *Includes the effect of netting agreements and net cash collateral received. The offset related to the OTC derivatives was allocated to the various types of derivatives based on the net positions.*

(b) *Offsetting of reverse repurchase agreements relates to our involvement in the FICC, where we settle government securities transactions on a net basis for payment and delivery through the Fedwire system.*

Offsetting of derivative assets and financial assets at Dec. 31, 2017

(in millions)	Gross assets recognized	Gross amounts offset in the balance sheet		Net assets recognized in the balance sheet	Gross amounts not offset in the balance sheet: Financial instruments	Gross amounts not offset in the balance sheet: Cash collateral received	Net amount
Derivatives subject to netting arrangements:							
Interest rate contracts	$ 5,915	$ 5,075		$ 840	$ 178	$ —	$ 662
Foreign exchange contracts	4,666	3,720		946	116	—	830
Equity and other contracts	67	50		17	—	—	17
Total derivatives subject to netting arrangements	10,648	8,845		1,803	294	—	1,509
Total derivatives not subject to netting arrangements	1,288	—		1,288	—	—	1,288
Total derivatives	11,936	8,845		3,091	294	—	2,797
Reverse repurchase agreements	42,784	25,848	*(b)*	16,936	16,923	—	13
Securities borrowing	11,199	—		11,199	10,858	—	341
Total	$ 65,919	$ 34,693		$ 31,226	$ 28,075	$ —	$ 3,151

(a) Includes the effect of netting agreements and net cash collateral received. The offset related to the OTC derivatives was allocated to the various types of derivatives based on the net positions.

(b) Offsetting of reverse repurchase agreements relates to our involvement in the FICC, where we settle government securities transactions on a net basis for payment and delivery through the Fedwire system.

Offsetting of derivative liabilities and financial liabilities at Dec. 31, 2018

(in millions)	Gross liabilities recognized	Gross amounts offset in the balance sheet	*(a)*	Net liabilities recognized in the balance sheet	Gross amounts not offset in the balance sheet: Financial instruments	Gross amounts not offset in the balance sheet: Cash collateral pledged	Net amount
Derivatives subject to netting arrangements:							
Interest rate contracts	**$ 3,144**	**$ 2,508**		**$ 636**	**$ 547**	**$ —**	**$ 89**
Foreign exchange contracts	**4,747**	**3,626**		**1,121**	**187**	**—**	**934**
Equity and other contracts	**75**	**36**		**39**	**37**	**—**	**2**
Total derivatives subject to netting arrangements	**7,966**	**6,170**		**1,796**	**771**	**—**	**1,025**
Total derivatives not subject to netting arrangements	**572**	**—**		**572**	**—**	**—**	**572**
Total derivatives	**8,538**	**6,170**		**2,368**	**771**	**—**	**1,597**
Repurchase agreements	**84,665**	**76,040**	*(b)*	**8,625**	**8,625**	**—**	**—**
Securities lending	**997**	**—**		**997**	**937**	**—**	**60**
Total	**$ 94,200**	**$ 82,210**		**$ 11,990**	**$ 10,333**	**$ —**	**$ 1,657**

(a) Includes the effect of netting agreements and net cash collateral paid. The offset related to the OTC derivatives was allocated to the various types of derivatives based on the net positions.

(b) Offsetting of repurchase agreements relates to our involvement in the FICC, where we settle government securities transactions on a net basis for payment and delivery through the Fedwire system.

Offsetting of derivative liabilities and financial liabilities at Dec. 31, 2017					Gross amounts not offset in the balance sheet		
(in millions)	Gross liabilities recognized	Gross amounts offset in the balance sheet	*(a)*	Net liabilities recognized in the balance sheet	Financial instruments	Cash collateral pledged	Net amount
Derivatives subject to netting arrangements:							
Interest rate contracts	$ 6,810	$ 5,495		$ 1,315	$ 1,222	$ —	$ 93
Foreign exchange contracts	4,765	3,221		1,544	177	—	1,367
Equity and other contracts	143	81		62	58	—	4
Total derivatives subject to netting arrangements	11,718	8,797		2,921	1,457	—	1,464
Total derivatives not subject to netting arrangements	655	—		655	—	—	655
Total derivatives	12,373	8,797		3,576	1,457	—	2,119
Repurchase agreements	33,908	25,848	*(b)*	8,060	8,059	—	1
Securities lending	2,186	—		2,186	2,091	—	95
Total	$ 48,467	$ 34,645		$ 13,822	$ 11,607	$ —	$ 2,215

(a) Includes the effect of netting agreements and net cash collateral paid. The offset related to the OTC derivatives was allocated to the various types of derivatives based on the net positions.
(b) Offsetting of repurchase agreements relates to our involvement in the FICC, where we settle government securities transactions on a net basis for payment and delivery through the Fedwire system.

Secured borrowings

The following table presents the contract value of repurchase agreements and securities lending transactions accounted for as secured borrowings by the type of collateral provided to counterparties.

Repurchase agreements and securities lending transactions accounted for as secured borrowings	**Dec. 31, 2018**				Dec. 31, 2017			
	Remaining contractual maturity				Remaining contractual maturity			
(in millions)	Overnight and continuous	Up to 30 days	30 days or more	Total	Overnight and continuous	Up to 30 days	30 days or more	Total
Repurchase agreements:								
U.S. Treasury	**$ 76,822**	**$ —**	**$ —**	**$ 76,822**	$ 26,883	$ 11	$ —	$ 26,894
U.S. government agencies	**759**	**—**	**—**	**759**	570	180	—	750
Agency RMBS	**3,184**	**—**	**4**	**3,188**	2,574	109	—	2,683
Corporate bonds	**416**	**—**	**1,413**	**1,829**	373	—	1,052	1,425
Other debt securities	**271**	**—**	**1,106**	**1,377**	253	—	731	984
Equity securities	**163**	**—**	**527**	**690**	655	—	517	1,172
Total	**$ 81,615**	**$ —**	**$ 3,050**	**$ 84,665**	$ 31,308	$ 300	$ 2,300	$ 33,908
Securities lending:								
U.S. government agencies	**$ 7**	**$ —**	**$ —**	**$ 7**	$ 72	$ —	$ —	$ 72
Other debt securities	**294**	**—**	**—**	**294**	316	—	—	316
Equity securities	**696**	**—**	**—**	**696**	1,798	—	—	1,798
Total	**$ 997**	**$ —**	**$ —**	**$ 997**	$ 2,186	$ —	$ —	$ 2,186
Total borrowings	**$ 82,612**	**$ —**	**$ 3,050**	**$ 85,662**	$ 33,494	$ 300	$ 2,300	$ 36,094

BNY Mellon's repurchase agreements and securities lending transactions primarily encounter risk associated with liquidity. We are required to pledge collateral based on predetermined terms within the agreements. If we were to experience a decline in the fair value of the collateral pledged for these transactions, we could be required to provide additional collateral to the counterparty, therefore decreasing the amount of assets available for other liquidity needs that may arise. BNY Mellon also offers tri-party collateral agency services in the tri-party repo market where we are exposed to credit risk. In order to mitigate this risk, we require dealers to fully secure intraday credit.

Note 23–Lines of business

We have an internal information system that produces performance data along product and service lines for our two principal businesses and the Other segment. The primary products and services and types of revenue for our principal businesses and a description of the Other segment are presented below.

Investment Services business

Line of business	*Primary products and services*	*Primary types of revenue*
Asset Servicing	Custody, accounting, ETF services, middle-office solutions, transfer agency, services for private equity and real estate funds, foreign exchange, securities lending, liquidity/lending services, prime brokerage and data analytics	- Asset servicing fees (includes securities lending revenue) - Foreign exchange revenue - Net interest revenue - Financing-related fees
Pershing	Clearing and custody, investment, wealth and retirement solutions, technology and enterprise data management, trading services and prime brokerage	- Clearing services fees - Net interest revenue
Issuer Services	Corporate Trust (trustee, administration and agency services and reporting and transparency) and Depositary Receipts (issuer services and support for brokers and investors)	- Issuer services fees - Net interest revenue - Foreign exchange revenue
Treasury Services	Integrated cash management solutions including payments, foreign exchange, liquidity management, receivables processing and payables management and trade finance and processing	- Treasury services fees - Net interest revenue
Clearance and Collateral Management	U.S. government clearing, global collateral management and tri-party repo	- Asset servicing fees - Net interest revenue

Investment Management business

Line of business	*Primary products and services*	*Primary types of revenue*
Asset Management	Diversified investment management strategies and distribution of investment products	- Investment management fees - Performance fees - Distribution and servicing fees
Wealth Management	Investment management, custody, wealth and estate planning and private banking services	- Investment management fees - Net interest revenue

Other segment	*Description*	*Primary types of revenue*
	Includes leasing portfolio, corporate treasury activities, including our securities portfolio, derivatives and other trading activity, corporate and bank-owned life insurance, renewable energy investments and business exits	- Net interest revenue - Investment and other income - Net gain (loss) on securities - Other trading revenue

Business accounting principles

Our business data has been determined on an internal management basis of accounting, rather than the generally accepted accounting principles used for consolidated financial reporting. These measurement principles are designed so that reported results of the businesses will track their economic performance.

Business results are subject to reclassification when organizational changes are made. There were no significant organizational changes in 2018. The results are also subject to refinements in revenue and expense allocation methodologies, which are typically reflected on a prospective basis.

The accounting policies of the businesses are the same as those described in Note 1.

The results of our businesses are presented and analyzed on an internal management reporting basis.

- Revenue amounts reflect fee and other revenue generated by each business. Fee and other revenue transferred between businesses under revenue transfer agreements is included within other revenue in each business.
- Revenues and expenses associated with specific client bases are included in those businesses. For example, foreign exchange activity associated with clients using custody products is included in Investment Services.
- Net interest revenue is allocated to businesses based on the yields on the assets and liabilities generated by each business. We employ a funds transfer pricing system that matches funds with the specific assets and liabilities of each business based on their interest sensitivity and maturity characteristics.
- The provision for credit losses associated with the respective credit portfolios is reflected in each business segment.
- Incentives expense related to restricted stock is allocated to the businesses.
- Support and other indirect expenses are allocated to businesses based on internally developed methodologies.
- Recurring FDIC expense is allocated to the businesses based on average deposits generated within each business.
- Litigation expense is generally recorded in the business in which the charge occurs.
- Management of the securities portfolio is a shared service contained in the Other segment. As a result, gains and losses associated with the valuation of the securities portfolio are included in the Other segment.
- Client deposits serve as the primary funding source for our securities portfolio. We typically allocate all interest revenue to the businesses generating the deposits. Accordingly, accretion related to the portion of the securities portfolio restructured in 2009 has been included in the results of the businesses.
- Balance sheet assets and liabilities and their related income or expense are specifically assigned to each business. Businesses with a net liability position have been allocated assets.
- Goodwill and intangible assets are reflected within individual businesses.

Total revenue includes approximately $2.6 billion in 2018, $2.4 billion in 2017 and $2.2 billion in 2016 of international operations domiciled in the UK which comprised 16%, 15% and 14% of total revenue, respectively.

The following consolidating schedules present the contribution of our businesses to our overall profitability.

For the year ended Dec. 31, 2018 *(dollars in millions)*	**Investment Services**	**Investment Management**		**Other**	**Consolidated**	
Total fee and other revenue	**$ 8,926**	**$ 3,781**	*(a)*	**$ 85**	**$ 12,792**	*(a)*
Net interest revenue (expense)	**3,372**	**303**		**(64)**	**3,611**	
Total revenue	**12,298**	**4,084**	*(a)*	**21**	**16,403**	*(a)*
Provision for credit losses	**1**	**3**		**(15)**	**(11)**	
Noninterest expense	**8,058**	**2,818**		**334**	**11,210**	*(b)*
Income (loss) before taxes	**$ 4,239**	**$ 1,263**	*(a)*	**$ (298)**	**$ 5,204**	*(a)(b)*
Pre-tax operating margin *(c)*	**34%**	**31%**		**N/M**	**32%**	
Average assets	**$ 262,747**	**$ 31,446**		**$ 49,581**	**$ 343,774**	

(a) Both total fee and other revenue and total revenue include a net loss from consolidated investment management funds of $1 million, representing $13 million of losses and a loss attributable to noncontrolling interests of $12 million. Income before taxes is net of a loss attributable to noncontrolling interests of $12 million.
(b) Noninterest expense includes a loss attributable to noncontrolling interests of $1 million related to other consolidated subsidiaries.
(c) Income before taxes divided by total revenue.

For the year ended Dec. 31, 2017 *(dollars in millions)*	Investment Services	Investment Management		Other	Consolidated	
Total fee and other revenue	$ 8,527	$ 3,668	*(a)*	$ 7	$ 12,202	*(a)*
Net interest revenue (expense)	3,058	329		(79)	3,308	
Total revenue (loss)	11,585	3,997	*(a)*	(72)	15,510	*(a)*
Provision for credit losses	(7)	2		(19)	(24)	
Noninterest expense	7,747	2,854		347	10,948	*(b)*
Income (loss) before taxes	$ 3,845	$ 1,141	*(a)*	$ (400)	$ 4,586	*(a)(b)*
Pre-tax operating margin *(c)*	33%	29%		N/M	30%	
Average assets	$ 254,646	$ 31,450		$ 57,752	$ 343,848	

(a) Both total fee and other revenue and total revenue include net income from consolidated investment management funds of $37 million, representing $70 million of income and noncontrolling interests of $33 million. Income before taxes is net of noncontrolling interests of $33 million.
(b) Noninterest expense includes a loss attributable to noncontrolling interest of $9 million related to other consolidated subsidiaries.
(c) Income before taxes divided by total revenue.

For the year ended Dec. 31, 2016 *(dollars in millions)*	Investment Services	Investment Management		Other	Consolidated	
Total fee and other revenue	$ 8,299	$ 3,424	*(a)*	$ 366	$ 12,089	*(a)*
Net interest revenue	2,797	327		14	3,138	
Total revenue	11,096	3,751	*(a)*	380	15,227	*(a)*
Provision for credit losses	8	6		(25)	(11)	
Noninterest expense	7,342	2,778		394	10,514	*(b)*
Income before taxes	$ 3,746	$ 967	*(a)*	$ 11	$ 4,724	*(a)(b)*
Pre-tax operating margin *(c)*	34%	26%		N/M	31%	
Average assets	$ 273,808	$ 30,169		$ 54,500	$ 358,477	

(a) Both total fee and other revenue and total revenue include net income from consolidated investment management funds of $16 million, representing $26 million of income and noncontrolling interests of $10 million. Income before taxes is net of noncontrolling interests of $10 million.
(b) Noninterest expense includes a loss attributable to noncontrolling interest of $9 million related to other consolidated subsidiaries.
(c) Income before taxes divided by total revenue.

Note 24–International operations

International activity includes Investment Services and Investment Management fee revenue generating businesses, foreign exchange trading activity, loans and other revenue producing assets and transactions in which the customer is domiciled outside of the United States and/or the international activity is resident at an international entity. Due to the nature of our international and domestic activities, it is not possible to precisely distinguish our international operations between internationally and domestically domiciled customers. As a result, it is necessary to make certain subjective assumptions such as:

- Income from international operations is determined after internal allocations for interest revenue, taxes, expenses and provision for credit losses.
- Expense charges to international operations include those directly incurred in connection with such activities, as well as an allocable share of general support and overhead charges.

Total assets, total revenue, income before income taxes and net income of our international operations are shown in the table below.

International operations *(in millions)*	International EMEA		International APAC	International Other	Total International	Total Domestic	Total
2018							
Total assets at period end *(a)*	**$ 74,982**	*(b)*	**$ 23,199**	**$ 1,483**	**$ 99,664**	**$ 263,209**	**$ 362,873**
Total revenue	**4,252**	*(b)*	**1,103**	**684**	**6,039**	**10,353**	**16,392**
Income before income taxes	**1,694**		**564**	**455**	**2,713**	**2,479**	**5,192**
Net income	**1,345**		**448**	**361**	**2,154**	**2,100**	**4,254**
2017							
Total assets at period end *(a)*	$ 88,490	*(b)*	$ 20,676	$ 1,737	$ 110,903	$ 260,855	$ 371,758
Total revenue	3,982	*(b)*	997	610	5,589	9,954	15,543
Income before income taxes	1,497		538	296	2,331	2,279	4,610
Net income	1,186		426	234	1,846	2,268	4,114
2016							
Total assets at period end *(a)*	$ 73,303	*(b)*	$ 18,074	$ 1,350	$ 92,727	$ 240,742	$ 333,469
Total revenue	3,744	*(b)*	922	549	5,215	10,022	15,237
Income before income taxes	1,263		485	286	2,034	2,691	4,725
Net income	1,013		389	229	1,631	1,917	3,548

(a) *Total assets include long-lived assets, which are not considered by management to be significant in relation to total assets. Long-lived assets are primarily located in the United States.*

(b) *Includes assets of approximately $30.6 billion, $32.9 billion and $29.6 billion and revenue of approximately $2.6 billion, $2.4 billion and $2.2 billion in 2018, 2017 and 2016, respectively, of international operations domiciled in the UK, which is 8%, 9% and 9% of total assets and 16%, 15% and 14% of total revenue, respectively.*

Note 25–Supplemental information to the Consolidated Statement of Cash Flows

Non-cash investing and financing transactions that, appropriately, are not reflected in the consolidated statement of cash flows are listed below.

Non-cash investing and financing transactions *(in millions)*	Year ended Dec. 31, **2018**	2017	2016
Transfers from loans to other assets for other real estate owned	**$ 2**	$ 3	$ 4
Change in assets of consolidated VIEs	**268**	500	170
Change in liabilities of consolidated VIEs	**—**	313	69
Change in nonredeemable noncontrolling interests of consolidated investment management funds	**215**	302	120
Securities purchased not settled	**227**	112	75
Securities sold not settled	**187**	587	—
Securities matured not settled	**—**	70	—
Available-for-sale securities transferred to trading assets	**963**	—	—
Held-to-maturity securities transferred to available-for-sale	**1,087**	74	10
Premises and equipment/capitalized software funded by capital lease obligations	**26**	347	13

To the Stockholders and Board of Directors
The Bank of New York Mellon Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of The Bank of New York Mellon Corporation and subsidiaries (BNY Mellon) as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of BNY Mellon as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), BNY Mellon's internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 27, 2019 expressed an unqualified opinion on the effectiveness of BNY Mellon's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of BNY Mellon's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to BNY Mellon in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as BNY Mellon's auditor since 2007.

New York, New York
February 27, 2019

Effective February 27, 2019

Directors

Steven D. Black
Co-Chief Executive Officer
Bregal Investments
Private equity firm

Linda Z. Cook
Partner, Managing Director and Member of the Executive Committee of EIG Global Energy Partners, an investment firm, and Chief Executive Officer of Harbour Energy, Ltd., an energy investment vehicle

Joseph J. Echevarria
Retired Chief Executive Officer
Deloitte LLP
Global provider of audit, consulting, financial advisory, risk management, tax and related services

Edward P. Garden
Chief Investment Officer and a founding partner, Trian Fund Management, L.P.
Alternative investment management firm

Jeffrey A. Goldstein
Chairman
SpringHarbor Holding Company LLC and a Senior Advisor, Hellman & Friedman LLC
Private equity firm

John M. Hinshaw
Former Executive Vice President and Chief Customer Officer at Hewlett Packard Enterprise Company
Global provider of IT, technology and enterprise products and solutions

Edmund F. (Ted) Kelly
Retired Chairman
Liberty Mutual Group
Multi-line insurance company

Jennifer B. Morgan
Executive Board Member of SAP and President of SAP Americas and Asia Pacific Japan, Global Customer Operations
Global software company

Mark A. Nordenberg
Chancellor Emeritus,
Chair of the Institute of Politics and Distinguished Service Professor of Law
University of Pittsburgh
Major public research university

Elizabeth E. Robinson
Former Global Treasurer, Partner and Managing Director of
The Goldman Sachs Group, Inc.
Global financial services company

Charles W. Scharf
Chairman and Chief Executive Officer
The Bank of New York Mellon Corporation

Samuel C. Scott III
Retired Chairman, President and Chief Executive Officer
Ingredion Incorporated (formerly Corn Products International, Inc.)
Global ingredient solutions provider

Executive Committee and Other Executive Officers

Paul Camp
Chief Executive Officer, Treasury Services

J. David Cruikshank
Chairman, Asia Pacific

Lisa Dolly
Chief Executive Officer, Pershing LLC

Bridget E. Engle *
Chief Information Officer

Thomas P. (Todd) Gibbons *
Chief Executive Officer, Clearing, Markets and Client Management

Mitchell E. Harris *
Chief Executive Officer, Investment Management

Monique R. Herena *
Chief Human Resources Officer

Hani A. Kablawi *
Chief Executive Officer, Global Asset Servicing and Chairman, Europe, Middle East and Africa

Catherine Keating
Chief Executive Officer, BNY Mellon Wealth Management

Kurtis R. Kurimsky *
Corporate Controller

Francis (Frank) La Salla *
Chief Executive Officer, Issuer Services

J. Kevin McCarthy *
General Counsel

Michelle M. Neal
Chief Executive Officer, BNY Mellon Markets

Lester J. Owens *
Head of Operations

Roman Regelman *
Head of Digital

Brian Ruane
Chief Executive Officer, BNY Mellon Government Securities Services Corp.

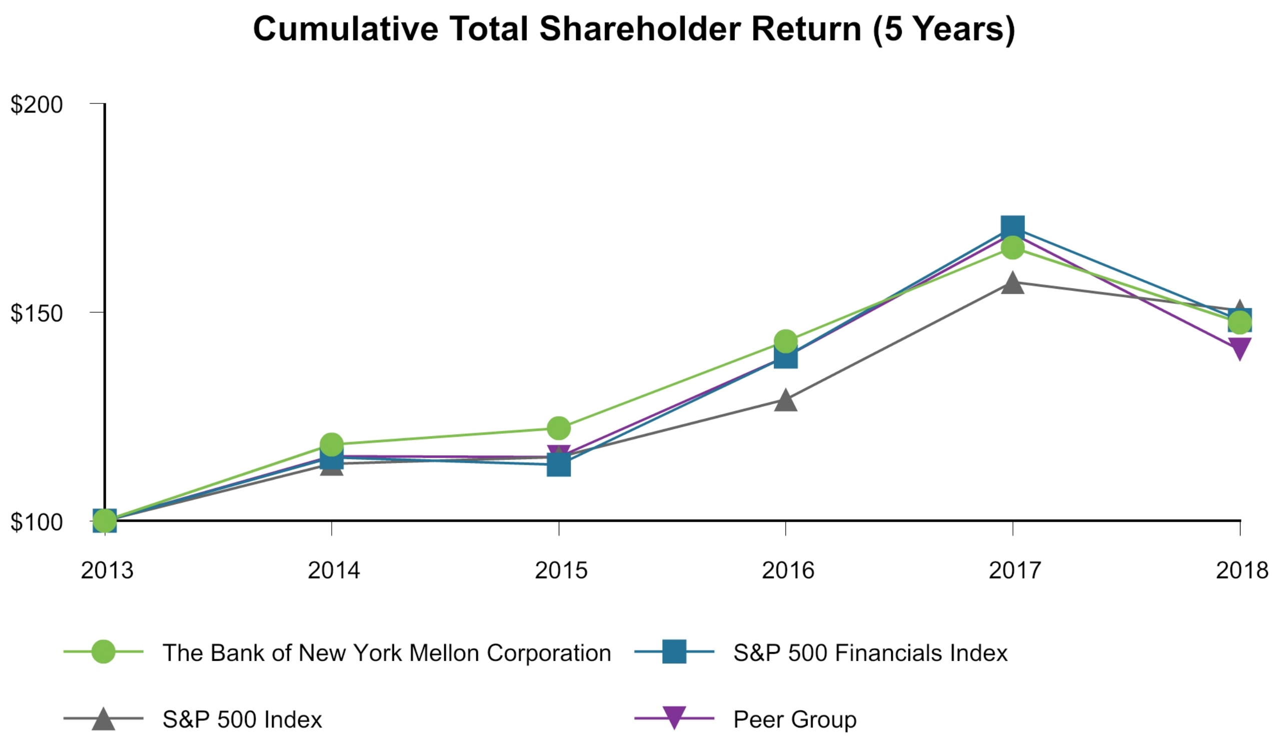
Michael P. Santomassimo *
Chief Financial Officer

Charles W. Scharf *
Chairman and Chief Executive Officer

Akash A. Shah *
Head of Strategy

James S. Wiener *
Chief Risk Officer

* Designated as an Executive Officer.



Cumulative shareholder returns *(a)*	Dec. 31,					
(in dollars)	2013	2014	2015	2016	2017	**2018**
The Bank of New York Mellon Corporation	$ 100.0	$ 118.3	$ 122.2	$ 143.0	$ 165.4	**$ 147.5**
S&P 500 Financials Index	100.0	115.2	113.4	139.3	170.2	**148.0**
S&P 500 Index	100.0	113.7	115.3	129.1	157.2	**150.3**
Peer Group	100.0	115.5	115.3	139.3	168.8	**141.0**

(a) Returns are weighted by market capitalization at the beginning of the measurement period.

This graph shows The Bank of New York Mellon Corporation's cumulative total shareholder returns over the five-year period from Dec. 31, 2013 to Dec. 31, 2018. Our peer group is composed of financial services companies which provide investment management and investment servicing. We also utilize the S&P 500 Financials Index as a benchmark against our performance. The graph shows the cumulative total returns for the same five-year period of the S&P 500 Financials Index, the S&P 500 Index as well as our peer group listed below. The comparison assumes a $100 investment on Dec. 31, 2013 in The Bank of New York Mellon Corporation common stock, in the S&P 500 Financials Index, in the S&P 500 Index and in the peer group detailed below and assumes that all dividends were reinvested.

Peer Group		
BlackRock, Inc.	Morgan Stanley	State Street Corporation
The Charles Schwab Corporation	Northern Trust Corporation	U.S. Bancorp
Franklin Resources, Inc.	The PNC Financial Services Group, Inc.	Wells Fargo & Company
JPMorgan Chase & Co.	Prudential Financial, Inc.	

EXHIBIT V
DEFINITIVE PROXY STATEMENT SCHEDULE 14A
FILED BY THE BANK OF NEW YORK MELLON CORPORATION ON MARCH 9, 2018

DEF 14A 1 d465958ddef14a.htm DEF 14A

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 14A
PROXY STATEMENT PURSUANT TO SECTION 14(a) OF
THE SECURITIES EXCHANGE ACT OF 1934
(Amendment No.)

Filed by the Registrant ☒
Filed by a Party other than the Registrant ☐

Check the appropriate box:

☐ Preliminary Proxy Statement
☐ Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))
☒ Definitive Proxy Statement
☐ Definitive Additional Materials
☐ Soliciting Material Pursuant to §240.14a-12

THE BANK OF NEW YORK MELLON CORPORATION

(Name of Registrant as Specified in its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

☒ No fee required.

☐ Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

(1) Title of each class of securities to which transaction applies:

(2) Aggregate number of securities to which transaction applies:

(3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (Set forth the amount on which the filing fee is calculated and state how it was determined):

(4) Proposed maximum aggregate value of transaction:

(5) Total fee paid:

☐ Fee paid previously with preliminary materials.

☐ Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

(1) Amount Previously Paid:

(2) Form, Schedule or Registration Statement No.:

(3) Filing Party:

(4) Date Filed:

BNY MELLON

NOTICE OF 2013 ANNUAL MEETING OF STOCKHOLDERS

Date and Time: April 9, 2013 at 9:00 a.m., local time

Place: 101 Barclay Street, New York, New York 10286

Record Date: You can, and should, vote if you were a stockholder on February 11, 2013

Admission: To attend, you must bring a **government-issued photo identification** and **evidence of ownership** on the record date (such as a brokerage account statement). If you represent an entity that is a stockholder, you also will need proof of authority. Complete instructions are outlined under "Annual Meeting Information" beginning on page 61 of the proxy statement.

Please note that no cameras, recording equipment, large bags or packages will be permitted in the Annual Meeting. The use of cell phones, smart phones, tablets and other personal communication devices during the Annual Meeting is also prohibited.

AGENDA AND BOARD RECOMMENDATIONS

Proposal	Board Voting Recommendation	Page Reference (for more detail)
Election of 12 directors	FOR EACH DIRECTOR NOMINEE	1
Advisory resolution to approve executive compensation	FOR	24
Ratification of KPMG LLP as our independent auditor for 2013	FOR	57

We will also act on any other business that may properly come before the meeting, although we have not received notice of any other matters that may be properly presented.

VOTING

It is important that you vote your shares. To ensure that they are voted, please follow the instructions on the proxy card to either complete and return the proxy card or vote by telephone or over the Internet. Mailing your proxy card or voting by telephone or over the Internet does not prevent you from changing your vote in person at the meeting.

BY ORDER OF THE BOARD OF DIRECTORS,

Jane Sherburne
General Counsel and Corporate Secretary

March 8, 2013

Important Notice Regarding the Availability of Proxy Materials for the Stockholder Meeting to Be Held on April 9, 2013: Our 2013 proxy statement and 2012 annual report to stockholders are available at http://www.edocumentview.com/bnym.

BNY MELLON

SUMMARY INFORMATION

To assist you in reviewing the proposals, including the election of directors and the non-binding advisory resolution on executive compensation, the following summarizes information about our 2012 financial performance, our corporate governance structure and our compensation program. This summary does not contain all of the information that you should consider when deciding how to vote your shares. You should read the entire proxy statement carefully before voting. This proxy statement and the form of proxy are first being sent to stockholders on March 8, 2013. See "Annual Meeting Information" beginning on page 61 for details on the voting process and how to attend the annual meeting.

BUSINESS HIGHLIGHTS

Business results. In 2012, continued global economic uncertainty, persistent low interest rates, low volatility and tepid capital markets continued to weigh on global markets and the financial services industry. Despite the challenges presented, the company achieved the following in 2012:

- Increased year-over-year assets under management by 10%, with net inflows of $36 billion
- Completed $1.1 billion in stock buybacks, up from $835 million in 2011, and paid more than $600 million in common stock dividends
- Increased our year-end book value by 10% over last year, to $30.39 per share
- Achieved above-target net savings of $309 million under our Operational Excellence Initiatives
- Reduced risk in our securities and loan portfolios, reflected in part by a $2.4 billion unrealized pre-tax gain and a credit to our provision for credit losses of $80 million
- Exceeded many of our bank peers in attaining a Basel I Tier 1 capital ratio of 15.1% and common ratio of 13.6% and a return on tangible common equity ratio of 19%[1]
- Exceeded Basel III guidelines for Tier 1 common equity ratio by attaining an estimated ratio of 9.8%[1]

These accomplishments contributed to a positive total shareholder return (TSR) of 32% for 2012, positioning us at the 75th percentile relative to both the S&P 500 Financials Index and our peer group. Our reported earnings per share was $2.03, 89% of budget, as market conditions unfavorably impacted our lower variable costs businesses and revenue streams, which was partially offset by continuing to win new business. Also impacting our earnings was the settlement of a number of significant litigation items, which was partially offset by our Operational Excellence Initiatives savings.

[1] For a reconciliation and explanation of these non-GAAP measures, see pages 106 to 110 of our 2012 Annual Report, available at http://www.edocumentview.com/bnym. GAAP is the acronym for generally accepted accounting principles in the United States.

BOARD NOMINEES (see pages 2 to 10)

Name	Age	Director Since	Occupation	Independent	Committee Memberships AC	CG&N	CSR	HRC	RC	TC	EC
Ruth E. Bruch	59	2007	Retired SVP and Chief Information Officer of Kellogg Company	Yes			C	M	M	M	
Nicholas M. Donofrio	67	2007	Retired EVP, Innovation and Technology of IBM Corporation	Yes			M		C	M	M
Gerald L. Hassell	61	2007	Chairman and CEO of The Bank of New York Mellon Corporation	No							M
Edmund F. “Ted” Kelly	67	2007	Chairman of Liberty Mutual Group	Yes				M	M	C	
Richard J. Kogan	71	2007	Retired Chairman, President and CEO of Schering Plough Corporation	Yes	M	M		M			
Michael J. Kowalski	60	2007	Chairman and CEO of Tiffany & Co.	Yes	M			M			
John A. Luke, Jr.	64	2007	Chairman & CEO of MeadWestvaco Corporation	Yes		C			M		M
Mark A. Nordenberg	64	2007	Chancellor, CEO and Distinguished Service Professor of Law at the University of Pittsburgh	Yes			M		M	M	
Catherine A. Rein	70	2007	Retired Senior EVP and Chief Administrative Officer of MetLife, Inc.	Yes	C	M					M
William C. Richardson	72	2007	President and CEO Emeritus of The W.K. Kellogg Foundation and Retired Chair and Co-Trustee of The W.K. Kellogg Foundation Trust	Yes	M	M					
Samuel C. Scott III	68	2007	Retired Chairman, President and CEO of Corn Products International, Inc.	Yes	M		M	C			M
Wesley W. von Schack	68	2007	Chairman of AEGIS Insurance Services, Inc.	Yes		M		M	M		C

AC	Audit Committee	TC	Technology Committee
CG&N	Corporate Governance and Nominating Committee	EC	Executive Committee
CSR	Corporate Social Responsibility Committee	M	Member
HRC	Human Resources and Compensation Committee	C	Chairperson
RC	Risk Committee		

CORPORATE GOVERNANCE FACTS (see pages 11 to 20)

Board Independence & Leadership

- Independent Lead Director: Wesley W. von Schack
- Independent director nominees: 11 of 12
- Number of independent board committees: 6
- Total board and committee meetings in 2012: 48
- Average director attendance at board and committee meetings in 2012 was about 95%
- Independent Lead Director selected by independent directors
- Expanded authority of Lead Director to approve, and add items to, board agendas and meeting schedules

Corporate Governance Structure and Practices

- No staggered board
- No “poison pill”
- Majority voting in uncontested director elections, with director resignation policy
- Action by stockholders requires only majority of votes cast (not majority of shares present and entitled to vote)
- Significant portion of director compensation paid in deferred stock units, which must be held as long as the director serves on the Board

COMPENSATION HIGHLIGHTS (see pages 25 to 42)

2012 Compensation Program

For 2012, we continued to operate a compensation program focused on variable pay and long-term performance. For example, variable pay makes up more than 90% of the 2012 target compensation for our named executives and about 66% of our CEO's 2012 target compensation was in the form of equity awards that remain subject to vesting, clawback and other restrictions. We also standardized the separation benefits available to our executive officers, as a result of our CEO's voluntary waiver of his transition agreement. In addition:

We have:

- No excessive perquisites or benefits
- No tax gross-ups for perquisites
- No single-trigger change-in-control benefits
- No tax gross-ups on severance payments

We provide for:

- No repricing of underwater stock options
- No hedging or short sales of our stock

And we grant:

- No stock options with exercise price below market

Stockholder Outreach and 2013 Enhancements

During 2012, our Human Resources and Compensation Committee, which we refer to as the "HRC Committee," determined to extend the scope of our outreach process with stockholders. In particular, we reached investors representing approximately 37% of our outstanding shares (about half of our largest 25 investors) and invited comments on our executive compensation program (including pay-for-performance linkage and severance arrangements) and our corporate governance structures. We also had a number of meetings with regulators and other stakeholders, including meetings with proxy advisory firms. Based on the quality and value of the feedback received, the HRC Committee has determined to continue our extended stockholder outreach program as an ongoing, annual process and approved the following pay-for-performance enhancements for 2013. We:

- increased the portion of our incentive pay in the form of annual incentive, increasing the amount of pay that varies directly with prior year performance;
- increased the equity portion of our annual incentive, subjecting a greater portion of annual incentive to risk-based forfeiture;
- changed the form of our long-term incentive to 100% performance shares;
- subjected annual long-term incentive target grant value to adjustment of between 0-125% based on performance;
- maintained a strong deferral rate of incentive pay; and
- subjected all equity awards going forward to 100% forfeiture during vesting period based on risk assessments.

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PROPOSAL 1 – ELECTION OF DIRECTORS

You are being asked to elect the 12 nominees named in this proxy statement to serve on the Board of Directors of The Bank of New York Mellon Corporation (which we refer to as "we," "us," the "company" or "BNY Mellon") until the 2014 Annual Meeting of stockholders or until their successors have been duly elected and qualified. Each nominee currently serves on our Board of Directors. Eleven nominees are independent directors, and one nominee serves as the company's Chairman and Chief Executive Officer.

We do not know of any reason why any nominee named in this proxy statement would be unable to serve as a director if elected. If any nominee is unable to serve, the shares represented by all valid proxies will be voted for the election of such other person as may be nominated in accordance with our by-laws, as described below. Proxies cannot be voted for a greater number of persons than the number of nominees named in this proxy statement.

The Board unanimously recommends you vote "FOR" each of the nominees described below.

Director Qualifications

Our Corporate Governance and Nominating Committee, which we refer to as the "CG&N Committee," assists the Board in reviewing and identifying individuals qualified to become Board members. The CG&N Committee utilizes Board-approved criteria in recommending nominees for directors at Annual Meetings of stockholders and nominees to fill vacancies on the Board. Directors chosen to fill vacancies will hold office for a term expiring at the end of the next Annual Meeting of stockholders.

In selecting nominees for election as directors of the company, our CG&N Committee's charter provides, among other things, that the Committee must consider (but is not limited to consideration of) the candidate's experience, accomplishments, education, skills and personal and professional integrity; the diversity of the Board; and the candidate's ability to devote the necessary time for service as a director (including directorships held at other corporations and organizations). The CG&N Committee will evaluate a candidate recommended by a stockholder for nomination as a director in the same manner that it evaluates any other nominee. For information on recommending a candidate for nomination as a director see "Stockholder Proposals for 2014 Annual Meeting" on page 64 below.

The Board and the CG&N Committee have concluded that each of our current Board members should be recommended for re-nomination as a director. As part of this determination, the Board and the CG&N Committee considered:

- ***Professional background and experience***. The individual's specific experience, background and education, including experience with, among other things, asset management and other financial services, international business, risk management, operational planning and business strategy, technology and innovation, financial reporting and accounting, legal matters, government and regulatory affairs, compensation and human resources, sales and marketing, and mergers and acquisitions.
- ***Senior level policy-making positions***. The individual's effectiveness, business acumen and leadership skills as demonstrated by senior-level policy-making experience in business, government, education, technology and/or not-for-profit enterprises.
- ***Other public company board experience***. The individual's service as a director on other public company boards.
- ***Intangible attributes***. The individual's integrity; capacity to evaluate business issues and make practical and mature judgments; willingness to devote the necessary time and effort required to serve on our

Board; the skills and personality to work effectively and collegially with other directors on a board that is responsive to the company's needs; and the self-confidence and articulateness to participate effectively in Board discussions.

- ***Prior BNY Mellon Board experience***. The individual's years of service on our Board and on the legacy boards of directors of The Bank of New York Company, Inc., which we refer to as "Bank of New York," and Mellon Financial Corporation, which we refer to as "Mellon," as well as each individual's service on standing committees of our Board and the legacy Bank of New York and Mellon boards.
- ***Board attendance and participation***. The individual's attendance record at Board and committee meetings, as well as each individual's preparedness for and participation at Board and committee meetings.

Diversity of the Board

In considering diversity of the Board (in all aspects of that term) as a criterion for selecting nominees in accordance with its charter, the CG&N Committee takes into account various factors and perspectives, including differences of viewpoint, professional experience, education, skills and other individual qualities and attributes that contribute to Board heterogeneity, as well as race, gender, national origin and sexual preference. The CG&N Committee seeks persons with leadership experience in a variety of contexts and, among public company leaders, across a variety of industries. The CG&N Committee believes that this conceptualization of diversity is the most effective means to implement Board diversity and will assess the effectiveness of this approach as part of its annual review of its charter and our Corporate Governance Guidelines.

Information About the Nominees

Each of the following nominees for election as director was elected as a director at our 2012 Annual Meeting. Our Board believes these nominees meet the criteria described above with diversity and depth of experience that enable them to effectively oversee management of the company. No director has a family relationship to any other director, nominee for director or executive officer. Information relating to each nominee for election as director, including his or her period of service as a director of Bank of New York or Mellon prior to their merger on July 1, 2007, which we refer to as the "merger," principal occupation, specific experience, other biographical material and qualifications is described below:

Independent

Director since 2007

Age 59

RUTH E. BRUCH
Retired Senior Vice President and Chief Information Officer of Kellogg Company

Ms. Bruch served as a director of Mellon from 2003 to 2007, where she served on the Human Resources, the Technology and the Community Responsibility Committees. Ms. Bruch served as Senior Vice President and Chief Information Officer of Kellogg Company, a food manufacturer focusing on cereal and convenience foods, from 2006 until her retirement in 2009. Prior to that, from 2002 to 2006, Ms. Bruch served as Senior Vice President and Chief Information Officer of Lucent Technologies Inc., which focuses on communications networking solutions.
Ms. Bruch is currently a director of Teledyne Technologies Inc., where she serves on the Audit Committee and the Personnel and Compensation Committee.

Ms. Bruch's experience also includes senior-level management positions at Visteon Corporation, ZoneTrader.com, Union Carbide Corporation, Continental Bank Corporation, First Bank System, Inc. and Davenport (IA) Bank & Trust Co. Ms. Bruch has also served as a member of the board of directors of BlueStar Solutions, an IT outsourcing services provider, and Manchester Bidwell Corporation, a non-profit organization that provides instruction and mentoring in career education and the arts for youth and adults in the Pittsburgh, Pennsylvania region. Ms. Bruch holds a Bachelor of Business Administration degree from the University of Iowa.

Ms. Bruch's service as chief information officer of several publicly-traded companies and other organizations for over 10 years, and her other extensive senior-level management positions, including service at three banks, will provide the Board with a perspective and resource on information technology and other technology-related matters, and the banking industry.

Other Public Company Board Service: Teledyne Technologies Inc.

Independent

Director since 2007

Age 67

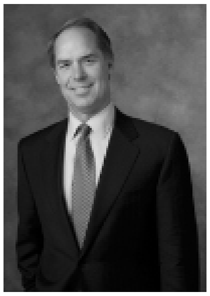
NICHOLAS M. DONOFRIO
Retired Executive Vice President, Innovation and Technology of International Business Machines (or "IBM") Corporation

Mr. Donofrio served as a director of Bank of New York from 1999 to 2007, where he served on the Audit, the Risk and the Technology Committees, among others. Mr. Donofrio served as Executive Vice President, Innovation and Technology of IBM Corporation, a developer, manufacturer and provider of advanced information technologies and services, from 2005 until his retirement in 2008. Mr. Donofrio previously served as Senior Vice President, Technology and Manufacturing of IBM Corporation from 1997 to 2005 and spent a total of 44 years as an employee of IBM Corporation. Mr. Donofrio is currently a director of Advanced Micro Devices, Inc., where he serves on the Nominating and Corporate Governance Committee and the Compensation Committee; Delphi Automotive PLC, where he chairs the Innovation and Technology Committee and serves on the Audit and Finance Committees; and Liberty Mutual Group, where he serves on the Audit Committee and the Nominating and Corporate Governance Committee.

