



BNY MELLON

THE BANK OF NEW YORK MELLON  
CORPORATION

# Pillar 3 Disclosure

December 31, 2017

# THE BANK OF NEW YORK MELLON CORPORATION

## Pillar 3 Disclosure

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## Disclosure Road Map

The table below shows where disclosures relating to topics addressed in this Pillar 3 Disclosure can be found in The Bank of New York Mellon Corporation's Annual Report on Form 10-K for the year ended Dec. 31, 2017 (the "2017 Annual Report").

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## Introduction

In this Pillar 3 Disclosure (this “Disclosure”), 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. References in this Disclosure to “Parent” or the “Holding Company” refer to The Bank of New York Mellon Corporation on a standalone basis.

Certain business terms and commonly used acronyms used in this Disclosure are defined in the Glossary and Acronyms sections of this Disclosure.

Investors should also read the section titled “Forward-looking Statements.”

Established in 1792 by Alexander Hamilton, we were the first company listed on the New York Stock Exchange (NYSE: BK). With a more than 225-year history, BNY Mellon is a global company that manages and services assets for financial institutions, corporations and individual investors in 35 countries and more than 100 markets.

As of Dec. 31, 2017, BNY Mellon had \$33.3 trillion in assets under custody and/or administration (“AUC/A”), and \$1.9 trillion in assets under management (“AUM”). In 2017, the Company delivered 18% growth in earnings per share and increased the return on common equity to nearly 11% year-over-year.

### *Basis of Presentation*

The accounting and financial reporting policies of BNY Mellon, a global financial services company, conform to U.S. generally accepted accounting principles (“GAAP”) and prevailing industry practices.

There are no differences in the basis of consolidation between BNY Mellon’s Annual Report on Form 10-K and Quarterly Report on Form 10-Q (“SEC Reports”) as filed with the Securities and Exchange Commission (the “SEC”) and this Disclosure.

## Capital Guidelines and Proposals

### *Capital Requirements - Existing U.S. Requirements*

As a bank holding company (“BHC”), we are subject to consolidated regulatory capital rules administered by the Board of Governors of the Federal Reserve System (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 Office of the Comptroller of the Currency (“OCC”) in the case of our largest national bank subsidiaries, BNY Mellon, N.A. and The Bank of New York Mellon Trust Company, National Association. These requirements (the “U.S. capital rules”) are intended to ensure that banking organizations have adequate capital given the risk levels of their assets and off-balance sheet financial exposures.

### *Advanced Approaches Risk-Based Capital Rules*

The U.S. federal banking agencies’ “Advanced Approaches” risk-based capital rules, which are a subset of the U.S. capital rules, are generally applicable to banking organizations having \$250 billion or more in total consolidated assets or \$10 billion or more in on-balance sheet foreign exposures (including BNY Mellon) and based upon an advanced internal ratings-based (“IRB”) approach for credit risk and an advanced measurement approach (“AMA”) for operational risk. Under the so-called “Collins Amendment floor” provisions of the U.S. capital rules, the risk-based capital ratios (Common Equity Tier 1 (“CET1”), Tier 1, and total capital ratios) of Advanced Approaches banking organizations (such as BNY Mellon) are determined by calculating each capital ratio under the Advanced Approaches and the Standardized Approach and then setting the relevant capital ratio equal to the lower of the two ratios.

### *Leverage Ratios*

The U.S. federal banking agencies require a minimum 4% leverage capital ratio for all banking organizations. At Dec. 31, 2017, the leverage capital ratio for The Bank of New York Mellon Corporation was 6.6%.

The U.S. capital rules also implement a 3% Supplementary Leverage Ratio (“SLR”) for Advanced Approaches banking organizations, including BNY Mellon, which became effective Jan. 1, 2018. Unlike the leverage capital 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.

U.S. federal banking agencies have adopted an “enhanced” SLR for banking organizations with total consolidated assets of more than \$700 billion or assets under custody of more than \$10 trillion, as well as their depository institution subsidiaries. The enhanced SLR requires BNY Mellon and other U.S. global systemically important banks (“G-SIBs”) to maintain a 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 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 Jan. 1, 2018.

The quantitative disclosure required by the U.S. capital rules, with respect to the SLR, is provided in the “Supplementary Leverage Ratio” section in this Disclosure.