Mr. Donofrio holds seven technology patents and is a member of numerous technical and science honor societies. Mr. Donofrio is Co-Chair of the New York Hall of Science, is a director of TopCoder, Inc., is on the board of advisors of StarVest Partners, L.P., and is a member of the Board of Trustees of Syracuse University. Mr. Donofrio earned a Bachelor of Science degree from Rensselaer Polytechnic Institute and a Master of Science degree from Syracuse University.

Mr. Donofrio's extensive background and experience in engineering, technology and innovation, including his 44 years of service at IBM, as well as his widely-recognized status in the field of engineering and his teaching and training in the area of innovation, will provide the Board with a perspective and resource on technology and innovation.

Other Public Company Board Service: Advanced Micro Devices, Inc.; Delphi Automotive PLC



GERALD L. HASSELL
Chairman and Chief Executive Officer of The Bank of New York Mellon Corporation

Management

Director since 2007

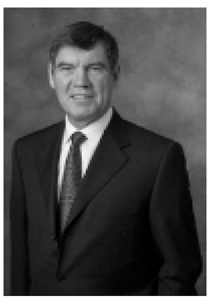
Age 61

Mr. Hassell served as a director of Bank of New York from 1998 to 2007. Mr. Hassell has served as our Chief Executive Officer since 2011 and served as our President since the merger in 2007 through 2012. Prior to the merger, Mr. Hassell served as President of Bank of New York from 1998 to 2007 as well as other prior leadership positions at Bank of New York. Mr. Hassell is currently a director of Comcast Corporation, where he serves on the Governance and Directors Nominating Committee and the Compensation Committee and chairs the Finance Committee.

Since joining Bank of New York's Management Development Program more than three decades ago, Mr. Hassell has held a number of key leadership positions within the company in securities servicing, corporate banking, credit, strategic planning and administration services. Mr. Hassell is also a director of the National September 11 Memorial & Museum and the New York Philharmonic, and is Vice Chair of Big Brothers/Big Sisters of New York. Mr. Hassell holds a Bachelor of Arts degree from Duke University and a Master in Business Administration degree from the New York University Stern School of Business.

Mr. Hassell's knowledge of the company's businesses and operations, as well as the financial services industry in general, based on his 39 year tenure with the company and Bank of New York, including service as President since 1998, and his participation in numerous financial services industry associations, will provide the Board with a perspective and resource on the company and the financial services industry in general.

Other Public Company Board Service: Comcast Corporation



EDMUND F. "TED" KELLY
Chairman of Liberty Mutual Group

Independent

Director since 2007

Age 67

Mr. Kelly served as a director of Mellon from 2004 to 2007, where he served on the Corporate Governance and Nominating, the Human Resources and the Risk Committees. Mr. Kelly has served as Chairman (since 2000), President (from 1992 to 2010) and Chief Executive Officer (from 1998 to 2011) of Liberty Mutual Group, a multi-line insurance company. Mr. Kelly is currently a director of Liberty Mutual Group and EMC Corporation, where he serves on the Finance Committee.

Mr. Kelly's experience also includes senior-level management positions at Aetna Life & Casualty Company. Mr. Kelly was a director of Citizens Financial Group Inc., where he served as Chair of the Audit Committee and Chair of the Joint Risk Assessment Committee. Mr. Kelly is also a member of the Board of Governors of the Property Casualty Insurers Association of America and a director of the Financial Services Roundtable; a member of the boards of the United Way of Massachusetts Bay, the American Red Cross of Massachusetts Bay, the American Ireland Fund and The Massachusetts Mentoring Partnership, among others; a past member of the Board of Trustees for Boston College and former President of the Boston Minuteman Council of the Boy Scouts of America. Mr. Kelly received a Bachelor's degree from Queen's University in Belfast and a Ph.D. from the Massachusetts Institute of Technology.

Mr. Kelly's role for over 10 years as Chairman, Chief Executive Officer and President of a multi-national Fortune 500 insurance company, as well as his over 38 years of experience in the insurance industry, which is highly regulated and concentrates on risk management, will provide the Board with a critical perspective on the Board's oversight of risk management of the company and an executive and leadership perspective on the management and operations of a large company in a highly regulated industry.

Other Public Company Board Service: EMC Corporation

Independent

Director since 2007

Age 71

RICHARD J. KOGAN
Principal of The KOGAN Group LLC
Retired Chairman, President and Chief Executive Officer of Schering-Plough Corporation

Mr. Kogan served as a director of Bank of New York from 1996 to 2007, where he served on the Audit and the Nominating and Governance Committees, among others, and chaired the Compensation and Organization Committee. Mr. Kogan is currently a principal of The KOGAN Group LLC, which provides advice and counsel to chief executive officers of for-profit and not-for-profit enterprises. Mr. Kogan previously served as Chief Executive Officer of Schering-Plough Corporation, a global healthcare company, from 1996 to 2003, as President from 1986 to 1998 and 2001 to 2003 and as Chairman from 1998 to 2002. Mr. Kogan is currently a director of Colgate-Palmolive Company, where he serves on the Audit and the Finance Committees, chairs the Personnel and Organization Committee, and is a past Presiding Director.

Mr. Kogan serves as Chairman of the Board of Trustees of Saint Barnabas Corporation and Medical Center, and is a member of the Board of Trustees of New York University, overseer and member of the Executive Committee of New York University's Stern School of Business and a member of the Council on Foreign Relations. Mr. Kogan earned a Bachelor's degree from The City College of The City University of New York and a Master in Business Administration degree from the New York University Stern School of Business.

Mr. Kogan's role as Chairman, Chief Executive Officer and President of a publicly-traded global pharmaceutical company, as well as his other senior management positions during his 30 year career in the pharmaceutical industry, will provide the Board with an executive and leadership perspective on the management and operations of a large public company in a highly regulated industry.

Other Public Company Board Service: Colgate-Palmolive Company

Independent

Director since 2007

Age 60

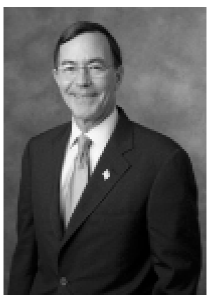
MICHAEL J. KOWALSKI
Chairman and Chief Executive Officer of Tiffany & Co.

Mr. Kowalski served as a director of Bank of New York from 2003 to 2007, where he served on the Audit, the Risk and the Corporate Responsibility and Community Redevelopment Committees, among others. Mr. Kowalski has served as Chairman and Chief Executive Officer of Tiffany & Co., an international designer, manufacturer and distributor of jewelry and fine goods, since 2003 and 1999, respectively. Mr. Kowalski has served in key leadership positions at Tiffany & Co. since 1983. Mr. Kowalski is currently a director of Tiffany & Co. and was a director of Fairmont Hotels & Resorts from 2002 to 2006.

Mr. Kowalski serves as Secretary of the Board of Jewelers of America and chairs the Board of Overseers of the University Museum of Archaeology and Anthropology at the University of Pennsylvania. Mr. Kowalski is a trustee of the University of Pennsylvania. Mr. Kowalski earned a Bachelor's degree from the University of Pennsylvania and a Master in Business Administration degree from Harvard University.

Mr. Kowalski's role as Chairman and Chief Executive Officer of a publicly-traded international manufacturer and retailer of jewelry and other specialty items, as well as his other senior operating and financial management positions during his 30 year career in the jewelry industry, will provide the Board with an executive and leadership perspective on the management, operations and financial oversight of a large public company.

Other Public Company Board Service: Tiffany & Co.



Independent

Director since 2007

Age 64

JOHN A. LUKE, JR.
Chairman and Chief Executive Officer of MeadWestvaco Corporation

Mr. Luke served as a director of Bank of New York from 1996 to 2007, where he served on the Audit, the Compensation and Organization and the Nominating Committees, among others. Mr. Luke has served as Chairman and Chief Executive Officer of MeadWestvaco Corporation, a manufacturer of paper, packaging and specialty chemicals, since 2002. Mr. Luke is currently a director of MeadWestvaco Corporation and The Timken Company, where he serves on the Nominating and Corporate Governance Committee and chairs the Compensation Committee.

Mr. Luke is also a director and former Chairman of the American Forest & Paper Association. He is currently a director of FM Global, where he chairs the Compensation Committee and serves on the Executive Committee. Mr. Luke is ex-officio director and former Chairman of the Sustainable Forestry Initiative, Inc., a former member of the President's Export Council, and a trustee of the American Enterprise Institute for Public Policy Research as well as the Virginia Museum of Fine Arts, among others. Mr. Luke served as an officer with the U.S. Air Force in Southeast Asia during the Vietnam conflict. Mr. Luke earned a Bachelor's degree from Lawrence University and a Master in Business Administration degree from The Wharton School at the University of Pennsylvania.

Mr. Luke's role as Chairman and Chief Executive Officer of a publicly-traded global manufacturer of packaging solutions and other products, as well as his other senior management positions during his 34 years at MeadWestvaco Corporation and its predecessors, will provide the Board with an executive and leadership perspective on the management and operations of a large public company.

Other Public Company Board Service: MeadWestvaco Corporation; The Timken Company

Independent

Director since 2007

Age 64

MARK A. NORDENBERG
Chancellor, Chief Executive Officer and Distinguished Service Professor of Law of the University of Pittsburgh

Mr. Nordenberg served as a director of Mellon from 1998 to 2007, where he served on the Corporate Governance and Nominating, the Human Resources and the Risk Committees, among others. Mr. Nordenberg has served as Chancellor and Chief Executive Officer of the University of Pittsburgh, a major public research university, since 1996.

Mr. Nordenberg joined the University of Pittsburgh's law faculty in 1977 and served as Dean of the School of Law from 1985 until 1993. Mr. Nordenberg was the interim Provost and Senior Vice Chancellor for Academic Affairs from 1993 to 1994, and interim Chancellor from 1995 to 1996. A specialist in scholarly aspects of civil litigation, he has published books, articles and reports on this topic, and has served as a member of both the United States Supreme Court's Advisory Committee on Civil Rules and the Pennsylvania Supreme Court's Civil Procedural Rules Committee. He is a director of the Association of American Universities and a board member of the Council on Competitiveness, a nonprofit organization that encourages innovation and economic progress, among others. Mr. Nordenberg received his Bachelor's degree from Thiel College and his Juris Doctorate degree from the University of Wisconsin School of Law.

Mr. Nordenberg's role for the past 17 years as Chancellor of a major research university and his other senior positions at the university, including Dean of its law school, over his 28 year career at the institution, as well as his legal expertise, will provide the Board with an executive, leadership and legal perspective on the management and operations of a large institution.

Other Public Company Board Service: None

CATHERINE A. REIN
Retired Senior Executive Vice President and Chief Administrative Officer of MetLife, Inc.

Independent

Director since 2007

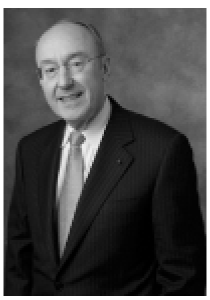
Age 70

Ms. Rein served as a director of Bank of New York from 1981 to 2007, where she served on the Audit, the Executive and the Risk Committees, among others. Ms. Rein served as Senior Executive Vice President and Chief Administrative Officer of MetLife, Inc., an insurance and financial services company, from 2005 to 2008. Prior to that, Ms. Rein served as President and Chief Executive Officer of Metropolitan Property and Casualty Insurance Company from 1999 to 2005. Ms. Rein served in key leadership positions at MetLife, Inc. from 1985 to 1998. Ms. Rein is currently a director of FirstEnergy Corp., where she serves on the Audit Committee and chairs the Compensation Committee.

Before joining MetLife, Ms. Rein served as vice president and general counsel for The Continental Group, Inc., a property management company. Prior to that, she was associated with the New York City law firm of Dewey, Ballantine, Bushby, Palmer & Wood. Ms. Rein is a member of the Board of Visitors of the New York University Law School, previously chaired the MetLife Foundation and is a director emeritus of Corning, Inc. Ms. Rein received a Bachelor of Arts degree from The Pennsylvania State University and a Juris Doctorate degree from New York University School of Law.

Ms. Rein’s role in various senior management positions during her 25 year career at a multi-national insurance company that is a Fortune 500 company, as well as her experience as general counsel of another company, will provide the Board with an executive, leadership and legal perspective on the management and operations of a company in a highly-regulated industry.

Other Public Company Board Service: FirstEnergy Corp.



WILLIAM C. RICHARDSON
President and Chief Executive Officer Emeritus of The W.K. Kellogg Foundation and Retired Chair and Co-Trustee of The W.K. Kellogg Foundation Trust

Independent

Director since 2007

Age 72

Dr. Richardson served as a director of Bank of New York from 1998 to 2007, where he served on the Audit, the Nominating and Governance and the Risk Committees, among others. Dr. Richardson had previously served as President and Chief Executive Officer of The W.K. Kellogg Foundation, a private foundation, as well as Chair and Co-Trustee of The W.K. Kellogg Foundation Trust from 1995 to 2007. Dr. Richardson is currently the lead director of Exelon Corporation, where he serves on the Audit, the Compensation, the Investment Oversight and the Corporate Governance Committees. Dr. Richardson is also a trustee of the Exelon Foundation. Dr. Richardson served as a director of Kellogg Company from 1996 to 2007, where he served on the Finance, Consumer Marketing, and Social Responsibility Committees, among others. He also served as a director of CSX Corporation from 1992 to 2008, where he served on the Audit, the Compensation and the Governance Committees, and as lead director.

Dr. Richardson has devoted his academic career to research related to the organization and financing of health services in the U.S. He served as President of The Johns Hopkins University. He was also Graduate Dean and Vice Provost for Research at the University of Washington in Seattle; Executive Vice President and Provost of The Pennsylvania State University; and held various positions at the University of Chicago. Dr. Richardson has chaired numerous boards and commissions at the federal and state levels and in the philanthropic sector. He has served as a director of Mercantile Bankshares Corporation, among others. He served as Professor of Health Policy and Management at The Johns Hopkins University. Dr. Richardson received a Bachelor of Arts degree from Trinity College and a Master in Business Administration degree and a Ph.D. from the University of Chicago.

Dr. Richardson's role as president of a major research university and his other senior positions at other major research institutions as well as his position as Chief Executive Officer and President for ten years of a major foundation, will provide the Board with an executive and leadership perspective on the management and operations of both large institutions and a foundation.

Other Public Company Board Service: Exelon Corporation

Independent

Director since 2007

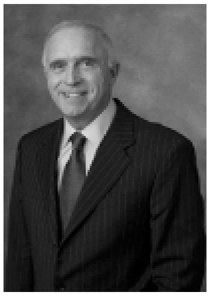
Age 68

SAMUEL C. SCOTT III
Retired Chairman, President and Chief Executive Officer of Corn Products International, Inc.

Mr. Scott served as a director of Bank of New York from 2003 to 2007, where he served on the Audit, the CRA Fair Lending and the Risk Committees, among others. Prior to his retirement in 2009, Mr. Scott served as Chairman (since 2001), Chief Executive Officer (since 2001), President (since 1997) and management director of Corn Products International, Inc., global producers of corn-refined products and ingredients. Mr. Scott previously served as President of Bestfoods Corn Refining from 1995 to 1997 and President of American Corn Refining from 1989 to 1997. Mr. Scott is currently a director of Motorola Solutions, Inc., where he chairs the Governance and Nominating Committee and serves on the Executive Committee, and a director of Abbott Laboratories, where he serves on the Audit Committee. Mr. Scott also serves on the boards of, among others, Chicago Sister Cities, Northwestern Memorial HealthCare, the Chicago Urban League and The Chicago Council on Global Affairs. Mr. Scott received both a Bachelor's degree and a Master in Business Administration degree from Farleigh Dickinson University.

Mr. Scott's role as Chairman, Chief Executive Officer and President over the course of twelve years of a publicly-traded international food company, as well as executive positions at other food product companies during his 36 year career, will provide the Board with an executive and leadership perspective on the management and operations of a large public company.

Other Public Company Board Service: Motorola Solutions, Inc.; Abbott Laboratories



Independent

Lead Director

Director since 2007

Age 68

WESLEY W. VON SCHACK
Chairman, AEGIS Insurance Services, Inc.

Mr. von Schack served as a director of Mellon from 1989 to 2007, where he served on the Audit and Corporate Governance and Nominating Committees, among others. Prior to his retirement in January 2010, Mr. von Schack served as Chairman, President and Chief Executive Officer of Energy East Corporation, an energy services company, since 1996. Energy East Corporation is a wholly-owned subsidiary of Iberdrola, S.A. Mr. von Schack is currently Chairman of the board of AEGIS Insurance Services, Inc., a mutual property and casualty insurance company. He is also a director of Teledyne Technologies Inc., where he serves on the Nominating and Governance and the Personnel and Compensation Committees, and a director of Edwards Lifesciences Corporation, where he serves as lead director and on the Audit and Public Policy Committee. Mr. von Schack was a director of Energy East until his retirement in January 2010.

From 1986 to 1996, Mr. von Schack was Chairman, President and Chief Executive Officer of DQE, a diversified energy services company. Mr. von Schack is Director Emeritus of the Gettysburg Foundation and a member of the President's Council – Peconic Land Trust. Mr. von Schack received a Bachelor's degree from Fordham University, a Master in Business Administration degree from St. John's University and a Doctorate degree from Pace University.

Mr. von Schack's role as Chairman, Chief Executive Officer and President over the course of 23 years of two large publicly traded energy services companies as well as his other senior management positions, including chief financial officer, during his 35 year career in the energy industry, will provide the Board with an executive and leadership perspective on the management, operations and financial reporting and accounting oversight of a large public company in a highly-regulated industry.

Other Public Company Board Service: Teledyne Technologies Inc.; Edwards Lifesciences Corporation

Majority Voting Standard for Election of Directors

Under our by-laws, in any uncontested election of directors, each director will be elected if more votes are cast "for" the director's election than are cast "against" the director's election, with abstentions and broker non-votes not being counted as a vote cast either "for" or "against" the director's election. A plurality standard will apply in any contested election of directors, which is an election in which the number of nominees for director exceeds the number of directors to be elected. Pursuant to our Corporate Governance Guidelines, if any incumbent director fails to receive a majority of the votes cast in any uncontested election, the director will be required to tender his or her resignation to the Lead Director (or such other director designated by the Board if the director failing to receive the majority of votes cast is the Lead Director) promptly after the certification of the stockholder vote.

The CG&N Committee will promptly consider the tendered resignation and recommend to the Board whether to accept or reject it, or whether other actions should be taken. In considering whether to accept or reject the tendered resignation, the CG&N Committee will consider whatever factors its members deem relevant, including any stated reasons for the "against" votes, the length of service and qualifications of the director whose resignation has been tendered, the director's contributions to the company, and the mix of skills and backgrounds of the Board members. The Board will act on the CG&N Committee's recommendation no later than 90 days following the certification of the election in question. In considering the recommendation of the CG&N Committee, the Board will consider the factors considered by the CG&N Committee and such additional information and factors as it deems relevant.

Following the Board's decision, the company will publicly disclose the Board's decision in a Current Report on Form 8-K filed with the Securities and Exchange Commission, which we refer to as the "SEC." If the Board does not accept the director's resignation, it may elect to address the underlying stockholder concerns or to take such other actions it deems appropriate and in the best interests of the company and its stockholders. A director who tenders his or her resignation pursuant to this provision will not vote on the issue of whether his or her tendered resignation will be accepted or rejected. If the Board accepts an incumbent director's resignation pursuant to this provision, or if a nominee for director is not elected and the nominee is not an incumbent director, then the Board may fill the resulting vacancy pursuant to our by-laws. If the Board does not accept an incumbent director's resignation pursuant to this provision, he or she will continue to serve on the Board until the election of his or her successor.

CORPORATE GOVERNANCE

BOARD LEADERSHIP

Our Board Leadership Structure

Our Board has reviewed its current leadership structure — which consists of a combined Chairman and Chief Executive Officer with an independent Lead Director — in light of the composition of the Board, the company's size, the nature of the company's business, the regulatory framework under which the company operates, the company's stockholder base, the company's peer group and other relevant factors. Our Board has determined that a combined Chairman and Chief Executive Officer position, with an independent Lead Director, is currently the most appropriate Board leadership structure for the company. Mr. von Schack, an independent director, currently serves as our Lead Director and his duties and powers have been recently updated as described below. The Board noted the following factors in reaching its determination:

- The Board acts efficiently and effectively under its current structure, where the Chief Executive Officer also acts as Chairman with a strong independent Lead Director.
- A combined Chairman/Chief Executive Officer is in the best position to be aware of major issues facing the company on a day-to-day and long-term basis, and to identify and bring key risks and developments facing the company to the Board's attention (in coordination with the Lead Director as part of the agenda-setting process).
- A combined Chairman/Chief Executive Officer position eliminates the potential for uncertainty as to who leads the company, providing the company with a single public "face" in dealing with stockholders, employees, regulators, analysts and other constituencies.
- A strong independent Lead Director provides the Board with the ability to act with respect to management personnel decisions.
- The Lead Director serves as an effective counterbalance to factors commonly cited as reasons to separate the Chairman and Chief Executive Officer positions, such as concerns that the Chairman/Chief Executive Officer will control the Board agenda or dominate Board meetings. In this regard, the Board noted the following in its review that, as set forth in our Corporate Governance Guidelines:
  - the scope of the Lead Director's duties and powers has been recently updated to clarify that the Lead Director reviews and approves, in coordination with the Chairman/Chief Executive Officer, agendas for Board meetings, materials and information sent or presented to the Board and meeting schedules, and has the authority to add items to the agenda for any Board meeting;

- – the Lead Director presides at executive sessions of independent directors, which are held at each regular Board meeting;
- – the Lead Director serves as a non-exclusive liaison between the other independent directors and the Chairman/Chief Executive Officer;
- – the Lead Director can call meetings of the independent directors in his discretion;
- – the Lead Director is available to meet with major stockholders and regulators under appropriate circumstances; and
- – in conjunction with the chairman of the HRC Committee, the Lead Director discusses with the Chairman/Chief Executive Officer the Board's annual evaluation of his performance as Chief Executive Officer.

- The powers of the Chairman under our by-laws are limited — other than chairing meetings of the Board and stockholders, the powers conferred on the Chairman (e.g., ability to call special meetings of stockholders or the Board) can be exercised by the Board or a specified number of directors or, in some cases, the Lead Director, or are administrative in nature (e.g., authority to execute documents on behalf of the company).
- The Lead Director chairs any meeting of the Board or stockholders at which the Chairman is absent.
- A substantial majority of our peers utilize a Board structure with a combined Chairman and Chief Executive Officer, as well as a lead independent director.

DIRECTOR INDEPENDENCE

Director Independence

Our Board has determined that we have 11 independent directors out of a total of 12 current directors. Our independent directors are Ruth E. Bruch; Nicholas M. Donofrio; Edmund F. "Ted" Kelly; Richard J. Kogan; Michael J. Kowalski; John A. Luke, Jr.; Mark A. Nordenberg; Catherine A. Rein; William C. Richardson; Samuel C. Scott III; and Wesley W. von Schack. As our Chairman and Chief Executive Officer, Gerald L. Hassell is not independent.

Our Standards of Independence

For a director to be considered independent, our Board must determine that the director does not have any direct or indirect material relationship with us. To assist it in determining director independence, our Board has established standards (which are also included in our Corporate Governance Guidelines, posted on our website at http://www.bnymellon.com/governance/guidelines/index.html) based on the specified categories and types of transactions, which conform to, or are more exacting than, the independence requirements of the New York Stock Exchange, or "NYSE."

Our Board will also determine that a director is not independent if it finds that the director has material business arrangements with us that would jeopardize that director's judgment. In making this determination, our Board reviews business arrangements between the company and the director and between the company and any other company for which the director serves as an officer or general partner, or of which the director directly or indirectly owns 10% of the equity. Our Board has determined that these arrangements will not be considered material if:

- they are of a type that we usually and customarily offer to customers or vendors;
- they are on terms substantially similar to those for comparable transactions with other customers or vendors under similar circumstances;

- in the event that the arrangements had not been made or were terminated in the normal course of business, it is not reasonably likely that there would be a material adverse effect on the financial condition, results of operation or business of the recipient; or
- in the case of personal loans, the loans are subject to and in compliance with Regulation O of the Board of Governors of the Federal Reserve System, which we refer to as the "Federal Reserve Board."

Our Board may also consider other factors as it may deem necessary to arrive at sound determinations as to the independence of each director, and such factors may override the conclusion of independence or non-independence that would be reached simply by reference to the factors listed above.

In determining that each of the directors, other than Mr. Hassell, is independent, our Board reviewed these standards, the corporate governance rules of the NYSE and the SEC, and the individual circumstances of each director.

The following categories or types of transactions, relationships and arrangements were considered by the Board in determining that a director is independent. None of these transactions, relationships and arrangements rose to the level that would require disclosure under our related party transactions policy described on page 64, and none of the transactions described below were in an amount that exceeded the greater of $1 million or 2% of the other entity's consolidated gross revenues, which is one of our standards for director independence:

- ***Purchases of goods or services in the ordinary course of business***. In 2012, the company and its subsidiaries purchased a small amount of goods and services from the following entities for which one of our independent directors also served as an executive officer during 2012: Tiffany & Co. (Mr. Kowalski); and University of Pittsburgh (Mr. Nordenberg). All of these purchases were made in the ordinary course of business. None of these purchases exceeded 0.003% of the selling entity's annual revenue for its last reported fiscal year or 0.001% of our annual revenue for 2012.
- ***Sales of goods or services in the ordinary course of business***. The company and its subsidiaries provided various financial services, including asset management services, securities servicing, issuer services, treasury services or credit services, to the following organizations for which one of our independent directors served as an executive officer during 2012: MeadWestvaco Corporation (Mr. Luke); Tiffany & Co. (Mr. Kowalski); and University of Pittsburgh (Mr. Nordenberg). All of the services were provided in the ordinary course of our business and at prevailing customer rates and terms. The amount of fees paid to us by each purchasing entity was less than 0.1% of that purchasing entity's annual revenue for its last reported fiscal year and 0.02% of our annual revenue for 2012.
- ***Charitable contributions***. We made (directly, through our subsidiaries or by the BNY Mellon Charitable Foundation or The Bank of New York Mellon Corporation Foundation) charitable contributions to not-for-profit, charitable, tax-exempt or non-profit organizations of which one of our independent directors serve or served as directors, executive officers or trustees during 2012, namely Messrs. Donofrio, Kelly, Kogan, Nordenberg, Richardson, Scott and von Schack. In 2012, charitable contributions to these organizations totaled approximately $800,000 in the aggregate, and no organization received a contribution greater than $250,000. None of these contributions exceeded the greater of $1 million or 2% of the organization's consolidated gross revenues in a single fiscal year within the past three years, which is one of our standards for director independence.
- ***Beneficial ownership or voting power***. In the ordinary course of our investment management services business, we beneficially own or have the power to vote (through our subsidiaries or through funds advised by our subsidiaries) shares of companies of which our independent directors are executive officers, namely Messrs. Kowalski and Luke. None of our subsidiaries or funds advised by our subsidiaries own or have the power to vote more than 3% of the outstanding shares of any such company.

Our Board determined that none of the transactions, relationships and arrangements described above constituted a material relationship between the director and our company or its subsidiaries for the purpose of the corporate governance rules of the NYSE and SEC and our Corporate Governance Guidelines. As such, our Board determined that these transactions, relationships and arrangements did not affect the independence of the director and did not impair the director's ability to act in the stockholders' best interest.

BOARD OVERSIGHT OF RISK

Successful management of our company requires understanding, identification and management of risk. Risk oversight begins with the Board of Directors and two key Board committees: the Risk Committee and the Audit Committee.

Our Board's Risk Committee consists of independent directors and meets on a regular basis to review and assess our risks, control processes with respect to such risks, and our risk management and fiduciary policies and activities. Our Risk Committee has primary oversight responsibility for risk management, subject to the role of our Audit Committee as described below. As set forth in our Risk Committee's Charter, our Risk Committee's responsibilities include, among others, the:

- review and approval of the company's risk appetite statement on an annual basis, and approval of any material amendment to the statement;
- review of significant financial and other risk exposures and the steps management has taken to monitor, control and report such exposures;
- evaluation of risk exposure and tolerance, and approval of appropriate transactional or trading limits;
- review and evaluation of the company's policies and practices with respect to risk assessment and risk management;
- with respect to risk management and compliance, review of (1) reports and significant findings of the company's Risk Management and Compliance department, which we refer to as the "Risk department," and the Internal Audit department, which we refer to as "Internal Audit," (2) significant reports from regulatory agencies and management's responses, and (3) the Risk department's scope of work and its planned activities;
- review of the company's technology risk management programs; and
- review of management reports concerning the company's technology operations and approval, or recommendation to the Board for approval, of related plans or policies, as appropriate.

Our Risk Committee delegates policy formulation and day-to-day oversight of risk to our Chief Risk Officer, who is responsible for implementing an effective risk management structure. Our Risk Committee has the responsibility to review the appointment, performance and replacement of our Chief Risk Officer.

Our Board's Audit Committee also plays a role in risk oversight. Our Audit Committee reviews and discusses policies with respect to risk assessment and risk management. Our Audit Committee also has oversight responsibility with respect to the integrity of our company's financial reporting process and systems of internal controls regarding finance and accounting, as well as our financial statements. At the management level, Internal Audit is responsible for providing reliable and timely information to our Board and management regarding our company's effectiveness in identifying and appropriately controlling risks. Annually, our Risk Committee presents to our Audit Committee a report summarizing our Risk Committee's review of the company's methods for identifying and managing risks. Semi-annually, our Risk Committee reports to our Audit Committee regarding corporate-wide compliance with laws and regulations. Our Risk Committee escalates to our Audit Committee any items that have significant financial statement impact or require significant financial statement/regulatory disclosures.

Since the financial crisis emerged in September 2008, the Risk and Audit Committees of our Board have held joint sessions at the beginning of each of their regular meetings to hear reports and discuss key risks affecting our company and our management of these risks. All independent directors are typically present during joint sessions, because all independent directors are currently members of either our Risk or Audit Committee. We have intentionally structured our Board committee meetings in a manner that facilitates discussion of major risks with all independent directors, including the Lead Director, at each regular meeting of the Board.

Our company has a comprehensive internal risk framework, which facilitates risk oversight by our Risk Committee. Our risk management framework is designed to:

- provide that risks are identified, monitored, reported, and priced properly;
- define and communicate the types and amount of risk the company is willing to take;
- communicate the type and amount of risk taken to the appropriate management level;
- maintain a risk management organization that is independent of risk-taking activities; and
- promote a strong risk management culture that encourages a focus on risk-adjusted performance.

Under this framework, our company has formed a Senior Risk Management Committee, which we refer to as the "SRMC," which consists of members of senior management and which reports to both the Risk Committee and the Audit Committee of our Board. The SRMC is the most senior focal point within the company to monitor, evaluate and recommend comprehensive policies and solutions to deal with all aspects of risk and to assess the adequacy of any risk remediation plans in our company's businesses. The SRMC provides reports of its activities to our Risk Committee, and any significant changes in the key responsibilities of the SRMC must be reported to the Risk Committee.

In addition, our company has also formed several risk management sub-committees to identify, assess and manage risks. Each risk management sub-committee reports its activities to the SRMC and any significant changes in the key responsibilities of any sub-committee, or a change in chairmanship of any sub-committee, must be approved by our Chief Risk Officer and subsequently reported to the SRMC.

Our primary risk exposures as well as our risk management framework and methodologies are discussed in further detail on pages 65 to 70 in our 2012 Annual Report. See "Compensation and Risk" on page 23 below for a discussion of risk assessment as it relates to our compensation program.

BOARD MEETINGS AND BOARD COMMITTEE INFORMATION

Board Meetings

Our Corporate Governance Guidelines provide that our directors are expected to attend our Annual Meeting of stockholders and all regular and special meetings of our Board and committees on which they sit. All of our directors attended our 2012 Annual Meeting of stockholders, which was held on April 10, 2012, other than Mr. Nordenberg who was not able to attend the meeting due to a prior commitment in his role as Chancellor of the University of Pittsburgh.

Our Board held 11 meetings in 2012. Each incumbent director attended at least 75% of the aggregate number of meetings of our Board and of the committees on which he or she sat, and the average attendance rate was about 95%.

Committees and Committee Charters

Our Board has established several standing committees, including an Audit Committee, a Corporate Governance and Nominating Committee, a Corporate Social Responsibility Committee, a Human Resources and

Compensation Committee, a Risk Committee, a Technology Committee and an Executive Committee. Each of the committees make recommendations to our Board as appropriate and reports periodically to the entire Board. The charters of our Audit Committee, our CG&N Committee, our Corporate Social Responsibility Committee, our Technology Committee, our HRC Committee and our Risk Committee are available on our website at www.bnymellon.com/governance/committees.

The following table identifies the individual members of our Board serving on each of the standing committees. Our Board will consider committee membership for the 2013 term following our Annual Meeting.

Director	Audit	Corporate Governance and Nominating	Corporate Social Responsibility	Human Resources and Compensation	Risk	Technology	Executive
Ruth E. Bruch			C	M	M	M	
Nicholas M. Donofrio			M		C	M	M
Gerald L. Hassell							M
Edmund F. “Ted” Kelly				M	M	C	
Richard J. Kogan	M	M		M			
Michael J. Kowalski	M			M			
John A. Luke, Jr.		C			M		M
Mark A. Nordenberg			M		M	M	
Catherine A. Rein	C	M					M
William C. Richardson	M	M					
Samuel C. Scott III	M		M	C			M
Wesley W. von Schack		M		M	M		C

M — Member
C — Chairperson

Audit Committee

In 2012, our Audit Committee, which consists entirely of independent directors, held 11 meetings. Our Audit Committee has direct responsibility for the appointment, compensation, retention and oversight of the work of the independent registered public accountants engaged to prepare an audit report or to perform other audit, review or attest services for us. The independent registered public accountants report directly to the committee. Annually, the committee recommends that our Board request stockholder ratification of the appointment of the independent registered public accountants.

The committee also acts on behalf of our Board in monitoring and overseeing the performance of our internal audit function. The committee oversees the operation of a comprehensive system of internal controls covering the integrity of our financial statements and reports, compliance with laws, regulations and corporate policies, and the qualifications, performance and independence of our independent registered public accountants. The committee has direct responsibility to annually evaluate and, as appropriate, replace the independent registered public accountants. The committee is responsible for the pre-approval of all audit and permitted non-audit services performed by our independent registered public accountants. The committee approves the appointment of our Chief Auditor, who reports directly to the committee. The committee has the direct responsibility to annually review the performance of the Chief Auditor and, as appropriate, replace the Chief Auditor. At least annually, the committee reviews the organizational structure, qualifications, independence and performance of Internal Audit and the scope of its planned activities. Quarterly, the committee reviews a report from the company’s Disclosure Committee and reports concerning the status of the company’s annual review of internal control over financial reporting, including (i) information about (a) any significant deficiencies or material weaknesses in the design or operation of internal control over financial reporting that are reasonably likely to adversely affect the company’s ability to record, process, summarize and report financial information and (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting, and (ii) management's responses to any such circumstance. The committee's function is one of oversight, recognizing that our management is responsible for preparing our financial statements, and our independent registered public accountants are responsible for auditing those statements.

Our Board of Directors has determined that its Audit Committee consists entirely of directors who meet the independence requirements of listing standards of the NYSE, Rule 10A-3 under the Securities Exchange Act of 1934, as amended, which we refer to as the "Exchange Act," and the rules and regulations of the Federal Deposit Insurance Corporation, which we refer to as the "FDIC." Our Board has also determined that all members of its Audit Committee are financially literate and have accounting or related financial management expertise within the meaning of the NYSE listing standards as interpreted by our Board. Our Board has determined that Ms. Rein satisfies the definition of "audit committee financial expert" as set out in the rules and regulations under the Exchange Act, based upon her experience actively supervising a principal accounting or financial officer or public accountant. All members of the Audit Committee have "banking and financial management expertise" as set out in the FDIC's rules and regulations.

Corporate Governance and Nominating Committee

In 2012, our CG&N Committee, which consists entirely of independent directors, held four meetings. As further described above, the committee assists our Board of Directors in reviewing and identifying individuals qualified to become Board members. In addition, the committee reviews non-employee director compensation and benefits on an annual basis and makes recommendations to our Board on appropriate compensation. The committee is also responsible for approving compensation arrangements for non-employee members of the Boards of Directors of our significant subsidiaries. The committee oversees evaluations of our Board and its committees. The CG&N Committee has the responsibility to develop and recommend to our Board our Corporate Governance Guidelines and propose changes to these guidelines from time to time as may be appropriate.

Corporate Social Responsibility Committee

In 2012, our Corporate Social Responsibility Committee, which consists entirely of independent directors, held four meetings.

The committee's purpose is to promote a culture that emphasizes and sets high standards for corporate citizenship and to review corporate performance against those standards. The committee is responsible for providing oversight of the company's programs regarding strategic philanthropy and employee community involvement, public policy and advocacy, including lobbying and political contributions, environmental management, corporate social responsibility of suppliers, corporate social responsibility governance and reporting and human rights. The committee also provides oversight for the company's compliance with the Community Reinvestment Act and Fair Lending laws. The committee considers the impact of the company's businesses, operations and programs from a social responsibility perspective, taking into account the interests of stockholders, clients, suppliers, employees, communities and regulators. For additional information regarding the company's commitment to corporate social responsibility and the committee's recent initiatives, please refer to our annual Corporate Social Responsibility Report, which is available on our website at www.bnymellon.com/csr.

Human Resources and Compensation Committee

In 2012, our HRC Committee, which consists entirely of independent directors, held 11 meetings. The HRC Committee is generally responsible for overseeing our employee compensation and benefit policies and programs, our management development and succession programs, the development and oversight of a succession plan for the position of Chief Executive Officer and our diversity and inclusion programs. The committee also has overall responsibility for executive compensation matters and also oversees the other incentive, retirement, welfare and equity plans in which all of our employees participate. In addition, the committee administers and makes equity and/or cash awards under plans adopted for the benefit of our officers and other employees to the extent required or permitted by the terms of these plans, establishes any related performance goals and determines whether and the extent to which these goals have been attained.

The committee reviews and approves corporate goals and objectives relevant to the compensation of our Chief Executive Officer, evaluates our Chief Executive Officer's performance in light of those goals and objectives, and determines and approves our Chief Executive Officer's compensation level on the basis of its evaluation. Although the committee has overall responsibility for executive compensation matters, with respect to the performance evaluation and compensation decisions regarding our Chief Executive Officer, the committee reports its preliminary decisions to the other independent directors of our full Board in executive session and solicits their input prior to finalizing the committee's decisions. The committee reviews, evaluates and approves the total compensation of all other executive officers.

In addition, the committee makes recommendations concerning equity-based plans, which recommendations are subject to the approval of our entire Board. The committee administers and makes awards under our various equity-based employee incentive plans and oversees certain retirement plans that we sponsor to ensure: (i) that they provide an appropriate level of benefits in a cost-effective manner to meet our needs and objectives in sponsoring such plans; (ii) that they are properly and efficiently administered in accordance with their terms to avoid unnecessary costs and minimize any potential liabilities to us; (iii) that our responsibilities as plan sponsor are satisfied; and (iv) that financial and other information with respect to such plans is properly recorded and reported in accordance with applicable legal requirements.

The committee has approved the delegation to our Chief Executive Officer of responsibility for determining equity awards to certain employees, other than himself, who are eligible to receive grants under our Long-Term Incentive Plan, or "LTIP." This delegated authority is subject to certain limitations, including: (i) total aggregate shares represented by plan awards in any calendar year (1,100,000); (ii) aggregate shares represented by plan awards that may be granted to any one individual in any calendar year (100,000); and (iii) a sub-limit of shares represented by full value awards that may be granted in any calendar year (550,000).

Finally, as further described in the "Compensation Discussion and Analysis" on page 25 below, our management provides information and recommendations for the committee's decision-making process in connection with the amount and form of executive compensation, except that no member of management will participate in the decision-making process with respect to his or her own compensation. The Compensation Discussion and Analysis discusses the role of our Chief Executive Officer in determining or recommending the amount and form of executive compensation. In addition, we address the role of our management and its independent compensation consultants and the role of the committee's independent outside compensation advisor in determining and recommending executive compensation below.

Risk Committee

In 2012, our Risk Committee, which consists entirely of independent directors, held five meetings. See "Board Oversight of Risk" on page 14 above for a discussion of the Risk Committee's duties and responsibilities.

Technology Committee

Our Technology Committee, which consists entirely of independent directors, was established in April 2012 and held two meetings in 2012.

The Technology Committee is responsible for reviewing and approving the company's technology planning and strategy, reviewing significant technology investments and expenditures, and monitoring and evaluating existing and future trends in technology that may affect the company's strategic plans, including monitoring overall industry trends. In addition, the committee receives reports from management concerning the company's technology and approves related policies or recommends such policies to the Board for approval, as appropriate. Oversight of risks associated with technology remains the responsibility of the Risk Committee.

EXECUTIVE COMPENSATION CONSULTANTS TO THE HUMAN RESOURCES AND COMPENSATION COMMITTEE

The HRC Committee has the sole authority to retain, terminate and approve the fees and other engagement terms of any independent compensation consultant directly assisting the committee.

The HRC Committee engaged Aon Hewitt Consulting, formerly Hewitt Associates, Inc., an affiliate of Aon Corporation, to serve as its independent compensation consultant. As discussed in greater detail in the “Compensation Discussion and Analysis” on page 25 below, throughout the year, Aon Hewitt Consulting assists the HRC Committee in its analysis and evaluation of compensation matters relating to our executive officers. Aon Hewitt Consulting reports directly to the HRC Committee, attends the in-person and telephonic meetings of the HRC Committee, and meets with the HRC Committee in executive session without members of management present. Aon Hewitt Consulting also reviews and provides input on materials for the HRC Committee’s meetings and advises on other matters that the HRC Committee may consider.

Aon Hewitt Consulting and its predecessor, Hewitt Associates, Inc., have served as the HRC Committee’s independent compensation consultant since August 2009. The company has historically used affiliates of Aon Hewitt Consulting for additional services, including insurance brokerage services, equity valuation services and compensation market survey data.

Aon Risk Services, Inc., an affiliate of Aon Hewitt Consulting, which we refer to as “Aon Risk,” historically has acted as one of the insurance brokers used by the company, and the company has paid some of its insurance premiums to Aon Risk, which premiums are passed through by Aon Risk to the underlying insurance providers. Aon Risk receives commissions from the underlying insurance providers for its services as an insurance broker to the company, which are calculated based on the amount of premiums that the company pays. McLagan Partners, Inc., an affiliate of Aon Hewitt Consulting and an independent consulting firm, has provided the company with compensation market survey data. In addition, Radford Valuation Services, an affiliate of Aon Hewitt Consulting, has provided the company with equity valuation services. Beginning in July 2012, Aon Hewitt Consulting has also been providing health and welfare benefits administration services to the company. The decisions to engage affiliates of Aon Hewitt Consulting for the services described above were made by management and were not approved by the HRC Committee or the Board of Directors; however, the HRC Committee and the Board of Directors were aware of other services being provided by affiliates of Aon Hewitt Consulting.

Aon Hewitt Consulting has developed safeguards to promote the independence of its executive compensation consulting advice. Aon Hewitt Consulting has informed us that these independence policies include: (i) strong confidentiality requirements and a code of conduct that effectively deters inappropriate behavior by the consultant; (ii) a strict policy against investing in client organizations; (iii) management of multiservice client relationships by separate account executives; (iv) clearly defined engagements with compensation committees that are separate from any other services provided; (v) formal segregation of executive compensation services into a separate business unit; (vi) no incentives for cross-selling of services and no compensation rewards based on other results; (vii) no offers of more favorable terms for companies that retain Aon Corporation for additional services; and (viii) consulting work limited to boards, compensation committees and companies, with no representation of individual executives in any capacity.

In 2012, the company paid approximately $116,312 in fees to Aon Hewitt Consulting for serving as the independent compensation consultant to the HRC Committee. In 2012, the company directly paid an aggregate of $1.996 million in fees to affiliates of Aon Corporation for the additional services described above. In addition, in 2012, Aon Risk received $2.286 million in commissions from insurance providers in connection with Aon Risk’s services as an insurance broker for the company.

The HRC Committee has considered the company’s relationship with Aon Hewitt, including the provision of other services to the company by Aon Hewitt, and determined that a conflict of interest does not exist.

In addition, as described in detail in the “Compensation Discussion and Analysis” on page 25 below, management also has engaged Compensation Advisory Partners LLC to assist in executive compensation matters from time to time.

SUCCESSION PLANNING

We have succession plans and succession processes in place for our Chairman and Chief Executive Officer, President, and for the team of approximately 125 senior leaders that make up our management Executive and Operating Committees. Our senior management succession planning process is an organization-wide practice designed to proactively identify, develop and retain the leadership talent that is critical for future business success.

The succession plan for our Chairman and Chief Executive Officer is reviewed annually by the HRC Committee and the other independent directors. The plan identifies a “readiness” level and ranking for each internal candidate. The plan also incorporates the flexibility to define an external hire as a succession option. Formal succession planning for the rest of our senior leaders is also an annual process, which also includes identifying a rank and readiness level for each potential internal candidate and also strategically planning for external hires for positions where, for example, gaps are identified. The HRC Committee and the Board review the succession plans for all Executive Committee positions.

BOARD EXECUTIVE SESSIONS

Our independent directors meet in executive sessions at each regularly scheduled Board meeting. These executive sessions are led by Mr. von Schack, our Lead Director.

BOARD EVALUATION AND EDUCATION

Each year, our Board and our Audit, Corporate Governance and Nominating, Corporate Social Responsibility and Human Resources and Compensation Committees evaluate their effectiveness. Our Technology Committee, which met twice in 2012, will conduct its first self-evaluation upon completing another year of meetings. Our Board views self-evaluation as an ongoing process designed to achieve high levels of Board and committee performance.

During 2012, our Board participated in Board information sessions during regularly scheduled and special meetings. During these sessions, directors received business updates from senior management, risk executives and our General Counsel.

Our Board also encourages directors to participate in continuing director education programs and our company reimburses directors for the expenses of this participation. Additionally, any new directors would also participate in our director orientation program in their first six months as a director.

CONTACTING THE BOARD OF DIRECTORS

Interested parties may send communications to our Board or our independent directors or any Board Committee through our Lead Director in accordance with the procedures set forth on our website at www.bnymellon.com/governance/contact.html.

Our Corporate Secretary is authorized to open and review any mail or other correspondence received that is addressed to the Board or any individual director unless the item is marked “Confidential” or “Personal.” If so marked and addressed to the Board, it will be delivered unopened to the Lead Director. If so marked and addressed to an individual director, it will be delivered to the addressee unopened. If, upon opening an envelope or package not so marked, the Corporate Secretary determines that it contains a magazine, solicitation or advertisement, the contents may be discarded.

The Audit Committee has approved procedures with respect to the receipt, review and processing of, and any response to, written communications sent by stockholders and other interested persons to our Board of Directors. Any written communication regarding accounting matters are processed in accordance with procedures adopted by the Audit Committee.

COMPENSATION OF DIRECTORS

Director Compensation

Our Corporate Governance Guidelines provide that compensation for our independent directors' services may include annual cash retainers; shares of our common stock; deferred stock units or options on such shares; meeting fees; fees for serving as a committee chairman; and fees for serving as a director of one of our subsidiaries. We also reimburse directors for their reasonable out-of-pocket expenses in connection with attendance at Board meetings. In the case of airfare, directors are reimbursed for their travel expenses not exceeding the first-class commercial rate. In addition, corporate aircraft and charter aircraft may be used for directors in accordance with the company's aircraft usage policy. Directors will also be reimbursed for reasonable out-of-pocket expenses (including tuition and registration fees) relating to attendance at seminars and training sessions relevant to their service on the Board and in connection with meetings or conferences which they attend at the company's request.

The CG&N Committee is responsible for reviewing and making recommendations annually to the Board regarding independent director compensation. The CG&N Committee annually reviews independent director compensation to ensure that it is consistent with market practice and aligns our directors' interests with those of long-term stockholders while not calling into question the directors' objectivity.

In undertaking its review, the CG&N Committee utilizes benchmarking data regarding independent director compensation of the company's peer group based on public filings with the SEC, as well as survey information analyzing independent director compensation at U.S. public companies. Based on its review, each year since 2008, the CG&N Committee has recommended, and the Board has approved, an annual equity award in the form of deferred stock units with the value of $110,000 for each independent director. The units vest on the earlier of one year after the date of the award or on the date of the next Annual Meeting of stockholders and must be held for as long as the director serves on the Board. The units accrue dividends, which are reinvested in additional deferred stock units. For 2013, this award of deferred stock units will be granted shortly after the 2013 Annual Meeting.

For 2012, our Board has determined to pay our independent directors an annual cash retainer of $75,000, payable in quarterly installments in advance, and a meeting fee of $1,800 for each committee meeting attended, including for any meeting of a special committee of the Board. The chairmen of the Audit Committee, the HRC Committee and the Risk Committee each receive an annual cash retainer of $15,000 and the chairmen of all other committees each receive an annual cash retainer of $12,500. Our Lead Director receives an annual cash retainer of $25,000.

In the merger of Bank of New York and Mellon, we assumed the Deferred Compensation Plan for Non-Employee Directors of The Bank of New York Company, Inc., which we refer to as the "Bank of New York Directors Plan," and the Mellon Elective Deferred Compensation Plan for Directors, which we refer to as the "Mellon Directors Plan." Under the Bank of New York Directors Plan, participating legacy Bank of New York directors continued to defer receipt of all or part of their annual retainer and meeting fees earned through 2007. Under the Mellon Directors Plan, participating legacy Mellon directors continued to defer receipt of all or part of their annual retainer and fees earned through 2007. Both plans are nonqualified plans, and neither plan is funded.

Although the Bank of New York Directors Plan and the Mellon Directors Plan continue to exist, all new deferrals of director compensation by any of the independent directors have been made under the Director Deferred Compensation Plan, which was adopted effective as of January 1, 2008. Under this plan, an independent director can direct all or a portion of his or her annual retainer or committee meeting fees into either (i) variable funds, credited with gains or losses that mirror market performance of market style funds or (ii) the company's phantom stock.

2012 Director Compensation Table

The following table provides information concerning the compensation of each independent director who served in 2012. Mr. Hassell did not receive any compensation for his service as a director.

Name	Fees Earned or Paid in Cash($)	Stock Awards($) (3)	Change in Pension Value and Nonqualified Deferred Compensation Earnings($)(4)	All Other Compensation($) (5)	Total($)
Ruth E. Bruch	$ 128,900	$ 110,000	$ —	$ —	$ 238,900
Nicholas M. Donofrio(1)	$ 110,975	$ 110,000	$ —	$ 677	$ 221,652
Edmund F. “Ted” Kelly	$ 108,250	$ 110,000	$ —	$ —	$ 218,250
Richard J. Kogan	$ 123,600	$ 110,000	$ —	$ —	$ 233,600
Michael J. Kowalski(1)	$ 111,000	$ 110,000	$ —	$ 370	$ 221,370
John A. Luke, Jr.	$ 103,700	$ 110,000	$ —	$ —	$ 213,700
Mark A. Nordenberg	$ 94,800	$ 110,000	$ 2,993	$ 1,935	$ 209,728
Catherine A. Rein	$ 117,000	$ 110,000	$ 27,621	$ 1,457	$ 256,078
William C. Richardson	$ 119,900	$ 110,000	$ —	$ 677	$ 230,577
Samuel C. Scott III	$ 138,600	$ 110,000	$ —	$ 370	$ 248,970
John P. Surma(2)	$ 33,433	$ —	$ 1,929	$ 1,060	$ 36,422
Wesley W. von Schack(1)	$ 136,000	$ 110,000	$ 36,893	$ 2,907	$ 285,800

(1) Elected to defer all or part of cash compensation in the Director Deferred Compensation Plan.

(2) Mr. Surma retired from the Board of Directors at the Annual Meeting of stockholders held on April 10, 2012.

(3) Amount shown represents the aggregate grant date fair value computed in accordance with Financial Accounting Standards Board’s Accounting Standards Codification (or “FASB ASC”) 718 Compensation-Stock Compensation for 4,814 deferred stock units granted to each independent director in April 2012, using the valuation methodology for equity awards set forth in footnote 18 of the consolidated financial statements in our annual report on Form 10-K for the year ended December 31, 2012. As of December 31, 2012, each independent director owned 4,895 unvested deferred stock units.

(4) The amounts disclosed in this column for Messrs. Nordenberg, Surma and von Schack represent the sum of the portion of interest accrued (but not currently paid or payable) on deferred compensation above 120% of the applicable federal long-term rate at the maximum rate payable under the Mellon Directors Plan. Under the Mellon Directors Plan, deferred amounts receive earnings based on (i) the declared rate, reflecting the return on the 120-month rolling average of the 10-year T-Note rate enhanced based on years of service and compounded annually, (ii) variable funds, which are credited with gains or losses that “mirror” the market performance of market-style funds or (iii) the company’s phantom stock. The fully enhanced declared rate for 2012 was 5.45%. The amount disclosed in the column for Ms. Rein represents the amount of increase in the present value of Ms. Rein’s accumulated pension benefit under The Bank of New York Company, Inc. Retirement Plan for Non-Employee Directors. Ms. Rein is the only current director who participates in this plan. Participation in this plan was frozen as to participants and benefit accruals as of March 11, 1999.

(5) The amounts disclosed for Messrs. Donofrio, Kowalski, Richardson and Scott and Ms. Rein reflect the amount of a 5% discount on purchases of phantom stock when dividend equivalents are reinvested under the Bank of New York Directors Plan. The amounts disclosed for Messrs. Nordenberg, Surma and von Schack reflect the estimated cost of the legacy Mellon Directors’ Charitable Giving Program, which remains in effect for them and certain other legacy Mellon directors. Upon such legacy Mellon director’s death, the company will make an aggregate donation of $250,000 to one or more charitable or educational organizations of the director’s choice. The donations are paid in 10 annual installments to each organization.

On September 9, 2003, Mr. Kogan and Schering-Plough Corporation, of which Mr. Kogan is the former Chairman/CEO, entered into a settlement with the SEC to resolve issues arising from the SEC’s inquiry into certain meetings by Schering-Plough Corporation with investors. Without admitting or denying any allegations of the SEC, Mr. Kogan agreed in connection with the settlement not to commit any future violations of Regulation FD and related securities laws.

COMPENSATION AND RISK

On a regular basis, our Chief Risk Officer and our HRC Committee review the company's employee compensation plans and practices for alignment with sound risk management. In 2012, our Chief Risk Officer met with the HRC Committee five times to discuss and review compensation plans, including the plans in which members of the Executive Committee, our most senior management committee, participate. With respect to employees broadly, we also monitor the company's compensation plans through a management-level compensation oversight committee that includes our Chief Risk Officer, Chief Human Resources Officer, Chief Financial Officer and the Risk Management and Compliance Chief Administrative Officer. The committee receives regular reports, meets at least on a quarterly basis and reports to the HRC Committee on risk-related compensation issues.

In 2012, we further developed our process for identifying employees who, individually or as a group, are responsible for activities that may expose us to material amounts of risk, establishing a risk-related performance evaluation program with adjustments determined by a committee comprised of members of senior management responsible for control functions with such adjustments later reviewed by the HRC Committee. The incentive compensation of identified employees is directly linked to risk-taking either through a "risk scorecard" or through the inclusion of a standard risk goal as part of our performance management process.

With respect to the incentive program for our Executive Committee, which is comprised of our named executive officers, or "NEOs," as well as 12 other senior management employees, the 2012 features designed to mitigate imprudent risk-taking include:

- Direct linkage of compensation and risk through use of a "risk scorecard" as described above, which can result in negative risk-based adjustments to awards under our annual incentive plan, the "Executive Incentive Compensation Plan" or "EICP."
- Upfront adjustments of up to a 100% decrease or up to a 20% increase based on prior year performance, including risk scorecard results, in setting target 2012 long-term equity incentive awards under our LTIP.
- Clawback of some or all of a cash incentive award within three years of the award date if an executive officer is found to have engaged in fraud or to directly or indirectly to have contributed to a financial restatement or other irregularity during the award performance period.
- Inclusion of risk-based and quantitative measures, including economic capital and earnings per share as determined under generally accepted accounting principles, in determining the "corporate component" of the EICP.
- Achievement of a Basel I Tier 1 common capital ratio of at least 9% (up from 7% in 2011) as a condition for funding awards under the EICP and time-based restricted stock units under the LTIP.

All equity awards, going forward starting in 2013, will be subject to 100% forfeiture during the vesting period based on risk assessments, and 2013 long-term equity incentive target grant value will be subject to adjustments of between 0-125% based on 2012 performance, including risk scorecard results.

Based on the above, we do not believe that our compensation plans and practices create risks that are reasonably likely to have a material adverse effect on the company.

PROPOSAL 2 – ADVISORY APPROVAL OF 2012 COMPENSATION OF NAMED EXECUTIVE OFFICERS

The Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act") requires public companies to provide their stockholders with an advisory vote to approve executive compensation at least once every three years. We are providing this stockholder advisory vote on our executive compensation in accordance with Section 14A of the Exchange Act and Exchange Act Rule 14a-21(a).

Our Board Supports a Say-On-Pay Vote, and We Consider the Results Carefully

We provided stockholders with an advisory vote on our executive compensation program at our 2009, 2010, 2011 and 2012 Annual Meetings. At these Annual Meetings, 96%, 88%, 80% and 59% of the votes cast approved our 2008, 2009, 2010 and 2011 executive compensation programs, respectively.

Our Board values our stockholders' feedback. Our 2012 compensation program is designed to pay for performance and to align the long-term interests of our named executive officers with the long-term interests of our stockholders. Following our 2012 advisory vote, we extended the scope of our outreach process with stockholders and invited comments on executive compensation (including pay-for-performance linkage and severance arrangements), corporate governance and stockholder proposals. We also met with regulators and other stakeholders. Our HRC Committee took into consideration the feedback received and approved the pay-for-performance enhancements for 2013 as discussed in the "Compensation Discussion and Analysis" on page 25 below.

At our 2011 Annual Meeting, we also provided stockholders with an advisory vote with respect to how often the company should hold a say-on-pay vote and 86% of the votes cast voted in favor of holding an advisory vote on our executive compensation program annually. Consistent with the voting results, we intend to hold an advisory vote each year on our executive compensation program, until the next stockholder advisory vote on its frequency, which we expect will occur at our 2017 Annual Meeting.

Effect of Advisory Vote

Your vote on this resolution is an advisory vote. The Board is not required to take any action in response to the stockholder vote. However, the Board values our stockholders' opinions, and, as in prior years, the Board intends to evaluate the results of the 2013 vote carefully when making future decisions regarding compensation of the named executive officers.

Resolution

The Board of Directors recommends that stockholders approve the following resolution:

> RESOLVED, that the stockholders approve the 2012 compensation of the named executive officers, as disclosed in this proxy statement pursuant to Item 402 of Regulation S-K of the Securities and Exchange Commission (including the Compensation Discussion and Analysis, the compensation tables and other narrative executive compensation disclosures).

The Board of Directors unanimously recommends that you vote "FOR" approval of the 2012 compensation of our named executive officers, as disclosed in this proxy statement.

EXECUTIVE COMPENSATION

COMPENSATION DISCUSSION AND ANALYSIS

EXECUTIVE SUMMARY

Our compensation program is designed to reflect our core principles of *pay for performance, alignment with stockholders' interests* and *appropriate risk taking*. Our compensation results for 2012 and program changes for 2013 are driven by these principles.

2012 Business & Compensation Results

Business results. In 2012, continued global economic uncertainty, persistent low interest rates, low volatility and tepid capital markets continued to weigh on global markets and the financial services industry. Despite the challenges presented, the company achieved the following in 2012:

- Increased year-over-year assets under management by 10%, with net inflows of $36 billion
- Completed $1.1 billion in stock buybacks, up from $835 million in 2011, and paid more than $600 million in common stock dividends
- Increased our year-end book value by 10% over last year, to $30.39 per share
- Achieved above-target net savings of $309 million under our Operational Excellence Initiatives
- Reduced risk in our securities and loan portfolios, reflected in part by a $2.4 billion unrealized pre-tax gain and a credit to our provision for credit losses of $80 million
- Exceeded many of our bank peers in attaining a Basel I Tier 1 capital ratio of 15.1% and common ratio of 13.6% and a return on tangible common equity ratio of 19%[2]
- Exceeded Basel III guidelines for Tier 1 common equity ratio by attaining an estimated ratio of 9.8%[2]

These accomplishments contributed to a positive total shareholder return (TSR) of 32% for 2012, positioning us at the 75th percentile relative to both the S&P 500 Financials Index and our peer group. Our reported earnings per share was $2.03, 89% of budget, as market conditions unfavorably impacted our lower variable costs businesses and revenue streams, which was partially offset by continuing to win new business. Also impacting our earnings was the settlement of a number of significant litigation items, which was partially offset by our Operational Excellence Initiatives savings.

Compensation results. The 2012 incentive compensation pay elements for our named executive officers are reflected in the table below. Our 2012 business results drive our annual incentive awards and the grant value delivered by our long-term equity program. All equity awards remain subject to vesting, clawback and other restrictions.

2012 Incentive Compensation Pay Elements

	Annual Incentive(a)		Long-Term Incentive(b)	
	Actual	**% of Target**	**Options**	**RSUs**
Gerald L. Hassell Chairman and Chief Executive Officer (CEO)	$4,061,250	90%	$2,250,000	$5,250,000
Thomas P. "Todd" Gibbons Vice Chairman and Chief Financial Officer (CFO)	$2,624,225	93%	$753,900	$1,759,100
Curtis Y. Arledge Vice Chairman and CEO of Investment Management	$8,270,313	99%	$1,507,500	$3,517,500
Brian G. Rogan Vice Chairman and Chief Risk Officer	$2,624,225	93%	$753,900	$1,759,100
Karen B. Peetz President(c)	$2,057,425	88%	$765,000	$1,785,000

[2] For a reconciliation and explanation of these non-GAAP measures, see pages 106 to 110 of our 2012 Annual Report, available at http://www.edocumentview.com/bnym.

(a) Awarded in February 2013 based on 2012 performance. Delivered 75% in cash and 25% in restricted stock units (RSUs) subject to risk-based forfeiture and vesting in equal installments over three years.

(b) Awarded in February 2012. Valued based on the average closing price of our common stock on the NYSE for the 25 trading days ending February 7, 2012 (which varies from the grant date value presented in the Summary Compensation Table and, for Mr. Hassell, does not include an award of RSUs and stock options in 2012, with an aggregate value of $1 million, in recognition of his appointment as Chairman and Chief Executive Officer).

(c) Ms. Peetz was appointed as President of the company effective January 1, 2013. During 2012, Ms. Peetz served as Vice Chairman and CEO of Financial Markets and Treasury Services.

2013 Compensation Program

Stockholder Feedback. Last year a majority of our stockholders approved, on an advisory basis, the compensation paid to our named executive officers. However, the 59% approval represented a decline from 80% and higher approval levels in the prior two years, and the HRC Committee accordingly determined to extend the scope of our stockholder outreach process to understand and respond to the factors contributing to the decline. In particular, we reached investors representing approximately 37% of our outstanding shares (about half of our largest 25 investors) and invited comments on our executive compensation program (including pay-for-performance linkage and severance arrangements) and our corporate governance structures. We also had a number of meetings with regulators and other stakeholders, including meetings with proxy advisory firms. Based on the quality and value of the feedback received, the HRC Committee has determined to continue our extended stockholder outreach program as an ongoing, annual process.

Our Response. Our HRC Committee took into consideration the feedback received from its outreach efforts and approved the following pay-for-performance enhancements for 2013:

- ***Increased portion of incentive pay that varies with prior-year performance.*** 70% of target incentive for 2013 (up from about 51% in 2012) is in the form of annual incentive, increasing the amount of pay that varies directly with prior-year performance.

- ***Increased equity portion of annual incentive.*** About 57% of the annual incentive awarded for Mr. Hassell and 43% for our other named executive officers will be deferred in the form of RSUs that are subject to risk-based forfeiture and vest in equal installments over three years (up from 25% in 2012).

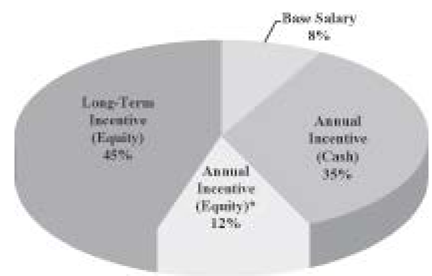
- ***Moved long-term incentives to 100% performance shares.*** For 2013, long-term incentives are in the form of performance share units (PSUs) that cliff vest based on our return on risk-weighted assets over each year of a three-year performance period.

- ***Subjected long-term incentive grant value to upfront adjustment of between 0-125% based on 2012 performance.*** Awards are subject to upfront adjustments of up to ±25% of target based on prior-year performance and may be reduced or eliminated based on risk scorecard results.

- ***Maintained strong deferral rate.*** 70% of target incentive pay for Mr. Hassell and 60% for our other named executive officers will be deferred through RSUs and PSUs.

- ***Subjected all RSUs and PSUs to 100% forfeiture during vesting period based on risk assessments.*** This contributes to a comprehensive risk adjustment process for our 2013 equity grants.

2012 NEO Pay Mix at Target



* In the form of RSUs that vest in equal installments over three years

2013 NEO Pay Mix at Target

* In the form of RSUs that vest in equal installments over three years

In addition, in December 2012, Mr. Hassell volunteered to waive his remaining rights under his transition agreement entered into and assumed by the Company as part of our 2007 merger (which provided enhanced equity vesting, a pro-rata annual bonus for the year of termination and an enhanced payment under our supplemental retirement plan), and our Board agreed. As a result, none of our current executive officers have employment agreements or individual severance arrangements. On a termination without cause (other than in connection with a change-in-control), severance for our executives under our Executive Severance Plan is limited to two times base salary.

We have:

- ***No excessive perquisites or benefits***
- ***No tax gross-ups for perquisites***
- ***No single-trigger change-in-control benefits***
- ***No tax gross-ups on severance payments***

We provide for:

- ***No repricing of underwater stock options***
- ***No hedging or short sales of our stock***

And we grant:

- ***No stock options with exercise price below market***

2012 COMPENSATION DECISION-MAKING PROCESS

Compensation Philosophy

In making compensation decisions, the HRC Committee utilizes the following core principles of the company's Global Remuneration Policy (available at http://www.bnymellon.com/policy) to ensure that our compensation structure is competitive and reflects our core values:

- ***Pay for performance***. Provide market competitive compensation with a focus on pay for performance both at the individual (which includes business unit performance for executives as applicable) and corporate levels.
- ***Alignment with stockholders' interests***. Motivate actions that contribute to superior financial performance and long-term stockholder value.
- ***Appropriate risk-taking***. Ensure that our incentive compensation arrangements do not encourage our employees to take unnecessary and excessive risks, including risks beyond our risk appetite or that threaten the value of the company. Our risk appetite statement may be found in our 2012 Annual Report, available at http://www.edocumentview.com/bnym.

Key Compensation Practices

In addition to aligning executive pay with long-term stockholder interests, we are committed to good corporate governance practices and mitigation of inappropriate risk-taking. To further this commitment, our 2012 compensation program has the following features:

- ***Pay for performance****.* Variable pay makes up more than 90% of 2012 target compensation for our named executive officers. The amount of variable pay realized will fluctuate based on stock price performance and the achievement of performance metrics that support both our short- and long-term business objectives.
- ***Long-term ownership****.* At target levels, about 66% of our CEO's 2012 compensation and 53% of the 2012 compensation of our other named executive officers is granted in the form of RSUs and stock options. The RSUs are subject to risk-based forfeiture and vest in equal installments over three years, and the stock options vest in equal installments over four years.

- ***Stock ownership guidelines and retention requirements***. Our CEO must acquire and retain company stock equal to five times base salary for 2012 (increased to six times for 2013), while our other named executive officers must acquire and retain stock equal to four times base salary. In addition, for awards received in 2008 and later, all named executive officers are required to retain 50% of net after-tax shares received from exercises of stock options, vesting of RSUs and restricted stock and payment of other long-term equity awards.

- ***Automatic reduction for performance shortfalls***. Our equity awards are automatically reduced upon the occurrence of below-threshold returns or specified loss events.

- ***Recoupment and forfeiture policies***. Our named executive officers are subject to recoupment policies that provide for the cancellation or clawback of cash incentive and equity awards in the event of, among other things, fraud, financial restatement or other irregularity.

- ***Independent compensation consultant***. Our HRC Committee engages an independent compensation consultant in its review of executive pay and our corporate governance practices and overall compensation program.

- ***Mitigation of inappropriate risk***. We engage in a risk review process that measures compliance with predetermined risk metrics that are appropriate for our business objectives. Risk performance by our named executive officers is documented through a risk scorecard, and unacceptable assessments result in the reduction or complete elimination of annual incentives.

- ***Continued review of compensation program***. Each year, our HRC Committee reviews our compensation program to ensure that executive pay is aligned with long-term stockholder interests, sound risk policies and evolving regulatory requirements.

The HRC Committee believes that equity awards are a key element of the company’s pay-for-performance compensation program. Equity awards are inherently performance-based, because their value is directly dependent on the company’s stock price. Equity awards are also an important tool for deferring a significant portion of compensation, which aids in retention and mitigates inappropriate risk-taking.

HRC Committee Role and Responsibility

Our HRC Committee has the discretion to establish the compensation for our named executive officers as it may determine is in the best interest of the company and our stockholders. The HRC Committee determines the compensation elements of our named executive officers for each year, including the terms and conditions applicable to each element and the timing of the payments and awards. In the first quarter of each year, for each named executive officer, the HRC Committee:

- approves base salary levels;

- establishes target amounts for the annual incentive award payable in the first quarter of the following year, based on performance under the corporate component and individual component of the award and payable in a combination of cash and RSUs that are subject to risk-based forfeiture and have delayed vesting; and

- grants a long-term equity incentive award (beginning in 2013, following consideration and adjustment based on prior-year performance, risk scorecard results and strategic milestones).

In setting 2012 compensation targets, the HRC Committee, assisted by its independent compensation consultant, continued to monitor compensation best practices and considered various factors over multiple meetings, including our financial performance, data concerning peer companies’ executive compensation programs and market trends and outlook within the broader financial services industry. The HRC Committee also considered changes in responsibilities, internal pay equity among our senior executives, competitive pay levels and prior compensation as part of its comprehensive decision-making process. None of these factors had an assigned or specific quantifiable impact on the target compensation levels established by the HRC Committee.

In the first quarter of the following year, the HRC Committee evaluates corporate performance, using a combination of financial and qualitative measures, as well as each named executive officer's individual performance, and determines final amounts for the annual incentive awards, as discussed in more detail on page 32. In addition, throughout 2012 and in early 2013, the HRC Committee made certain determinations with respect to the 2013 executive compensation program, including the mix of annual incentives and long-term compensation, the incorporation of a long-term performance plan focused on return on risk-weighted assets, the elimination of stock options and the increased percentage of outstanding equity awards that will be subject to forfeiture based on, among other things, risk assessments.

Although the HRC Committee has overall responsibility for executive compensation matters, the HRC Committee reports its preliminary conclusions and compensation decisions regarding our CEO, and information on the process used by the HRC Committee, to the other independent members of our Board in executive session and solicits their input prior to finalizing determinations concerning the CEO. The HRC Committee also advises and discusses with the other independent directors compensation decisions regarding our President and the process utilized by the HRC Committee.

Risk and Regulatory Review

As described in the Compensation and Risk section of this proxy statement, our Chief Risk Officer and our HRC Committee review our compensation plans, including the plans in which each of our named executive officers and other members of the Executive Committee participate, on a regular basis. Based on these reviews and our approach to risk management, we believe that our compensation plans, arrangements and agreements with the named executive officers are well balanced and do not encourage imprudent risk-taking that threatens our company's value. In addition, annual performance assessments for our named executive officers take into account a risk assessment for both the company as a whole and for each individual. The HRC Committee believes that the risks arising from the company's compensation plans, policies and practices are not reasonably likely to have a material adverse effect on the company.

We are subject to regulation by various U.S. and international governmental and regulatory agencies with respect to executive compensation matters and the consideration of risk in the context of compensation. Our compensation programs have been designed to comply with these regulations, and the HRC Committee regularly monitors new and proposed regulations as they develop to determine if additional action is required.

Role of Compensation Consultants

Since August 2009, the HRC Committee has retained Aon Hewitt Consulting, formerly Hewitt Associates, Inc., an affiliate of Aon Corporation, to serve as the HRC Committee's independent compensation consultant. Aon Hewitt Consulting regularly attends HRC Committee meetings and, in 2012, provided advice on matters including market practices and trends, peer group composition and incentive programs and CEO target compensation and performance. We discuss payments to Aon Hewitt Consulting and Aon Corporation and its affiliates in greater detail on page 19 of this proxy statement. The company has engaged Compensation Advisory Partners LLC, which we refer to as "CAP," to assist management with various executive compensation matters, including compiling data about our peer group and industry, compiling and analyzing data about the compensation practices and programs of our peers and our industry, evaluating proposed aspects of our executive compensation program, preparing and presenting materials relative to our executive compensation program to the HRC Committee and providing advice and recommendations to management.

Peer Group Comparison

The HRC Committee and our management use compensation data from our peer group to provide a basis for assessing relative company performance, to provide data for the HRC Committee to assess competitiveness in determining targeted and actual compensation and to analyze market trends and practices. In determining to use the S&P 500 Financials Index (which is an index of S&P 500 companies that are classified as members of the Global Industry Classification Standard financials sector) as a relative benchmark in the determination of the corporate component of the annual incentive award, the HRC Committee also considered how our peers used industry benchmarks in determining their own compensation decisions.

In evaluating and selecting companies for inclusion in the peer group, the HRC Committee targets complex financial companies with which we typically compete for executive talent and business. In particular, the HRC Committee selected these companies based on:

- mix of businesses (*e.g.*, asset management, asset servicing and clearing services) and other financial services with similar business models that operate in a similar regulatory environment;
- relative size in terms of revenue, market capitalization and assets under management, as well as total assets;
- position as competitors for customers and clients, executive talent and investment capital; and
- global presence.

For 2012, the HRC Committee reviewed data relating to our 2011 peer group and considered input from Aon Hewitt Consulting, management and CAP. The following chart details how the company compared against our peer group on key financial metrics:

Metric	Comparison to Peer Group
2011 Revenue	37th percentile
2011 Assets Under Management	73rd percentile
2011 Total Assets	53rd percentile
2011 Reported Net Income	39th percentile
2011 Percentage of Foreign Sales	49th percentile

The 2012 peer group selected by the HRC Committee was unchanged from 2011:

American Express Company	Northern Trust Corporation
Bank of America Corporation	The PNC Financial Services Group, Inc.
BlackRock, Inc.	Prudential Financial, Inc.
The Charles Schwab Corporation	State Street Corporation
Citigroup Inc.	U.S. Bancorp
JPMorgan Chase & Co.	Wells Fargo & Company

For certain named executive officers, data relating to the peer group is supplemented with industry data from surveys conducted by national compensation consulting firms and other data to assess the compensation levels and practices in the businesses and markets in which we compete for executive talent. All peer group and other data provided to the HRC Committee by Aon Hewitt Consulting, management and CAP was used by the HRC Committee in setting target levels of compensation for our named executive officers.

2012 COMPENSATION

Compensation Elements

Component	Form	Description
Base Salary	Cash	• Sole fixed source of cash compensation • Set by the HRC Committee based on position, level of responsibilities and competitive market data • Represents 4 - 11% of total target pay of our named executive officers
Annual Incentives	75% Cash 25% RSUs	• Granted based on a “balanced scorecard” that includes corporate and individual goals • Subject to a threshold Basel I Tier 1 common capital ratio of 9% (up from 7% in 2011) as a condition to funding 2012 bonuses • Subject to risk-based and performance-related reduction or elimination • RSUs are subject to risk-based forfeiture and vest in equal installments over three years • *For 2013, about 57% of the annual incentive for Mr. Hassell, and about 43% for our other named executive officers, will be deferred through RSUs that are subject to risk-based forfeiture, and about 70% (up from about 51% in 2012) of total target incentive pay will be based on balanced scorecard results*
Long-Term Equity Incentives	70% RSUs 30% Options	• Granted annually and subject to adjustment based on prior-year performance results • Stock options vest in equal installments over a four-year period. *For 2013, stock options have been eliminated* • RSUs vest in equal installments over a three-year period, subject to a threshold Basel I Tier 1 common capital ratio of 9% (up from 7% in 2011) as of December 31, 2012 • 15% of unvested long-term equity incentive awards granted in 2012 will be forfeited if the company’s return on tangible common equity in any single year during the vesting period falls below 10% or, in the case of a named executive officer who is a business unit leader, the business unit experiences a net operating loss in any single year during the vesting period • *All long-term equity incentive awards granted in 2013 are subject to forfeiture during their vesting period based on performance and annual risk assessments* • *For 2013, 30% of total target incentive pay is in the form of long-term PSU awards that are earned between 0-125% based on our return on risk-weighted assets over each year of a three-year performance period*

Compensation Decisions for 2012

Base Salaries. In February 2012, the HRC Committee reviewed the base salaries of our named executive officers based on competitive market data, as well as each named executive officer's position and level of responsibilities. After consulting with its independent compensation consultant, the HRC Committee decided to maintain all base salaries for the named executive officers except Ms. Peetz. Based on a review of market practices and competitive data, the HRC Committee determined to increase Ms. Peetz' base salary from $500,000 to $600,000 effective July 1, 2012.

Annual Incentives

Executive Incentive Compensation Plan. Under the EICP approved by our stockholders in April 2011, our named executive officers have the opportunity to earn annual incentives based on achievement of pre-established goals for the year. Awards earned under the EICP are based on a "balanced scorecard" of both corporate and individual goals, and are subject to a minimum funding requirement based on the Basel I Tier 1 common ratio.

Awards under the EICP generally are designed with the intent of qualifying as "performance-based" compensation under Section 162(m) of the Internal Revenue Code of 1986, as amended. In that regard, awards paid to any individual participant for the calendar year cannot exceed the sum of $3 million plus 0.5% of the company's positive pre-tax income from continuing operations, before the impact of the cumulative effect of accounting changes and extraordinary items, as disclosed on our consolidated statement of income for such year included in our Annual Report on Form 10-K.

Minimum Funding Requirement. In February 2012, to strengthen the link between pay and performance, the HRC Committee increased the threshold goal required to fund 2012 annual incentives. The company must achieve a Basel I Tier 1 common capital ratio of at least 9% as of December 31, 2012, as compared to the 7% threshold used in 2011, which was above the minimum regulatory threshold ratio for a "well capitalized" bank. This threshold funding goal was met, with a Basel I Tier 1 common ratio of 13.6% as of December 31, 2012.

Balanced Scorecard Approach. We adopted the use of a "balanced scorecard" approach in 2009. In February 2012, the HRC Committee reevaluated this approach and determined that it continues to be appropriate. This approach measures (1) corporate financial and capital results, which we refer to as the "corporate component" and (2) each named executive officer's functional, strategic and operational results, including business financial results, if applicable, and expense management, which we refer to as the "individual component." The process is a comprehensive analysis of corporate and individual performance that includes discretion by the HRC Committee rather than a simple mathematical formula.

Interaction with Risk Scorecard. We adopted the use of a risk scorecard in 2011 to formally connect compensation and risk taking. The risk scorecard takes into account liquidity, operational, reputation, market, credit and technology risks by measuring:

- maintenance of an adequate compliance program, including adhering to the compliance rules and programs established by the company;
- protection of the company's reputation, including reviewing the company's business practices to ensure that they comply with laws, regulations and policies, and that business decisions are free from actual or perceived conflicts;
- management of operational risk, including managing operational losses and maintaining proper controls;
- compliance with all applicable credit, market and liquidity risk limits, including understanding and monitoring risks associated with relevant businesses and new client acceptance, as well as appropriately resolving or escalating risk issues to minimize losses; and
- meeting Internal Audit expectations, including establishing an appropriate governance culture, achieving acceptable audit results and remediating control issues in a timely manner.

The results of the HRC Committee's review of the risk scorecard were taken into account by the HRC Committee in determining the corporate and individual components of the balanced scorecard as described below.

2012 Annual Incentive Metrics and Payouts

In February 2012, the HRC Committee established the corporate and individual components of the scorecard. These components were weighted differently for each officer, as shown below, based on the officer's role within the company. The corporate component is given more weight for Mr. Hassell, who is the most senior member of management, to more closely tie his compensation to corporate performance. The individual component is given more weight for named executive officers who are responsible for a major business (Mr. Arledge and Ms. Peetz), and is equally weighted with the corporate component for named executive officers who are responsible for a corporate service function (Messrs. Gibbons and Rogan).

	Weight	
Name	**Corporate Component**	**Individual Component***
Hassell	65%	35%
Gibbons	50%	50%
Arledge	35%	65%
Rogan	50%	50%
Peetz	35%	65%

*including business financial performance, as applicable

The following table shows target 2012 annual incentive awards set in February 2012 and actual amounts earned after the HRC Committee reviewed performance against each named executive's goals in February 2013. The table also shows actual 2012 annual incentive amounts earned as a percentage of 2012 targets. The HRC Committee's determinations are discussed in more detail below.

	Corporate Component		Individual Component		Total		
Name	**Target Payout**	**Actual Payout**	**Target Payout**	**Actual Payout**	**Target Payout**	**Actual Payout**	**% of 2012 Target**
Hassell	$2,925,000	$2,486,250	$1,575,000	$1,575,000	$4,500,000	$4,061,250	90%
Gibbons	$1,418,500	$1,205,725	$1,418,500	$1,418,500	$2,837,000	$2,624,225	93%
Arledge	$2,931,250	$2,491,563	$5,443,750	$5,778,750	$8,375,000	$8,270,313	99%
Rogan	$1,418,500	$1,205,725	$1,418,500	$1,418,500	$2,837,000	$2,624,225	93%
Peetz	$822,500	$699,125	$1,527,500	$1,358,300	$2,350,000	$2,057,425	88%

Corporate Component. In approving the corporate component for 2012, the HRC Committee decided to adopt multiple measures of corporate performance using a combination of financial and qualitative measures to assess financial, risk and capital levels. The HRC Committee does not assign a specific weighting to any of these measures. The same corporate goals applied to each named executive officer and the final payout was determined based on several metrics:

– **Earnings per share**. Earnings per share, as determined under GAAP were calculated and used to determine the applicable pre-set range of corporate component incentive payouts: 0% to 50% of target, 50% to 80% of target, 80% to 95% of target, 100% of target, 105% to 120% of target, 120% to 150% of target or 150% of target. For 2012, the budgeted earnings per share was $2.27 and actual earnings per share was $2.03, 89% of budget, resulting in a guideline corporate component incentive payout of 80% to 95% of target. The range of earnings per share that would have resulted in this guideline payout was $1.82 - $2.16.

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– The HRC Committee then evaluated four other financial or risk metrics, which could reduce or increase the corporate component of the award by up to 25% of target from the guideline payout:

  - **Relative TSR**. Our 2012 TSR of 32% was at the 75th percentile of both the S&P 500 Financials Index and our peer group.
  - **Return on economic capital**, which is defined as adjusted operating earnings divided by economic capital. Adjusted operating earnings equals operating earnings less intangible amortization and reflects the cost of Tier 1 common equity for acquisitions. Economic capital represents the risk based allocation of Tier 1 common equity. For 2012, our return on economic capital budget was 19.9% and our actual achievement was 17.9%.
  - **Relative earnings per share growth** as determined under GAAP relative to the S&P 500 Financials Index. Our 2012 reported earnings per share was $2.03, the same as in 2011 and representing growth at the 31st percentile of the S&P 500 Financials Index.
  - **Impact of unusual unplanned items**. The HRC Committee evaluated the events that affected the company in 2012 and determined that there were no unusual unplanned items.

– **Risk assessment results**. Finally, the HRC Committee determined whether it would make any downward adjustments based on the risk assessment measured by the risk scorecard. The metrics noted under the previous step may not under any circumstances be used to increase the corporate component of the award if the risk scorecard result is lower than acceptable risk tolerance. No downward adjustment was made for 2012.

Based on an evaluation of the factors outlined above, none of which had any specific weighting, and its discussions with other non-management directors, the HRC Committee approved a payout of 85% of target for the corporate component. In reaching its decision, the HRC Committee noted that reported earnings per share was 89% of budget and also considered the company's positive financial improvements that were reflected in an improved one-year TSR of 32% for 2012 (as compared to -33% for the year ended December 31, 2011). Although our 2012 TSR substantially exceeded the median TSR of the S&P 500 Financials Index and our peer group, because return on economic capital was less than planned and relative earnings per share growth was less than median, the HRC Committee determined that limiting 2012 payout to the 2011 corporate component payout of 85% of target was appropriate.