For further discussion of the regulatory capital framework and additional regulatory matters relevant to the Company, see “Supervision and Regulation” in our 2017 Annual Report.

#### *G-SIB Framework*

The U.S. capital rules’ required capital ratio minimums are also supplemented by a risk-based capital surcharge on G-SIBs. The Federal Reserve’s final rules to implement a G-SIB surcharge (the “Final U.S. G-SIB Rule”) 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. This first method is based on the Basel Committee on Banking Supervision’s (“BCBS”) 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. The Final U.S. G-SIB Rule does not add the G-SIB surcharge to post-stress minimum risk-based capital ratios for purposes of the Dodd-Frank Act Stress Tests (“DFAST”) or Comprehensive Capital Analysis and Review (“CCAR”). For 2017, the G-SIB surcharge applicable to BNY Mellon is 0.75% and, when fully phased-in on Jan. 1, 2019 as calculated applying metrics as currently applicable to BNY Mellon, would be 1.5%.

#### *Pillar 3 Disclosure*

The U.S. federal banking agencies have included within the U.S. capital rules public disclosure requirements, with an expressed objective of improving market discipline and encouraging sound risk-management practices.

The U.S. banking agencies require Pillar 3 disclosures at the holding company level for each calendar quarter. Separate and complete Pillar 3 disclosures are not required for consolidated subsidiaries of Advanced Approaches banking organizations, even if those subsidiaries themselves are Advanced Approaches banking organizations. A separate Pillar 3 disclosure therefore has not been prepared for any of our consolidated subsidiaries. Nevertheless, this Disclosure describes risk management policies and procedures, risk weighting methodologies, accounting policies and financial results, among other items, that apply to or encompass our consolidated subsidiaries. In addition, the U.S. banking agencies permit certain Pillar 3 Disclosure requirements to be satisfied by inclusion within the SEC Reports. In certain cases, BNY Mellon makes reference to its other public disclosures in this Disclosure.

On Jan. 28, 2015, the BCBS issued revisions to the Pillar 3 Disclosure requirements of the Basel framework. On March 11, 2016, the BCBS published a proposal that introduces further substantial additional disclosure requirements and consolidates previously published BCBS disclosure requirements, including those published on Jan. 28, 2015. The additional disclosure requirements aim to provide market participants with greater comparability across banks’ disclosures and to incorporate disclosures regarding more recent

regulatory capital and leverage requirements. The U.S. federal banking agencies have not yet proposed rules implementing the revised requirements of either the Jan. 28, 2015 or the March 11, 2016 document.

*Policy and Approach - Comparison with Annual and Quarterly Reports, Verification and Sign off*

This Disclosure illustrates BNY Mellon's assets both in terms of credit exposure and risk-weighted assets ("RWA"). For the purposes of this Disclosure, credit exposure is defined as the estimate of the amount at risk in the event of a default (before any recoveries). This estimate takes into account certain contractual commitments related to undrawn lines of credit, and is referred to as Exposure at Default ("EAD"). In contrast, the assets on BNY Mellon's balance sheet, as published in our SEC Reports, are reported as the carrying value only. Therefore, exposure values in this Disclosure can differ from asset values as reported in our SEC Reports.

This Disclosure is presented in accordance with the U.S. capital rules for Pillar 3 disclosure requirements. We maintain a disclosure policy that addresses internal controls and disclosure controls and procedures associated with the preparation of this Disclosure. One or more senior officers of BNY Mellon must attest that the contents of this Disclosure satisfy the requirements of the Capital Rule. There are no requirements for external auditing of this Disclosure; however CET1, Tier 1, and Total capital ratios as well as leverage capital ratio will be tested by external auditors as part of the annual financial statement audit.

### **Scope of Application**

The Bank of New York Mellon Corporation is the top-tier parent company to all members of its consolidated group and is subject to consolidated supervision by the Federal Reserve. The information in this Disclosure is presented on a consolidated basis that includes BNY Mellon and its subsidiaries. A list of our 2017 primary subsidiaries can be found in Exhibit 21.1 of our 2017 Form 10-K.

*Consolidation and Variable Interest Entities ("VIEs")*

BNY Mellon has variable interests in VIEs, which include investments in retail, institutional and alternative investment funds, including collateralized loan obligation ("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 VIEs previously discussed are included in the scope of ASU 2015-02 and are reviewed for consolidation based on the guidance in ASC 810, *Consolidation*.