Individual Component. In February 2012, the HRC Committee determined the individual objectives for our CEO after discussion with the other independent directors. The HRC Committee also reviewed the individual objectives for our other named executive officers, which were set by our CEO after discussion with the HRC Committee. In January and February 2013, the HRC Committee evaluated each named executive officer's individual performance over the year. For Mr. Hassell, the HRC Committee reviewed his performance self-assessment, considered an Aon Hewitt Consulting report summarizing feedback received from each independent director, and finalized its decision after reporting its preliminary evaluation to the other independent directors and soliciting their input. For each of the other named executive officers, the HRC Committee reviewed his or her performance self-assessment, considered Mr. Hassell's recommendation and summary of performance, and finalized its decision after soliciting input from the other independent directors.

– **Mr. Hassell**. The HRC Committee awarded Mr. Hassell 100% of target under the individual component of his balanced scorecard. Combined with the amount awarded under the corporate component described above, Mr. Hassell's total annual incentive for 2012 was 90% of his target annual incentive, or $4,061,250. The HRC Committee considered the company's 2012 achievements under Mr. Hassell's leadership in determining his individual component, including:

  - Achievement of solid company-wide performance despite challenging market conditions, including an increase of year-over-year assets under management by 10%, completion of

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$1.1 billion in stock buybacks, and payment of more than $600 million in common stock dividends, although reported earnings per share was the same as in 2011;

- A positive one-year TSR of 32%, positioning the company at the 75th percentile relative to both the S&P 500 Financials Index and our peer group;
- Oversight in developing and executing the company's business model, including through proactive management of the company's balance sheet, execution of key strategic initiatives, investment in organic growth and effective implementation of our Operational Excellence Initiatives with program costs lower than planned and above-target net savings to the company of $309 million;
- Meaningful progress in strengthening the company's management team and risk assessments by our principal regulators, including reduction of the risk related to the company's intra-day and overnight market risk exposure, leadership in tri-party repo reform, strengthened corporate stress testing and improvement of risk tracking and reporting;
- Substantial progress in resolution of litigation matters, including settlement of class action litigation related to losses in connection with Sigma Finance Inc.; and
- Continued progress in diversity by setting explicit goals for all Executive Committee members, hiring a global head of diversity and establishing a proactive program for identifying diverse candidates.

– **Mr. Gibbons**. The HRC Committee awarded Mr. Gibbons 100% of target under the individual component of his balanced scorecard. Combined with the amount awarded under the corporate component described above, Mr. Gibbons' total annual incentive for 2012 was 93% of his target annual incentive, or $2,624,225. The HRC Committee considered, among other things, the following 2012 achievements in determining his individual component:

- Successful articulation of the company's strategy and business plan to investors and other stakeholders;
- Effective management of the company's balance sheet despite challenging market conditions;
- Successful management of the company's Operational Excellence Initiative, exceeding targets; and
- Reduction in 2012 tax expenses and management of investment portfolio within the company's risk appetite.

– **Mr. Arledge**. The HRC Committee awarded Mr. Arledge 106% of target under the individual component of his balanced scorecard. Combined with the amount awarded under the corporate component described above, Mr. Arledge's total annual incentive for 2012 was 99% of his target annual incentive, or $8,270,313. The HRC Committee considered, among other things, the following 2012 achievements in determining his individual component:

- Strong 2012 business results in investment management, including pre-tax income and revenue that were higher than planned;
- Leadership of a variety of initiatives to enhance growth and efficiency, including continued rationalization of the boutique structure of the business and identification of synergies between the asset and wealth management businesses;
- Strong focus on risk management, including through productive engagement with regulators, consolidation of the investment management business' legal entity structure and increased employee communication;

- Creation and execution of a new global distribution strategy, including through the pursuit of key strategic hires and expansion in key regions; and
- Continued integration of the investment management business with the rest of the company.

– **Mr. Rogan**. The HRC awarded Mr. Rogan 100% of target under the individual component of his balanced scorecard. Combined with the amount awarded under the corporate component described above, Mr. Rogan's total annual incentive for 2012 was 93% of his target annual incentive, or $2,624,225. The HRC Committee considered, among other things, the following 2012 achievements in determining his individual component:

- Successful oversight of our credit, operational and market risk with minimal loss, noting that the company experienced significant reduction in non-performing assets;
- Continued performance in addressing systems, processes and operational requirements to meet evolving regulatory standards, including strengthened corporate stress testing and simulations of market scenarios that test key risk metrics;
- Leadership in enhancing information risk management, including improvements in governance, awareness and understanding of information security; and
- Improvement of risk tracking and reporting throughout the company and oversight of operational risk for a variety of significant corporate transformation initiatives.

– **Ms. Peetz**. Ms. Peetz led our financial markets and treasury services businesses from 2008 to 2012 and has served as our President since January 1, 2013. The HRC Committee increased Ms. Peetz' 2012 target in part due to a comparative market review, and awarded her 89% of that target under the individual component of her balanced scorecard. Combined with the amount awarded under the corporate component described above, Ms. Peetz' total annual incentive for 2012 was 88% of her target annual incentive, or $2,057,425. The HRC Committee considered, among other things, the following 2012 achievements in determining her individual component:

- Leadership in controlling expense growth across our financial markets and treasury services businesses, attaining modest growth in our treasury services business but with weaker results in our issuer services business, all within a difficult market environment;
- Leadership in tri-party repo reform including significantly reducing the risk associated with the secured credit the company provides to the tri-party repo market;
- Continued success of operational excellence and innovation initiatives that involve strategic use of cross-business synergies; and
- Leadership on talent development, particularly with regard to diverse employees, and championship of learning initiatives by, among other things, launching an early career rotational program.

Long-Term Equity Incentives

Long-term equity incentive awards, which are made pursuant to the company's LTIP, are intended to be a key element of the company's pay-for-performance compensation program by aligning a significant portion of our named executive officers' compensation with changes in our stock price over a multiple-year period. In February 2012, the HRC Committee granted 2012 target equity incentive awards, expressed as a dollar value, to our named executive officers. The grants were made 30% in stock options that vest in equal installments over a four-year period with a 10-year term and 70% in RSUs that vest in equal installments over a three-year period. The HRC Committee determined that this ratio was appropriate for 2012 (as compared to 50% stock options and 50% RSUs in 2011) in order to limit the potential upside leverage provided by stock option awards while still providing incentives for our named executive officers to increase the value of our stock price over a long-term period.

Minimum Threshold Basel I Tier 1 Common Capital Ratio. To strengthen the link between pay and performance, for 2012, the HRC Committee increased the threshold Basel I Tier 1 common capital ratio, which must be achieved as of 2012 year-end to avoid forfeiture of the RSUs, from the 7% threshold used in 2011 to 9%, which was above the minimum regulatory threshold ratio for a "well capitalized" bank. The threshold ratio was met for 2012, and no forfeitures were required.

Automatic 15% Reduction of All Unvested Amounts in Certain Circumstances. In addition, RSUs and stock options are subject to reduction based on performance during the entire three-year and four-year respective vesting periods. For all named executive officers, if return on tangible common equity for any single year falls below 10% during the vesting period or, for named executive officers who are business unit leaders, if the business unit experiences a net operating loss in any single year during the vesting period, then 15% of any then-unvested equity awards granted in 2012 will be forfeited.

Performance Adjustment Prior to Grant. For 2012, the target long-term equity incentive awards were subject to upfront adjustments of up to a 100% decrease or up to a 20% increase based on prior-year performance, including the balanced scorecard results, risk performance and other factors considered relevant by the HRC Committee. This process did not result in any adjustment to the equity awards granted in February 2012.

The following table shows target long-term equity incentive values and the numbers of RSUs and options awarded in February 2012.

Name	Target Value of RSUs	Target Value of Stock Options	Additional Equity Award Value	Total Value of Equity Awards	# of RSUs	# of Stock Options
Hassell	$ 5,250,000	$ 2,250,000	$ 1,000,000	$ 8,500,000	283,738	434,412
Gibbons	$ 1,759,100	$ 753,900	$ 0	$ 2,513,000	83,886	128,432
Arledge	$ 3,517,500	$ 1,507,500	$ 0	$ 5,025,000	167,739	256,814
Rogan	$ 1,759,100	$ 753,900	$ 0	$ 2,513,000	83,886	128,432
Peetz	$ 1,785,000	$ 765,000	$ 0	$ 2,550,000	85,121	130,323

In calculating the number of RSUs and stock options to be delivered, the HRC Committee used a share price of $20.97, which was the average closing price of our common stock on the NYSE for the 25 trading days from January 3, 2012 through February 7, 2012, in order to mitigate the impact of short-term volatility in our stock price. The RSU portion of the target award was divided by $20.97 to determine the number of shares subject to the RSUs. The number of stock options awarded was determined by dividing the stock option portion of the target award by $5.87, which reflects $20.97 multiplied by an estimated Black-Scholes percentage value of 28%. The exercise price for the stock options was the actual closing price of our common stock on February 23, 2012, the grant date, or $22.03 per share. These valuation methods differ from the accounting grant date fair values reported for these awards in the Summary Compensation Table and the 2012 Grants of Plan-Based Awards Table.

As of December 31, 2012, approximately 68% of the stock options previously awarded to our named executive officers were underwater, and these stock options will not have value unless our stock price increases above the exercise price prior to the expiration of the options (10 years after grant). For details on the stock options held by our named executive officers, see "Outstanding Equity Awards at Fiscal Year-End 2012" below.

2012 Total Direct Compensation

The 2012 total direct compensation awarded to each of our named executive officers, after considering 2012 corporate and individual performance in determining their annual incentive payouts, was: $12,561,250 for Mr. Hassell; $5,787,225 for Mr. Gibbons; $13,895,313 for Mr. Arledge; $5,787,225 for Mr. Rogan; and $5,157,425 for Ms. Peetz. In recognition of his appointment as Chairman and Chief Executive Officer effective September 1, 2011 and subsequent leadership of the company, Mr. Hassell also received an award of RSUs and stock options in 2012 with an aggregate value of $1 million.

Compensation Decisions for 2013

Under guidelines adopted by the HRC Committee, beginning in 2013, long-term incentive awards will be subject to upward or downward upfront adjustments of up to 25% based on prior-year performance and strategic objectives to enhance pay-for-performance and upfront downward adjustment of up to 100% based on prior-year risk scorecard results to create a more significant risk adjustment process:

- **Performance Results**. Target long-term incentive award amounts are first subject to adjustment based on the corporate and individual components of the prior year's annual incentive balanced scorecard:

Performance Results	Adjustment
Less than 90%	0% to -25%
Between 90% and 110%	0%
More than 110%	0% to +25%

- **Strategic Objectives**. Adjustments resulting from the guidelines above may be modified, upward or downward, by an additional 25% in the HRC Committee's discretion after considering strategic assessments of each named executive officer. The total reduction or increase cannot be greater than 25%.
- **Risk Scorecard Results**. Target long-term incentive award amounts are also subject to downward adjustment of up to 100% based on the risk scorecard results, which measure compliance with risk metrics and any unsatisfactory risk assessments. All negative adjustments under the guidelines are cumulative, and no positive adjustment may be applied if the risk scorecard result is lower than acceptable risk tolerance.

In February 2013, the HRC Committee granted 2013 long-term incentive awards in the form of PSUs that will be earned between 0-125% based on our return on risk-weighted assets over each year of a three-year performance period. In determining the amounts of those awards, the HRC Committee applied the adjustment process described above to the following initial target long-term incentive awards for each named executive officer: $3,600,000 for Mr. Hassell; $1,605,000 for Mr. Gibbons; $4,005,000 for Mr. Arledge; $1,605,000 for Mr. Rogan and $1,605,000 for Ms. Peetz. In particular, the HRC Committee made the following adjustments based on 2012 results:

- **Performance Results**. The initial target awards were not adjusted based on 2012 performance results. Although Ms. Peetz' performance result was less than 90%, the HRC Committee determined that a downward adjustment was not appropriate given her achievements despite the difficult economic circumstances and her change in position to President of the company effective January 2013.
- **Strategic Objectives.** The initial target award for Mr. Rogan was adjusted by 106% to further align him with the success of our ongoing regulatory compliance and risk management initiatives, which have substantially increased in complexity and significance in the current environment.
- **Risk Scorecard Results**. The initial target awards were not adjusted on this basis.

As a result of the above adjustments, the HRC Committee granted 2013 equity awards for each of the named executive officers as follows: $3,600,000 for Mr. Hassell; $1,605,000 for Mr. Gibbons; $4,005,000 for Mr. Arledge; $1,700,000 for Mr. Rogan and $1,605,000 for Ms. Peetz.

OTHER COMPENSATION AND BENEFITS ELEMENTS

Retirement and Deferred Compensation Plans

As a result of the merger of Bank of New York and Mellon in 2007, we assumed by operation of law certain existing arrangements affecting the provision of retirement benefits to our named executive officers. We also maintain qualified and non-qualified defined benefit and defined contribution plans in which eligible employees, including our named executive officers, may participate. Our named executive officers are eligible to participate in deferred compensation plans, which enable eligible employees to defer the payment of taxes on a portion of their compensation until a later date. Details relating to these arrangements and plans are included under "2012 Pension Benefits" and "2012 Nonqualified Deferred Compensation" below.

Perquisites

In addition to the benefits that we offer to all our employees, we provide modest perquisites for our named executive officers. We believe that the benefits and perquisites help us attract and retain a talented leadership team and are reasonable in comparison to market practices. The following perquisites were provided in 2012 and, other than car and driver, are substantially unchanged from 2011:

Perquisites	Description
Car and Driver	Each named executive officer has access to a company pool car and driver for security purposes and to allow for more effective use of such officer's travel time. In 2012, in an effort to make more efficient use of company resources, we moved from individually assigned drivers to a pool of cars and drivers available for use by our named executive officers and other executives.
Executive Life Insurance	The named executive officers are covered by certain life insurance plans, which are described in further detail in the footnotes to the Summary Compensation Table below.
Personal Use of Corporate Aircraft	Company aircraft are intended to be used by employees, directors and authorized guests primarily for business purposes. Our aircraft usage policy provides that the CEO should make prudent use of the company aircraft for security purposes and to make the most efficient use of his time. The HRC Committee receives an aircraft usage report on a semi-annual basis. In 2012, none of our named executive officers used company aircraft for non-business purposes.
Enhanced Matching of Charitable Gifts	The company maintains a matching gift program for gifts to eligible charities. All of our employees are eligible to participate in the matching gift program, but our named executive officers are eligible for an additional match of up to $30,000.

We do not provide financial planning services, personal cars, parking, supplemental long-term disability insurance, medical physical examinations, personal use of club memberships, home security or personal liability insurance perquisites.

ADDITIONAL COMPENSATION POLICIES AND CONSIDERATIONS

STOCK OWNERSHIP GUIDELINES

The HRC Committee believes that stock ownership is one of the most direct ways to align the long-term interests of the named executive officers with the long-term interests of our stockholders. Under the company's stock ownership guidelines, each named executive officer is required to own a number of shares of our common stock with a value equal to a multiple of base salary within five years of becoming a member of our Executive Committee. The officer cannot sell or transfer to a third party any shares until he or she achieves the ownership guideline. In 2012, the HRC Committee reviewed these guidelines and determined to increase the multiple applicable to our CEO from 5-times to 6-times base salary, effective in 2013; our other named executive officers are subject to a 4-times base salary ownership guideline.

All of our named executive officers meet the stock ownership guidelines. For purposes of determining their ownership stake, we include shares owned directly, shares held in our employee stock purchase and retirement plans and shares held in certain trusts. We include 50% of unvested restricted stock and RSUs that do not have performance conditions or for which the applicable performance conditions have been met. Unearned performance shares, awards that remain subject to performance conditions and stock options are not counted toward compliance with the stock ownership guidelines.

In addition, under the company's stock retention guideline, named executive officers must retain 50% of the net after-tax shares received from exercises of stock options and vesting of restricted stock and RSUs awarded after January 1, 2008. Over time, this requirement significantly increases the ownership stake of our senior executives beyond the stock ownership guideline discussed above. Provided that the named executive officer continues to comply with the stock ownership guidelines, sales are permitted commencing five years before normal retirement (which, for these purposes, we define as age 65) to allow for diversification.

NO HEDGING POLICIES

Our named executive officers are restricted from entering into hedging transactions with their company stock under various policies that we have adopted. These policies prohibit our named executive officers from engaging in short sales of our stock, from purchasing our stock on margin and from buying or selling any puts, calls or other options involving our securities.

CLAWBACK AND RECOUPMENT POLICY

In addition to forfeiture provisions based on risk outcomes during the vesting period, the company has a comprehensive recoupment policy that applies to equity awards granted to our executives, including the named executive officers, and is administered by the HRC Committee. Under the policy, the company may cancel all or any portion of unvested equity awards made after the adoption of the policy and require repayment of any shares of common stock (or values thereof) or amounts that were acquired from the award if:

- the executive directly or indirectly engages in conduct, or it is discovered that the executive engaged in conduct, that is materially adverse to the interests of the company, including failure to comply with the company's rules or regulations, fraud or conduct contributing to any financial restatements or irregularities;
- during the course of the executive's employment, the executive engages in solicitation and/or diversion of customers or employees and/or competition with the company;
- following termination of the executive's employment with the company for any reason, the executive violates any post-termination obligations or duties owed to the company or any agreement with the company; or
- any compensation otherwise payable or paid to the executive is required to be forfeited and/or repaid to the company pursuant to applicable regulatory requirements.

In addition, the company has a cash recoupment policy, which provides that the company may claw back some or all of a cash incentive award within three years of the award date if, during the award performance period, the employee (including the named executive officers) is found to have engaged in fraud or directly or indirectly to have contributed to a financial restatement or other irregularity. The company continues to monitor regulatory requirements as may be applicable to its recoupment policies.

LIMITED SEVERANCE BENEFITS

Stockholder Approval of Future Senior Officer Severance Arrangements

In July 2010, the Board adopted a policy regarding stockholder approval of future senior officer severance arrangements. The policy provides that the company will not enter into a future severance arrangement with a senior executive that provides for severance benefits (as defined in the policy) in an amount exceeding 2.99 times the sum of annual base salary and target bonus for the year of termination (or, if greater, for the year before the year of termination), unless such arrangement receives the approval of our stockholders.

Executive Severance Plan

In July 2010, we adopted The Bank of New York Mellon Corporation Executive Severance Plan, which provides severance benefits as described in the following table:

Reason for termination	Severance payment	Bonus	Benefit Continuation	Outplacement services	Tax gross-up
By the company without "cause"	2 times base salary	Pro-rata annual bonus for the year of termination	Two years	One year	None
By the company without "cause" or by the executive for "good reason" within two years following a "change in control"	2 times base salary and 2 times target annual bonus	Pro-rata target annual bonus for the year of termination	Two years	One year	None

Plan participants are selected by the HRC Committee and include each of our named executive officers. In order to receive benefits under the plan, the participant must sign a release and waiver of claims in favor of the company and agree not to solicit our customers and employees for one year. If any payment under the plan would cause a participant to become subject to the excise tax imposed under Section 4999 of the Internal Revenue Code, then payments and benefits will be reduced to the amount that would not cause the participant to be subject to the excise tax if such a reduction would put the participant in a better after-tax position than if the participant were to pay the tax. In addition, the amount of payments and benefits that are payable under the plan will be reduced to the extent necessary to comply with our policy regarding stockholder approval of future senior officer severance arrangements as described above.

SECTION 162(M) TAX CONSIDERATIONS

Generally, Section 162(m) of the Internal Revenue Code of 1986, as amended, which we refer to as the "IRC," imposes a $1 million limit on the amount that a public company may deduct for compensation paid to its CEO and three other most highly compensated officers each year. This limitation does not apply to "qualifying performance-based" compensation as defined in the IRC. We generally design our compensation programs so that compensation paid to the named executive officers can qualify for available income tax deductions. The HRC Committee believes, however, that stockholders' interests may best be served by offering compensation that is not fully deductible, where appropriate, to attract, retain and motivate talented executives. Accordingly, the HRC Committee has discretion to authorize compensation that does not qualify for income tax deductibility.

REPORT OF THE HUMAN RESOURCES AND COMPENSATION COMMITTEE

The HRC Committee has reviewed and discussed the foregoing Compensation Discussion and Analysis with management. On the basis of such review and discussions, the HRC Committee recommended to the Board of Directors that the Compensation Discussion and Analysis be included in the company's annual report on Form 10-K and this proxy statement.

By: The Human Resources and Compensation Committee

Samuel C. Scott III, Chairman
Ruth E. Bruch
Edmund F. "Ted" Kelly
Richard J. Kogan
Michael J. Kowalski
Wesley W. von Schack

SUMMARY COMPENSATION TABLE

The following table shows the compensation of our principal executive officer, our principal financial officer and the three most highly compensated executive officers (other than our principal executive officer and principal financial officer) for 2012 in accordance with SEC rules.

Name and Principal Position	Year	Salary	Bonus	Stock Awards(2)	Option Awards(2)	Non-Equity Incentive Plan Compensation	Change in Pension Value and Nonqualified Deferred Compensation Earnings(3)	All Other Compensation (4)	Total Compensation
GERALD L. HASSELL	2012	$1,000,000	$ 0	$6,250,748	$2,389,266	$ 3,045,938	$ 978,595	$ 140,611	$ 13,805,158
Chairman, President and Chief Executive Officer(1)	2011	$ 866,667	$ 0	$2,490,064	$2,514,414	$ 4,000,000	$ 2,218,704	$ 260,411	$ 12,350,260
	2010	$ 800,000	$ 0	$2,709,251	$2,679,949	$ 3,272,500	$ 1,506,276	$ 211,126	$ 11,179,102
THOMAS P. “TODD” GIBBONS	2012	$ 650,000	$ 0	$1,848,009	$ 706,376	$ 1,968,169	$ 826,027	$ 112,579	$ 6,111,160
Vice Chairman and Chief Financial Officer	2011	$ 650,000	$ 0	$1,604,181	$1,619,856	$ 1,780,000	$ 1,006,638	$ 154,313	$ 6,814,988
	2010	$ 650,000	$ 0	$1,641,184	$1,623,424	$ 2,050,000	$ 636,918	$ 170,714	$ 6,772,240
CURTIS Y. ARLEDGE	2012	$ 600,000	$ 0	$3,695,290	$1,412,477	$ 6,202,735	$ 0	$ 163,111	$ 12,073,613
Vice Chairman and CEO of Investment	2011	$ 600,000	$ 0	$6,081,530	$5,173,881	$ 6,043,400	$ 0	$ 156,866	$ 18,055,677
Management(5)	2010	$ 105,001	$3,000,000	$8,708,006	$ 0	$ 0	$ 0	$ 30,467	$ 11,843,474
BRIAN G. ROGAN	2012	$ 650,000	$ 0	$1,848,009	$ 706,376	$ 1,968,169	$ 857,863	$ 147,604	$ 6,178,021
Vice Chairman and Chief Risk Officer	2011	$ 650,000	$ 0	$1,604,181	$1,619,856	$ 1,675,000	$ 1,051,798	$ 160,271	$ 6,761,106
	2010	$ 631,250	$ 0	$1,484,882	$1,468,813	$ 2,050,000	$ 650,881	$ 160,935	$ 6,446,761
KAREN B. PEETZ	2012	$ 550,000	$ 0	$1,875,216	$ 716,777	$ 1,543,069	$ 149,654	$ 18,729	$ 4,853,445
President(6)	2011	$ 500,000	$ 0	$1,316,862	$1,329,733	$ 1,320,450	$ 160,266	$ 27,250	$ 4,654,561

(1) Mr. Hassell also served as a director in 2010, 2011 and 2012. He did not receive any additional compensation for this service. Effective January 1, 2013, Ms. Peetz was appointed as President of the company and, accordingly, Mr. Hassell no longer serves in that position.

(2) Computed in accordance with FASB ASC Topic 718, which we refer to as “ASC 718,” using the valuation methodology for equity awards set forth in footnote 18 of the consolidated financial statements in our annual report on Form 10-K for the year ended December 31, 2012, in footnote 18 of the consolidated financial statements in our annual report on Form 10-K for the year ended December 31, 2011 and in footnote 19 of the consolidated financial statements in our annual report on Form 10-K for the year ended December 31, 2010.

(3) The amount disclosed in this column for each year represents the amount of increase in the present value of the executive’s accumulated pension benefit. The total amounts disclosed for 2012 for Messrs. Hassell, Gibbons and Rogan and Ms. Peetz consist solely of the increase in the present value of the accumulated benefit for each individual, as there are no above-market nonqualified deferred compensation earnings. Present values are determined in accordance with the assumptions used for purposes of measuring our pension obligations under FASB ASC 715 (formerly SFAS No. 87) as of December 31, 2012, including a discount rate of 4.25%, with the exception that benefit payments are assumed to commence at the earliest age at which unreduced benefits are payable.

The total amounts disclosed for 2011 for Messrs. Hassell, Gibbons and Rogan and Ms. Peetz consist solely of the increase in the present value of the accumulated benefit for each individual, as there are no above-market nonqualified deferred compensation earnings.

The total amounts disclosed for 2010 for Messrs. Hassell, Gibbons and Rogan consist solely of the increase in the present value of the accumulated benefit for each individual, as there are no above-market nonqualified deferred compensation earnings.

(4) The following table sets forth a detailed breakdown of the items which comprise "All Other Compensation" for 2012:

Name	Perquisites and Other Personal Benefits(a)	Contributions to Defined Contribution Plans(b)	Insurance Premiums(c)	Total
GERALD L. HASSELL	$ 113,461	$ 12,500	$ 14,650	$140,611
THOMAS P. "TODD" GIBBONS	$ 89,979	$ 12,500	$ 10,100	$112,579
CURTIS Y. ARLEDGE	$ 131,236	$ 31,875	$ 0	$163,111
BRIAN G. ROGAN	$ 127,679	$ 12,500	$ 7,425	$147,604
KAREN B. PEETZ	$ 6,229	$ 12,500	$ 0	$ 18,729

(a) The following is a description of the items comprising "Perquisites and Other Personal Benefits" for each named executive officer: Mr. Hassell: use of company car and driver ($83,461), enhanced charitable gift match ($30,000); Mr. Gibbons: use of company car and driver ($76,479), enhanced charitable gift match ($13,500); Mr. Arledge: use of company car and driver ($123,176), enhanced charitable gift match ($8,060); Mr. Rogan: use of company car and driver ($112,679), enhanced charitable gift match ($15,000); Ms. Peetz: use of company car and driver and non-company car service ($6,229).

Each amount disclosed in the table above as a perquisite and other personal benefit represents the aggregate incremental cost to us of the particular item being described. The dollar amounts identified in connection with use of the company pool car and driver reflect the individual's share of the aggregate cost associated with personal use of the vehicles and drivers. The amount included for Ms. Peetz's use of non-company car service reflects the actual cost. The dollar amounts identified in connection with the enhanced charitable gift match represent matching contributions to eligible charities made by the company in excess of matching contributions provided for other employees under the company's gift matching programs.

(b) The amounts identified in the "Contributions to Defined Contribution Plans" column represents matching contributions under our 401(k) plans and, for Mr. Arledge, non-discretionary company contributions under our 401(k) plan and The Bank of New York Mellon Corporation Defined Contribution IRC Section 401(a)(17) Plan, which we refer to as the "BNY Mellon 401(k) Benefits Restoration Plan." See "2012 Nonqualified Deferred Compensation" below on page 49 for more details regarding the BNY Mellon 401(k) Benefits Restoration Plan.

(c) The amounts identified for Messrs. Hassell, Gibbons and Rogan represent taxable payments made by us for universal life insurance policies.

(5) The value of Stock Awards for 2011 includes a $3,000,000 restricted stock award that was granted in 2011 for 2010 and the value of Option Awards for 2011 also includes a $2,000,000 stock option award that was granted in 2011 for 2010, in each case, pursuant to the letter agreement entered into between Mr. Arledge and the company at the time of his employment.

(6) Ms. Peetz was appointed as President of the company effective January 1, 2013. During 2012, Ms. Peetz served as Vice Chairman and CEO of Financial Markets and Treasury Services. Because Ms. Peetz was only a named executive officer for 2012 and 2011, no disclosure is included as to Ms. Peetz for 2010.

2012 GRANTS OF PLAN-BASED AWARDS TABLE

The following table shows the details concerning the grant of any non-equity incentive compensation and equity-based compensation to each named executive officer during 2012. All non-equity incentive compensation grants were made under The Bank of New York Mellon Executive Incentive Compensation Plan. All equity awards were made under The Bank of New York Mellon Long-Term Incentive Plan.

				Estimated Possible Payouts Under Non-Equity Incentive Plan Awards(1)						
Name	Award Type	Grant Date	Date HRC Committee took Action to Grant Award	Thres-hold ($)	Target ($)	Maximum ($)	All Other Stock Awards: Number of Shares of Stock or Units (#)(2)	All Other Option Awards: Number of Securities Underlying Options (#)(3)	Exercise or Base Price of Option Awards ($/Sh)	Grant Date Fair Value of Stock and Option Awards(4)
GERALD L. HASSELL	EICP	—	—	—	$4,500,000	$ 7,481,250	—	—	—	—
	Stock Options	2/23/2012	2/23/2012	—	—	—	—	434,412	22.03	$ 2,389,266
	Restricted Stock Units	2/23/2012	2/23/2012	—	—	—	283,738	—	—	$ 6,250,748
THOMAS P. "TODD" GIBBONS	EICP	—	—	—	$2,837,000	$ 4,610,125	—	—	—	—
	Stock Options	2/23/2012	2/23/2012	—	—	—	—	128,432	22.03	$ 706,376
	Restricted Stock Units	2/23/2012	2/23/2012	—	—	—	83,886	—	—	$ 1,848,009
CURTIS Y. ARLEDGE	EICP	—	—	—	$8,375,000	$13,630,313	—	—	—	—
	Stock Options	2/23/2012	2/23/2012	—	—	—	—	256,814	22.03	$ 1,412,477
	Restricted Stock Units	2/23/2012	2/23/2012	—	—	—	167,739	—	—	$ 3,695,290
BRIAN G. ROGAN	EICP	—	—	—	$2,837,000	$ 4,610,125	—	—	—	—
	Stock Options	2/23/2012	2/23/2012	—	—	—	—	128,432	22.03	$ 706,376
	Restricted Stock Units	2/23/2012	2/23/2012	—	—	—	83,886	—	—	$ 1,848,009
KAREN B. PEETZ	EICP	—	—	—	$2,350,000	$ 3,824,625	—	—	—	—
	Stock Options	2/23/2012	2/23/2012	—	—	—	—	130,323	22.03	$ 716,777
	Restricted Stock Units	2/23/2012	2/23/2012	—	—	—	85,121	—	—	$ 1,875,216

(1) Represents target and maximum amounts that were targeted to be paid for performance during 2012 under The Bank of New York Mellon Corporation Executive Incentive Compensation Plan. The award was made 75% in the form of cash and 25% in the form of restricted stock units that vest in equal installments over three years. These amounts are subject to the condition that the company achieve a minimum Basel I Tier 1 common capital ratio of 9% as of December 31, 2012, which was satisfied. There was no threshold payout under this plan for 2012.

(2) Represents restricted stock units granted as part of the named executive officer's annual long-term incentive award. Restricted stock units have transfer restrictions until they vest and, upon vesting, will be paid out in shares of BNY Mellon common stock. Restricted stock units cannot be sold during the period of restriction. During this period, dividend equivalents on the restricted stock units are paid to the executives. These units will vest in equal installments over three years if the executive remains employed by us. These grants were subject to the conditions that the company achieve a minimum Basel I Tier 1 common capital ratio of 9% as of December 31, 2012, which was satisfied. In the event that, at the end of a vesting calendar year, the company's return on tangible common equity is less than 10% or the grantee is directly responsible for a business unit and such business unit incurs a net operating loss for such year, 15% of any unvested units will be forfeited.

(3) Represents stock options granted as part of the named executive officer's annual long-term incentive award. Stock options were granted with an exercise price equal to the fair market value on the date of grant and vest in equal installments over four years if the executive remains employed by us. The options will expire 10 years after the grant date if the executive remains employed by us. In the event that, at the end of a vesting calendar year, the company's return on tangible common equity is less than 10% or the grantee is directly responsible for a business unit and such business unit incurs a net operating loss for such year, 15% of any unvested units will be forfeited.

(4) The aggregate grant date fair value of awards presented in this column is calculated in accordance with ASC 718.

OUTSTANDING EQUITY AWARDS AT FISCAL YEAR-END 2012

The following table shows the details concerning outstanding options (exercisable and unexercisable), and the number and value of any unvested or unearned stock awards outstanding as of December 31, 2012 for each named executive officer. The market value of any unvested or unearned awards as of December 31, 2012 is calculated based on $25.70 per share, the closing price of our common stock on the NYSE on December 31, 2012, the last trading day in 2012. The numbers have been rounded to the nearest whole dollar, share or unit, as applicable.

	Option Awards					Stock Awards	
		Number of Securities Underlying Unexercised Options (#)					
Name	Year of Option Grant	Exercisable	Unexercisable	Option Exercise Price ($)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested ($)
GERALD L. HASSELL	2003	353,775	—	$24.5200	2/11/2013	455,944(19)	$ 11,717,761
	2004	165,095	—	$35.0800	3/4/2014		
	2006	155,661	—	$37.0900	3/14/2016		
	2007	191,042	—	$40.4000	3/13/2017		
	2007	86,180	—	$42.8300	4/2/2017		
	2007	471,700	—	$43.9300	6/29/2017		
	2007	35,896	—	$44.5900	7/23/2017		
	2008	380,916	—	$42.3100	3/10/2018		
	2009	247,197	82,396(1)	$18.0200	3/9/2019		
	2010	159,902	159,901(2)	$30.2500	3/15/2020		
	2011	73,780	221,339(3)	$30.1300	2/23/2021		
	2012	—	434,412(4)	$22.0300	2/22/2022		
THOMAS P. “TODD” GIBBONS	2003	141,510	—	$24.5200	2/11/2013	191,382(20)	$ 4,918,517
	2004	117,925	—	$35.0800	3/4/2014		
	2005	127,359	—	$32.2100	3/9/2015		
	2006	127,359	—	$37.0900	3/14/2016		
	2007	79,022	—	$40.4000	3/13/2017		
	2007	43,161	—	$42.8300	4/2/2017		
	2007	16,320	—	$44.5900	7/23/2017		
	2008	184,380	—	$42.3100	3/10/2018		
	2008	38,152	—	$34.6300	7/21/2018		
	2009	136,746	45,582(5)	$18.0200	3/9/2019		
	2010	96,864	96,862(6)	$30.2500	3/15/2020		
	2011	47,531	142,593(7)	$30.1300	2/23/2021		
	2012	—	128,432(8)	$22.0300	2/22/2022		
CURTIS Y. ARLEDGE	2011	151,817	455,446(9)	$30.1300	2/23/2021	511,607(21)	$ 13,148,300
	2012	—	256,814(10)	$22.0300	2/22/2022		
BRIAN G. ROGAN	2003	212,265	—	$24.5200	2/11/2013	186,215(22)	$ 4,785,726
	2004	108,491	—	$35.0800	3/4/2014		
	2005	111,321	—	$32.2100	3/9/2015		
	2006	127,359	—	$37.0900	3/14/2016		
	2007	79,890	—	$40.4000	3/13/2017		
	2007	40,472	—	$42.8300	4/2/2017		
	2007	15,096	—	$44.5900	7/23/2017		
	2008	162,092	—	$42.3100	3/10/2018		
	2008	14,674	—	$34.6300	7/21/2018		
	2009	111,765	37,253(11)	$18.0200	3/9/2019		
	2000	87,638	87,638(12)	$30.2500	3/15/2020		
	2001	47,531	142,593(13)	$30.1300	2/23/2021		
	2012	—	128,432(14)	$22.0300	2/22/2022		
KAREN B. PEETZ	2006	9,434	—	$37.0900	3/14/2016	163,274(23)	$ 4,196,142
	2007	52,102	—	$40.4000	3/13/2017		
	2007	24,198	—	$42.8300	4/2/2017		
	2007	8,964	—	$44.5900	7/23/2017		
	2008	109,412	—	$42.3100	3/10/2018		
	2008	17,609	—	$34.6300	7/21/2018		
	2009	78,894	26,295(15)	$18.0200	3/9/2019		
	2010	61,502	61,499(16)	$30.2500	3/15/2020		
	2011	39,018	117,054(17)	$30.1300	2/23/2021		
	2012	—	130,323(18)	$22.0300	2/22/2022		

(1) 82,396 options vest on March 9, 2013.

(2) 79,951 options vest on March 16, 2013 and 79,950 options vest on March 16, 2014.

(3) 73,780 options vested on February 24, 2013, 73,780 options vest on February 24, 2014 and 73,779 options vest on February 24, 2015.

(4) 108,603 options vested on February 23, 2013, 108,603 options vest on February 23, 2014, 108,603 options vest on February 23, 2015 and 108,603 options vest on February 23, 2016.

(5) 45,582 options vest on March 9, 2013.

(6) 48,432 options vest on March 16, 2013 and 48,430 options vest on March 16, 2014.

(7) 47,531 options vested on February 24, 2013, 47,531 options vest on February 24, 2014 and 47,531 options vest on February 24, 2015.

(8) 32,108 options vested on February 23, 2013, 32,108 options vest on February 23, 2014, 32,108 options vest on February 23, 2015 and 32,108 options vest on February 23, 2016.

(9) 151,817 options vested on February 24, 2013, 151,817 options vest on February 24, 2014 and 151,812 options vest on February 24, 2015.

(10) 64,204 options vested on February 23, 2013, 64,204 options vest on February 23, 2014, 64,204 options vest on February 23, 2015 and 64,202 options vest on February 23, 2016.

(11) 37,253 options vest on March 9, 2013.

(12) 43,819 options vest on March 16, 2013 and 43,819 options vest on March 16, 2014.

(13) 47,531 options vested on February 24, 2013, 47,531 options vest on February 24, 2014 and 47,531 options vest on February 24, 2015.

(14) 32,108 options vested on February 23, 2013, 32,108 options vest on February 23, 2014, 32,108 options vest on February 23, 2015 and 32,108 options vest on February 23, 2016.

(15) 26,295 options vest on March 9, 2013.

(16) 30,751 options vest on March 16, 2013 and 30,748 options vest on March 16, 2014.

(17) 39,018 options vested on February 24, 2013, 39,018 options vest on February 24, 2014 and 39,018 options vest on February 24, 2015.

(18) 32,581 options vested on February 23, 2013, 32,581 options vest on February 23, 2014, 32,581 options vest on February 23, 2015 and 32,580 options vest on February 23, 2016.

(19) 89,562 shares vest on March 16, 2013, 82,644 shares vest on February 24, 2014, 94,580 shares vest on February 23, 2013, 94,580 shares vest on February 23, 2014 and 94,578 shares vest on February 23, 2015.

(20) 54,254 shares vest on March 16, 2013, 53,242 shares vest on February 24, 2014, 27,962 shares vest on February 23, 2013, 27,962 shares vest on February 23, 2014 and 27,962 shares vest on February 23, 2015.

(21) 55,913 shares vested on February 23, 2013, 31,786 shares vested on February 24, 2013, 86,906 shares vest on November 1, 2013, 55,913 shares vest on February 23, 2014, 138,270 shares vest on February 24, 2014, 86,906 shares vest on November 1, 2014 and 55,913 shares vest on February 23, 2015.

(22) 27,962 shares vested on February 23, 2013, 49,087 shares vest on March 16, 2013, 27,962 shares vest on February 23, 2014, 53,242 shares vest on February 24, 2014 and 27, 962 shares vest on February 23, 2015.

(23) 28,374 shares vested on February 23, 2013, 34,447 shares vest on March 16, 2013, 28,374 shares vest on February 23, 2014, 43,706 shares vest on February 24, 2014 and 28,373 shares vest on February 23, 2015.

2012 OPTION EXERCISES AND STOCK VESTED

The following table provides information concerning aggregate exercises of stock options and vesting of stock awards, including restricted stock, restricted share units and similar instruments, during 2012 for each named executive officer.

	Option Awards		Stock Awards	
Name	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise ($)	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting ($)
Gerald L. Hassell	—	$ —	92,302	$ 2,069,411
Thomas P. “Todd” Gibbons	—	$ —	51,060	$ 1,144,765
Curtis Y. Arledge	—	$ —	118,693	$ 2,870,165
Brian G. Rogan	—	$ —	41,732	$ 935,631
Karen B. Peetz	—	$ —	29,458	$ 660,448

2012 PENSION BENEFITS

The following table provides information with respect to each plan that provides for specified payments and benefits to the named executive officers following, or in connection with, retirement (other than defined contribution plans).

Name(1)	Plan Name	Number of Years Credited Service (#)	Present Value of Accumulated Benefit ($)(2)	Payments During Last Fiscal Year ($)
Gerald L. Hassell	BNY Mellon Tax-Qualified Retirement Plan	36.25	$ 1,620,299	$ —
	Legacy BNY Excess Plan	36.25	$ 4,416,702	$ —
	Legacy BNY SERP	36.25	$ 12,022,980	$ —
Thomas P. "Todd" Gibbons	BNY Mellon Tax-Qualified Retirement Plan	25.58	$ 1,156,636	$ —
	Legacy BNY Excess Plan	25.58	$ 1,916,391	$ —
	Legacy BNY SERP	25.58	$ 2,708,338	$ —
Brian G. Rogan	BNY Mellon Tax-Qualified Retirement Plan	30.17	$ 1,338,504	$ —
	Legacy BNY Excess Plan	30.17	$ 1,722,714	$ —
	Legacy BNY SERP	30.17	$ 2,870,740	$ —
Karen B. Peetz	BNY Mellon Tax-Qualified Retirement Plan	13.75	$ 512,049	$ —
	Legacy BNY Excess Plan	13.75	$ 321,431	$ —

(1) Mr. Arledge is not included in the table because he does not participate in any plan that provides for specified payments and benefits (other than defined contribution plans).

(2) The present values shown above are based on benefits earned as of December 31, 2012 under the terms of the various plans as summarized below. Present values are determined in accordance with the assumptions used for purposes of measuring our pension obligations under FASB ASC 715 (formerly SFAS No. 87) as of December 31, 2012, including a discount rate of 4.25%, with the exception that benefit payments are assumed to commence at the earliest age at which unreduced benefits are payable.