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.

For more information on the consolidation of VIEs see Note 1 - Summary of Significant Accounting and Reporting Policies of the Notes to Consolidated Financial Statements in our 2017 Annual Report.

As of Dec. 31, 2017, we had \$1.1 billion of assets and \$369 million of liabilities included in our consolidated financial statements related to VIEs or other investment management funds we are required to consolidate. Approximately \$0.5 billion of the assets were classified as trading assets while the remainder is classified as available-for-sale securities or other assets. These consolidated investment management funds are risk-weighted in accordance with the U.S. capital rules' requirements. 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.

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.

As of Dec. 31, 2017, BNY Mellon had \$2.6 billion of assets and \$486 million of liabilities related to VIEs where BNY Mellon is not the primary beneficiary, and are included in our consolidated financial statements. The maximum loss exposure of \$3.1 billion for the non-consolidated VIEs relates solely to BNY Mellon's investments in, and unfunded commitments to, the VIEs. The assets are risk-weighted in accordance with the U.S. capital rules' requirements.

BNY Mellon has noncontrolling equity interests in various venture capital investments, strategic joint ventures and trade or clearing associations which are risk-weighted according to the U.S. capital rules' requirements. Investments where our percentage of voting stock or equity ownership ranges between 20% to 50% are accounted for under the equity method of accounting. For a listing of our most significant equity method investments see Note 1 - Summary of Significant Accounting and Reporting Policies of the Notes to Consolidated Financial Statements in our 2017 Annual Report. Those equities where our share in the voting stock or equity of the investee is less than 20% are accounted for under the cost method of accounting. See the "Equities Not Subject to Market Risk Rule" section of this Disclosure for a further discussion of these accounting treatments.

BNY Mellon does not have any non-consolidated entities that are deducted from regulatory capital. The minimum regulatory capital requirements of our insurance subsidiaries are deducted for regulatory purposes with 50% deducted from each of Other Tier 1 Capital and Tier 2 Capital.

#### *Restrictions on Transfer of Capital*

The Parent is a legal entity separate and distinct from its bank subsidiaries and other subsidiaries. Dividends and interest from its subsidiaries are the

Parent's principal sources of funds to make capital contributions or loans to its subsidiaries, to service its own debt, to honor its guarantees of debt issued by its subsidiaries or of trust preferred securities issued by a trust or to make its own capital distributions. Various federal and state statutes 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 Federal Deposit Insurance Corporation ("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, an insured depository institution may not pay any dividends if the institution is undercapitalized or if the payment of the dividend would cause the institution to become undercapitalized. Finally, the U.S. 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.

Subsequent to Dec. 31, 2017, our U.S. bank subsidiaries could declare dividends to the Parent of approximately \$6.2 billion, without the need for a regulatory waiver. In addition, at Dec. 31, 2017, non-bank subsidiaries of the Parent had liquid assets of approximately \$1.4 billion.

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 Act limits and generally requires collateral for extensions of credit by our insured subsidiary banks to BNY Mellon and 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 non-bank 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 non-bank affiliates are limited to 10% of such bank's regulatory capital, and in the aggregate for BNY Mellon and all such non-bank affiliates to 20%, and collateral must be between 100% and 130% of the amount of the credit, depending on the type of collateral.

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.

#### *Surplus of Insurance Subsidiaries and Subsidiary Regulatory Capital*

BNY Mellon and each of its subsidiary banks are subject to capital adequacy requirements promulgated by federal regulatory agencies. Certain non-bank subsidiaries of the Company are required to maintain minimum levels of shareholders' equity as specified by various U.S. and foreign regulatory agencies, including the SEC, the Financial Conduct Authority, the Prudential Regulation Authority and other foreign regulators.

BNY Mellon also has insurance subsidiaries that are regulated by various national and state regulatory agencies. Most of these insurance subsidiaries are required to meet minimum capital levels. We have insurance subsidiaries that offer life, accident, health and annuity products. Additionally, we have captive insurance subsidiaries that provide property and casualty insurance coverage for the primary benefit of BNY Mellon and its subsidiaries. As captive insurance subsidiaries, they primarily insure the risks of those BNY Mellon entities related to it through common ownership. The insured businesses pay premiums to the captive insurance subsidiaries in exchange for insurance. Two of our three insurance subsidiaries are underwriters in some capacity and currently only underwrite the risks associated with BNY Mellon and its subsidiaries. As of Dec. 31, 2017, these insurance subsidiaries had \$1.5 billion of aggregate capital surplus in excess of their statutory minimum requirements which is included in the total capital of BNY Mellon.