BNY Mellon Retirement Plans

Effective January 1, 2009, The Bank of New York Mellon Corporation Pension Plan, which we refer to as the "BNY Mellon Tax-Qualified Retirement Plan," was amended to change the benefit formula for participants under age 50 as of December 31, 2008 and for new participants to a cash balance formula for service earned on and after January 1, 2009. Plan participants who were age 50 or older as of December 31, 2008 continue to earn benefits under the provisions of the legacy plan in which they participated as of that date. Effective January 1, 2011, the plan was amended further to reduce future benefit accruals and limit participation to those persons participating in the plan as of December 31, 2010.

In 2012, Messrs. Hassell, Gibbons and Rogan and Ms. Peetz participated in the BNY Mellon Tax-Qualified Retirement Plan and a pension benefits restoration plan, which we refer to as the "Legacy BNY Excess Plan." Messrs. Hassell, Gibbons and Rogan also participated in a supplemental executive retirement plan, which we refer to as the "Legacy BNY SERP." Each of Messrs. Hassell, Gibbons and Rogan and Ms. Peetz were all over age 50 as of December 31, 2008 and therefore continue to earn benefits under the provisions of the legacy plans in which they participate. Mr. Arledge does not participate in any of these legacy plans.

BNY Mellon Tax-Qualified Retirement Plan — Legacy BNY Provisions. The Legacy BNY Tax-Qualified Retirement Plan, which we refer to as the "Legacy BNY Plan," formula is a career average pay formula subject to IRC limits on eligible pay for determining benefits. Benefits are based on eligible base pay (maximum of $250,000 in 2012). Employees who participated in the Legacy BNY Plan prior to January 1, 2006 may choose between a monthly benefit and a lump sum at retirement, while other participants will receive monthly benefits at retirement.

Legacy BNY Excess Plan. This plan is an unfunded nonqualified plan designed to provide the same benefit to Legacy BNY employees as under the BNY Mellon Tax-Qualified Retirement Plan to the extent their benefits are limited under such plan as a result of IRC limits on accrued benefits and eligible base pay. Benefits are paid in a lump sum.

Legacy BNY SERP. The Legacy BNY SERP is an unfunded nonqualified plan that provides benefits according to a benefit formula similar to that of the BNY Mellon Tax-Qualified Retirement Plan benefit formula but includes an annual bonus (capped at 100% of base salary after 2005) for senior executives who were selected to participate in this plan by Bank of New York's board of directors prior to July 8, 2003. Benefits are paid in a lump sum. Participants are entitled to benefits in this plan only if they terminate service on or after age 60. The Legacy BNY SERP is closed to new participants.

Beginning with 2006, each of the plans generally provides benefits under a career average pay formula, rather than the final average pay formula under which benefits were based prior to 2006. In addition to the formula change, changes were also made to the Legacy BNY SERP that further limit future benefits by capping the amount of eligible pay used to calculate benefits. Because Messrs. Hassell, Gibbons and Rogan and Ms. Peetz have attained at least age 55, they are each eligible for immediate retirement under the BNY Mellon Tax-Qualified Retirement Plan and the Legacy BNY Excess Plan. Unreduced benefits are payable under these plans at age 60, or at age 57 with 20 years of service. Mr. Hassell is currently entitled to an unreduced benefit from these plans. Messrs. Gibbons and Rogan are entitled to unreduced benefits from these plans at age 57 and Ms. Peetz at age 60. Since Mr. Hassell is over age 60, he is also entitled to an unreduced benefit from the Legacy BNY SERP.

Beginning January 1, 2006, benefits accrued for all three plans are equal to 1% (increased to 1.1% effective January 1, 2009 and with respect to the BNY Mellon Tax-Qualified Retirement Plan and the Legacy BNY Excess Plan, decreased to 0.9%, effective January 1, 2011) of eligible pay earned after 2005. Benefits accrued before 2006 are based on a final average pay formula and service as of December 31, 2005. The prior accrued benefit is indexed at a rate of 1% per year. For the prior accrued benefit, the BNY Mellon Tax-Qualified Retirement Plan and the Legacy BNY Excess Plan use a five-year average period, whereas the Legacy BNY SERP was based on a three-year average period. Benefits under each of the plans are provided solely for service at Bank of New York or with us.

2012 NONQUALIFIED DEFERRED COMPENSATION

The following table provides information with respect to each defined contribution or other plan that provides for nonqualified deferred compensation in which the named executive officers participate.

Name(1)	Executive Contributions in Fiscal Year 2012	Registrant Contributions in Fiscal Year 2012	Aggregate Earnings in Fiscal Year 2012	Aggregate Withdrawals/Distributions	Aggregate Balance at End of Fiscal Year 2012
Curtis Y. Arledge	$ —	$ 14,375(2)	$ —(3)	$ —	$ 14,375(4)
Thomas P. "Todd" Gibbons	$ —	$ —	$ 80,392	$ —	$ 1,082,070(5)

(1) Messrs. Hassell and Rogan and Ms. Peetz are not included in the table, because, as of December 31, 2012, none of them had a balance in or made any contributions to or withdrawals from any nonqualified deferred compensation plan of the company.

(2) Represents company contributions to Mr. Arledge pursuant to the BNY Mellon 401(k) Benefits Restoration Plan for the 2011 and 2012 fiscal year.

(3) The BNY Mellon 401(k) Benefits Restoration Plan was adopted in December 2012, and Mr. Arledge's account was not credited with any amounts until early 2013. Accordingly, Mr. Arledge did not receive any interest or other earnings in 2012.

(4) These amounts are included in the All Other Compensation column of the Summary Compensation Table on page 43.

(5) Mr. Gibbons contributed $1,025,000 to The Bank of New York Mellon Corporation Deferred Compensation Plan for Employees, which we refer to as the BNY Mellon Deferred Compensation Plan, in 2011. This amount was included in the Non-Equity Incentive Plan Compensation column of the Summary Compensation Table for 2010 on page 43. The account had negative earnings of $23,322 in 2011, resulting in a balance of $1,001,678 at year-end 2011.

BNY Mellon 401(k) Benefits Restoration Plan. On December 20, 2012, the company adopted the BNY Mellon 401(k) Benefits Restoration Plan, which is a nonqualified plan designed for the purpose of providing deferred compensation on an unfunded basis for eligible employees. The deferred compensation provided under the BNY Mellon 401(k) Benefits Restoration Plan is intended to supplement the benefit provided under the BNY Mellon 401(k) Savings Plan, our 401(k) Plan, where the employee's retirement contributions under the 401(k) Plan are limited due to the maximums imposed on "qualified" plans by section 401(a)(17) of the Internal Revenue Code. Pursuant to the BNY Mellon 401(k) Benefits Restoration Plan, we set up a notional account that is credited with an amount, if any, of company matching contributions that would have been credited to each eligible employee's 401(k) Plan account absent those tax limitations, including for prior years in which the BNY Mellon 401(k) Benefits Restoration Plan was not yet in effect. The amounts credited to the notional accounts generally vest after three years of service, as defined and calculated under the 401(k) Plan. As of December 31, 2012, Mr. Arledge was the only named executive officer who participated in the BNY Mellon 401(k) Benefits Restoration Plan.

BNY Mellon Deferred Compensation Plan. The company adopted the BNY Mellon Deferred Compensation Plan effective as of April 1, 2008 for deferrals of cash compensation earned by eligible employees of the company after March 31, 2008. The BNY Mellon Deferred Compensation Plan permits executives to defer receipt of cash bonus/incentive amounts above the Social Security wage base (which was $110,100 in 2012) until a later date while employed, upon retirement or after retirement not to exceed age 70. Changes are permitted to the payment election once annually; however, they must comply with the regulations contained in The American Jobs Creation Act of 2004. Deferred compensation may be paid in a lump sum or annual payments over two to 15 years. If an executive terminates employment prior to age 55, his benefit is paid in a lump sum shortly after termination. Investment alternatives, based on a selection of variable rate options, must be selected when the executive makes a deferral election and may be changed each quarter for future deferrals. Previously deferred amounts may generally be reallocated among the investment options at the beginning of each quarter. The plan is a nonqualified unfunded plan.

POTENTIAL PAYMENTS UPON TERMINATION OR CHANGE IN CONTROL

The following discussion summarizes any arrangements, agreements and policies of the company relating to potential payments upon termination or change in control.

Transition Agreement for Mr. Hassell

Bank of New York entered into a transition agreement with Mr. Hassell on June 25, 2007, effective as of the July 1, 2007 merger. This transition agreement expired on July 1, 2011, other than Mr. Hassell's special termination right which allowed him to terminate his employment for any reason any time after July 1, 2010 and to receive certain benefits. In December 2012, Mr. Hassell volunteered to waive these special termination rights and our Board agreed; accordingly, they are not included in the table below.

Change in Control and Severance Arrangements

In 2010, our Board adopted a "Policy Regarding Stockholder Approval of Future Senior Officer Severance Arrangements." The policy provides that the company will not enter into a future severance arrangement with a senior executive that provides for severance benefits (as defined) in an amount exceeding 2.99 times the sum of the senior executive's annual base salary and target bonus for the year of termination (or, if greater, for the year before the year of termination), unless such arrangement receives approval of the stockholders of the company.

Under The Bank of New York Mellon Corporation Executive Severance Plan, if an eligible participant is terminated by the company without "cause" (as defined in the plan), the participant is eligible to receive a severance payment equal to two times the participant's base salary for the year of termination (or, if greater, for the year before the year of termination), a pro-rata annual bonus for the year of termination, benefit continuation for two years and outplacement services for one year, provided the participant signs a release and waiver of claims in favor of the company and agrees not to solicit our customers and employees for one year. If a participant's employment is terminated by the company without cause or if the participant terminates his or her employment for "good reason" (as defined in the plan) within two years following a "change in control" (as defined in the plan), then instead of receiving the benefits described above, the participant is eligible to receive a severance payment equal to two times the sum of the participant's base salary and target annual bonus for the year of termination (or, if greater, for the year before the year of termination), a pro-rata target annual bonus for the year of termination, benefit continuation for two years and outplacement services for one year, subject to the participant signing a release and agreeing not to solicit our customers and employees for one year. If any payment under the plan would cause a participant to become subject to the excise tax imposed under section 4999 of the Internal Revenue Code, then payments and benefits will be reduced to the amount that would not cause the participant to be subject to the excise tax if such a reduction would put the participant in a better after tax position than if the participant were to pay the tax.

Payments and benefits that are payable under the plan will be reduced to the extent that the amount of such payments or benefits would exceed the amount permitted to be paid under the company's "Policy Regarding Stockholder Approval of Future Senior Officer Severance Arrangements" and such amounts are not approved by the company's stockholders in accordance with the policy.

Effect of Termination Events or Change in Control on Unvested Equity Awards

Equity awards granted to our named executive officers through December 31, 2012 were granted under (i) the 1999 and 2003 Long-Term Incentive Plans of The Bank of New York and (ii) The Bank of New York Mellon Corporation Long-Term Incentive Plan, as applicable. Each award is evidenced by an award agreement that sets forth the terms and conditions of the award and the effect of any termination event or a change in control on unvested equity awards. Accordingly, the effect of a termination event or change in control on outstanding equity awards varies by executive officer and type of award.

2012 Table of Potential Payments Upon Termination and Change in Control

The following table sets forth the details, on an executive by executive basis, of the estimated payments and benefits that would be provided to each named executive officer in the event that the executive's employment with us is terminated for any reason, including resignation or retirement, a termination by the company without cause, a termination in connection with a change in control, and death pursuant to the terms of the various agreements described above. The amounts included in the tables are based on the following:

- The termination event listed in the table is assumed to be effective as of December 31, 2012.
- The value of our common stock of $25.70 per share is based on the closing price of our common stock on the NYSE on December 31, 2012, the last trading day in 2012.
- The amounts shown in the table include the estimated potential payments and benefits that are payable as a result of the triggering event and do not include any previously earned and vested amounts that have accrued to the benefit of the named executive officer.

- The designation of an event as a resignation or a retirement is dependent upon an individual's age and the terms of the applicable plan or agreement.
- The designation of an event as a termination in connection with a change of control is dependent upon the termination being either an involuntary termination by the company without cause or a termination by the named executive officer for good reason or, in the case of equity awards, the satisfaction of certain age and service requirements or the receipt of severance payments.
- "Cash Compensation" includes payments of salary, bonus, severance or death benefit amounts payable in the applicable scenario.
- We have not included the present value of accumulated benefits under the 2012 Pension Benefits Table above. As noted in the applicable footnotes below, we have only included amounts by which a named executive officer's deferred compensation benefit or retirement benefit is enhanced by the triggering event.
- None of the named executive officers will receive a payment or benefit upon termination by the company for cause other than any previously earned and vested amounts that have accrued to the benefit of the named executive officer. Accordingly, we have not included a column for termination for cause.

The actual amounts that would be payable in these circumstances can only be determined at the time of the executive's separation, would include payments or benefits already earned or vested and may differ from the amounts set forth in the tables below. In some cases a release may be required before amounts would be payable. Although we may not have any contractual obligation to make a cash payment or provide other benefits to any named executive officer in the event of his or her death or upon the occurrence of any other event, a cash payment may be made or other benefit may be provided in our discretion. The incremental benefits that would be payable upon certain types of termination of employment as they pertain to the named executive officers are described below.

Named Executive Officer	Resignation/ Retirement	By Company without Cause	Termination in Connection with Change of Control	Death
Gerald L. Hassell				
Cash Compensation(1)	$ —	$ 6,061,250	$15,500,000	$ —
Health and Welfare Benefits	$ —	$ 38,353	$ 38,353	$ —
Retirement Benefits(2)	$ —	$ —	$ —	$ —
Deferred Compensation	$ —	$ —	$ —	$ —
Unvested Options(3)	$ 2,227,093	$ 2,227,093	$ 2,227,093	$ 2,227,093
Stock Awards(4)	$11,717,761	$11,717,761	$11,717,761	$11,717,761
Tax Gross-Up	$ —	$ —	$ —	$ —
TOTAL	$13,944,854	$20,044,457	$29,483,207	$13,944,854
Thomas P. "Todd" Gibbons				
Cash Compensation(1)	$ —	$ 3,924,225	$ 9,811,000	$ —
Health and Welfare Benefits	$ —	$ 2,885	$ 2,885	$ —
Retirement Benefits(2)	$ —	$ —	$ —	$ 3,312,101
Deferred Compensation	$ —	$ —	$ —	$ —
Unvested Options(3)	$ —	$ 585,742	$ 821,414	$ 821,414
Stock Awards(4)	$ 4,918,516	$ 4,918,516	$ 4,918,516	$ 4,918,516
Tax Gross-Up	$ —	$ —	$ —	$ —
TOTAL	$ 4,918,516	$ 9,431,368	$15,553,815	$ 9,052,031
Curtis Y. Arledge				
Cash Compensation(1)	$ —	$ 9,470,313	$26,325,000	$ —
Health and Welfare Benefits	$ —	$ 42,153	$ 42,153	$ —
Retirement Benefits(2)	$ —	$ —	$ —	$ —
Deferred Compensation	$ —	$ —	$ —	$ —
Unvested Options(3)	$ —	$ 471,258	$ 942,508	$ 942,508
Stock Awards(4)	$ —	$13,148,299	$13,148,299	$13,148,299
Tax Gross-Up	$ —	$ —	$ —	$ —
TOTAL	$ —	$23,132,023	$40,457,960	$14,090,807
Brian G. Rogan				
Cash Compensation(1)	$ —	$ 3,924,225	$ 9,811,000	$ —
Health and Welfare Benefits	$ —	$ 38,353	$ 38,353	$ —
Retirement Benefits(2)	$ —	$ —	$ —	$ 4,160,403
Deferred Compensation	$ —	$ —	$ —	$ —
Unvested Options(3)	$ —	$ 521,775	$ 757,447	$ 757,447
Stock Awards(4)	$ 4,785,724	$ 4,785,724	$ 4,785,724	$ 4,785,724
Tax Gross-Up	$ —	$ —	$ —	$ —
TOTAL	$ 4,785,724	$ 9,270,077	$15,392,524	$ 9,703,574
Karen B. Peetz				
Cash Compensation(1)	$ —	$ 3,257,425	$ 8,250,000	$ —
Health and Welfare Benefits	$ —	$ 38,138	$ 38,138	$ —
Retirement Benefits(2)	$ —	$ —	$ —	$ 33,186
Deferred Compensation	$ —	$ —	$ —	$ —
Unvested Options(3)	$ —	$ 441,090	$ 680,231	$ 680,231
Stock Awards(4)	$ 4,196,142	$ 4,196,142	$ 4,196,142	$ 4,196,142
Tax Gross-Up	$ —	$ —	$ —	$ —
TOTAL	$ 4,196,142	$ 7,932,795	$13,164,511	$ 4,909,559

(1) Amounts represented assume that no named executive officer received payment from any displacement program, supplemental unemployment plan or other separation benefit other than the executive severance plan. Amounts have been calculated in accordance with the terms of the applicable agreements. For terminations by the company without cause, amounts will be paid in installments over a two-year period following termination. For terminations in connection with a change of control, amounts will be paid in a lump sum.

(2) Amounts shown include amounts that would be payable automatically in a lump sum distribution upon death. For benefits that would not be payable automatically in a lump sum, the amount included is the present value based on the assumptions used for purposes of measuring pension obligations under FASB ASC 715 (formerly SFAS No. 87) as of December 31, 2012, including a discount rate of 4.25%. Amounts shown include only the amount by which a named executive officer's retirement benefit is enhanced as a result of termination, pursuant to, where applicable, required notices given after the existence of a right to payment. Information relating to the present value, whether the amounts are paid in a lump sum or on an annual basis and the duration of each named executive officer's accumulated retirement benefit can be found in "2012 Pension Benefits" on page 48 above. Accumulated retirement benefits would not be enhanced as a consequence of a termination due to the named executive officer's resignation/retirement.

(3) The value of Option Awards represents the difference between the closing price of our common stock on December 31, 2012 ($25.70) and the exercise price of all unvested options that would vest on or after a separation from employment.

(4) The value of Stock Awards represents the value at December 31, 2012 of all shares of restricted stock and restricted stock units that on that date were subject to service-based restrictions, which restrictions lapse on or after certain terminations of employment, including following a change of control.

EQUITY COMPENSATION PLANS TABLE

The following table shows information relating to the number of shares authorized for issuance under our equity compensation plans as of December 31, 2012.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column(a))
Equity compensation plans			
Approved by stockholders	96,495,354(1)	$30.50	44,675,803(2)
Not approved by stockholders	157,680(3)	$26.95	—
Total	96,653,034(4)	$30.50(5)	44,675,803

(1) Includes 55,933,809 and 16,224,913 shares of common stock that may be issued pursuant to outstanding options and RSUs awarded under The Bank of New York Mellon Corporation Long-Term Incentive Plan and the Mellon Long-Term Profit Incentive Plan (2004), respectively; 16,796 shares of common stock that may be issued pursuant to outstanding director deferred share units under the Mellon Director Equity Plan (2006) and 89,281 shares of common stock that may be issued pursuant to stock options issued under the 2001 Mellon Stock Option Plans for Outside Directors; 24,215,866 shares of common stock that may be issued pursuant to outstanding stock-based awards under the legacy Bank of New York Long-Term Incentive Plans; and 14,689 shares of common stock that may be issued pursuant to outstanding stock options under The Bank of New York Mellon Corporation Employee Stock Purchase Plan.

(2) Includes 6,681,258 shares of common stock that remain available for issuance under The Bank of New York Mellon Corporation Employee Stock Purchase Plan; 5,000,000 shares that remain available for issuance as options solely for the purpose of satisfying outstanding reload option rights under the Mellon Long-Term Profit Incentive Plan (2004); and 32,994,545 shares of common stock that remain available for issuance under The Bank of New York Mellon Corporation Long-Term Incentive Plan, 20,144,378 of which may be granted as restricted stock or RSUs (or other full value awards).

(3) Includes 150 shares of common stock that may be issued pursuant to options outstanding under the Mellon ShareSuccess Plan at an exercise price of $21.26. The Mellon ShareSuccess Plan, which we assumed in the merger, is a broad-based employee stock option plan covering full and part-time benefited employees of Mellon who were not participants in the Mellon Long-Term Profit Incentive Plan at the time of grant. From 1999 through 2002, each eligible full-time employee was granted an option to purchase 150 shares and each eligible benefited part-time employee was granted an option to purchase 75 shares of Mellon's common stock. The exercise price is equal to the fair market value of Mellon's common stock on the grant date, and the outstanding unvested options became exercisable upon stockholder approval of the merger. All outstanding options under the plan expire 10 years after the grant date. No further grants will be made under this plan.

Also includes 34,230 shares of common stock that may be issued pursuant to options outstanding under the Mellon Stock Option Plan for Affiliate Boards of Directors. The Mellon Stock Option Plan for Affiliate Boards of Directors, which we assumed in the merger and refer to as the "Affiliate Board Plan," provided for grants of stock options to the non-employee members of affiliate boards who were not also members of Mellon's Board of Directors. No grants were available to Mellon employees under these plans. The timing, amounts, recipients and other terms of the option grants were determined by the terms of the option plans for Mellon's Board of Directors and no person or committee had discretion over these grants. The exercise price of the options is equal to the fair market value of Mellon's common stock on the grant date. All options have a term of 10 years from the regular date of grant and become exercisable one year from the regular grant date. Directors elected during the service year were granted options on a pro rata basis to those granted to the directors at the start of the service year. No further grants are being made under the Affiliate Board Plan, although the practice was continued through 2009 by issuing grants under The Bank of New York Mellon Corporation Long-Term Incentive Plan.

Also includes shares of common stock that may be issued pursuant to deferrals under the Deferred Compensation Plan for Non-Employee Directors of Bank of New York, which is described in further detail in “Director Compensation” on page 21 above.

(4) The weighted average term for the expiration of outstanding stock options under our equity compensation plans is 5.4 years.

(5) This weighted-average exercise price relates only to the options described in footnote 1. Shares underlying RSUs and deferred share units are deliverable without the payment of any consideration, and therefore these awards have not been taken into account in calculating the weighted-average exercise price.

PROPOSAL 3 – RATIFICATION OF THE SELECTION OF KPMG LLP

The Audit Committee has appointed KPMG LLP as our independent registered public accountants for the year ending December 31, 2013.

We expect that representatives of KPMG LLP will be present at the Annual Meeting to respond to appropriate questions, and they will have the opportunity to make a statement if they desire.

The Board is submitting the selection of KPMG LLP to the stockholders for ratification upon the recommendation of the Audit Committee. Unless contrary instructions are given, shares represented by proxies solicited by the Board will be voted "for" the ratification of the selection of KPMG LLP as our independent registered public accountants for the year ending December 31, 2013. If the selection of KPMG LLP is not ratified by the stockholders, the Audit Committee will reconsider the matter. Even if the selection of KPMG LLP is ratified, the Audit Committee in its discretion may direct the appointment of a different independent registered public accountant at any time during the year if it determines that such a change is in our best interests.

Adoption of this proposal requires the affirmative vote of a majority of the votes cast on the proposal at the Annual Meeting by the holders of our common stock voting in person or by proxy.

The Board of Directors unanimously recommends that you vote "FOR" approval of KPMG LLP as our independent registered public accountants for the year ending December 31, 2013.

REPORT OF THE AUDIT COMMITTEE

On behalf of our Board of Directors, the Audit Committee oversees the operation of a comprehensive system of internal controls in respect of the integrity of our financial statements and reports, compliance with laws, regulations and corporate policies and the qualifications, performance and independence of our independent registered public accounting firm. The committee's function is one of oversight, recognizing that our management is responsible for preparing our financial statements, and our independent registered public accountants are responsible for auditing those statements.

Consistent with this oversight responsibility, the committee has reviewed and discussed with management the audited financial statements for the year ended December 31, 2012 and management's assessment of internal control over financial reporting as of December 31, 2012. KPMG LLP, our independent registered public accounting firm, issued its unqualified report on our financial statements and the operating effectiveness of our internal control over financial reporting.

The committee has also discussed with KPMG LLP the matters required to be discussed in accordance with Public Company Accounting Oversight Board Auditing Standard, Communications with Audit Committees. The committee has also received the written disclosures and the letter from KPMG LLP required by applicable requirements of the Public Company Accounting Oversight Board, which we refer to as the "PCAOB," regarding the independent accountants' communications with the audit committee concerning auditor independence, and has conducted a discussion with KPMG LLP regarding its independence. The committee has determined that KPMG LLP's provision of non-audit services is compatible with its independence.

Based on these reviews and discussions, the committee recommended to the Board of Directors that our audited financial statements for the year ended December 31, 2012 be included in our 2012 annual report on Form 10-K.

Catherine A. Rein, Chairman
Richard J. Kogan
Michael J. Kowalski
William C. Richardson
Samuel C. Scott III

AUDIT FEES, AUDIT-RELATED FEES, TAX FEES AND ALL OTHER FEES

The Audit Committee appointed KPMG LLP as our independent registered public accounting firm for the year ending December 31, 2013. We have been advised by KPMG LLP that it is an independent public accounting firm registered with the PCAOB and it complies with the auditing, quality control and independence standards and rules of the PCAOB and the SEC.

The appointment of KPMG LLP as our independent registered public accounting firm for the 2012 fiscal year was ratified at our 2012 Annual Meeting. The following table reflects the fees earned by KPMG LLP for services provided to us for 2012 and 2011:

Description of Fees	Amount of Fees Paid to KPMG LLP for 2012	Amount of Fees Paid to KPMG LLP for 2011
Audit Fees (1)	$ 18,004,000	$ 16,898,000
Audit-Related Fees (2)	$ 13,541,000	$ 12,850,000
Tax Fees (3)	$ 2,172,000	$ 2,316,000
All Other Fees (4)	$ 83,000	$ 115,000
Total	**$ 33,800,000**	**$ 32,179,000**

(1) Includes fees for professional services rendered for the audit of our annual financial statements for the fiscal year (including services relating to the audit of internal control over financial reporting under the Sarbanes-Oxley Act of 2002) and for reviews of the financial statements included in our quarterly reports on Form 10-Q and for other services that only our independent registered public accountant can reasonably provide.

(2) Includes fees for services that were reasonably related to performance of the audit of the annual financial statements for the fiscal year, other than Audit Fees, such as service organization reports (under Statement on Standards for Attestation Engagements (or “SSAE”) 16), employee benefit plan audits and internal control reviews.

(3) Includes fees for tax return preparation and tax planning.

(4) Includes fees for regulatory and other advisory services.

OTHER SERVICES PROVIDED BY KPMG LLP

KPMG LLP also provided services to entities associated with us that were charged directly to those entities and accordingly were not included in the amounts disclosed in the table above. These amounts included $12.7 million for 2012 and $11.3 million for 2011 for the audits and tax compliance services for mutual funds, collective funds and other funds advised by us. Also excluded from the amounts disclosed in the table above are fees billed by KPMG LLP to joint ventures or equity method investments in which we have an interest of 50% or less.

PRE-APPROVAL POLICY

Our Audit Committee has established pre-approval policies and procedures applicable to all services provided by our independent registered public accountants. In accordance with SEC rules, our pre-approval policy has two different approaches to pre-approving audit and permitted non-audit services performed by our independent registered public accountants. Proposed services may be pre-approved pursuant to policies and procedures established by the Audit Committee that are detailed as to a particular class of service without consideration by the Audit Committee of the specific case-by-case services to be performed. We refer to this pre-approval method as “class pre-approval.” If a class of service has not received class pre-approval, the service will require specific pre-approval by the Audit Committee before such service is provided by our independent registered public accountants. We refer to this pre-approval method as “specific pre-approval.” A list of services that has received class pre-approval from our Audit Committee (or its delegate) is attached to our Audit and Permitted Non-Audit Services Pre-Approval Policy. A copy of our Audit and Permitted Non-Audit Services Pre-Approval Policy is available on our website at www.bnymellon.com/governance/auditpolicy.pdf. For 2012, all of the fees associated with the independent registered public accounting firm services were pre-approved by the Audit Committee.

INFORMATION ON STOCK OWNERSHIP

BENEFICIAL OWNERSHIP OF SHARES BY HOLDERS OF 5% OR MORE OF OUTSTANDING STOCK

As of February 11, 2013, we had 1,161,532,235 shares of common stock outstanding. Based on filings made under Section 13(d) and 13(g) of the Exchange Act reporting ownership of shares and percent of class as of December 31, 2012, as of February 11, 2013, the only persons known by us to be beneficial owners of more than 5% of our common stock were as follows:

Name and Address of Beneficial Owner	Shares of Common Stock Beneficially Owned	Percent of Class
Davis Selected Advisers, L.P.(1) 2949 East Elvira Road, Suite 101 Tucson, Arizona 85756	94,886,202	8.1%
Massachusetts Financial Services Company(2) 111 Huntington Avenue Boston, MA 02199	72,850,727	6.2%
Dodge & Cox(3) 555 California Street, 40th Floor San Francisco, CA 94104	61,860,295	5.3%
BlackRock, Inc.(4) 40 East 52nd Street New York, NY 10022	60,716,360	5.2%

(1) Based on a review of the Schedule 13G filed on February 13, 2013 by Davis Selected Advisers, L.P. The Schedule 13G discloses that Davis Selected Advisers, L.P. had sole voting power as to 89,278,927 shares, no voting power as to 5,607,275 shares and sole dispositive power as to all 94,886,202 shares.

(2) Based on a review of the Schedule 13G filed on February 13, 2013 by Massachusetts Financial Services Company. The Schedule 13G discloses that Massachusetts Financial Services Company had sole voting power as to 59,032,653 shares and sole dispositive power as to all 72,850,727 shares.

(3) Based on a review of the Schedule 13G filed on February 13, 2013 by Dodge & Cox. The Schedule 13G discloses that Dodge & Cox had sole voting power as to 58,194,865 shares and sole dispositive power as to all 61,860,295 shares.

(4) Based on a review of the Schedule 13G filed on February 12, 2013 by BlackRock, Inc. The Schedule 13G discloses that BlackRock, Inc. had sole voting and dispositive power as to all 60,716,360 shares.

BENEFICIAL OWNERSHIP OF SHARES BY DIRECTORS AND EXECUTIVE OFFICERS

The table below sets forth the number of shares of our common stock beneficially owned as of the close of business on February 11, 2013 by each director, each individual included in the "Summary Compensation Table" on page 43 above and our current directors and executive officers as a group, based on information furnished by each person. Except as otherwise indicated, sole voting and sole investment power with respect to the shares shown in the table below are held either by the individual alone or by the individual together with his or her immediate family.

Beneficial Owners	**Shares of Common Stock Beneficially Owned(1)(2)**
Curtis Y. Arledge	1,042,193
Ruth E. Bruch	36,312
Nicholas M. Donofrio	46,413
Thomas P. "Todd" Gibbons	1,613,211(3)(4)
Gerald L. Hassell	3,448,138(3)(5)
Edmund F. "Ted" Kelly	34,885
Richard J. Kogan	47,958
Michael J. Kowalski	54,945
John A. Luke, Jr.	47,580
Mark A. Nordenberg	32,085
Karen B. Peetz	723,008
Catherine A. Rein	113,490
William C. Richardson	47,557
Brian G. Rogan	1,697,024
Samuel C. Scott III	38,348
Wesley W. von Schack	179,001(3)
All current directors and executive officers, as a group (22 persons)	12,540,472

(1) On February 11, 2013, none of the individuals named in the above table beneficially owned more than 1% of our outstanding shares of common stock. On that date, all current directors and executive officers as a group beneficially owned approximately 1.1% of our outstanding stock.

(2) Includes the following amounts of common stock which the indicated individuals and group have the right to acquire under our equity plans and deferred compensation plans within 60 days of February 11, 2013: Mr. Arledge, 423,751; Ms. Bruch, 34,147; Mr. Donofrio, 12,816; Mr. Gibbons, 1,216,434; Mr. Hassell, 2,406,679; Mr. Kelly, 30,885; Mr. Kogan, 19,878; Mr. Kowalski, 49,285; Mr. Luke, 19,878; Mr. Nordenberg, 31,265; Ms. Peetz, 558,152; Ms. Rein, 17,242; Dr. Richardson, 46,425; Mr. Rogan, 1,095,002; Mr. Scott, 34,386; Mr. von Schack, 42,156; and directors and executive officers as a group, 8,304,819.

Also includes the following additional number of restricted stock units, deferred share units and phantom stock: Mr. Arledge, 218,310; Mr. Donofrio, 33,597; Mr. Gibbons, 109,166; Mr. Hassell, 271,802; Ms. Peetz, 100,453; Ms. Rein, 59,784; Mr. Rogan, 109,166; Mr. von Schack, 6,846; and directors and executive officers as a group, 1,281,666. These individuals do not have voting or investment power with respect to the underlying shares, nor do they have the right to acquire the underlying shares within 60 days of February 11, 2013.

(3) Includes the following shares held in Grantor Retained Annuity Trusts: Mr. Hassell, 137,245 shares; Mr. Gibbons, 81,784 shares; and Mr. von Schack, 120,696 shares.

(4) Includes 145,667 shares over which Mr. Gibbons exercises investment discretion held in trusts.

(5) Includes 56,604 shares held by Mr. Hassell's spouse, as to which Mr. Hassell disclaims beneficial ownership. Also includes 224,280 shares over which Mr. Hassell exercises investment discretion held in trusts.

SECTION 16(A) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Exchange Act requires our directors and executive officers and any beneficial owner of more than 10% of any class of our equity securities to file with the SEC initial reports of beneficial ownership and reports of changes in ownership of any of our securities. These reports are made on documents referred to as Forms 3, 4 and 5. Our directors and executive officers must also provide us with copies of these reports. We have reviewed the copies of the reports that we have received and written representations from the individuals required to file the reports. Based on this review, we believe that during 2012 each of our directors and executive officers timely complied with applicable reporting requirements for transactions in our equity securities.

ANNUAL MEETING INFORMATION

The Board of Directors is soliciting your proxy for our 2013 Annual Meeting of stockholders and any adjournment of the meeting, for the purposes set forth in the Notice of Annual Meeting.

Who Can Vote; Outstanding Shares on Record Date

Only stockholders of record of our common stock at the close of business on February 11, 2013, which we refer to as the "record date," may vote at the Annual Meeting. On the record date, we had 1,161,532,235 shares of common stock outstanding. You are entitled to one vote for each share of common stock that you owned on the record date. The shares of common stock held in our treasury will not be voted.

What is a Proxy?

Your proxy gives us authority to vote your shares and tells us how to vote your shares at the Annual Meeting or any adjournment. Three of our employees, who are called "proxies" or "proxy holders" and are named on the proxy card, will vote your shares at the Annual Meeting according to the instructions you give on the proxy card or by telephone or over the Internet.

Voting Your Shares

Your vote is important. Whether or not you plan to attend the Annual Meeting, we encourage you to vote your shares promptly.

If you are a "stockholder of record" (that is, you hold your shares of our common stock in your own name), you may vote your shares by using any of the following methods:

- **In Person at the Annual Meeting:** If you are a registered stockholder or hold a proxy from a registered stockholder (and meet other requirements as described in "Annual Meeting Admission" on page 62 below), you may attend the Annual Meeting and vote in person by obtaining and submitting a ballot that will be provided at the meeting;
- **By Submitting a Proxy by Mail:** To submit a proxy by mail, complete, sign, date and return the proxy card in the postage-paid envelope provided;
- **By Submitting a Proxy by Telephone:** To submit a proxy by telephone, call the toll-free telephone number listed on the proxy card; or
- **By Submitting a Proxy by Internet:** To submit a proxy by internet, use the Internet site listed on the proxy card.

The telephone and Internet voting procedures, as set forth on the proxy card, are designed to authenticate stockholders' identities, to allow stockholders to provide their voting instructions and to confirm that their instructions have been properly recorded. If you vote by telephone or over the Internet, you should not return your proxy card.

If you are a "beneficial owner," also known as a "street name" holder (that is, you hold your shares of our common stock through a broker, bank or other nominee), you will receive voting instructions (including, if your broker, bank or other nominee elects to do so, instructions on how to vote your shares by telephone or over the Internet) from the record holder, and you must follow those instructions in order to have your shares voted at the Annual Meeting.

Depending on how you hold your shares, you may receive more than one proxy card.

If you vote by proxy through mail, telephone or over the Internet, your shares will be voted in accordance with your instructions. If you sign, date and return your proxy card without indicating how you want to vote your shares, the proxy holders will vote your shares in accordance with the following recommendations of the Board of Directors:

Proposal 1	**FOR** the election of each nominee for director
Proposal 2	**FOR** the advisory resolution to approve the 2012 compensation of our named executive officers
Proposal 3	**FOR** the ratification of the appointment of KPMG LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2013

In addition, if other matters are properly presented for voting at the Annual Meeting, the proxy holders are also authorized to vote on such matters as they shall determine in their sole discretion. As of the date of this proxy statement, we have not received notice of any other matters that may be properly presented for voting at the Annual Meeting.

Revoking Your Proxy

You may revoke your proxy at any time before it is voted at the Annual Meeting by:

- delivering a written notice of revocation to our Corporate Secretary at the address indicated on the first page of this proxy statement;
- submitting another signed proxy card with a later date;
- submitting another proxy by telephone or over the Internet at a later date; or
- attending the Annual Meeting and voting in person.

Annual Meeting Admission

Only stockholders as of the record date have a right to attend the Annual Meeting. In order to be admitted to the annual meeting, you will need to present a government-issued photo identification (such as a driver's license or passport) and, if you are not a "record holder" on the company's books, evidence of ownership of our common stock as of the record date (such as a brokerage account statement). If you are representing an entity that is a stockholder, you must also present documentation showing your authority to attend and act on behalf of the entity (such as a power of attorney, written proxy to vote, or letter of authorization on the entity's letterhead). We reserve the right to limit the number of representatives for any entity that may be admitted to the meeting. No cameras, recording equipment, large bags or packages will be permitted in the Annual Meeting. The use of cell phones, smart phones, tablets and other personal communication devices during the Annual Meeting is also prohibited.

Quorum

A quorum is the minimum number of shares required to conduct business at the Annual Meeting. Under our by-laws, to have a quorum, a majority of the outstanding shares of stock entitled to vote at the Annual Meeting must be represented in person or by proxy at the meeting. Abstentions and broker non-votes (as defined below) are counted as present for determining the presence of a quorum. Inspectors of election appointed for the Annual Meeting will tabulate all votes cast in person or by proxy at the Annual Meeting. In the event a quorum is not present at the Annual Meeting, we expect that the Annual Meeting will be adjourned or postponed to solicit additional proxies.

Vote Required for Approval

Our by-laws provide for a majority vote standard in an uncontested election of directors, such as this year's election. Accordingly, each of the 12 nominees for director will be elected if more votes are cast "for" a director's election than are cast "against" such director's election, as discussed further under "Majority Voting Standard for Election of Directors" on page 10 above. All other matters to be voted on at the Annual Meeting require the favorable vote of a majority of the votes cast on the applicable matter, at the meeting in person or by proxy, for approval.

Abstentions and broker non-votes are not treated as votes cast, will not have the effect of a vote for or against a proposal or for or against a director's election, and will not be counted in determining the number of votes required for approval or election.

If your shares are held through a broker, the broker will ask you how you want your shares to be voted. If you give the broker instructions, your shares will be voted as you direct. If you do not give instructions, one of two things can happen, depending on the type of proposal. For the ratification of the auditor (Proposal 3), the broker may vote your shares in its discretion. For all other proposals, the broker may not vote your shares at all if you do not give instructions (this is referred to as a "broker non-vote").

OTHER INFORMATION

Stockholder Proposals for 2014 Annual Meeting

Stockholder proposals intended to be included in our proxy statement and voted on at our 2014 Annual Meeting of stockholders must be received at our offices at One Wall Street, New York, New York 10286, Attention: Corporate Secretary, on or before November 8, 2013. Applicable SEC rules and regulations govern the submission, and our consideration, of stockholder proposals for inclusion in the 2014 Annual Meeting proxy statement and form of proxy.

Pursuant to our by-laws, in order for any business not included in the notice of meeting for the 2014 Annual Meeting of stockholders to be brought before the meeting by a stockholder entitled to vote at the meeting (including nominations of candidates for director), the stockholder must give timely written notice of that business to our Corporate Secretary. To be timely, the notice must not be received any earlier than November 8, 2013 (120 days prior to March 8, 2014), nor any later than December 8, 2013 (90 days prior to March 8, 2014). The notice also must contain the information required by our by-laws. The foregoing by-law provisions do not affect a stockholder's ability to request inclusion of a proposal in our proxy statement within the procedures and deadlines set forth in Rule 14a-8 of the SEC's proxy rules and referred to in the paragraph above. A proxy may confer discretionary authority to vote on any matter at a meeting if we do not receive notice of the matter within the time frames described above. A copy of our by-laws is available upon request to: The Bank of New York Mellon Corporation, One Wall Street, New York, New York 10286, Attention: Corporate Secretary. The officer presiding at the meeting may exclude matters that are not properly presented in accordance with these requirements.

Corporate Governance Guidelines and Codes of Conduct

Our Board of Directors has adopted Corporate Governance Guidelines covering, among other things, the duties and responsibilities and independence of our directors. The Corporate Governance Guidelines cover a number of other matters, including the Board's role in overseeing executive compensation, compensation and expenses for independent directors, communications between stockholders and directors, and Board committee structures and assignments. A copy of our Corporate Governance Guidelines is available on our website at www.bnymellon.com/governance/guidelines.

Our Board of Directors also has adopted a Code of Conduct, which applies to all of our employees, to provide a framework to maintain the highest standards of professional conduct for the company, and a Code of Conduct for directors of the company to provide guidance to our directors to help them recognize and deal with ethical issues, provide mechanisms to report possible unethical conduct and foster a culture of honesty and accountability.

Both our Code of Conduct and our Directors' Code of Conduct satisfy applicable SEC and NYSE requirements and, together, apply to all of our directors, officers and employees and those of our subsidiaries. A copy of the Code of Conduct is available on our website at www.bnymellon.com/ethics/codeofconduct.pdf. A copy of the Directors' Code of Conduct is available on our website at www.bnymellon.com/governance/directorscodeofconduct.pdf. We intend to disclose any amendments to our Code of Conduct or our Directors' Code of Conduct and any waivers from the Code of Conduct or the Directors' Code of Conduct for executive officers and directors, respectively, by posting such information on our website.

Business Relationships and Related Party Transactions Policy

In the ordinary course of business, certain of our subsidiaries periodically have, and expect to continue to have, banking and other transactions with "related persons." A "related person" includes directors, nominees for director, executive officers, greater than 5% beneficial owners, members of such persons' immediate families and any firm, corporation or other entity in which any of the foregoing persons is employed as a general partner or principal or in a similar position or in which such person and all other related persons has a 10% or greater beneficial interest.