We have not identified any BNY Mellon subsidiaries that failed to meet minimum regulatory capital requirements.



## Capital Structure

The following table presents BNY Mellon's capital components described in the U.S. capital rules as phased-in to date.

Basel III capital components (in millions)	Advanced Approaches – Transitional	
	Dec. 31, 2017	Sept. 30, 2017
<b>CET1:</b>		
Common stock (par value)	\$ 14	\$ 14
Additional paid-in capital	26,665	26,588
Retained earnings	25,635	24,757
Accumulated other comprehensive income (loss), net of tax	(2,207)	(2,567)
Less: Treasury stock	(12,248)	(11,597)
Common shareholders' equity	37,859	37,195
Goodwill and intangible assets	(19,056)	(18,210)
Net pension fund assets	(169)	(72)
Deferred tax assets	(33)	(31)
Other (a)	(8)	(12)
Total CET1	18,593	18,870
<b>Other Tier 1 capital:</b>		
Preferred stock	3,542	3,542
Deferred tax assets	(8)	(8)
Net pension fund assets	(42)	(19)
Other (b)	(41)	(34)
Total Tier 1 capital	22,044	22,351
<b>Tier 2 capital:</b>		
Subordinated debt	1,250	1,300
Excess of eligible credit reserve over total expected credit losses (up to 0.60% of credit RWA)	31	49
Other (c)	(12)	(7)
Total Tier 2 capital	1,269	1,342
Total capital - Advanced Approaches	\$ 23,313	\$ 23,693

(a) Includes an adjustment related to gains on cash flow hedges, as well as 80% of the debit valuation adjustment ("DVA") at both Dec. 31, 2017 and Sept. 30, 2017.

(b) Includes 20% of the DVA at both Dec. 31, 2017 and Sept. 30, 2017; 50% of the deduction for the regulatory capital requirements of insurance underwriting subsidiaries at both Dec. 31, 2017 and Sept. 30, 2017 and Volcker capital deduction at both Dec. 31, 2017 and Sept. 30, 2017.

(c) Includes 50% of the deduction for the regulatory capital requirements of insurance underwriting subsidiaries at both Dec. 31, 2017 and Sept. 30, 2017.

*Preferred Stock*

BNY Mellon has 100 million authorized shares of preferred stock with a par value of \$0.01 per share. The table below presents a summary of BNY Mellon's preferred stock issued and outstanding at Dec. 31, 2017.

<b>Preferred stock summary at Dec. 31, 2017 (a)</b>		<b>Total shares issued and outstanding</b>	<b>Carrying value (b)</b> <i>(in millions)</i>
<b>Series</b>	<b>Per annum dividend rate</b>		
Series A (c)	Greater of (i) three-month LIBOR plus 0.565% for the related distribution period; or (ii) 4.000%	5,001	\$ 500
Series C	5.2%	5,825	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	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	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	990
<b>Total</b>		<b>35,826</b>	<b>\$ 3,542</b>

(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.

(c) Series A preferred stock is the sole asset of Mellon Capital IV, a Delaware statutory trust owned by BNY Mellon Capital IV.

For additional information on the preferred stock, see Note 13 - Shareholders' equity of the Notes to Consolidated Financial Statements in our 2017 Annual Report.

*Qualifying Subordinated Debt*

As of Dec. 31, 2017, \$1,250 million of subordinated debt is included as Tier 2 regulatory capital. Regulatory capital treatment requires capital to be discounted on a straight-line basis over the final five

years of maturity. For accounting purposes, the capital instruments below are included in long-term debt.

The following table details the primary terms and conditions of the qualifying subordinated debt included in Tier 2 regulatory capital. The balances disclosed are determined in accordance with GAAP balance sheet carrying amounts and the U.S. capital rules.

<b>Terms and conditions of qualifying subordinated debt - Dec. 31, 2017</b> <i>(dollars in millions)</i>	<b>Tier 2 regulatory capital</b>	<b>Carrying value</b>	<b>Rate</b>	<b>Issue</b>	<b>Maturity</b>	<b>Callable</b>
BNY Mellon Corporation	500	500	3.00	SD	Oct-2028	No
BNY Mellon Corporation	750	750	3.30	SD	Aug-2029	No
Mellon Funding Corporation	—	249	5.50	SD	Nov-2018	No
<b>Total qualifying subordinated debt</b>	<b>\$ 1,250</b>	<b>\$ 1,499</b>				

SD – Subordinated debt.

## Capital Adequacy

### *Capital Management*

The Bank of New York Mellon Corporation is committed to maintaining a well capitalized position. Corporate Treasury has joint responsibility with our Enterprise Capital Adequacy Group within Risk Management and Compliance for the development of the annual capital plan (the “Capital Plan”) submitted to the Federal Reserve. It is the Company’s policy to maintain a commitment to strong capital levels and establish sufficient capital while considering asset size, quality and duration, off-balance sheet commitments, risk characteristics, growth and economic conditions. Capital management is one of senior management’s most important ongoing responsibilities.

Our Capital Management Policy sets forth our principles with respect to capital planning, capital usage and capital actions based on a continual assessment of risk and business factors. It also sets forth the governance process used to make such decisions and the factors that we consider when developing our Capital Plan and determining when capital actions are appropriate. Any updates to this policy must be approved by both our Asset Liability Committee (“ALCO”) and the Board of Directors or a designated committee of the Board of Directors.

Corporate Treasury coordinates with our Enterprise Capital Adequacy, Management Reporting, and Regulatory Reporting groups to project capital levels and ratios and develop a base Capital Plan for the forthcoming calendar year. In 2017, this was completed in the first quarter. The Capital Plan is reviewed and approved by the Chief Financial Officer (“CFO”) and Chief Risk Officer (“CRO”), the Stress Testing Oversight Group (“STOG”), ALCO and the Board of Directors. We then submit the plan to the Federal Reserve as part of the CCAR process.

When developing its Capital Plan, BNY Mellon considers, among other factors, the requirements of the U.S. capital rules, including the minimum capital thresholds and leverage ratios to which BNY Mellon is subject. BNY Mellon continually monitors our capital and leverage position and ensures that any contemplated capital actions would not limit our ability to meet capital requirements. Management monitors progress under the Capital Plan on a monthly basis, and reports progress to the Federal

Reserve through quarterly CCAR submissions. Updates to the projections of capital levels and ratios are presented to senior management at least once a month at the ALCO and Balance Sheet Review meetings.

### *Economic Capital Required*

BNY Mellon has implemented a methodology to quantify economic capital. We define economic capital as the capital required to protect against unexpected economic losses over a one-year period at a level consistent with the solvency of a target debt rating. We quantify economic capital requirements for the risks inherent in our business activities using statistical modeling techniques and then aggregate them at the consolidated level. A capital reduction, or diversification benefit, is applied to reflect the unlikely event of experiencing an extremely large loss in each type of risk at the same time. Economic capital requirements are directly related to our risk profile. As such, they have become a part of our Internal Capital Adequacy Assessment Process (“ICAAP”) and, along with regulatory capital, are a key component to ensuring that the actual level of capital is commensurate with our risk profile and sufficient to provide the financial flexibility to undertake future strategic business initiatives.

The framework and methodologies to quantify each of our risk types have been developed by the Enterprise Capital Adequacy Group and are designed to be consistent with our risk management principles. The framework has been approved by senior management and has been reviewed by the Risk Committee of the Board of Directors. Due to the evolving nature of quantification techniques, we expect to continue to refine the methodologies used to estimate our economic capital requirements.

### *Capital Planning and Stress Testing*

BNY Mellon's capital distributions are subject to supervision and regulation by the Federal Reserve.