The Board has adopted a policy on related party transactions, which we refer to as our "related party transactions policy," and which was reviewed by the CG&N Committee. Our related party transactions policy provides that the CG&N Committee, or another Board committee consisting solely of independent directors, must approve any transaction, arrangement or relationship (or any series of similar transactions, arrangements or relationships) in which we or any of our subsidiaries was, is or will be a participant and where the amount involved exceeds $120,000, and in which any related person had, has or will have a direct or indirect material interest, such transactions constituting disclosable related party transactions under SEC rules. Consistent with SEC rules, our related party transactions policy provides that certain transactions, including employment relationships and ordinary course non-preferential transactions, entered into with a related person, are not considered to be related party transactions and are not required to be disclosed or approved by the CG&N Committee. In 2012, there were no related party transactions that required CG&N Committee approval or disclosure in this proxy statement.

Our related party transactions policy provides that the CG&N Committee may recommend to our Board from time to time adoption of resolutions pre-approving certain types or categories of transactions that the CG&N Committee determines in good faith are in, or are not inconsistent with, our best interests and the best interests of our stockholders. The Board has adopted a resolution pre-approving transactions that involve the sale or other provision of products and services (not subject to Regulation O or other specific regulatory requirements) by our company or its subsidiaries to directors and members of their immediate family, director-related companies and executive officers and members of their immediate family in the ordinary course and on terms generally offered in transactions with non-related persons. Transactions subject to Regulation O or other specific regulatory requirements are approved as required by Regulation O or other applicable regulations.

Under the related party transactions policy, in making its determination to approve a disclosable related party transaction, the CG&N Committee may take into consideration all of the relevant facts and circumstances available to it, including (if applicable) but not limited to:

- the related person's relationship to us and interest in the transaction;
- the material facts of the transaction, including the amount involved;
- the benefits to us of the transaction;
- the availability from other sources of comparable products or services; and
- an assessment of whether the transaction is on terms that are comparable to the terms available to or from an unrelated third party or to employees generally.

The CG&N Committee also may consider the impact on a director's independence in the event the related person is a director, an immediate family member of a director or a director-related company.

Under the related party transactions policy, no member of the CG&N Committee may participate in the review, consideration, approval or ratification of any disclosable related party transaction with respect to which such member or any of his or her immediate family members or director-related company is the related person. The CG&N Committee may approve only those disclosable related party transactions that are in, or are not inconsistent with, our best interests and the best interests of our stockholders, as the CG&N Committee determines in good faith.

Under the related party transactions policy, if a disclosable related party transaction is identified after it is already ongoing or completed, it must be submitted to the CG&N Committee promptly for ratification, applying the standards described above. In these circumstances, the CG&N Committee would evaluate all options available, including ratification, amendment, termination or rescission of the transaction.

Our related party transactions policy does not limit or affect the application of our other policies applicable to our directors, executive officers and other related persons, including our Codes of Conduct.

How Our Board Solicits Proxies; Expenses of Solicitation

We will pay all costs of soliciting proxies. We have retained Georgeson Inc. to assist with the solicitation of proxies for a fee of approximately $20,000, plus reimbursement of reasonable out-of-pocket expenses. In addition, we have agreed to pay Computershare Shareowner Services LLC a fee of approximately $45,000 in connection with project management and technical services to be provided by Computershare Shareowner Services LLC relating to the distribution of this proxy statement and the annual report to employees and former employees participating in employee benefit and stock option programs. In addition, we may use our officers and employees, at no additional compensation, to solicit proxies either personally or by telephone, Internet, letter or facsimile.

Householding

To reduce the expense of delivering duplicate proxy materials to our stockholders, we are relying on SEC rules that permit us to deliver only one proxy statement to multiple stockholders who share an address unless we receive contrary instructions from any stockholder at that address. This practice, known as "householding," reduces duplicate mailings, saves printing and postage costs as well as natural resources and will not affect dividend check mailings. If you wish to receive a separate copy of the annual report or proxy statement, or if you wish to receive separate copies of future annual reports or proxy statements, please contact our transfer agent, Computershare Shareowner Services LLC, by phone at 1-800-729-9606 (U.S.) or 1-201-680-6651 (International) or by mail at Computershare Shareowner Services LLC, P.O. Box 3550, South Hackensack, New Jersey 07606-9250. We will deliver the requested documents promptly upon your request.

If you and other stockholders of record with whom you share an address currently receive multiple copies of annual reports or proxy statements, or if you hold our stock in more than one account and, in either case, you wish to receive only a single copy of the annual report or proxy statement, please contact our transfer agent, Computershare Shareowner Services LLC, with the names in which all accounts are registered and the name of the account for which you wish to receive mailings.

Other Business

As of the date of this proxy statement, we do not know of any other matters that may be presented for action at the meeting. Should any other business properly come before the meeting, the persons named on the enclosed proxy will, as stated therein, have discretionary authority to vote the shares represented by such proxy in accordance with their best judgment.

Jane Sherburne
General Counsel and Corporate Secretary

March 8, 2013

BNY MELLON

IMPORTANT ANNUAL MEETING INFORMATION

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ENDORSEMENT_LINE______________ SACKPACK_____________

MR A SAMPLE
DESIGNATION (IF ANY)
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Electronic Voting Instructions

Available 24 hours a day, 7 days a week!

Instead of mailing your proxy, you may choose one of the voting methods outlined below to vote your proxy.

VALIDATION DETAILS ARE LOCATED BELOW IN THE TITLE BAR.

Proxies submitted by the Internet or telephone must be received by 8 AM Eastern Time, on April 9, 2013.

Vote by Internet

- Go to **www.investorvote.com/bnym**
- Or scan the QR code with your smartphone
- Follow the steps outlined on the secure website

Vote by telephone

- Call toll free 1-800-652-VOTE (8683) within the USA, US territories & Canada on a touch tone telephone
- Follow the instructions provided by the recorded message

Using a **black ink** pen, mark your votes with an X as shown in this example. Please do not write outside the designated areas. X

Annual Meeting Proxy Card 1234 5678 9012 345

q **IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE.** q

Where a vote is not specified, the proxies will vote shares represented by this Proxy FOR all nominees for director and FOR Proxy Items 2 and 3, and will vote in their discretion on such other matters that may properly come before the meeting and at any adjournment of such meeting.

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A The Board of Directors recommends a vote FOR all nominees for director and FOR proposals 2 and 3

1. Election of Directors:	For	Against	Abstain		For	Against	Abstain		For	Against	Abstain
1.1 - Ruth E. Bruch	☐	☐	☐	1.2 - Nicholas M. Donofrio	☐	☐	☐	1.3 - Gerald L. Hassell	☐	☐	☐
1.4 - Edmund F. Kelly	☐	☐	☐	1.5 - Richard J. Kogan	☐	☐	☐	1.6 - Michael J. Kowalski	☐	☐	☐
1.7 - John A. Luke, Jr.	☐	☐	☐	1.8 - Mark A. Nordenberg	☐	☐	☐	1.9 - Catherine A. Rein	☐	☐	☐
1.10 - William C. Richardson	☐	☐	☐	1.11 - Samuel C. Scott III	☐	☐	☐	1.12 - Wesley W. von Schack	☐	☐	☐

	For	Against	Abstain		For	Against	Abstain
2. Advisory resolution to approve executive compensation.	☐	☐	☐	3. Ratification of KPMG LLP as our independent auditor for 2013.	☐	☐	☐

B Non-Voting Items

Change of Address — Please print new address below.

C Authorized Signatures — This section must be completed for your vote to be counted. — Date and Sign Below

Note: Please sign as name appears hereon. Joint owners should each sign. When signing as attorney, executor, administrator, trustee or guardian, please give full title as such.

Date (mm/dd/yyyy) — Please print date below.	Signature 1 — Please keep signature within the box.	Signature 2 — Please keep signature within the box.
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Important notice regarding the Internet availability of proxy materials for the Annual Meeting of shareholders. The Proxy Statement and the 2012 Annual Report to Stockholders are available at: www.investorvote.com/bnym

q **IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE.** q

BNY MELLON

Proxy — THE BANK OF NEW YORK MELLON CORPORATION

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS OF THE CORPORATION

The undersigned hereby appoints Craig T. Beazer, Bennett E. Josselsohn and Richard M. Pearlman or any of them, each with full power of substitution, as attorneys and proxies of the undersigned to vote all The Bank of New York Mellon Corporation Common Stock which the undersigned is entitled to vote at the Annual Meeting of Shareholders of the Corporation to be held on Tuesday, April 9, 2013, at 9:00 a.m., 101 Barclay Street, New York, New York, 10286 and at any adjournment of such meeting, as fully and effectually as the undersigned could do if personally present, and hereby revokes all previous proxies for said meeting. **Where a vote is not specified, the proxies will vote the shares represented by this Proxy FOR the election of all nominees for director and FOR Proxy Items 2 and 3, and will vote in their discretion on such other matters that may properly come before the meeting and at any adjournment of such meeting.**

This Proxy is solicited on behalf of the Board of Directors of the Corporation, and may be revoked prior to its exercise. **The Board of Directors recommends votes FOR the election of all nominees for director and FOR Proxy Items 2 and 3.**

(Continued and to be marked, dated and signed, on the other side)

EXHIBIT VI
BNY MELLON'S PERSONAL SECURITIES TRADING POLICY

Personal Securities Trading Policy

Compliance

I-A-045

Date of Last Full Review: January 15, 2019

Posting Date: January 15, 2019

Applicable to: All BNY Mellon employees

Table of Contents

A. Introduction/Purpose

As a Global Financial Institution, The Bank of New York Mellon Corporation and its subsidiaries (the "Company") are subject to certain laws and/or regulations governing the personal trading of securities (as hereinafter defined). In order to ensure that all employees' personal investments are conducted in compliance with the applicable rules and regulations and are free from conflicts of interest, the Company has established limitations on personal trading. This policy describes the global minimum requirements and restrictions related to personal securities transactions.

B. Applicability and Scope

This policy applies to all employees of the Company, including its subsidiaries and affiliates, when trading in Financial Instruments (collectively referred to as "Securities" under this policy). Where indicated, this policy may also apply to "Indirect Accounts," as defined under Section E.

An **employee** is defined as a Director (excluding non-employees), Officer, Agent, Temporary Worker, Contractor, Intern or any other person who works for the Company, regardless of their duration of employment or contract.

"**Securities**" are defined under Appendix G of this policy and include all Financial Instruments unless these are specifically listed as "Exempt" under Appendix G.

Where business / country-specific requirements are more stringent than those set out within this policy, the business or country-specific rules prevail and, therefore, this policy must be read in conjunction with any business-specific or country-specific Tier II/Tier III policies and procedures.

C. General Requirements for all Employees

The following requirements apply to all employees of the Company. In addition to the below standards of conduct, employees must also comply with any additional requirements, as described in the next section of this policy (See Additional Requirements).

1. Avoidance of Conflicts of Interest

In line with the Employee Code of Conduct, employees must not put their own interests ahead of the Company and its clients. Employees are prohibited from placing transactions in securities if this would (or be perceived to) create a conflict of interest between the employee and clients or the Company. Employees must also not seek to benefit in any way from their access to the Company or client information. You must be mindful of this obligation, use your best efforts to honor it, and report promptly to the Ethics Office and your **Compliance Officer** any Company employee that fails to meet this obligation. With respect to the potential conflicts of interest that personal securities trading activity or other actions may engender, please also refer to the Company's Code of Conduct and the policy on Corporate Policy I-A-035, Business Conflicts of Interest.

2. Prohibition of Insider Trading MNPI (Trading while in possession of MNPI)

In carrying out your job responsibilities, you must, at a minimum, comply with all applicable legal requirements and securities laws. As an employee, you may receive information about the Company, its clients or other parties that, for various reasons, must be treated as confidential. With respect to these parties, you **are not** permitted to divulge to anyone (except as may be permitted by your business and in accordance with approved procedures) proprietary information. You must comply with measures in place to preserve the confidentiality of information. Refer to the Company's Code of Conduct for additional guidance.

Securities and/or Market Abuse laws prohibit the trading (including initiating, amending, or cancelling an order) of securities (see Appendix G) while aware of material nonpublic information (MNPI) regarding the issuer of those securities and/or about the portfolio holdings, transactions or recommendations with respect to fiduciary accounts; this is generically known as "insider trading".

Employees that possess MNPI must not

- Engage or attempt to engage in Insider Trading on the basis of having MNPI;
- Recommend that another person engages in dealing or induces another person to engage in dealing on the basis of the MNPI; or
- Unlawfully disclose the MNPI (Tipping)

Employees cannot trade in a security if it would be reasonably foreseen that this could be perceived as Insider Trading. Please refer to the Market Abuse Policy (Corporate Policy I-A-040) for more information.

Refer to the Company's Securities Firewalls Policy (Corporate Policy I-A-046) for guidance in determining when information is material and/or nonpublic and how to handle such information. Examples of potential MNPI include, but are not limited to, proposed mergers or acquisitions, tender offers, significant events such as a security or cyber breach, and receipt of earnings prior to public disclosure. Please refer to Appendix A in the Securities Firewalls Policy for a more comprehensive list of potential MNPI examples.

3. Prohibition of Market Manipulation

In accordance with the Market Abuse Policy, Employees of BNY Mellon must not engage in, or attempt to engage in, Market Manipulation.

4. Trading in BNY Mellon Securities

All employees who trade in Company securities must be aware of their responsibilities to the Company and must be sensitive to even the appearance of impropriety. The following restrictions apply to all transactions in the Company's publicly traded securities, whether owned directly (i.e., in your name) or indirectly (see indirect ownership in Appendix G):

- **Short Sales** – You are prohibited from engaging in short sales of Company securities.
- **Short-Term Trading** – You are prohibited from purchasing and selling or from selling and purchasing any Company securities within any 60 calendar day period. In addition to other potential sanctions, you will be required to disgorge any profits on such short-term trades as calculated in accordance with procedures established by the Ethics Office. This included transactions in the BK Stock Fund held within the BNY Mellon 401(k).
- **Margin Transactions** – You are prohibited from purchasing Company securities on margin; however, you may use Company securities to collateralize full-recourse loans for non-securities purposes or for the acquisition of securities other than those issued by the Company.
- **Option Transactions** – You are prohibited from engaging in any derivative transaction involving or having its value based upon any securities issued by the Company (or the values thereof), including the buying and writing of over-the-counter and exchange traded options.
- **Major Company Events** – You are prohibited from transacting in the Company's securities if you have knowledge of major Company events that have not been publicly announced. This prohibition expires 24 hours after a public announcement is made.

5. Trading in Non-Company Securities

You must be sensitive to any impropriety in connection with your personal securities transactions in securities of any issuer, including those owned indirectly (see indirect ownership in Appendix G). You must refer to the Company's Code of Conduct for employee investment restrictions with parties that do business with the Company. In addition, you are prohibited from front running and scalping.

6. Spread Betting

Taking bets on securities pricing (***inclusive of FX spread-betting***) to reflect market/currency movement activities is prohibited.

7. FX Derivatives

FX derivative trading is prohibited.

8. Short Selling

All employees should be mindful of short selling prohibitions in the jurisdiction in which the security is listed for trading. In some jurisdictions, short selling of financial stocks is banned.

9. Initial Public Offerings

You are prohibited from acquiring securities through an allocation by the underwriter of an initial public offering (IPO) without the prior approval of the Ethics Office. Approval is only likely to be given when the allocation comes through an employee of the issuer who has a direct family relationship to the BNY Mellon employee or when the issuance is arranged by governments to promote the public ownership of previously state owned assets and where a bank, savings and loan or insurance company converts from a structure owned by policyholders to one owned by investors (demutualization). Approval may not be available to employees of registered broker-dealers due to certain laws and regulations (e.g., FINRA rules in the U.S.). If you have any questions as to whether a particular offering constitutes an IPO, consult the Ethics Office before submitting an indication of interest to purchase the security.

10. Private Placements

- **Acquisition** – You are prohibited from acquiring any security in a private placement unless you obtain prior written approval from the Ethics Office and your Compliance Officer. In order to receive approval, employees must complete and submit to the Ethics Office the Private Placement/Volcker Covered Fund Request Form, which can be found on MySource or can be obtained by sending an email to the PST Private Placements mailbox at pstprivateplacements@bnymellon.com.
- **Subsequent Actions** – Should you participate in any subsequent consideration of credit for the issuer or of an investment in the issuer for an advised account, you are required to disclose your investment to your **Compliance Officer**. The decision to transact in such securities for an advised account is subject to independent review.
- **Divesture of a Private Placement that is an Affiliated Fund of BNY Mellon** – Employees who wish to divest are required to obtain pre-approval from the Ethics Office prior to redemption. An Affiliated Fund Redemption Request Form can be found on MySource or may be obtained by sending an email to the PST Private Placements mailbox at pstprivateplacements@bnymellon.com.

11. Volcker Covered Funds

- **Acquisition** – You are prohibited from acquiring any initial or subsequent investment in a Volcker Covered Fund (the list of funds can be found at the Volcker Compliance site on MySource) unless you obtain prior written approval from the Ethics Office and your Compliance Officer. You should be aware that under the Volcker Rule, neither you nor your immediate family, may make such an investment unless your job duties are directly related to providing investment advisory, commodity trading advisory or "other services" to the fund. In order to receive approval, employees must complete and submit to the Ethics Office the Private Placement/Volcker Covered Funds Request Form, which can be found on MySource or may be obtained by sending an email to PST Private Placements mailbox at pstprivateplacements@bnymellon.com.
- **New Employees** – Any new hire who directly or indirectly (through an immediate family member) holds an investment in a Volcker Covered Fund must receive permission to continue to hold that investment. In order to receive approval, employees must complete and submit to the Ethics Office the Private Placement/Volcker Covered Funds Request Form, which can be found on MySource or may be obtained by sending an email to the PST Private Placements mailbox at pstprivateplacements@bnymellon.com. If the holding is not permitted under the Volcker Rule, the employee will be required to divest the ownership interest.

Contact your Compliance Officer if you have questions regarding requirements related to the Volcker Rule.

D. Requirement to Classify Employees[1]

This policy imposes additional requirements and limitations on employees based on the nature of their job activities.

Each Business [2] or Corporate Staff group is responsible for assigning Personal Securities Trading Classifications to their employees in accordance with this Policy and/or their Business Policy/Procedure. In considering whether an individual should be deemed a Monitored Employee, Businesses should consider the following:

- S/he has regular access to MNPI; or
- S/he has access to pending, open orders or pre-trade information (or providing advice to Clients on the purchase or sales of securities); or
- S/he has been designated a Monitored Employee by business/functional-level Compliance and business management using a risk based approach (or perceived conflicts of interest that would require the employee to be monitored); or
- Local law, regulation or contractual obligation requires the person to be subject to enhanced controls/monitoring over their personal securities trading activities.

Businesses should consider the full extent of the employee's role (i.e., operational role as well as any governance role such as a CEO). If an employee would not receive MNPI in their operational role but, due to their governance responsibilities, they receive regular MNPI, the highest standard of classification should apply.

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[1] With the exception of Non-Classified Employees, all other classifications are considered to be "Monitored Employees". Due to the nature of their job activities and in addition to the General Requirements of this policy, Monitored Employees are also subject to the requirements listed in Section E (General Requirements for all Monitored Employees). Non-Classified Employees do not have any additional requirements.

[2] Compliance is responsible for classifying employees in Investment Management (Asset Management and Wealth Management) in accordance with their policies and procedures

Employees not meeting any of these requirements will be classified as a Non-Classified Employee and their personal trading will not be monitored. Only the requirements as set out under Section C will apply to non-monitored employees.

The classifications are as follows:

Classification Type	**Definition**
Access Decision Maker (ADM)	Generally, employees are considered to be ADM Employees if they are Portfolio Managers or Research Analysts and make or participate in recommendations or decisions regarding the purchase or sale of securities for mutual funds or managed accounts. Portfolio Managers of broad-based index funds and traders are not typically classified as ADM Employees.
Dreyfus/FINRA Employee	An employee who is subject to regulation resulting from his/her registration with FINRA.
Fund Officer Employee	An employee who is not in the Asset Management or Wealth Management businesses and, in the normal conduct of his/her job responsibilities, serves as an officer of a fund, is not required to preclear trading activity by a fund, and does not attend board meetings.
Fund Service Employee	An employee who is not in the Asset Management or Wealth Management businesses and whose normal job responsibilities involve maintaining the books and records of mutual funds and/or managed accounts.
Insider Risk Employee	A classification of employees that in the normal conduct of their job responsibilities are likely to receive or be perceived to be aware of or receive material nonpublic information concerning the company's clients. Employees in this classification typically include, but are not limited to, Risk and Legal personnel. All members of the company's Executive Committee (excluding Pershing Executive Committee Members who are covered by the Pershing trading policy), who are not otherwise classified as Investment Employees, will be classified as Insider Risk Employees.

Investment Employee	An employee who, in the normal conduct of his/her job responsibilities, has access (or are likely to be perceived to have access) to nonpublic information regarding any advisory client's purchase or sale of securities or nonpublic information regarding the portfolio holdings of any Proprietary Fund, is involved in making securities recommendations to advisory clients, or has access to such recommendations before they are public. This classification typically includes employees in the Asset Management and Wealth Management businesses, including:
	
	• Certain employees in fiduciary securities sales and trading, investment management and advisory services, investment research and various trust or fiduciary functions; Employees of a Company business regulated by certain investment company laws. Examples are:
	    • In the U.S., employees who are "advisory persons" or "access persons" under Rule 17j-1 of the Investment Company Act of 1940 or "access persons" under Rule 204A-1 of the Advisers Act.
	    • In the U.K., employees in companies undertaking specified activities under the Financial Services and Markets Act 2000 (Regulated Activities), Order 2001, and regulated by the Financial Conduct Authority.
	    • Any member of the Company's Senior Management who, as part of his/her usual duties, has management responsibility for fiduciary activities or routinely has access to information about

	advisory clients' securities transactions.
Pre-Release Earning Group (PREG) Employee	The Pre-Release Earnings Group consists of all members of the Company's Executive Committee, their administrative assistants and any individual determined by the Company's Corporate Finance Department to be a member of the group.

E. General Requirements for all Monitored Employees

In addition to the requirements which apply to all employees as described in Section C of this policy, all Monitored Employees (i.e., all employees excluding Non-Classified Employees) are also subject to the following requirements as well as the specific requirements set out under the appendices for their classification:

1. Monitored Personal Trading Activity

In order to ensure compliance with securities laws and to avoid even the appearance of a conflict of interest, the Ethics Office monitors the personal trading activities of Monitored Employees. Trading is monitored electronically via the Personal Trading Assistant (PTA) System. The Ethics Office will grant Monitored Employees secure access to the PTA so that they can fulfill their PTA reporting requirements as described below.

Employees classified as monitored employees have a duty to report trades in accounts which are directly owned by them or where they have indirect ownership as per the additional requirements set out in this policy. The definition of indirect ownership [3] can be found under Appendix G.

F. PTA Reporting

1. Initial Reporting

Within 10 calendar days of being assigned a classification and informed by the Ethics Office, you must file an Initial Broker Accounts Report and an Initial Holdings Report (excluding Pershing employees) in the PTA. The Initial Broker Accounts Report must contain a listing of all accounts that trade or are capable of trading securities (excluding exempt securities) and that are owned directly by you or of which you have indirect ownership. The Initial Holdings Report must contain a listing of all securities (excluding exempt securities) held in the aforementioned accounts and any securities (excluding exempt securities) held outside of these accounts (e.g., physical securities held in a safe deposit box, paper certificates, etc.). Both the Initial Broker Accounts Report and the Initial Holdings Report must be an accurate recording of security accounts and security holdings within the last 45 calendar days after receiving your employee classification.

Note: Monitored Employees are required to report any directly- or indirectly-owned accounts that have the capability of holding securities (excluding exempt securities), regardless of what the accounts are currently holding. For example, if an account contains only exempt securities but has the capability of holding non-exempt securities, the account must be reported.

2. Annual reporting

On an annual basis and within 30 calendar days after the end of the year, Monitored Employees (excluding Pershing employees) are required to file an Annual Holdings Report

[3] It is recognized that in some jurisdictions or regulated entities that are outside of the U.S., other regulations may prevail with respect to disclosure of third party accounts. Please refer to your local Personal Securities Trading Policy, if appropriate, to determine if this is applicable and/or speak with your Compliance Officer if you have any questions.

in the PTA. The Annual Holdings Report must contain a current listing of securities (excluding exempt securities) held in all accounts that trade or are capable of trading securities (excluding exempt securities) and that are owned directly by you or of which you have indirect ownership. The Annual Holdings Report must also contain a current listing of securities (excluding exempt securities) held outside of the aforementioned accounts (e.g., physical securities held in a safe deposit box, paper certificates, etc.). The securities information included in the report must be current within 45 calendar days of the date the report is submitted. Additionally, as part of this annual reporting requirement, Monitored Employees must also certify that they have read, understand, and complied with this policy.

3. Updating PTA

a) New Accounts

Monitored Employees are responsible for adding to the PTA as soon as possible any new brokerage accounts that are opened after the Initial Broker Accounts Report has been submitted. This requirement applies to both accounts that are owned directly by you or of which you have indirect ownership.

b) Gifts and Inheritances

Monitored Employees (excluding Pershing employees) who give or receive a gift of securities (excluding exempt securities) or receive an inheritance that includes securities (excluding exempt securities) must report the activity as an adjustment to holdings in the PTA within 10 calendar days. The report must disclose the name of the person receiving or giving the gift or inheritance, date of the transaction, and name of the broker through which the transaction was effected (if applicable). A gift of securities must be one where the donor does not receive anything of monetary value in return.

c) Updating Holdings

You are required to update in the PTA any changes to your securities (excluding exempt securities) holdings that occur as a result of corporate actions, dividend reinvestments, or similar activity. These adjustments must be reported as soon as possible, but no less than annually. Non-U.S.-based Monitored Employees, including Fund Service and Fund Officer Employees, are required to submit to Local Compliance, upon receipt from their broker, trade confirmations or contract notes for trades in non-exempt securities.

4. Approved Broker-Dealers

All U.S.-based Monitored Employees must maintain any directly- or indirectly-owned brokerage accounts at specific broker-dealers that have been approved by the company. Monitored Employees living outside the U.S. are not subject to this requirement. U.S.-based Monitored Employees should refer to MySource to obtain the current list of approved broker-dealers. Any exceptions to this requirement must be approved, in writing, by the Ethics Office.

5. Account Statements and Trade Confirmations

U.S.-based Monitored Employees who receive an exception to the approved broker-dealer requirement or who are in the process of moving their account(s) to an approved broker-dealer must instruct their non-approved broker-dealer, trust account manager, or other entity holding their securities to submit duplicate statements and trade confirmations directly to the company. This requirement applies to both direct- and indirectly-owned accounts where applicable and includes any account that has the capability of holding securities (excluding exempt securities) regardless of what the account is currently holding. For securities held outside of an account (such as those held directly with an issuer or maintained in paper certificate form), Monitored Employees must comply with the company's request to confirm transactions and holdings.

Non-U.S.-based Monitored Employees are required to enter their trade into the PTA System **within 10 days** of the transaction and provide account statements to their designated Local Compliance Officer. Employees based in Canada should provide their statements to the Ethics Office at securitiestradingpolicyhelp@bnymellon.com. This requirement applies to both direct- and indirectly-owned accounts where applicable and includes any account that has the capability of holding securities (excluding exempt securities) regardless of what the account is currently holding. For securities held outside of an account (such as those held directly with an issuer or maintained in paper certificate form), Monitored Employees must comply with the company's request to confirm transactions and holdings.

G. Classification-Specific Requirements

In addition to the General Requirements of the policy and the preceding Requirements for Monitored Employees, ADM, Investment, Insider Risk, Fund Service, Fund Officer, and PREG Employees must also adhere to the requirements of their assigned classification(s). Employees should refer to Appendices A through E for the specific additional requirements of their assigned classification(s).

Refer to Appendix F for a summary of select policy requirements by employee classification.

H. Compliance with this Policy

Generally, as an employee of the Company, you may be held personally liable for any improper or illegal acts committed during the course of your employment; non-compliance with this policy may be deemed to encompass one of these acts. Accordingly, you must read this policy and comply with the spirit and the strict letter of its provisions. Failure to comply may result in the imposition of serious sanctions, which may include, but are not limited to, the disgorgement of profits, cancellation of trades, selling of positions, and suspension of personal trading privileges, dismissal, and referral to law enforcement or regulatory agencies.

The provisions of the policy have worldwide applicability and cover trading in any part of the world, subject to the provisions of any controlling local law. To the extent any particular portion of the policy is inconsistent with, or in particular less restrictive than such laws, you must consult with the Manager of the Ethics Office.

1. Reporting Violations

To report a known or suspected violation of this policy, immediately contact the Ethics Office or your Compliance Officer. You may also report known or suspected violations anonymously through BNY Mellon's Ethics Help Line or Ethics Hot Line.

2. Issuing / Receiving Violations

If an employee is found to be in violation of this Policy, they will be issued with a warning or violation memo.

3. Policy Administration

Various departments, business units, teams, and employees within the Company are responsible for managing, overseeing, and/or providing support for the administration of this policy. The specific responsibilities and procedural requirements for these various administrators are described in Section I.

I. Roles and Responsibilities

1. Ethics Office

The Corporate Ethics Office, led by the Chief Compliance and Ethics Officer (CCEO), must:

- Develop, interpret and administer the Policy. (**Note**: Amendments of the policy will be made, or waivers of its terms will be granted, at the discretion of the Manager of the Ethics Office only and with the concurrence of other officers or directors of the Company, where required (e.g., U.S. mutual fund directors). Any waiver or exemption must be evidenced in writing to be official.) Substantive changes to the policy will be approved by the CCEO.
- Maintain the following records in a readily accessible place, for five years from their creation (unless otherwise noted below):
  - A copy of each version of the Policy, including amendments, in existence for any period of time;
  - A record of any violation of the Policy and any action taken as a result of such violation for five years from the end of the fiscal year in which the violation occurred;
  - A record of acknowledgement of receipt of the Policy by each person who currently, or at any time in the prior five years, was required to receive a copy pursuant to some law, rule, or regulation;
  - All holdings or transaction reports made pursuant to the terms of the Policy (only the past two years in a readily accessible place);
  - A list of names and designations of all employees of the company who are designated as “supervised persons” of an SEC Registered Investment Advisor;
  - A record of any decision and supporting reasons for approving the acquisition of securities by personnel subject to the Policy in limited offerings.
- Identify all **Compliance Officers** who are responsible for reviewing employee reports and other records.
- Set standards for compliance monitoring and testing of compliance with this Policy.
- Maintain electronic systems to support personal trading and ensure system enhancements are properly controlled and tested prior to implementation.
- Provide training during major acquisitions, significant system implementations or modifications.
- Use their best efforts to assure that requests for preclearance, personal securities transaction reports and reports of securities holdings are treated as “personal and confidential.” (The company may be required by law to review, retain, and in some circumstances, disclose such documents. Therefore, such documents must be available for inspection by appropriate regulatory agencies and by other parties within and outside the Company as are necessary to evaluate compliance with or sanctions under the Policy or other requirements applicable to the Company.)
- Determine appropriate sanctions for Policy violations and maintain a record of all such sanctions.
- Notify the violator and his/her manager of policy violations and the sanctions imposed.
- Maintain a list (the “Restricted List”) of companies whose securities employees in their business or firm are restricted from trading for various reasons. Such trading restrictions may be appropriate to protect the Company and its employees from potential violations, or the appearance of violations, of securities laws. This list

must not be distributed outside of the Compliance Office or Ethics Office and its contents are confidential.

- Calculate and collect proof of employee disgorgement of profits to a recognized charity.
- Ensure an annual certification of compliance with the Policy is collected.
- Where agreed upon with a business or sector, oversee collection of reporting requirements including obtaining required securities account statements and trade transaction details, and monitoring to trading to detect violations of Policy.
- Oversee approvals of investments in initial public offerings, acquisitions of private investments, and withdrawal requests for affiliated hedge/private equity funds.
- Review account documentation to determine if an employee account can be deemed a non-discretionary (managed) account.

2. Business Management

Management of the Company's business and corporate staff groups will:

- Classify employees according to Business Policy seeking guidance from Compliance when required.
- Maintaining the correct classification for Employees in their business unit and monitoring whether the correct classification is still assigned to employees
- Provide annual attestation of the classification of the employees according to Business Policy seeking guidance from Compliance when required.
- Ensure that managers communicate an employee's classification under this policy and that proper training of the Policy requirements has been provided.
- In consultation with the function-level compliance unit, construct and provide a list of securities appropriate for Policy restrictions.
- Enforce compliance with the Policy.
- Notify the Ethics Office of new trading systems required for employee monitoring.

3. Function-Level Compliance Unit

Compliance units at the Function level, under the supervision of Business Compliance Directors, must:

- When agreed upon with the Business, classify employees in accordance with the rationale as defined in the local policies and procedures. Investment Management (Asset Management and Wealth Management) Compliance will classify employees according to Policy or procedures.
- As a result of a second policy violation and at the request of the Ethics Office, provide training and or confirm the employee completed such training on the Policy.
- Report violations of the Policy to the Ethics Office and to the Board of Directors at the appropriate investment subsidiary, if necessary.
- When applicable, ensure data required to perform compliance monitoring (e.g., Restricted Lists, Portfolio Manager Codes, and Designated Approvers) is provided to the Ethics Office.
- Assist the Ethics Office in overseeing the collection of reporting requirements, including obtaining required securities account statements and trade transaction details and monitoring to trading to detect violations of Policy, unless the Ethics Office is performing those functions for the business.

- Oversee the timely completion of all required employee reports and certifications.
- Approve requests for investment that have been delegated by Policy or the Ethics Office to the business.
- When applicable, provide timely updates to the list of Proprietary Funds (those that are advised, sub-advised or underwritten by the business) to the Ethics Office.

4. Legal Department

The Legal Department has the following responsibilities:

- Provide legal analysis of new and revised legislation of all jurisdictions regarding personal securities trading laws and regulations.
- Participate in the review of Policy amendments.

5. Technology Department

The Technology Department has the following responsibilities:

- Provide support for internally hosted applications to ensure systems function properly, including various files are properly loaded into the system.
- Develop an alert process to detect any failed or non-received files.
- Ensure all software updates or hardware installations are adequately tested.

J. Questions

Questions regarding this policy or personal securities trading must be directed to the Securities Trading Policy Help Line by phone at 1-800-963-5191 or by email at securitiestradingpolicyhelp@bnymellon.com. If calling from outside of the United States or Canada, dial the appropriate international access code and then 1-800-963-5191-2.

K. Ownership

The Ethics Office owns this policy.

L. Related Policies

- I-A-010: Code of Conduct
- I-A-035: Business Conflicts of Interest
- I-A-046: Securities Firewall Policy
- I-C-170: Policy on Rule 10b5-1 Plans
- I-A-040: Market Abuse Policy

M. Revision History

- January 15, 2019 (current; revised to transfer the classification responsibility from Local Compliance to the 1st Line of Business for Investment Services; removed reference to IEC Oversight and Senior Leadership Team Members.
- June 8, 2018 (the document was reviewed and reapproved without changes, pending substantive revisions anticipated for July 2018)
- April 3, 2018 (revised to include existing requirement for pre-approval prior to divesting from an affiliated fund; other minor edits)
- December 22, 2017 (added definition of personal trading activity)

- August 15, 2017 (update to Appendix G, Selected Policy Requirement Fields (Preclear Trades & Preclear Proprietary Funds)
- May 31, 2017 (update to Senior Leadership Team name)
- June 22, 2016 (updates to align with Market Abuse Policy definitions; additions to Related Policies; not otherwise reviewed)
- November 18, 2015 (information classification re-labelled from “internal use only” to “public”)
- November 13, 2015 (updated Appendices D, G and H)
- April 27, 2015 (addition of language related to Volcker Funds)
- December 1, 2014 (reviewed and reformatted)
- November 2013

Appendix A: Requirements for ADM Employees

In addition to the General Requirements of this policy and the General Requirements for all Monitored Employees, employees who are classified as ADM Employees are also subject to the following requirements:

A. Proprietary Funds

Proprietary Funds are non-exempt securities for ADM Employees. As such, ADM Employees are required to report in the PTA any Proprietary Funds held in brokerage accounts or directly with the mutual fund company. A list of Proprietary Funds is published on MySource or can be obtained by sending an email to the Securities Trading Policy Help Line at securitiestradingpolicyhelp@bnymellon.com.

B. PTA Reporting

Quarterly Reporting

In addition to the Initial and Annual Reporting that must be completed by all Monitored Employees, ADM Employees are also subject to Quarterly Reporting. On a quarterly basis and within 30 calendar days after the end of the quarter, ADM Employees are required to file a Quarterly Transactions Report in the PTA. The Quarterly Transactions Report must contain the following:

- A listing of all transactions in securities (excluding exempt securities) that occurred throughout the most recent calendar quarter;
- A current listing of all securities accounts that trade or are capable of trading securities and that are owned directly by you or of which you have indirect ownership;
- A current listing of securities (excluding exempt securities) held in the aforementioned accounts, and;
- A current listing of securities (excluding exempt securities) held outside of the aforementioned accounts (e.g., physical securities held in a safe deposit box, paper certificates, etc.).

All reported information must be current within 45 calendar days of the date the report is submitted. Additionally, as part of this quarterly reporting requirement, employees must also certify that they have read, understand, and complied with this policy.

C. Preclearing Trades in PTA

ADM Employees are required to receive preclearance approval in PTA prior to executing trades in all securities (excluding exempt securities). ADM Employees must preclear trades in Proprietary Funds. Refer to Appendix E for trade preclearance requirements and see below for details regarding de minimis transactions and Proprietary Fund transactions in the Company's 401(k) plan.

1. De Minimis Transactions

ADM Employees will generally not be given preclearance approval to execute a transaction in any security for which there is a pending buy or sale order for an affiliated account (other than an index fund) in the business unit where the ADM Employee has access to information about pending transactions. In certain circumstances, the Preclearance Compliance Officer may approve certain de minimis transactions even when the firm is trading such securities. **Note**: Some ADM Employees who are also Portfolio Managers may not be eligible for this de minimis exemption. Questions should be directed to the Preclearance Compliance Officer or the Ethics Office.

a) Restrictions and Conditions

- Employee preclearance is required prior to executing the transaction.
- If the transaction is a 60 day trade, recognized profit disgorgement will be applicable. (Refer to Section D for information about profit disgorgement on short-term trades.)
- Preclearance Compliance Officers are limited to applying this de minimis standard to only two trades in the securities of any one issuer in each calendar month.
- Employees must cooperate with the Preclearance Compliance Officer's request to document market capitalization amounts.

b) Transaction Limits

The following transaction limit is available for this de minimis exception: The dollar value from transacting in 100 shares or $10,000 (whichever value is greater) for companies with a market capitalization of $5 billion or higher. **Note**: Currency is listed in USD. For all other countries, use the local currency's USD equivalent and/or U.S. share amount.

2. Proprietary Fund Transactions in the Company's 401(k) plan

ADM Employees are required in most situations to preclear Proprietary Fund trades. However, the treatment of Proprietary Fund trades in the company's 401(k) plan is dependent upon the type of plan.

a) Non-Self-Directed Accounts (Includes Tier 1 - LifePath Index Funds, Tier 2 - Passively Managed Index Funds, and Tier 3 - Actively Managed Funds)

The movements of balances into or out of Proprietary Funds are deemed to be purchases or redemptions of those Proprietary Funds for purposes of the holding period requirement, but are exempt from the general preclearance requirement. Accordingly, you do not need to preclear these movements, but must get prior approval from the Preclearance Compliance Officer if it is within 60 calendar days of an opposite transaction in shares of the same fund. In lieu of transaction reporting, employees are deemed to consent to the company obtaining transaction information from plan records. Such movements must be reflected in your holdings reports.

b) Self-Directed Accounts (Tier 4 – Large Selection of Mutual Funds and Exchange Traded Funds)

Treated like any other Proprietary Fund account. This means that the reporting, preclearance, and holding period requirements apply.

D. Profit Disgorgement on Short-Term Trading

Any profits recognized from purchasing then selling or selling then purchasing the same or equivalent (derivative) securities within any 60 calendar day period must be disgorged. For purposes of disgorgement, profit recognition is based upon the difference between the most recent purchase and sale prices for the most recent transactions. Accordingly, profit recognition for disgorgement purposes may differ from the capital gains calculations for tax purposes. Sixty-day transactions in securities that are exempt from preclearance and trades of Proprietary Funds held within the BNY Mellon 401(k) will not be subject to disgorgement. The disposition of any disgorged profits will be at the discretion of the company, and the employee will be responsible for any tax and related costs.

E. Initial Public Offerings

ADM Employees must obtain approval from the Ethics Office and your Compliance Officer prior to acquiring securities through an allocation by the underwriter of an initial public offering.

F. Private Placements

In addition to the General Requirements as defined under Section C, the following requirements apply:

1. Approval Considerations

The Ethics Office will generally not approve private placement requests in which any managed fund or account is authorized to invest within the ADM's fund complex. Also, it will not approve any investment involving a fund vehicle serviced or sponsored by BNY Mellon or one of its subsidiaries or affiliates that is a Volcker Covered Fund, unless your job duties are directly related to providing investment advisory, commodity trading advisory or "other services" to the fund, as described under the Volcker Rule. The Ethics Office will take into account the specific facts and circumstances of the request prior to reaching a decision on whether to authorize a private placement investment. These factors include, among other things, whether the opportunity is being offered to an individual by virtue of their position with the company or its affiliates or their relationship to a managed fund or account and whether or not the investment opportunity being offered to the employee could be re-allocated to a client. ADM Employees must comply with requests for information and/or documentation necessary for the Ethics Office to satisfy itself that no actual or potential conflict, or appearance of a conflict, exists between the proposed private placement purchase and the interests of any managed fund or account.

2. Approval to Continue to Hold Existing Investments

Within 90 days of being designated an ADM Employee, employees holding private placement securities must request and receive written authorization from the Ethics Office to continue to hold these securities.

G. Additional Reporting Requirements for ADM Employees

ADM Employees have two additional reporting requirements. These requirements are described below. **Note**: It is an ADM Employee's responsibility to confirm with their Preclearance Compliance Officer whether he or she is required to comply with the below additional reporting requirements.