The Comprehensive Capital Analysis and Review (“CCAR”) and the Dodd-Frank Act Stress Tests (“DFAST”) are a major component of the Federal Reserve's oversight. CCAR and the Federal Reserve's capital planning rules require BHCs with \$50 billion or more in total consolidated assets, including BNY Mellon, to submit annual capital plans to their Federal Reserve Bank. BNY Mellon and other

covered 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 to which the Federal Reserve has not objected. The Federal Reserve may object to a capital plan for quantitative or qualitative reasons, including if the covered BHC will not meet all minimum regulatory capital ratios for each quarter throughout the nine-quarter planning horizon under stressed scenarios. We submitted our 2017 capital plan to the Federal Reserve in April 2017. On June 28, 2017 the Federal Reserve announced that it did not object to BNY Mellon's 2017 capital plan. DFAST substantially overlaps with CCAR stress testing requirements. Under DFAST, BNY Mellon is required to undergo supervisory stress tests conducted by the Federal Reserve annually, and to conduct our own internal stress tests pursuant to regulatory requirements during a mid-year stress test, due October 2017. The Federal Reserve published the results of its annual 2017 DFAST stress test on June 22, 2017.

See “Supervision and Regulation – Capital Planning and Stress Testing” in our 2017 Annual Report for additional information regarding the CCAR and DFAST requirements applicable to us.

### Risk-weighted Assets

The following table presents our RWA by exposure type calculated using the U.S. capital rules' risk-weightings.

<b>Basel III RWA – Advanced Approaches – Transitional</b>		
<i>(in millions)</i>	<b>Dec. 31, 2017</b>	Sept. 30, 2017
Wholesale exposures	<b>\$ 68,317</b>	\$ 65,753
Retail exposures	<b>372</b>	391
Securitization exposures	<b>5,840</b>	5,428
Cleared transactions	<b>419</b>	481
Equity exposures <i>(a)</i>	<b>6,676</b>	6,453
Other assets	<b>11,147</b>	10,863
Total credit RWA	<b>92,771</b>	89,369
Total credit RWA x 1.06 <i>(b)</i>	<b>98,337</b>	94,731
Credit valuation adjustment (“CVA”)	<b>3,344</b>	3,470
Market risk:		
Non specific	<b>2,510</b>	2,261
Standardized approach for specific risk	<b>1,147</b>	735
Total market risk	<b>3,657</b>	2,996
Operational risk	<b>68,688</b>	68,625
Total RWA	<b>\$ 174,026</b>	\$ 169,822

*(a) All direct equity exposures for BNY Mellon are subject to the simple risk weight approach; equity exposures to investment funds are currently weighted using various look-through approaches as appropriate.*

*(b) Gross-up of 6% applies to credit RWA under the advanced approach.*

Credit RWA at Dec. 31, 2017 totaled \$92.8 billion and included wholesale exposures of \$68.3 billion. Wholesale exposures include corporate, bank, sovereign, commercial real-estate secured loans, over-the-counter (“OTC”) derivatives, repo-style and margin lending transactions and represents 74% of our credit RWA at Dec. 31, 2017. The remaining credit-related risk exposures included securitization exposures of \$5.8 billion, cleared transactions of \$419 million, equities of \$6.7 billion, retail of \$372 million and other assets not included in a defined exposure category of \$11.1 billion.

The other significant components of the Advanced Approaches RWA at Dec. 31, 2017 included operational risk of \$68.7 billion, market risk of \$3.7 billion and a CVA of \$3.3 billion for derivative exposures intended to capture changes in credit spreads applicable to BNY Mellon's counterparties.

As of Dec. 31, 2017 BNY Mellon and our U.S. bank subsidiaries were “well capitalized.” The “well capitalized” and other capital categories (where

applicable), as established by applicable regulations for BHCs and depository institutions, have been established by those regulations solely for purposes of implementing their respective requirements (for example, eligibility for FHC status in the case of BHCs and prompt corrective action measures in the case of depository institutions). A BHC's or depository institution's qualification for a capital category may not constitute an accurate representation of the entity's overall financial condition or prospects.

The following table provides the Standardized Approach ("SA") and Advanced Approaches ("AA") RWA and risk-based capital ratios for the Holding Company and for our two largest depository institution subsidiaries. At Dec. 31, 2017, our Holding Company CET1 ratio calculated under the U.S. capital rules' Standardized Approach was 11.9% and the Advanced Approaches was 10.7%, both on a transitional basis. Based on the Collins Amendment Floor, the risk-based capital ratios are determined by calculating each capital ratio under the Advanced Approaches and the Standardized Approach and then setting the relevant capital ratio equal to the lower of the two ratios.