1. Contemporaneous Disclosure

Prior to an ADM Employee making or acting upon a portfolio recommendation (e.g., buy, hold, or sell) in a security directly or indirectly owned, written authorization must be obtained. The reason for disclosure is to ensure that management can consider whether the portfolio recommendation or transaction is for the purpose of affecting the value of a personal securities holding. Contemporaneous Disclosure forms can be obtained from the Preclearance Compliance Officer, on MySource, or by emailing the Securities Trading Policy Help Line at securitiestradingpolicyhelp@bnymellon.com. Under no circumstances can an ADM Employee provide portfolio recommendations or place trades based on their potential impact to his/her personal securities holdings, nor can he or she refuse to take such action to avoid submitting a Contemporaneous Disclosure. The ADM Employee's fiduciary duty to make portfolio recommendations and trades solely in the best interest of the client must always take precedence.

a) Approval

Approval must be obtained from the ADM Employee's CIO or CEO, or their designee, prior to the first such portfolio recommendation or transaction in a particular security in a calendar month. Disclosure forms for subsequent transactions in the same security are not required for the remainder of the calendar month so long as purchases/sells in all portfolios do not exceed the maximum number of shares, options, or bonds disclosed on the disclosure form. If the ADM Employee seeks to effect a transaction or makes a recommendation in a direction opposite of the most recent disclosure form, a new disclosure form must be completed prior to the transaction or recommendation.

b) Exemption to the Contemporaneous Disclosure Requirement

- ADM Employees who are index fund managers and have no investment discretion in replicating an index model or clone portfolio do not need to comply with this disclosure requirement. This exemption does not apply in the following circumstances:
  - If the ADM Employee recommends a security that is not in the clone or model portfolio or recommends a model or clone security in a different percentage than the model or clone amounts.
  - If the ADM Employee recommends individual securities to clients, even if the company shares control of the investment process with other parties.

c) Securities Exempt from Reporting

Certain securities are exempt from the requirement to submit a Contemporaneous Disclosure. They are:

- Exempt securities as defined in Definitions.
- Holdings of debt securities, which do not have a conversion feature and are rated investment grade or better by a nationally recognized statistical rating organization or unrated, but of comparable quality.
- Holdings of equity securities of the following:
  - In the U.S., the top 200 issuers on the Russell list and other companies with a market capitalization of $20 billion or higher.
  - In the U.K., the top 100 companies on the FTSE All Share Index and other companies with a market capitalization of the £ USD equivalent.
  - In Japan, the top 100 companies of the TOPIX and other companies with a market capitalization of the ¥ USD equivalent.
  - In Brazil, companies on the IBr-X and other companies with a market capitalization of the R USD equivalent.

H. Restrictions for ADM Employees

7 Day Blackout Period

- **Prohibition**

  It is impermissible for an ADM Employee to buy or sell a security (owned directly or indirectly) within 7 calendar days before and 7 calendar days after their investment company or managed account has effected a transaction in that security. This is known as the “7 Day Blackout Period.”

- **Disgorgement Required**

  If an ADM Employee initiates a transaction within the 7 Day Blackout Period, in addition to being subject to sanctions for violating the Policy, profits recognized from the transaction must be disgorged. The following transactions will not be subject to this disgorgement requirement:

  - In the U.S., the dollar value from transacting in 100 shares or $10,000 (whichever value is greater) for companies with a market capitalization of $5 billion or higher.
  - In all other countries, the greater of the USD equivalent or 100 shares for companies with a USD equivalent market capitalization.

- **Exemption**

  Portfolio Managers who manage broad-based index funds, which replicate exactly, a clone, or model, are exempt from the 7 Day Blackout Period.

I. Additional Requirements for Micro-Cap ADM (MCADM) Employees ONLY

1. Transactions and Holdings in Micro-Cap Securities

In recognition of the potential for price volatility in micro-cap securities, the company requires that approvals be obtained prior to a MCADM Employee placing a trade in their direct and indirectly owned accounts. The market capitalization approval thresholds are listed below. **Note**: Currency is listed in USD. For all other countries, use the local currency's USD equivalent.

- **Threshold 1**

  Without the prior written approval of the immediate supervisor and the Chief Investment Officer (CIO), MCADM Employees may not trade the securities of companies with a market capitalization of $100 million or less.

- **Threshold 2**

  Without the prior written approval of the immediate supervisor and the Chief Investment Officer (CIO), MCADM Employees may not trade the securities of companies with a market capitalization that is more than $100 million but less than or equal to $250 million.

- **Exemption**

  Micro-cap securities acquired involuntarily (e.g., inheritance, gift, spin-off, etc.) are exempt from these above restrictions; however, they must be disclosed in a memo to the Preclearance Compliance Officer within 10 calendar days of the involuntary acquisition.

2. Requirement for Newly Designated MCADM Employees

Newly designated MCADM Employees must obtain the approval of the CIO or Chief Executive Officer and provide a copy of the approval to the Preclearance Compliance Officer to continue holding micro-cap securities with a market capitalization equal to or less than $250 million. For all other countries, use the local currency's USD equivalent.

Appendix B: Additional Requirements for Investment Employees

In addition to the General Requirements of this policy and the General Requirements for all Monitored Employees employees who are classified as Investment Employees are also subject to the following requirements:

A. Proprietary Funds

Proprietary Funds are non-exempt securities for Investment Employees. As such, Investment Employees are required to report in the PTA any Proprietary Funds held in brokerage accounts or directly with the mutual fund company. A list of Proprietary Funds is published on MySource or can be obtained by sending an email to the Securities Trading Policy Help Line at securitiestradingpolicyhelp@bnymellon.com.

B. PTA Reporting

Quarterly Reporting

In addition to the Initial and Annual Reporting that must be completed by all Monitored Employees, Investment Employees are also subject to Quarterly Reporting. On a quarterly basis and within 30 calendar days after the end of the quarter, Investment Employees are required to file a Quarterly Transactions Report in the PTA. The Quarterly Transactions Report must contain the following:

- A listing of all transactions in securities (excluding exempt securities) that occurred throughout the most recent calendar quarter;
- A current listing of all securities accounts that trade or are capable of trading securities and that are owned directly by you or of which you have indirect ownership;
- A current listing of securities (excluding exempt securities) held in the aforementioned accounts, and;
- A current listing of securities (excluding exempt securities) held outside of the aforementioned accounts (e.g., physical securities held in a safe deposit box, paper certificates, etc.).

All reported information must be current within 45 calendar days of the date the report is submitted. Additionally, as part of this quarterly reporting requirement, employees must also certify that they have read, understand, and complied with this policy.

C. Preclearing Trades in PTA

Investment Employees are required to receive preclearance approval in PTA prior to executing trades in all securities (excluding exempt securities). Investment Employees must preclear trades in Proprietary Funds. Refer to Appendix E for trade preclearance requirements and see below for details regarding de minimis transactions and Proprietary Fund transactions in the company's 401(k) plan.

1. De Minimis Transactions

Investment Employees will generally not be given preclearance approval to execute a transaction in any security for which there is a pending buy or sale order for an affiliated account (other than an index fund) in the business unit where the Investment Employee has access to information about pending transactions. In certain circumstances, the Preclearance Compliance Officer may approve certain de minimis transactions even when the firm is trading such securities.

a) Restrictions and Conditions

- Employee preclearance is required prior to executing the transaction.
- If the transaction is a 60 day trade, recognized profit disgorgement will be applicable.
- Preclearance Compliance Officers are limited to applying this de minimis standard to only two trades in the securities of any one issuer in each calendar month.
- Employees must cooperate with the Preclearance Compliance Officer's request to document market capitalization amounts.

b) Transaction Limits

The below transaction limits are available for this de minimis exception. **Note**: Currency is listed in USD. For all other countries, use the local currency's USD equivalent and/or U.S. share amount.

- Transactions up to $50,000 for companies having a market capitalization of $20 billion or more.
- The dollar value from transacting in 250 shares or $25,000 (whichever value is greater) for companies having a market capitalization between $5 billion and $20 billion.
- The dollar value from transacting in 100 shares or $10,000 (whichever value is greater) for companies having a market capitalization between $250 million and $5 billion.

2. Proprietary Fund Transactions in the Company's 401(k) plan (U.S. based employees)

Investment Employees are required in most situations to preclear Proprietary Fund trades. However, the treatment of Proprietary Fund trades in the company's 401(k) plan is dependent upon the type of plan.

a) Non-Self-Directed Accounts (Includes Tier 1 - LifePath Index Funds, Tier 2 - Passively Managed Index Funds, and Tier 3 - Actively Managed Funds)

The movements of balances into or out of Proprietary Funds are deemed to be purchases or redemptions of those Proprietary Funds for purposes of the holding period requirement but are exempt from the general preclearance requirement. Accordingly, you do not need to preclear these movements, but you must get prior approval from the Preclearance Compliance Officer if it is within 60 calendar days of an opposite transaction in shares of the same fund. In lieu of transaction reporting, employees are deemed to consent to the company obtaining transaction information from plan records. Such movements must be reflected in your holdings reports.

b) Self-Directed Accounts (Tier 4 – Large Selection of Mutual Funds and Exchange Traded Funds)

Treated like any other Proprietary Fund account. This means that the reporting, preclearance, and holding period requirements apply.

D. Profit Disgorgement on Short-Term Trading

Any profits recognized from purchasing and then selling or selling and then purchasing the same or equivalent (derivative) securities within any 60 calendar day period must be disgorged. For purposes of disgorgement, profit recognition is based upon the difference between the most recent purchase and sale prices for the most recent transactions. Accordingly, profit recognition for disgorgement purposes may differ from the capital gains calculations for tax purposes. Sixty-day transactions in securities that are exempt from preclearance and trades of Proprietary Funds held within the BNY Mellon 401(k) are not subject to disgorgement. The disposition of any disgorged profits will be at the discretion of the company, and the employee will be responsible for any tax and related costs.

Appendix C: Requirements for Insider Risk, Fund Service, and Fund Officer Employees

A. Insider Risk Employees

In addition to the General Requirements of this policy and the General Requirements for all Monitored Employees employees who are classified as Insider Risk Employees are also subject to the following requirements:

1. Exempt Securities

In addition to the exempt securities as listed in Appendix G, Proprietary Funds, Exchange Traded Funds, and municipal bonds are also considered to be exempt securities for Insider Risk Employees. In all instances that the term “exempt securities” is used throughout this policy, Insider Risk Employees may also include Proprietary Funds, Exchange Traded Funds, and municipal bonds.

2. Preclearing Trades in PTA

Insider Risk Employees are required to receive preclearance approval in PTA prior to executing trades in all securities (excluding exempt securities). Insider Risk Employees must preclear Exchange Traded Notes (ETNs). Refer to Appendix E for trade preclearance requirements.

B. Fund Officer and Fund Service Employees

In addition to the General Requirements of this policy and the General Requirements for all Monitored Employees (Section E), employees who are classified as Fund Officer and Fund Service Employees are also subject to the following requirements:

1. Company Oversight

While Fund Officer and Fund Service Employees are subject to many of the same requirements as the other employee classifications, Fund Officer and Fund Service Employees are not required to preclear trades, and therefore, are not subject to pre-trade denials of those trades. However, unlike the other employee classifications, Fund Officer and Fund Service Employees are subject to a post-trade back-testing analysis that is designed to accumulate and assess employee trading activity that mirrors company or client trades. Trading activity that mirrors company or client trades may result in a change to the employee’s classification that will require future preclearance approval.

2. Quarterly Reporting in PTA – For Fund Officer Employees and EMEA based Fund Service Employees Only

In addition to the Initial and Annual Reporting that must be completed by all Monitored Employees, Fund Officer Employees and EMEA-based Fund Service Employees are also subject to Quarterly Reporting. On a quarterly basis and within 30 calendar days after the end of the quarter, these employees are required to file a Quarterly Transactions Report in the PTA. The Quarterly Transactions Report must contain the following:

- A listing of all transactions in securities (excluding exempt securities) that occurred throughout the most recent calendar quarter;
- A current listing of all securities accounts that trade or are capable of trading securities and that are owned directly by you or of which you have indirect ownership;

- A current listing of securities (excluding exempt securities) held in the aforementioned accounts, and;
- A current listing of securities (excluding exempt securities) held outside of the aforementioned accounts (e.g., physical securities held in a safe deposit box, paper certificates, etc.).

All reported information must be current within 45 calendar days of the date the report is submitted. Additionally, as part of this quarterly reporting requirement, employees must also certify that they have read, understand, and complied with this policy.

Appendix D: Requirements for PREG Employees

In addition to the General Requirements of this policy and the General Requirements for all Monitored Employees employees who are classified as PREG Employees are also subject to the following requirements:

A. Exempt Securities

Excluding company securities, all securities are exempt for PREG Employees. In all instances that the term “exempt securities” is used throughout this policy, PREG Employees should note that this includes all securities except company securities. Only company securities are reportable for PREG Employees.

B. Preclearing Trades in PTA

PREG Employees are required to receive preclearance approval in PTA prior to executing trades in company securities only. Refer to Appendix E for trade preclearance requirements.

C. Trading in Company Securities

1. General Restrictions

Every quarter, the Company imposes a restriction on PREG employees. These employees are deemed to have access to inside information with respect to the Company’s financial results and are prohibited from trading in the Company’s securities from 12:01 AM Eastern Standard Time, on the 15th day of the month preceding the end of each calendar quarter through the first trading day after the public announcement of the company’s earnings for that quarter. This period of time is during which PREG employees are prohibited from trading in the Company’s securities is known as the 24-Hour Blackout Period. For example, if earnings are released on Wednesday at 9:30 AM Eastern Standard Time, PREG Employees cannot trade the Company’s securities until Thursday at 9:30 AM Eastern Standard Time. Non-trading days, such as weekends or holidays, are not counted as part of the restricted period. Occasionally, the Company may extend the restricted period for some or all PREG Employees.

2. Company 401(k) Plan

- **Changes in Your Company Stock Holdings** – During quarterly blackout periods, PREG Employees are prohibited from making payroll deduction or investment election changes that would impact their future purchases in company stock. These changes must be made when the blackout period is not in effect.
  - **Reallocating Balances in Company 401(k) Plan** – PREG Employees are prohibited from reallocating balances in their company 401(k) if the reallocating action impacts their holdings in company stock.

3. Company Employee Stock Options

PREG Employees are prohibited from exercising options during the blackout period.

4. Company Employee Stock Purchase Plan (ESPP)

During quarterly blackout periods, PREG employees are prohibited from enrolling in or making payroll deduction changes in the ESPP. These changes must be made when the blackout period is not in effect.

5. Blackout Period Trading Implications Profit Disgorgement/Loss Recognition

Any trade in BNY Mellon securities made during the 24-Hour Blackout Period must be reversed and any corresponding profit recognized from the reversal is subject to profit disgorgement. The employee will incur any loss resulting from the reversal of a blackout period trade. Profit disgorgement will be in accordance with procedures established by senior management. For purposes of disgorgement, profit recognition is based upon the difference between the most recent purchase and sale prices for the most recent transaction(s). Accordingly, profit recognition for disgorgement purposes may differ from the capital gains calculations for tax purposes and the employee will be responsible for any tax costs associated with the transaction(s).

Appendix E: Trade Preclearance Requirements

ADM Employees, Investment Employees, Insider Risk Employees, and PREG Employees are required to preclear trades in all securities (excluding exempt securities). All other employees are not subject to the below trade preclearance requirements.

A. General Preclearance Requirements

1. Obtain Preclearance Prior to Initiating a Transaction

In order to trade securities (excluding exempt securities), ADM Employees, Investment Employees, Insider Risk Employees, and PREG Employees are required to submit a preclearance request in the PTA system and receive notice that the preclearance request was approved prior to placing a security trade. Unless expressly exempt (See exemptions below), all securities transactions are covered by this preclearance requirement. Although preclearance approval does not obligate an employee to place a trade, preclearance should not be made for transactions the employee does not intend to make. You may not discuss the response to a preclearance request with anyone (excluding any account co-owners or indirect owners).

Note: Employees required to preclear securities must preclear trades in company securities (BK) and receive approval before executing the trade.

2. Execute Trade within Preclearance Window (Preclearance Expiration)

For ADM and Investment Employees, preclearance authorization will be granted for a two business day window, day one being the day approval is received. For Insider Risk and PREG Employees, preclearance authorization will be valid for a three business day window, day one being the day approval is received.

Note: Preclearance time stamps in PTA are in Eastern Standard Time (EST).

Example

An ADM Employee requests and receives trade preclearance approval on Monday at 3 PM EST. The preclearance authorization is valid until the close of business on Tuesday. An Insider Risk Employee's window would be one day longer and would therefore be valid until the close of business on Wednesday.

Note of Caution

Employees who place "limit," "stop-loss," "good-until-cancelled," or "standing buy/sell" orders are cautioned that transactions receiving preclearance authorization must be executed before the preclearance expires. At the end of the preclearance authorization period, any unexecuted order must be canceled. A new preclearance authorization may be requested; however, if the request is denied, the trade order with the broker-dealer must be canceled immediately.

3. Exemptions from the Requirement to Preclear

Preclearance is not required for the following security transactions:

- Exempt securities as defined in the Definitions.
- Non-financial commodities (e.g., agricultural futures, metals, oil, gas, etc.), currency, crypto-based currency, and financial futures (excluding stock and narrow-based stock index futures).
- ETFs and funds to include proprietary funds that are based on the following indices; the S&P 100, Russell 200, Eurostoxx 50, FTSE 100, Nikkei 225, A50

ETFs and the CSI 300. The same indices with larger participation (e.g., S&P 500, Russell 1000) would also be exempt. A complete list of exempt ETFs and Proprietary Funds is listed on MySource. **Only securities on the published list are exempt from preclearance.** Derivative securities based on these indices still require preclearance.

- Involuntary on the part of an employee (such as stock dividends or sales of fractional shares); however, sales initiated by brokers to satisfy margin calls are not considered involuntary and must be precleared.
- Pursuant to the exercise of rights (purchases or sales) issued by an issuer pro rata to all holders of a class of securities, to the extent such rights were acquired from such issuer.
- Sells effected pursuant to a bona fide tender offer.
- Pursuant to an automatic investment plan, including payroll withholding to purchase Proprietary Funds.

B. Preclearance Rules for Company Stock in Retirement and Benefit Plans

1. Company 401(k) Plan

a) Changes in Your Company Stock Holdings

Preclearance **is not** required for changes in your company stock holdings held within the company 401(k) Plan that result from the following:

- Changes in your payroll deduction contribution percentage.
- Changes in investment elections regarding the future purchase of company stock.

b) Reallocating Balances in Company 401(k) Plan

The purchase or sell of company stock resulting from a reallocation does not require preclearance but is considered a purchase or sale of company stock for purposes of the short-term trading prohibition. As a result, a subsequent trade in company stock in the opposite direction of the reallocation occurring within a 60 calendar day period would result in a short-term trading prohibition. Changes to existing investment allocations in the plan or transactions in company stock occurring outside the plan will not be compared to reallocation transactions in the plan for purposes of the 60 day trading prohibition. Profits recognized through short-term trading in company stock in the plan will not generally be required to be disgorged; however, the Legal Department will be consulted to determine the proper disposition of short-term trading prohibitions involving Executive Committee members.

c) Rebalancing Company 401(k) Plan

The purchase or sell of company stock resulting from rebalancing (i.e., the automatic movement of balances to pre-established investment election allocation percentages) is not subject to preclearance and is not considered a purchase or sale of company stock for purposes of the short-term trading prohibition.

2. Company Employee Stock Options

- **Preclearance approval is required prior to the exercise of stock option grants**.
- Preclearance **is not** required for the receipt of a stock option grant or the subsequent vesting of the grant.

3. Company Restricted Stock/Units

Preclearance **is not** required for the following:

- The receipt of an award of company restricted stock/units.
- The subsequent vesting of the company stock/unit award; however, you are required to report these shares upon vesting in the PTA system and preclear subsequent sells.
- The sale (through company-approved procedures) of a portion of the company stock received in a restricted stock award at the time of vesting in order to pay for tax withholding.

  Preclearance **is** required when selling shares after they have vested and are available to the employee.

4. Company Employee Stock Purchase Plan (ESPP)

- Preclearance is required for the following:
- The sale of stock from the ESPP Plan. **Note**: The sale of stock from the Company ESPP will be compared to transactions in company securities outside of the Company ESPP to ensure compliance with the short-term (60 day) trading prohibition.
- The sale of stock withdrawn previously from the ESPP. Like stock sold directly from the ESPP, sales will be compared to transactions in company securities outside of the ESPP to ensure compliance with the short-term (60 day) trading prohibition.
- Preclearance **is not** required for your enrollment in the plan, changes in your contribution to the plan, or shares acquired through the reinvestment of dividends.

Appendix F: Summary of Select Policy Requirements by Employee Classification

Selected Policy Requirements	ADM	Investment Employees	Insider	Fund Service, Fund Officer, and Dreyfus/FINRA Employees	PREG	Non-Classified Employees
U.S.-based employees – required to use approved broker-dealer	Yes	Yes	Yes	Yes	Yes	No
Initial Accounts and Holdings Reports (filed within 10 days of being classified)	Yes	Yes	Yes	Yes (Pershing – Initial Accounts only)	Yes	No
Annual Certification (filed within 30 days of year-end)	Yes	Yes	Yes	Yes (Excluding Pershing)	Yes	No
Quarterly Certification (filed within 30 days of quarter-end)	Yes	Yes	No	Only applies to Fund Officers and EMEA-based Fund Service Employees	No	No
Preclearance window (in business days, includes day approval granted)	2 days	2 days	3 days	No	3 days	No
Preclear trades in all Non-Exempt Securities;	Yes	Yes	Yes	No	Yes (BNYM stock only)	No
Non-Exempt Security types include but are not limited to:						
Proprietary Funds	Yes	Yes	No	No	No	No
Exchange Traded Funds (ETFs)	Yes	Yes	No	No	No	No
Exchange Traded Notes (ETNs)	Yes	Yes	Yes	No	No	No
Municipal bonds	Yes	Yes	No	No	No	No
Corporate Bonds	Yes	Yes	Yes	No	No	No
Closed End Mutual Funds	Yes	Yes	Yes	No	No	No
Open End Non-Proprietary Mutual Funds	No	No	No	No	No	No
Common Stock and Options of Common	Yes	Yes	Yes	No	BNYM	No

Selected Policy Requirements	**ADM**	**Investment Employees**	**Insider**	**Fund Service, Fund Officer, and Dreyfus/FINRA Employees**	**PREG**	**Non-Classified Employees**
Stock (includes trades in company securities "BK)					stock only	
ADR's	Yes	Yes	Yes	No	No	No
Futures/Currencies	No	No	No	No	No	No
Certificate of Deposit (CD's)	No	No	No	No	No	No
Subject to 7+ - day blackout period	Yes	No	No	No	No	No
Additional approvals required for personal trades in micro-cap securities	Yes (MCADMs only)	No	No	No	No	No
Short-term trading (60 days) profit disgorgement on all trades	Yes	Yes	No	No	No	No
Short-term trading (60 days) profit disgorgement on BNYM stock	Yes	Yes	Yes	Yes	Yes	Yes
Prohibited from buying BNYM stock on margin, short selling BNYM, and trading in BNYM derivatives (options)	Yes	Yes	Yes	Yes	Yes	Yes
Initial public offerings are prohibited (refer to Policy waiver requirements)	Yes	Yes	Yes	Yes	Yes	Yes
Private Placements/Volcker Covered Funds require Ethics Office pre-approval	Yes	Yes	Yes	Yes	Yes	Yes

Appendix G: Definitions

Automatic Investment Plan

A program in which regular periodic purchases (withdrawals) are made automatically to/from investment accounts in accordance with a predetermined schedule and allocation. Examples include: Dividend Reinvestment Plans (DRIPS), payroll deductions, bank account drafts or deposits, automatic mutual fund investments/withdrawals (PIPS/SWIPS), and asset allocation accounts.

Direct Family Relationship

For purposes of this policy, an employee's immediate family as defined by "indirect ownership" in Appendix G.

Exempt Securities/Financial Instruments (Collectively "Securities") from PTA Reporting

All securities require reporting unless expressly exempt by this policy. The below securities are exempt for all classifications of employees. There may be additional exempt securities based on an employee's classification. Refer to the applicable Appendix for your classification for any additional security exemptions.

- Cash, cash-like securities (FX and Crypto-based derivatives are not considered cash or cash-like securities while bankers acceptances, bank CDs and time deposits, money market funds, commercial paper, repurchase agreements and crypto-based currency are).
- Cryptocurrencies in non-brokerage exchange accounts (e.g., Coinbase) or in their own personal cryptocurrency wallets.
- Employee investments in their sovereign governments, with the exception of employees located in EMEA jurisdictions. Obligations of other instrumentalities or quasi-government agencies are not exempt.
- High-quality, short-term debt instruments having a maturity of less than 366 days at issuance and rated in one of the two highest rating categories by a nationally recognized statistical rating organization or which is unrated but of comparable quality.
- Securities issued by open-end investment companies (i.e., mutual funds and variable capital companies) that are **not** Proprietary Funds or Exchange Traded Funds (**Note**: Proprietary Funds and Exchange Traded Funds are considered non-exempt securities for ADM and Investment Employees only).
- Securities in non-company 401(k) plans for U.S.-based employees (e.g., spouse's plan, previous employer's plan, etc.).
- Securities in 529 plans, provided they are **not** invested in Proprietary Funds for U.S.-based employees (**Note**: Proprietary Funds and Exchange Traded Funds are considered non-exempt securities for ADM and Investment Employees only).
- Fixed annuities.
- Variable annuities that are **not** invested in Proprietary Fund sub-accounts (**Note**: Variable annuities that are invested in Proprietary Fund sub-accounts are considered non-exempt securities for ADM and Investment Employees only).
- Securities held in approved non-discretionary (managed) accounts.
- Stock held in a bona fide employee benefit plan of an organization not affiliated with the Company on behalf of an employee of that organization, who is a member of the Company employee's immediate family. For example, if an employee's spouse works for an organization unrelated to the Company, the employee is not required to report for transactions that his/her spouse makes in the unrelated organization's company

stock so long as they are part of an employee benefit plan. This exemption does **not** apply to any plan that allows the employee to buy and sell securities other than those of their employer. Such situations would subject the account to all requirements of this policy.

Front Running

The purchase or sale of securities for your own or the company's accounts on the basis of your knowledge of the company's or company's clients trading positions or plans.

Index Fund

An investment company or managed portfolio (including indexed accounts and model-driven accounts) that contain securities in proportions designed to replicate the performance of an independently maintained, broad-based index or that is based not on investment discretion but on computer models using prescribed objective criteria to replicate such an independently maintained index.

Indirect Ownership

Generally, you are the indirect owner of securities if you are named as power of attorney on the account or, through any contract, arrangement, understanding, relationship, or otherwise, you have the opportunity, directly or indirectly, to share at any time in any profit derived from a transaction in them (a "pecuniary interest"). Common indirect ownership situations include, but are not limited to:

- Securities held by members of your immediate family by blood, marriage, adoption, or otherwise, who share the same household with you.
  - "Immediate family" includes your spouse, domestic partner, children (including stepchildren, foster children, sons-in-law and daughters-in-law), grandchildren, parents (including step-parents, mothers-in-law and fathers-in-law), grandparents, and siblings (including brothers-in-law, sisters-in-law and stepbrothers and stepsisters).
- Partnership interests in a general partnership or a general partner in a limited partnership. Passive limited partners are not deemed to be owners of partnership securities absent unusual circumstances, such as influence over investment decisions.
- Corporate shareholders who have or share investment control over a corporation's investment portfolio.
- Trusts in which the parties to the trust have both a pecuniary interest and investment control.
- Derivative securities – You are the indirect owner of any security you have the right to acquire through the exercise or conversion of any option, warrant, convertible security or other derivative security, whether or not presently exercisable.
- Securities held in investment clubs.
- Within EMEA and specific to the Investment Services entities which fall outside of the scope of US SEC Investment Advisor regulation other regulation may prevail in respect to disclosure of third party accounts such as MiFID and Market Abuse Regulation. Therefore, for employees in EMEA Investment Services & Markets, the definition of Indirect Ownership is:

  "Trades which are effected by or on behalf of the employee when that trade is carried out for the account of any of the following persons

  - The employee
  - Any person with whom they have a family relationship, or with whom they have close links;

- A person in respect of who the employee has a direct or indirect material interest in the outcome of the trade, other than obtaining a fee or commission for the execution of the trade"

Employees must consider this requirement and ensure trades which fit under the above definition are reported to avoid violations and breaches of both regulations and Policy.

Initial Public Offering (IPO)

The first offering of a company's securities to the public.

Investment Clubs

Organizations whose members make joint decisions on which securities to buy or sell. The securities are generally held in the name of the investment club. Prior to participating in an investment club, all employees (excluding Non-Classified Employees) are required to obtain written permission from their Preclearance Compliance Officer. Employees who receive permission to participate in an investment club are subject to the requirements of this policy.

Investment Company

A company that issues securities that represent an undivided interest in the net assets held by the company. Mutual funds are open-end investment companies that issue and sell redeemable securities representing an undivided interest in the net assets of the company.

Micro-Cap Access Decision Maker (MCADM) Employee

A subset of ADM Employees who make recommendations or decisions regarding the purchase or sale of any security of an issuer with a small market capitalization. The market capitalization threshold used when determining if an ADM Employee is considered a MCADM Employee is a market capitalization equal to or less than $250 million (for all other countries, the local currency's USD equivalent is used).

Money Market Fund

A mutual fund that invests in short-term debt instruments where its portfolio is valued at amortized cost so as to seek to maintain a stable net asset value (typically, of $1 per share).

Non-Discretionary (Managed) Account

An account in which the employee has a beneficial interest but no direct or indirect control over the investment decision making process. It may be exempted from preclearance and reporting procedures only if the Ethics Office is satisfied that the account is truly non-discretionary (i.e., the employee has given total investment discretion to an investment manager and retains no ability to influence specific trades). Employees are required to complete an annual certification in PTA regarding managed accounts. In addition, employees are required to provide copies of statements to Compliance when requested.

Non-Self-Directed Accounts

The portion of the Company 401(k) balance invested in Tier 1 - LifePath Index Funds, Tier 2 - Passively Managed Index Funds, Tier 3 - Actively Managed Funds, and/or BNY Mellon stock.

Option

A security which gives the investor the right, but not the obligation, to buy or sell a specific security at a specified price within a specified time frame. For purposes of compliance with this policy, an employee who buys/sells an option is deemed to have purchased/sold the underlying security when the option was purchased/sold. Four combinations are possible as described below:

Call Options

- If an employee buys a call option, the employee is considered to have purchased the underlying security on the date the option was purchased.

- If an employee sells a call option, the employee is considered to have sold the underlying security on the date the option was sold (for covered call writing, the sale of an out-of-the-money option is not considered for purposes of the 60 day trading prohibition). Please note that this would not apply to covered calls on BNY Mellon stock as option trades of Company stock are prohibited.

Put Options

- If an employee buys a put option, the employee is considered to have sold the underlying security on the date the option was purchased.
- If an employee sells a put option, the employee is considered to have bought the underlying security on the date the option was sold.
- Opening and closing or closing and opening a put position within 60 days of each other for employees classified as Investment Employee and Access Decision Maker will subject the trade to profit disgorgement.

Personal Trading Activity

Trading in investments or securities for the benefit of oneself or immediate family member as is defined by the policy for Indirect Ownership. This includes brokerage or investment accounts for which the employee is named as holder, has a beneficial interest or control and any in which the employee shares an ownership interest with persons who are not covered under this Policy or has the power, directly or indirectly, to effect transactions in the account. This may be a formal power, e.g., through a power of attorney or a fiduciary relationship such as trustee or custodian, or an informal arrangement, including the accounts of minor children and other financial dependents and, only when required by local regulation, the accounts of spouses and domestic partners.

Preclearance Compliance Officer

A person designated by the Ethics Office to administer, among other things, employees' preclearance requests for a specific business (for purposes of this policy, the term "Compliance Officer" and "Preclearance Compliance Officer" are used interchangeably).

Pre-Release Earnings Group (PREG)

The Pre-Release Earnings Group consists of any individual determined by the Company's Corporate Finance Department to be a member of the group or are deemed to have access to MNPI on BK.

Private Placement

An offering of securities that is exempt from registration under various laws and rules, such as the Securities Act of 1933 in the U.S. and the Listing Rules in the U.K. Such offerings are exempt from registration because they do not constitute a public offering. Private placements can include limited partnerships, certain cooperative investments in real estate, co-mingled investment vehicles such as hedge funds, investments in privately-held and family owned businesses and Volcker Covered Funds. For the purpose of this policy, time-shares and cooperative investments in real estate used as a primary or secondary residence are not considered to be private placements.

Proprietary Fund

An investment company or collective fund for which a Company subsidiary serves as an investment adviser, sub-adviser or principal underwriter. The Proprietary Funds listing can be found on MySource on the Compliance and Ethics homepage or it can be obtained by sending an email to the Securities Trading Policy Help Line at securitiestradingpolicyhelp@bnymellon.com.

Scalping

The purchase or sale of securities for clients for the purpose of affecting the value of a security owned or to be acquired by you or the company.

Securities/Financial Instruments (Collectively "Securities")

Transferable Securities and/or Money Market Instruments

Any investment that represents an ownership stake or debt stake in a company, partnership, governmental unit, business or other enterprise. It includes stocks, bonds, notes, evidences of indebtedness, certificates of participation in any profit-sharing agreement, units in collective investment undertakings, collateral trust certificates and certificates of deposit. It also includes security-based derivatives and swaps and many types of puts, calls, straddles and options on any security or group of securities; fractional undivided interests in oil, gas, or other mineral rights; and investment contracts, variable life insurance policies and variable annuities whose cash values or benefits are tied to the performance of an investment account. Unless expressly exempt, all securities transactions are covered under the provisions of this policy (See exempt securities).

Self-Directed Accounts

An account established as part of the company 401(k) plan that offers employees the opportunity to build and manage their own investment portfolio through the purchase and sale of a broad variety of Exchange Traded Funds, Proprietary Funds, and non-Proprietary Funds.

Short Sale

The sale of a security that is not owned by the seller at the time of the trade.

Spread Betting

A type of speculation that involves taking a bet on the price movement of a security. A spread betting company quotes two prices, the bid and offer price (also, called the spread), and investors bet whether the price of the underlying security will be lower than the bid or higher than the offer. The investor does not own the underlying security in spread betting, they simply speculate on the price movement of the stock.

Tender Offer

An offer to purchase some or all shareholders' shares in a corporation. The price offered is usually at a premium to the market price.

Volcker Covered Fund

Generally, a "Volcker Covered Fund" is a domestic or foreign hedge fund, private equity fund, venture capital fund, commodity pool or alternative investment fund ("AIF") that is sold in a private, restricted or unregistered offering to investors who must meet certain net worth, income or sophistication standards or is sold to a restricted number of investors.

Generally, the fund is not registered with a securities/commodity regulator and therefore cannot be offered to the general or retail public unless the investor meets some type of qualification to demonstrate the investor does not need the protection of the securities or commodities regulations.

Some examples of funds that generally **are not Covered Funds** are U.S. registered mutual funds, U.S. registered closed-end funds that are traded on an exchange, U.S. registered ETFs (exchange-traded funds), U.S. registered UITs (unit investment trusts), UCITs (Undertakings for Collective Investment in Transferable Securities, which are primarily sold in the European Union), similarly publicly registered investment pools that are available on a retail basis without investment restrictions, and U.S. bank common and collective funds.

A complete list of Covered Funds can be found at the Volcker Compliance Site on MySource or refer to the Volcker Covered Funds Policy (Corporate Policy I-A-049).

EXHIBIT VII
TAX AND SOCIAL SECURITY CONSEQUENCES OF PARTICIPATION IN THE ESPP, SAP, AND LTIP[2]

1. Belgium

The following is intended to briefly summarize certain tax consequences associated with the acquisition of Shares ("Shares") under (i) The Bank of New York Mellon Corporation Employee Stock Purchase Plan (the "ESPP") and (ii) The Bank of New York Mellon Corporation Long-Term Incentive Plan (the "LTIP").

This discussion reflects the tax and other law as in effect in Belgium on March 12, 2019. Such laws are often complex and change frequently. As a result, the information contained in this description may be out of date at the time the employee is granted an award, acquires Shares or sells Shares acquired under the ESPP and/or the LTIP.

In addition, this description does not discuss all of the various laws, rules and regulations that may apply. It may not apply to the employee's particular tax or financial situation and the Company is not in a position to assure the employee of any particular tax result. **Accordingly, the employee is strongly advised to seek appropriate professional advice as to how the tax or other laws in his/her country apply to his/her specific situation.**

If the employee is a citizen or resident of a country other than Belgium, the information contained in this description may not be applicable to the employee.

Any examples contained within this description are for illustrative purposes only.

ESPP

Enrollment in the ESPP

The employee is not subject to tax when a stock purchase right is granted to him/her under the ESPP (*i.e.*, when the employee subscribes to the ESPP).

Purchase of Shares

When Shares are purchased under the ESPP, the employee will be subject to personal income tax (at the normal progressive income tax rates) on the difference (or 'discount') between the fair market value of the Shares on the date of purchase and the purchase price.

Example:
- Accumulated contributions at the end of a certain purchase period: US$ 1,500
- Purchase price: US$ 47.50
- Number of Shares purchased: 31 (for purposes of this example, the number was rounded)
- Stock exchange price on the purchase date: US$ 50.00

[2] All figures in the examples are for illustrative purposes only.

The employee will be taxed on the difference between US$ 50.00 and US$ 47.50 (*i.e.*, US$ 2.50) times the number of Shares purchased (*i.e.*, 31) or 31 x US$ 2.50 = US$ 77.50 or EUR 68.20 (at an exchange rate of US$ 1: EUR 0.88). This taxable amount, *i.e.,* US$ 77.50 or EUR 68.20 in the example, will be taxed at the normal progressive income tax rates. If the employee were, for instance, to be taxed at a 50% rate, the tax due will amount to US$ 38.75 or EUR 34.1 (at an exchange rate of US$ 1: EUR 0.88). The local employer will withhold income taxes on the taxable amount at the time of purchase (amount to be withheld needs to be determined individual by individual on the basis of published tables).

If, however, the employee undertakes in writing to hold the Shares for a minimum period of two years as of their purchase in a written agreement with the Company, and actually holds the Shares during that period of time, the taxable benefit may be reduced, from a tax perspective, to the difference between 100/120th of the fair market value of the Shares on the purchase date and the amount paid for the Shares.

Sale of Shares

When the employee subsequently sells the Shares purchased under the ESPP, he/she should not be subject to capital gains tax.

The employee will be subject to a 0.35 % stock exchange tax at the time he/she sells the Shares purchased under the ESPP (capped at EUR 1,600). The stock exchange tax applies on the sale proceeds on a per transaction basis (subject to the applicable maximum threshold). The employee will be responsible for filing a stock exchange tax return and paying the tax due by the end of the second month following the month of the sale, except in the unlikely event that the financial intermediary involved in the sale of shares arranges to pay and/or remit the stock exchange tax on the employee's behalf via a Belgian representative.

Dividends

Where Shares are acquired under the ESPP, dividends may be paid with respect to these Shares if the Company, in its discretion, declares a dividend. The dividends received will be subject to income tax in Belgium (at a rate of 30%) and to U.S. federal income withholding tax. The employee may be entitled to reduce the U.S. federal income withholding tax rate provided that the appropriate certifications concerning domicile in Belgium are provided as required by the United States Internal Revenue Service (i.e., Substitute Form W-8BEN Certificate of Foreign Status and Instructions available from the brokerage firm(s) retained by the Company).

Withholding and Reporting

The local employer is required to withhold income tax at the time of the taxable event and to report the taxable amount in the employee's salary forms (fiscal voucher 281.10). The employee is always obliged and responsible to report the benefit in kind on his/her annual income tax return and to pay any taxes resulting from the purchase of the Shares.

In addition, the employee is always obliged and responsible to report any security or bank account held outside Belgium on his/her annual income tax return. Furthermore, the employee will also have to provide a central contact point at the National Bank of Belgium with the account number of such foreign bank accounts in a separate report (the form for, and modalities of, this reporting obligation are available on www.nbb.be.

Social Security

If the Company does not charge the costs related to the ESPP to the employee's local employer and if the local employer is not directly or indirectly involved in the ESPP, no social security contributions are in principle due on the fringe benefit derived from the participation in the ESPP.

However, according to the recently adjusted administrative instructions of the Belgian social security authorities, the benefits become subject to social security contributions as soon as the benefit's attribution can be linked to the employment relationship, even if no local intervention occurs.

Tax on securities accounts

The employee may be subject to a 0.15% tax on securities accounts with Belgian and foreign financial institutions if the total average annual value of the securities he/she holds on securities accounts exceeds EUR 500,000. For securities accounts maintained with Belgian financial institutions, the responsibility to report and pay the tax lies with the Belgian institutions. If the employee holds securities on accounts with several Belgian financial institutions and the threshold of EUR 500.000 is not reached with respect to the separate accounts, but only taken together, then the employee is responsible to report and pay the tax. In case shares are held on foreign securities accounts, and the tax is not voluntarily withheld abroad, you will be solely responsible for declaring and paying the tax on securities accounts due.

LTIP - RSUs

Grant

The employee should not be subject to taxation on the date the Company grants him/her RSUs under the LTIP that is payable in Shares.

Vesting

The employee should be subject to the taxation on the date he/she becomes vested in the RSU and receives Shares and should be taxed, on the fair market value of the Shares at that time. The taxable amount will be classified as employment compensation and will be subject to income taxes at progressive tax rates.

Sale of Shares

When the employee subsequently sells the Shares acquired under the LTIP, he/she should not be subject to capital gains tax.

The employee will be subject to a 0.35% stock exchange tax at the time he/she sells the Shares purchased under the ESPP (capped at EUR 1,600). The stock exchange tax applies on the sale proceeds on a per transaction basis (subject to the applicable maximum threshold). The employee will be responsible for filing a stock exchange tax return and paying the tax due by the end of the second month following the month of the sale, except in the unlikely event that the financial intermediary involved in the sale of shares arranges to pay and/or remit the stock exchange tax on the employee's behalf via a Belgian representative.

Dividends

Where Shares are acquired under the LTIP, dividends may be paid with respect to these Shares if the Company, in its discretion, declares a dividend. The dividends received will be subject to income tax in Belgium (at a rate of 30%) and to U.S. federal income withholding tax. The employee may be entitled to reduce the U.S. federal income withholding tax rate provided that the appropriate certifications concerning domicile in Belgium are provided as required by the United States Internal Revenue Service (i.e., Substitute Form W-8BEN Certificate of Foreign Status and Instructions available from the brokerage firm(s) retained by the Company).

Dividend equivalents

The employee will be subject to income taxes at progressive income tax rates on any dividend equivalents that are paid to him/her prior to the acquisition of the Shares.