Basel III RWA and risk-based capital ratios - Standardized and Advanced Approaches <i>(dollar amounts in millions)</i>	Dec. 31, 2017								
	RWA		CET1		Tier 1		Total Capital		
	SA	AA	SA	AA	SA	AA	SA	AA	
<b>BHC:</b>									
The Bank of New York Mellon Corporation	\$155,621	\$174,026	11.9%	10.7%	14.2%	12.7%	15.1%	13.4%	
<b>Depository institution subsidiaries:</b>									
The Bank of New York Mellon	119,971	142,078	16.7	14.1	17.1	14.4	17.6	14.7	
BNY Mellon, N.A.	17,775	10,107	10.4	18.3	10.4	18.3	11.7	20.5	

## Capital Conservation and Countercyclical Capital Buffers

The U.S. capital rules introduced a capital conservation buffer and countercyclical capital buffer that add to the minimum regulatory capital ratios. The capital conservation buffer—1.25% for 2017 and 2.5% when fully phased-in on Jan. 1, 2019—is designed to absorb losses during periods of economic stress and applies to all banking organizations. During periods of excessive growth, the capital conservation buffer may be expanded through the imposition of a countercyclical capital buffer that may be as high as an additional 2.5%. As of Dec. 31, 2017, BNY Mellon's excess total capital over the minimums with the buffers was 3.4%. Accordingly, as of Dec. 31, 2017, BNY Mellon does not have any limitations on distributions and discretionary bonus payments resulting from the capital buffer and surcharge framework.

The countercyclical capital buffer, when applicable, applies only to Advanced Approaches banking organizations. The countercyclical capital buffer is currently set to zero with respect to U.S. exposures, but it could increase if the banking agencies determine that systemic vulnerabilities are meaningfully above normal.

The phase-in for these buffers and surcharge began on Jan. 1, 2016 and will be fully implemented on Jan. 1, 2019. The following table presents the capital ratios at Dec. 31, 2017, the minimum ratio requirements plus the minimum ratio requirements with the buffers and surcharge and finally, the excess over the minimums with the buffers.

Capital Ratio Minimums and Buffers	Dec. 31, 2017		
	CET1	Tier 1	Total Capital
Consolidated capital ratios	10.7%	12.7%	13.4%
Minimum ratio requirements	4.5%	6.0%	8.0%
Capital conservation buffer	1.25%	1.25%	1.25%
U.S. G-SIB surcharge	0.75%	0.75%	0.75%
Minimum ratios with buffers and surcharge	<b>6.5%</b>	<b>8.0%</b>	<b>10.0%</b>
Excess over minimum ratios with buffers and surcharge	<b>4.2%</b>	<b>4.7%</b>	<b>3.4%</b>

## Credit Risk: General Disclosures

### General Risk Management - 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](http://www.bnymellon.com).

The Audit Committee is also comprised entirely of independent directors, all of whom are financially literate within the meaning of the NYSE listing standards. Two members of the Audit Committee have been determined to be audit committee financial experts as set out in the rules and regulations under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), with accounting or related financial management expertise within the meaning of the NYSE listing standards, and to have banking and financial management expertise within the meaning of the FDIC rules. 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](http://www.bnymellon.com).

#### *Risk Management - Structure*

The Senior Risk Management Committee ("SRMC") is the most senior management body responsible for ensuring that emerging risks are weighed against the corporate risk appetite. The SRMC also reviews any material breaches to our risk appetite and approves action plans required to remediate the issue. SRMC

provides oversight for the risk management, compliance and ethics framework. The Chief Executive Officer, Chief Risk Officer and Chief Financial Officer are among SRMC'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:

**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 ("L/C"), and securities lending indemnifications.

**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 ("FX") and equity risk. Market risk particularly impacts our exposures that are fair valued such as the securities portfolio, trading book, and equity investments.

**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 inability to convert assets to cash, 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 its 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 BNY Mellon's operating model and adapt to transformational change in the industry.

### *Credit Risk Management*

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.

### *Risk Measurement & Reporting Systems*

The purpose of the Company’s risk measurement and reporting systems is to ensure that all risks and exposures are comprehensively captured, with all of the attributes necessary to support robust decision making by senior management and risk mitigation within approved risk appetite levels.