The local employer will report the payment to the tax authorities and will withhold tax from the payment. The employee is always obliged and responsible to report the payment on his/her annual income tax return and to pay any additional taxes due.

Withholding and Reporting

The local employer is required to withhold income tax at the time of the taxable event and to report the taxable amount in the employee's salary form (fiscal voucher 281.10). The employee is always obliged and responsible to report the benefit in kind on his/her annual income tax return and to pay any taxes resulting from the vesting of the Shares.

In addition, the employee is always obliged and responsible to report any security or bank account held outside Belgium on his/her annual income tax return. Furthermore, the employee will also have to provide a central contact point at the National Bank of Belgium with the account number of such foreign bank accounts in a separate report (the form for, and modalities of, this reporting obligation are available on www.nbb.be).

Social security

If the Company does not charge the costs related to the LTIP to the employee's local employer and if the local employer is not directly or indirectly involved in the LTIP, no social security contributions were in principle due on the benefit derived from the participation in the LTIP.

However, according to the recently adjusted administrative instructions of the Belgian social security authorities, the benefits become subject to social security contributions as soon as the benefit's attribution can be linked to the employment relationship, even if no local intervention occurs.

Tax on securities accounts

The employee may be subject to a 0.15% tax on securities accounts with Belgian and foreign financial institutions if the total average annual value of the securities he/she holds on securities accounts exceeds EUR 500,000. For securities accounts maintained with Belgian financial institutions, the responsibility to report and pay the tax lies with the Belgian institutions. If the employee holds securities on accounts with several Belgian financial institutions and the threshold of EUR 500.000 is not reached with respect to the separate accounts, but only taken together, then the employee is responsible to report and pay the tax. In case shares are held on foreign securities accounts, and the tax is not voluntarily withheld abroad, you will be solely responsible for declaring and paying the tax on securities accounts due.

2. Ireland

The following is intended to briefly summarize certain tax consequences associated with the acquisition of Shares ("Shares") under (i) The Bank of New York Mellon Corporation Employee Stock Purchase Plan (the "ESPP") and (ii) The Bank of New York Mellon Corporation Long-Term Incentive Plan (the "LTIP").

This discussion reflects the tax and other law as in effect in Ireland on March 1, 2019. Such laws are often complex and change frequently. As a result, the information contained in this description may be out of date at the time the employee is granted an award, acquires Shares or sells Shares acquired under the ESPP and/or the LTIP.

In addition, this description does not discuss all of the various laws, rules and regulations that may apply. It may not apply to the employee's particular tax or financial situation and the Company is not in a position to assure the employee of any particular tax result. **Accordingly, the employee is strongly advised to seek appropriate professional advice as to how the tax or other laws in his/her country apply to his/her specific situation.**

If the employee is a citizen or resident of a country other than Ireland, the information contained in this description may not be applicable to the employee.

Any examples contained within this description are for illustrative purposes only.

ESPP

Enrollment in the ESPP

The employee is not subject to tax when a stock purchase right is granted to him/her under the ESPP (*i.e.*, when the employee subscribes to the ESPP).

Purchase of Shares

When shares are purchased under the ESPP, the employee will generally be subject to personal income tax at the employee's marginal rate, either 20% or 40% (2019 income), on the difference (or spread) between the fair market value of the Shares on the date of purchase and the purchase price. In addition, the employee also will be subject to the Universal Social Charge ("USC") (at rates up to 8% depending on the employee's income level) and employee Pay Related Social Insurance ("PRSI") on the spread at purchase (at a rate of 4%).

The employee must pay income tax on the spread at the higher tax rate (currently 40%), plus USC and employee PRSI within 30 days of the purchase date without an assessment by the tax inspector. If the employee is subject to income tax at the lower tax rate (currently 20%), he/she may apply to pay tax at the lower rate. However, if permission to pay tax at the lower rate is not received within 30 days of the purchase date, the employee must pay tax at the higher rate and seek a refund on any overpayment.

Example:

- Accumulated contributions at the end of a certain purchase period: US$ 1,500
- Purchase price: US$ 47.50
- Number of Shares purchased: 31 (for purposes of this example, the number was rounded)
- Stock exchange price on the purchase date: US$ 50.00

The employee will be taxed on the difference between US$ 50.00 and US$ 47.50 (*i.e.*, US$ 2.50) times the number of Shares purchased (*i.e.*, 31) or 31 x US$ 2.50 = US$ 77.50 or EUR 68.20 (at an exchange rate of US$ 1: EUR 0.88). This taxable amount, *i.e.,* US$ 77.50 or EUR 68.20 in the example, will be taxed at the marginal tax rate. If the employee were, for instance, to be taxed at a 40% rate, the income tax due will amount to US$ 31.00 or EUR 27.28 (at an exchange rate of US$ 1: EUR 0.88). In addition, the employee will be liable for USC and employee PRSI on the taxable amount, in this example of US$ 77.50 or EUR 68.20.

Sale of Shares

When the employee subsequently sells the Shares purchased under the ESPP, any gain (*i.e.,* the difference between the sale price and the fair market value of the Shares on the purchase date) will be subject to capital gains tax at a rate of 33%. However, capital gains tax is only payable on gains from all sources in excess of the annual personal exemption in any tax year (€1,270 for gains realized in 2019).

Dividends

Where Shares are acquired under the ESPP, dividends may be paid with respect to these Shares if the Company, in its discretion, declares a dividend. The dividends received will be subject to income tax in Ireland (at marginal tax rates), USC (at rates up to 8% depending on the employee's income level) and to U.S. federal income withholding tax. In addition, depending on the employee’s personal circumstances, the employee may also be subject to employee PRSI on any dividends received. The employee may be entitled to reduce the U.S. federal income withholding tax rate provided that the appropriate certifications concerning domicile in Ireland are provided as required by the United States Internal Revenue Service (*i.e.*, Substitute Form W-8/BEN Certificate of Foreign Status and Instructions, available from the brokerage firm(s) retained by the Company). Further, the employee may be entitled to a tax credit against his/her Irish income tax for the U.S. federal income tax withheld at source

Withholding and Reporting

The local employer will not withhold income tax, employee PRSI or the USC when Shares are purchased under the ESPP, but will report the details of the grant and purchase of Shares to the Irish Revenue Commissioners. It is the employee's responsibility to report and pay any tax due as a result of his/her participation in the ESPP within the timeframes set forth by the Irish Revenue Commissioners.

Social security

Social security contributions (*e.g.,* employee PRSI) are due on the income derived from participation in the ESPP. As referenced above, the local employer will not withhold the employee's portion of such contributions.

LTIP - RSUs

Grant

The employee should not be subject to taxation on the date the Company grants him/her an RSU under the LTIP that is payable in Shares.

Vesting

The employee will be subject to taxation at vesting (*i.e.,* on the receipt of the Shares) on the fair market value of the Shares at that date. The taxable amount will be classified as employment compensation and will generally be subject to income taxes at the employee's marginal rate, either 20% or 40% (2019 income), a Universal Social Charge ("USC") (at rates up to 8% depending on the employee's income level) and employee Pay Related Social Insurance ("PRSI") at a rate of 4%.

Sale of Shares

When the employee subsequently sells the Shares acquired under the LTIP, any gain (*i.e.,* the difference between the sale price and the fair market value of the Shares on the vesting date) will be subject to capital gains tax at a rate of 33%. However, capital gains tax is only payable on gains from all sources in excess of the annual personal exemption in any tax year (€1,270 for gains realized in 2019).

Dividends

Where Shares are acquired under the LTIP, dividends may be paid with respect to these Shares if the Company, in its discretion, declares a dividend. The dividends received will be subject to income tax in Ireland (at marginal tax rates), USC (at rates up to 8% depending on the employee's income level) and to U.S. federal income withholding tax. In addition, depending on the employee’s personal circumstances, the employee may also be subject to employee PRSI on any dividends received. The employee may be entitled to reduce the U.S. federal income withholding tax rate provided that the appropriate certifications concerning domicile in Ireland are provided as required by the United States Internal Revenue Service (*i.e.*, Substitute Form W-8/BEN Certificate of Foreign Status and Instructions, available from the brokerage firm(s) retained by the Company). Further, the employee may be entitled to a tax credit against his/her Irish income tax for the U.S. federal income tax withheld at source

Dividend Equivalents

If a dividend is declared on the Company's common stock and the employee holds unvested RSUs on the record date, the employee is eligible for dividend equivalents. The employee will be subject to income tax, USC and PRSI on any dividend equivalents paid to him/her.

Withholding and Reporting

The local employer must withhold and report income tax, USC and the employee portion of the PRSI upon vesting of the RSUs and payment of dividend equivalents. The local employer is also required to report the details of the RSUs to the Revenue Commissioners on an annual basis.

It is the employee's responsibility to pay any taxes resulting from the sale of his/her shares and/or the receipt of any dividends.

Social security

Social security contributions (*e.g.,* employee PRSI) are due on the income derived from participation in the LTIP (*i.e.,* the fair market value of the Shares acquired upon vesting and dividend equivalents). As noted above, the local employer will withhold the employee's portion of such contributions.

3. Luxembourg

The following is intended to briefly summarize certain tax consequences associated with the acquisition of Shares ("Shares") under (i) The Bank of New York Mellon Corporation Employee Stock Purchase Plan (the "ESPP") and (ii) The Bank of New York Mellon Corporation Long-Term Incentive Plan (the "LTIP").

This discussion reflects the tax and social security laws as in effect in Luxembourg on March 1, 2019. Such laws are often complex and change frequently. As a result, the information contained in this description may be out of date at the time the employee is granted an award, acquires Shares or sells Shares acquired under the ESPP and/or the LTIP.

In addition, this description does not discuss all of the various laws, rules and regulations that may apply. It may not apply to the employee's particular tax or financial situation and the Company is not in a position to assure the employee of any particular tax result. **Accordingly, the employee is strongly advised to seek appropriate professional advice as to how the tax or other laws in his/her country apply to his/her specific situation.**

If the employee is a resident of a country other than Luxembourg, the information contained in this description may not be applicable to the employee.

Any examples contained within this description are for illustrative purposes only.

ESPP

Enrollment in the ESPP

The employee is, in principle, not subject to tax when a stock purchase right is granted to him/her under the ESPP (*i.e.,* when the employee subscribes to the ESPP).

Purchase of Shares

When shares are purchased under the ESPP, the employee likely will be subject to tax on the difference (or spread) between the fair market value of the Shares on the date of purchase and the purchase price. The taxable amount is treated as salary income and as such is subject to personal income tax (based on progressive tax rates (up to 45.78% including employment fund contributions) depending on the employee's personal situation).

Example:

- Accumulated contributions at the end of a certain purchase period: US$ 1,500
- Purchase price: US$ 47.50
- Number of Shares purchased: 31 (for purposes of this example, the number was rounded)
- Stock exchange price on the purchase date: US$ 50.00

The employee will be taxed on the difference between US$ 50.00 and US$ 47.50 (*i.e.*, US$ 2.50) times the number of Shares purchased (*i.e.*, 31) or 31 x US$ 2.50 = US$ 77.50 or EUR 68.20 (at an exchange rate of US$ 1: EUR 0.88). This taxable amount, *i.e.,* US$ 77.50 or EUR 68.20 in the example, will be taxed at the normal progressive income tax rates. If the employee were, for instance, to be taxed at a 45.78% rate, the tax due will amount to approximately US$ 35.48 or EUR 31.22 (at an exchange rate of US$ 1: EUR 0.88).

Sale of Shares

When the employee subsequently sells the Shares purchased under the ESPP, the employee will not be subject to capital gains tax on any gain (*i.e.,* the difference between the sale price and the fair market value of the Shares on the purchase date) provided the following conditions are met:

(1) The employee has held the Shares for less than seven calendar days or for more than six months from the date of acquisition;

(2) The employee has not: (i) at any time during the last five years preceding the date of the disposition, directly or indirectly held more than 10% of the share capital of the Company (either alone or together with his/her spouse or children); or (ii) acquired free of charge, within the five years preceding the transfer, a participation that was constituting a substantial participation in the hands of the alienator (or the alienators in case of successive transfers free of charge within the same five-year period); and

(3) The Shares are not held as a business asset.

If conditions (1) and/or (3) are not met, the gain resulting from the sale will be taxable as ordinary income (based on progressive tax rates (up to 45.78% including employment fund contributions) depending on the employee's personal situation). If only condition (1) is not met, the speculative gain is not subject to tax if the total annual speculative gains do not exceed a certain threshold set annually (*i.e.,* speculative gains are not subject to tax if the aggregate gains realized within the same tax year do not exceed EUR 500). If only condition (2) is not met, the gain resulting from the sale will be taxed as extraordinary income according to the half-global rate method, *i.e.,* the average rate applicable to the sum of ordinary and extraordinary income is calculated according to progressive income tax rates and half of the average rate is applied to the extraordinary income (*i.e.*, maximum rate of 22.89% in 2019). These rules are complex and the employee is advised to consult with his/her personal advisor to understand the tax consequences upon a sale of Shares.

Dividends

Where Shares are acquired under the ESPP, dividends may be paid with respect to these Shares if the Company, in its discretion, declares a dividend. Fifty-percent (50%) of the dividends received will be subject to income tax in Luxembourg[3] (at rates up to 45.78% including employment fund contributions) to the extent such amount is in excess of the annual tax-free allowance[4] applicable to

[3] Please note that the 50% exemption will be applicable only if the Company is (i) a Luxembourg resident fully-taxable company limited by share capital; (ii) a company limited by share capital resident in a State with which Luxembourg has concluded a double tax treaty and liable to a tax corresponding to Luxembourg corporate income tax; or (iii) a company resident in an EU Member State and covered by Article 2 of the EU Parent-Subsidiary Directive.

[4] Up to EUR 1,500 (or EUR 3,000 for jointly taxable couples).

income from movable property (mainly interest and dividends). Employees may also benefit from a lump sum annual deduction that is available for investment expenses. The dividends also will be subject to U.S. federal income withholding tax. The employee may be entitled to reduce the U.S. federal income withholding tax rate provided that the appropriate certifications concerning domicile in Luxembourg are provided as required by the United States Internal Revenue Service (*i.e.,* Substitute Form W-8/BEN Certificate of Foreign Status and Instructions, available from the brokerage firm(s) retained by the Company). Further, the employee may be entitled to a tax credit against his/her Luxembourg income tax for the U.S. federal income tax withheld at source.

Withholding and Reporting

The local employer will withhold, on a monthly basis, tax on the ESPP income, together with the income tax on wages, because the spread will be considered a benefit in-kind to the employee. The local employer must report the income tax on the employee's Certificat de Remuneration and pay the withheld amount to the Luxembourg tax authorities (*i.e.,* Administration des Contributions Directes). The employee will not have reporting obligations with respect to income obtained under the ESPP. However, if the employee's total earnings (including the income from the ESPP) exceed an annual ceiling, the employee is required to file an annual tax return on or before March 31st following the relevant tax year and has to include any income realized under the ESPP.

As with income taxes, the employee's portion of social security contributions will be withheld and be paid by the local employer..

Social security

The employee also will be subject to social security contributions on the income received under the ESPP to the extent the monthly wage ceiling has not been exceeded already. The monthly wage ceiling amounts to EUR 10,355.50 (2019). Further, please note that such annual wage ceiling is applicable only to social security contributions regarding sickness, pension, accident, mutual insurance and health at work.

The aggregate rate of the social security contribution is 12.45% for Luxembourg employees.

LTIP - RSUs

Grant

The employee should not be subject to taxation on the date the Company grants him/her an RSU under the LTIP that is payable in Shares.

Vesting

The employee likely will be subject to the taxation on the date he/she becomes vested in the RSU and receives Shares and should be taxed, on the fair market value of the Shares at that time. The taxable amount is treated as salary income and as such is subject to personal income tax (based on progressive tax rates (up to 45.78% including employment fund contributions) depending on the employee's personal situation).

Sale of Shares

When the employee subsequently sells the Shares acquired under the LTIP, the employee will not be subject to capital gains tax on any gain (*i.e.,* the difference between the sale price and the fair market value of the Shares at vesting) provided the following conditions are met:

(1) The employee has held the Shares for less than seven calendar days or for more than six months from the date of acquisition;

(2) The employee has not: (i) at any time during the last five years preceding the date of the disposition, directly or indirectly held more than 10% of the share capital of the Company (either alone or together with his/her spouse or children); or (ii) acquired free of charge, within the five years preceding the transfer, a participation that was constituting a substantial participation in the hands of the alienator (or the alienators in case of successive transfers free of charge within the same five-year period); and

(3) The Shares are not held as a business asset.

If conditions (1) and/or (3) are not met, the gain resulting from the sale will be taxable as ordinary income (based on progressive tax rates (up to 45.78% including employment fund contributions) depending on the employee's personal situation). If only condition (1) is not met, the speculative gain is not subject to tax if the total annual speculative gains do not exceed a certain threshold set annually (*i.e.*, speculative gains are not subject to tax if the aggregate gains realized within the same tax year do not exceed EUR 500). If only condition (2) is not met, the gain resulting from the sale will be taxed as extraordinary income according to the half-global rate method, *i.e.,* the average rate applicable to the sum of ordinary and extraordinary income is calculated according to progressive income tax rates and half of the average rate is applied to the extraordinary income (*i.e.,* maximum rate of 22.89% in 2019). These rules are complex and the employee is advised to consult with his/her personal advisor to understand the tax consequences upon a sale of Shares.

Dividends

Where Shares are acquired under the LTIP, dividends may be paid with respect to these Shares if the Company, in its discretion, declares a dividend. Fifty-percent (50%) of the dividends received will be subject to income tax in Luxembourg[5] (at rates up to 45.78% including employment fund contributions) to the extent such amount is in excess of the annual tax-free allowance[6] applicable to income from movable property (mainly interest and dividends). Employees may also benefit from a lump sum annual deduction that is available for investment expenses. The dividends also will be subject to U.S. federal income withholding tax. The employee may be entitled to reduce the U.S. federal income withholding tax rate provided that the appropriate certifications concerning domicile in Luxembourg are provided as required by the United States Internal Revenue Service (*i.e.*, Substitute Form W-8/BEN Certificate of Foreign Status and Instructions, available from the brokerage firm(s) retained by the Company). Further, the employee may be entitled to a tax credit against his/her Luxembourg income tax for the U.S. federal income tax withheld at source.

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[5] Please note that the 50% exemption will be applicable under the above-mentioned conditions (see footnote 2 for further details).

[6] Up to EUR 1,500 (or EUR 3,000 for jointly taxable couples).

Dividend Equivalents

The employee will be subject to income tax and social insurance contributions on any dividend equivalents paid to him/her.

Withholding and Reporting

The local employer will withhold, on a monthly basis, tax on the RSU income and the dividend equivalents, together with the income tax on wages. The local employer must report the income tax on the employee's Certificat de Remuneration and pay the withheld amount to the Luxembourg tax authorities (*i.e.,* Administration des Contributions Directes). The employee will not have reporting obligations with respect to income obtained under the LTIP. However, if the employee's total earnings (including the income from RSUs and dividend equivalents) exceed an annual ceiling, the employee is required to file an annual tax return on or before March 31st following the relevant tax year and has to include any income realized under the LTIP.

As with income taxes, the employee's portion of social security contributions will be withheld and be paid by the local employer.

Social security

The employee also will be subject to social security contributions on the income received under the LTIP (*i.e.,* the fair market value of the Shares acquired upon vesting and dividend equivalents) to the extent the monthly wage ceiling has not been exceeded already. The monthly wage ceiling amounts to EUR 10,355.50 (2019). Further, please note that such annual wage ceiling is applicable only to social security contributions regarding sickness, pension, accident, mutual insurance and health at work.

The aggregate rate of the social security contribution is 12.45% for Luxembourg employees.

4. Netherlands

The following is intended to briefly summarize certain tax consequences associated with the acquisition of Shares ("Shares") under (i) The Bank of New York Mellon Corporation Employee Stock Purchase Plan (the "ESPP") and (ii) The Bank of New York Mellon Corporation Long-Term Incentive Plan (the "LTIP").

This discussion reflects the tax and other law as in effect in the Netherlands on March 1, 2019. Such laws are often complex and change frequently. As a result, the information contained in this description may be out of date at the time the employee is granted an award, acquires Shares or sells Shares acquired under the ESPP and/or the LTIP.

In addition, this description does not discuss all of the various laws, rules and regulations that may apply. It may not apply to the employee's particular tax or financial situation and the Company is not in a position to assure the employee of any particular tax result. **Accordingly, the employee is strongly advised to seek appropriate professional advice as to how the tax or other laws in his/her country apply to his/her specific situation.**

If the employee is a citizen or resident of a country other than the Netherlands, the information contained in this description may not be applicable to the employee.

Any examples contained within this description are for illustrative purposes only.

ESPP

Enrollment in the ESPP

The employee is not subject to tax when a stock purchase right is granted to him/her under the ESPP (*i.e.*, when the employee subscribes to the ESPP).

Purchase of Shares

When shares are purchased under the ESPP, the employee will be subject to tax on the difference (or spread) between the fair market value of the Shares on the date of purchase and the purchase price. The taxable amount is treated as salary income and as such is subject to wage withholding tax as an advance levy of personal income tax (at progressive rates of up to 51.75%).

Example:

- Accumulated contributions at the end of a certain purchase period: US$ 1,500
- Purchase price: US$ 47.50
- Number of Shares purchased: 31 (for purposes of this example, the number was rounded)
- Stock exchange price on the purchase date: US$ 50.00

The employee will be taxed on the difference between US$ 47.50 and US$ 50.00 (*i.e.*, US$ 2.50) times the number of Shares purchased (*i.e.*, 31) or 31 x US$ 2.50 = US$ 77.50 or EUR 68.20 (at an exchange rate of US$ 1: EUR 0.88). This taxable amount, *i.e.,* US$ 77.50 or EUR 68.20 in the example, will be taxed at the progressive income tax rates. If the employee were, for instance, to be taxed at a 51.75% rate, the tax due will amount to approximately US$ 40.11 or EUR 35.30 (at an exchange rate of US$ 1: EUR 0.88).

Sale of Shares

When the employee subsequently sells the Shares purchased under the ESPP, the employee will not be subject to capital gains tax on any gain (*i.e.,* the difference between the sale price and the fair market value of the Shares on the purchase date) provided the employee owns less than 5% of the Company's Shares.

Dividends

Where Shares are acquired under the ESPP, dividends may be paid with respect to these Shares if the Company, in its discretion, declares a dividend. The dividends received will not be subject to income tax in the Netherlands, but will be subject to U.S. federal income withholding tax. The employee may be entitled to reduce the U.S. federal income withholding tax rate provided that the appropriate certifications concerning domicile in the Netherlands are provided as required by the United States Internal Revenue Service (*i.e.*, Substitute Form W-8/BEN Certificate of Foreign Status and Instructions, available from the brokerage firm(s) retained by the Company).

Annual Investment Tax

The employee will be subject to an investment yield tax (Box III) at a rate of between 0.61% and 1.61% (effectively) based on the value of all of his/her assets (including Shares acquired under the ESPP) as of January 1 of the respective tax year, subject to an annual exemption (€30,000 for 2019). It is the employee's responsibility to report and pay any investment tax due in his/her income tax return.

Withholding and Reporting

The local employer will withhold, on a monthly basis, tax on the ESPP income, together with the income tax on wages, because the spread will be considered a benefit in-kind to the employee. The local employer must report the wage withholding tax on the employee's wage tax return and remit the withheld amount to the tax authorities. The employee is responsible for paying any difference between his/her personal income tax liability and the amount withheld. The employee must also report any taxable benefit derived from the ESPP on his/her personal income tax return.

As with income taxes, the employee's portion of social security contributions, if any, has to be withheld and be remitted by the local employer.

Social security

The income received under the ESPP will be subject to social security contributions at a rate of 27.65% to the extent the annual contribution ceiling (€34,300 for 2019) has not already been exceeded.

LTIP - RSUs

Grant

The employee should not be subject to taxation on the date the Company grants him/her an RSU under the LTIP that is payable in Shares.

Vesting

The employee will be subject to the taxation on the date he/she becomes vested in the RSU and receives Shares and should be taxed, on the fair market value of the Shares at that time. The taxable amount is treated as salary income and as such is subject to wage withholding tax as an advance levy of personal income tax (at progressive rates of up to 51.75%).

Sale of Shares

When the employee subsequently sells the Shares acquired under the LTIP, the employee will not be subject to capital gains tax on any gain (*i.e.,* the difference between the sale price and the fair market value of the Shares on the vesting date) provided the employee owns less than 5% of the Company's Shares.

Dividends

Where Shares are acquired under the LTIP, dividends may be paid with respect to these Shares if the Company, in its discretion, declares a dividend. The dividends received will not be subject to income tax in the Netherlands, but will be subject to U.S. federal income withholding tax. The employee may be entitled to reduce the U.S. federal income withholding tax rate provided that the appropriate certifications concerning domicile in the Netherlands are provided as required by the United States Internal Revenue Service (*i.e.*, Substitute Form W-8/BEN Certificate of Foreign Status and Instructions, available from the brokerage firm(s) retained by the Company).

Dividend Equivalents

The employee will be subject to income tax and social insurance contributions (subject to the applicable contribution ceiling) on any dividend equivalents paid to him/her.

Annual Investment Tax

The employee will be subject to an investment yield tax (Box III) at a rate of between 0.61% and 1.61% (effectively) based on the value of all of his/her assets (including Shares acquired under the LTIP) as of January 1 of the respective tax year, subject to an annual exemption (€30,000 for 2019). It is the employee's responsibility to report and pay any investment tax due in his/her income tax return.

Withholding and Reporting

The local employer will withhold, on a monthly basis, tax on the LTIP income (*i.e.,* the fair market value of the Shares acquired upon vesting and dividend equivalents), together with the wage withholding tax on wages. The local employer must report the wage withholding tax on the employee's wage tax return and remit the withheld amount to the tax authorities. The employee is responsible for paying any difference between his/her personal income tax liability and the amount withheld. The employee must also report any taxable benefit derived from the LTIP on his/her personal income tax return.

As with income taxes, the employee's portion of social security contributions has to be withheld and be remitted by the local employer.

Social security

The income received under the LTIP (*i.e.,* the fair market value of the Shares acquired upon vesting and dividend equivalents) also will be subject to social security contributions at a rate of 27.65% to the extent the annual contribution ceiling (€34,300 for 2019) has not already been exceeded.

5. United Kingdom

The following is intended to briefly summarize certain tax consequences associated with the acquisition of Shares under (i) The Bank of New York Mellon Corporation Employee Stock Purchase Plan (the "ESPP"), (ii) The Bank of New York Mellon Corporation Share Accumulation Plan ("SAP"), and (iii) The Bank of New York Mellon Corporation Long-Term Incentive Plan (the "LTIP").

This discussion reflects the tax and other law as in effect in the United Kingdom on March 1, 2019, as they apply to employees who are resident and domiciled in the UK. Such laws are often complex and change frequently. In particular, rates of income tax and National Insurance contributions may change in the coming years. As a result, the information contained in this description may be out of date at the time the employee is granted an award, acquires Shares or sells Shares acquired under the ESPP, SAP, and/or the LTIP.

In addition, this description does not discuss all of the various laws, rules and regulations that may apply. It may not apply to the employee's particular tax or financial situation and the Company is not in a position to assure the employee of any particular tax result. **Accordingly, the employee is strongly advised to seek appropriate professional advice as to how the tax or other laws in his/her country apply to his/her specific situation.**

If the employee is a citizen or resident of a country other than the United Kingdom, the information contained in this description may not be applicable to the employee.

Any examples contained within this description are for illustrative purposes only.

ESPP

Enrollment in the ESPP

The employee is not subject to tax when a stock purchase right is granted to him/her under the ESPP (*i.e.*, when the employee subscribes to the ESPP).

Purchase of Shares

When Shares are purchased under the ESPP, the employee will be subject to personal income tax (at the employee's marginal income tax rates) and employee National Insurance Contributions ("NICs") at the applicable rate on the difference (or spread) between the market value of the Shares on the date of purchase and the purchase price. The purchase of Shares under the ESPP will be made using contributions from the employee's post-tax salary.

Example:

- Accumulated contributions at the end of a certain purchase period: US$ 1,500
- Purchase price: US$ 47.50
- Number of Shares purchased: 31
- Stock exchange price on the purchase date: US$ 50.00

The employee will be taxed on the difference between US$ 47.50 and US$ 50.00 (*i.e.*, US$ 2.50) times the number of Shares purchased (*i.e.*, 31) or 31 x US$ 2.50 = US$ 77.50 or GBP 59.68 (at an exchange rate of US$ 1: GBP 0.77). This taxable amount, *i.e.,* US$ 77.50 or GBP 59.68 in the example, will be taxed at the employee's marginal income tax rates. If the employee were, for instance, to be taxed at a 40% rate, the income tax due will amount to US$ 31.00 or GBP 23.87 (at an exchange rate of US$ 1: GBP 0.77). In addition, the employee will be liable to employee NICs on the taxable amount.

Sale of Shares

When the employee subsequently sells the Shares purchased under the ESPP, any gain (*i.e.*, the difference between the sale price and the market value of the Shares on the purchase date) may be subject to capital gains tax.

Capital gains tax is only payable on gains from all sources in excess of the annual personal exemption in any tax year.

The employee will need to take into account the share identification rules in calculating his/her capital gains tax liability.

The capital gains tax rules are complex and their impact will vary according to the employee's own circumstances. **It is recommended that employees obtain their own independent tax advice prior to any acquisition or sale of shares.**

Dividends

Where Shares are acquired under the ESPP, dividends may be paid with respect to these Shares if the Company, in its discretion, declares a dividend. The dividends received will be subject to dividend income tax (but not NICs) in the United Kingdom to the extent that dividends from all sources exceed the annual dividend allowance (the applicable tax rate will depend on the employee's total income). The dividends will also be subject to U.S. federal income withholding tax. The employee may be entitled to reduce the U.S. federal income withholding tax rate provided that the appropriate certifications concerning domicile in the United Kingdom are provided as required by the United States Internal Revenue Service (*i.e.*, Substitute Form W-8/BEN Certificate of Foreign Status and Instructions, available from the brokerage firm(s) retained by the Company). Further, the employee may be entitled to a tax credit against his/her UK income tax for the U.S. federal income tax withheld at source.

Withholding and Reporting

The local employer will withhold income tax and employee NICs due on the spread when Shares are purchased under the ESPP. If the amount withheld is not sufficient to cover the employee's actual liability, he/she will be responsible for paying the difference.

The local employer is also required to report the details of the grant of purchase rights and the purchase of Shares, as well as the tax withheld, to HM Revenue & Customs on its annual UK tax returns (including the online share scheme report).

The employee should report details of any tax liabilities arising from the Shares acquired under the ESPP and Shares sold or disposed of, together with details of any dividend income, to HM Revenue & Customs on his/her annual self-assessment tax return. The employee will be responsible for paying any capital gains tax due as a result of the sale of Shares acquired under the ESPP.

Social security

The employee also will be subject to employee NICs on the income received under the ESPP at the applicable rates.

SAP – Approved Shares

The SAP is a tax preferential employee share plan (a "Schedule 2 SIP") which offers income tax and National Insurance advantages. The SAP is operated in conjunction with a trust (the "Trust") in which the Shares will be held on the employees' behalf. The SAP provides for four main types of Shares to be used. They are:

- "Partnership Shares" - the employee can use up to £1,800 of his/her salary in any tax year (or, if less, 10% of his/her salary in any tax year) to buy Partnership Shares. The trustee of the Trust (the "Trustee") will purchase Partnership Shares on the employee's behalf using contributions deducted from his/her pre-tax earnings.

- "Matching Shares" - his/her employer will give the employee up to two free Shares for each Partnership Share the employee buys, up to the maximum contribution the employee is permitted to make.

- "Free Shares" - his/her employer will award the employee a number of free shares up to a maximum value of £3,600 in any tax year.

- "Dividend Shares" - dividends paid on his/her shareholding by the Company are accumulated and used to buy additional Dividend Shares.

At this time, Free Shares and Matching Shares are not offered under the SAP.

Purchase of Shares

The employee will not be subject to income tax or employee NICs when Partnership Shares, Matching Shares, Free Shares or Dividend Shares are acquired on his/her behalf.

Withdrawal of Shares from the SAP

The tax treatment relating to Shares withdrawn from the Trust depends on the type of Shares withdrawn and the length of time the Shares were held in the SAP. When Shares are withdrawn they cease to be subject to the SAP if:

(a) They are transferred to the employee upon his/her instructions;
(b) The employee transfers his/her interest in the Shares held in the SAP; or
(c) They are sold by the Trustee upon the employee's direction.

Shares cease to be subject to the SAP if the employee ceases to be employed by the local employer, the Company or one of its subsidiaries or affiliates (the "Group"). If Shares cease to be subject to the SAP when the employee ceases to be employed by the Group for one of the specified "Good Leaver" reasons (including injury, disability, redundancy or retirement or a change in control or other circumstances ending the associated status of the local employer), "Good Leaver" treatment should be available as set out below.

Partnership Shares

The employee can sell or transfer Partnership Shares at any time.

The employee will not be liable for income tax or employee NICs in relation to his/her Partnership Shares if they are held in the SAP for five years. If the Partnership Shares are held in the SAP for less than three years, the employee will be liable for income tax and employee NICs calculated on the market value of the Partnership Shares when they cease to be subject to the SAP. If the Partnership Shares are held in the SAP for more than three years but less than five years, the employee will be liable for income tax and employee NICs calculated on the lesser of (i) the contributions used to buy the Partnership Shares and (ii) the market value of the Partnership Shares on the date they cease to be subject to the SAP. Charges to income tax and employee NICs will not apply where the Partnership Shares are withdrawn from the SAP as a consequence of the employee leaving employment for "Good Leaver" reasons.

Matching Shares

The employee is not permitted to withdraw his/her Matching Shares from the SAP for a holding period of between three and five years unless the employee ceases to be employed by the Group. If the employee leaves the Group for any reason other than a Good Leaver reason, the employee will forfeit any Matching Shares he/she has held for less than the specified forfeiture period (which will not be more than three years).

The employee will not be liable for income tax or employee NICs in relation to his/her Matching Shares if:

(a) the Shares are held in the SAP for five years or more; or
(b) the employee ceases to be employed by the local employer for one of the "Good Leaver" reasons described above.

If Matching Shares are held in the SAP for less than three years (*i.e.*, the employee ceases to be employed by the Group for other than a "Good Leaver" reason and has held his/her Shares for the specified forfeiture period or more), the employee will be liable for income tax and employee NICs calculated on the market value of the Shares on the date they cease to be subject to the SAP. If Matching Shares are held in the SAP for more than three years but less than five years, the employee will be liable for income tax and employee NICs based on the lesser of the market value of the Matching Shares at the date of the award and on ceasing to be subject to the SAP.

Free Shares

The employee can be awarded up to £3,600 of free shares each tax year.

The employee is not permitted to withdraw his/her Free Shares from the SAP for a holding period of between three and five years unless the employee ceases to be employed by the Group. If the employee leaves the Group for any reason other than a Good Leaver reason, the employee will forfeit any Free Shares he/she has held for less than the specified forfeiture period (which will not be more than three years).

The employee will not be liable for income tax or employee NICs in relation to his/her Free Shares if:

(a) the Shares are held in the SAP for five years or more; or
(b) the employee ceases to be employed by the local employer for one of the "Good Leaver" reasons described above.

If Free Shares are held in the SAP for less than three years (*i.e.*, the employee ceases to be employed by the Group for other than a "Good Leaver" reason and has held his/her Shares for the specified forfeiture period or more), the employee will be liable for income tax and employee NICs calculated on the market value of the Shares on the date they cease to be subject to the SAP. If Free Shares are held in the SAP for more than three years but less than five years, the employee will be liable for income tax and employee NICs based on the lesser of the market value of the Free Shares at the date of the award and on ceasing to be subject to the SAP.

Dividend Shares

The employee is not permitted to withdraw his/her Dividend Shares from the SAP for a holding period of three years unless the employee ceases to be employed by the Group. The employee will not be liable for income tax (employee NICs are not payable in relation to Dividend Shares in any event) in relation to his/her Dividend Shares if:

(a) the Shares are held in the SAP for three years or more; or
(b) the employee ceases to be employed by the local employer for one of the "Good Leaver" reasons.

If the employee's Dividend Shares cease to be subject to the SAP before three years after their acquisition on his/her behalf, the employee will be liable to income tax on the amount of the cash dividend used to acquire his/her Dividend Shares.

Sale of Shares

If the employee keeps his/her Shares in the SAP until the employee sells his/her Shares, the employee will not have to pay any capital gains tax on any increase in the market value of the Shares while they are in the SAP, however large. The employee will also have no capital gains tax liability if his/her Shares are forfeited under the rules of the SAP.

If the employee takes his/her Shares out of the SAP and sells them later, the employee may be subject to capital gains tax on any difference between the sale price of the Shares and the market value of the Shares at the time they were withdrawn from the SAP.

Capital gains tax is only payable on gains from all sources in excess of the annual personal exemption in any tax year.

The capital gains tax rules are complex and their impact will vary according to the employee's own circumstances. **It is recommended that employees obtain their own independent tax advice prior to any acquisition or sale of shares.**

Dividends

Where Shares are acquired under the SAP, dividends may be paid with respect to these Shares if the Company, in its discretion, declares a dividend. Any dividends received in relation to Shares that have been removed from SAP will be subject to dividend income tax (but not NICs) in the United Kingdom to the extent that dividends from all sources exceed the annual dividend allowance (the applicable tax rate will depend on the employee's total income). The dividends received will also be subject to U.S. federal income withholding tax. The employee may be entitled to reduce the U.S. federal income withholding tax rate provided that the appropriate certifications concerning domicile in the United Kingdom are provided as required by the United States Internal Revenue Service (*i.e.*, Substitute Form W-8/BEN Certificate of Foreign Status and Instructions, available from the brokerage firm(s) retained by the Company). Further, the employee may be entitled to a tax credit against his/her UK income tax for the U.S. federal income tax withheld at source.

Withholding and Reporting

<u>Selling Shares held in the SAP</u>

If the employee keeps his/her Shares in the SAP until the employee sell his/her Shares and an income tax and NICs liability arises on sale (as described in the 'Withdrawal of Shares From the SAP" section above), the Trustee will send the proceeds of sale to the employee's employing company. The local employer will then deduct the appropriate sum from the proceeds through the PAYE system and pay this to HM Revenue & Customs on the employee's behalf. The employee will be taxed on the amount indicated in the "Withdrawal of Shares From the SAP" section above. Income tax will be due on the taxable amount at his/her marginal income tax rate and employee NICs will be due at the applicable rate on the same amount.

<u>Transfer of Shares out of the SAP</u>

If the employee transfers his/her Shares out of the SAP and an income tax and NICs liability arises on withdrawal (as described in the "Withdrawal of Shares From the SAP" section above) the Trustee will notify the employee of the income tax and employee NICs to be paid. When the Trustee has received this sum from the employee, it will pay the income tax and employee NICs to HM Revenue & Customs on the employee's behalf and arrange for his/her name to be entered on the register of shareholders of the Company.

Please note that the Trustee is able to discharge any PAYE obligation that arises where the employee's Shares cease to be subject to the SAP by (i) arranging for the employee to pay a sum equal to the PAYE obligation; or (ii) selling a sufficient number of the employee's Shares held in the SAP and using the proceeds to meet that obligation.

The local employer is required to report the details of the tax withheld and other aspects of the operation of the SAP to HM Revenue & Customs on its annual UK tax returns (including the online share schemes report). The Trustee also has reporting obligations in relation to the SAP.

It is the employee's responsibility to report any transaction relating to the SAP where taxable income arises, the subsequent sale of Shares that have ceased to be held in the SAP or the receipt of any dividends on his/her annual UK Tax Return. In addition, the employee will be responsible for paying any taxes due as a result of the sale of Shares no longer held in the SAP or the receipt of dividends.

Social security

Please refer to the 'Withdrawal of Shares from the SAP' section above for information related to the employee's NICs obligation (if any).

LTIP - RSUs

Grant

The employee should not be subject to taxation on the date the Company grants him/her an RSU under the LTIP that is payable in Shares.

Vesting

The employee will be subject to taxation on the date the RSU vests and the employee receives Shares, and he/she will be taxed on the market value of the Shares at that time. The taxable amount will be classified as employment income and will be subject to income tax at the employee's marginal tax rates and employee NICs at the applicable rates.

Sale of Shares

When the employee subsequently sells the Shares acquired under the LTIP, any gain (*i.e.*, the difference between the sale price and the market value of the Shares on the vesting date) may be subject to capital gains tax.

Capital gains tax is only payable on gains from all sources in excess of the annual personal exemption in any tax year.

The employee will need to take into account the share identification rules in calculating his/her capital gains tax liability.

The capital gains tax rules are complex and their impact will vary according to the employee's own circumstances. **It is recommended that employees obtain their own independent tax advice prior to any acquisition or sale of shares.**

Dividends

Where Shares are acquired under the LTIP, dividends may be paid with respect to these Shares if the Company, in its discretion, declares a dividend. The dividends received will be subject to dividend income tax (but not NICs) in the United Kingdom to the extent that dividends from all sources exceed the annual dividend allowance (the applicable tax rate will depend on the employee's total income).

The dividends will also be subject to U.S. federal income withholding tax. The employee may be entitled to reduce the U.S. federal income withholding tax rate provided that the appropriate certifications concerning domicile in the United Kingdom are provided as required by the United States Internal Revenue Service (*i.e.*, Substitute Form W-8/BEN Certificate of Foreign Status and Instructions, available from the brokerage firm(s) retained by the Company). Further, the employee may be entitled to a tax credit against his/her UK income tax for the U.S. federal income tax withheld at source.

Dividend Equivalents

The employee will be subject to income tax and NICs on any dividend equivalents paid to him/her.

Withholding and Reporting

The local employer will withhold income tax and employee NICs on the market value of the Shares acquired upon vesting and dividend equivalents. If the amount withheld is not sufficient to cover the employee's actual liability, he/she will be responsible for paying the difference.

The local employer is required to report the details of the grant of RSUs and the acquisition of Shares, as well as the tax withheld, to HM Revenue & Customs on its annual UK tax returns (including the online share schemes report (including the online share scheme report).

The employee should report details of any tax liabilities arising from the Shares acquired under the LTIP and Shares sold or disposed of, together with details of any dividend income, to HM Revenue & Customs on his/her annual self- assessment tax return. The employee will be responsible for paying any capital gains tax due as a result of the sale of Shares acquired under the LTIP.

Social security

The employee also will be subject to employee NICs on the income received under the LTIP (*i.e.,* the market value of the Shares acquired upon vesting and dividend equivalents) at the applicable rates.

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