*Credit Risk Exposure*

The following tables detail total credit exposure before the effect of credit risk mitigation (such as collateral and netting) and distribute the exposure by geographic region, counterparty and remaining contractual maturity. In order to remove the effects of credit risk mitigants, exposures were grossed up for the following product types: OTC derivatives, margin loans, and repurchase agreements (“repo”)/ reverse repurchase agreement (“reverse repo”) transactions. The cumulative effect of credit risk mitigation was \$24.7 billion as of Dec. 31, 2017. Credit exposure is presented using EAD for all tables below. In addition, we had off-balance sheet credit risk associated with securities lending indemnification and indemnification for securities for which BNY Mellon acts as an agent on behalf of CIBC Mellon clients, that are excluded from the table below, of \$432 billion and \$69 billion, respectively, at Dec. 31, 2017. For more information, see Note 20 - Commitments and contingent liabilities of the Notes to Consolidated Financial Statements in our 2017 Annual Report.

**Credit risk exposure before effect of credit risk mitigation – quarter end and average (a)**

<i>(in millions)</i>	<b>Dec. 31, 2017</b>	<b>4Q17 Average (b)</b>
Deposits with banks, securities and loans	<b>\$ 264,642</b>	<b>\$ 258,550</b>
Unused commitments (c)	<b>33,664</b>	<b>33,326</b>
OTC derivatives	<b>19,938</b>	<b>19,616</b>
Repo-style transactions and margin lending	<b>53,474</b>	<b>54,816</b>
<b>Total credit risk exposure (d)</b>	<b>\$ 371,718</b>	<b>\$ 366,308</b>

- (a) *Credit risk exposure represents exposure before the effect of credit risk mitigation such as collateral, guarantees and netting.*
- (b) *Calculated using a simple average based on the current and prior quarterly balances.*
- (c) *Includes unused commitments, commercial L/Cs and standby L/Cs.*
- (d) *Excludes equities, securitizations, and other assets.*

As reflected in the table above, total EAD was \$371.7 billion at Dec. 31, 2017, comprised of:

- Deposits with banks, securities and loans of \$264.6 billion primarily consisted of interest-bearing deposits, debt securities, Federal Reserve Bank (“FRB”) placements, pass through mortgage-backed securities (“MBS”), and non-pass through MBS;
- Repo-style transactions and margin lending of \$53.5 billion;
- Unused commitments, including commercial L/Cs and standby L/Cs, of \$33.7 billion; and
- OTC derivative exposures, including interest rate, FX and equity contracts, of \$19.9 billion.



The following table distributes credit exposure by geographic region based on the counterparty's country of risk.

<b>Credit risk exposure before effect of credit risk mitigation by geographic region (a)</b>								
<b>at Dec. 31, 2017</b>								
<i>(in millions)</i>	<b>Americas</b>		<b>EMEA</b>		<b>APAC</b>	<b>Total</b>		
Deposits with banks, securities and loans	\$	182,667	\$	64,405	\$	17,570	\$	264,642
Unused commitments (c)		31,353		2,105		206		33,664
OTC derivatives		10,682		7,809		1,447		19,938
Repo-style transactions and margin lending		44,066		388		9,020		53,474
<b>Total credit risk exposure (d)</b>	<b>\$</b>	<b>268,768</b>	<b>\$</b>	<b>74,707</b>	<b>\$</b>	<b>28,243</b>	<b>\$</b>	<b>371,718</b>

Note: See the table titled "Credit risk exposure before effect of credit risk mitigation - quarter end and average" above for footnotes.

Exposures were primarily located in the Americas and Europe, the Middle East and Africa ("EMEA") regions at Dec. 31, 2017.

- EAD in the Americas totaled \$268.8 billion and primarily consisted of repo-style transactions, FRB placements, debt securities, pass through

MBS, unused loan commitments, and non-pass through MBS.

- EAD in EMEA totaled \$74.7 billion and primarily consisted of deposits with banks, securities, and loans.

The following table distributes credit exposure by counterparty type.

<b>Credit risk exposure before effect of credit risk mitigation by counterparty type (a)</b>												
<b>at Dec. 31, 2017</b>												
<i>(in millions)</i>	<b>Corporate</b>		<b>Sovereign</b>		<b>Bank</b>		<b>Real Estate (e)</b>	<b>Retail</b>	<b>Total</b>			
Deposits with banks, securities and loans	\$	96,241	\$	142,020	\$	23,294	\$	2,295	\$	792	\$	264,642
Unused commitments (c)		31,631		—		1,408		563		62		33,664
OTC derivatives		9,446		561		9,931		—		—		19,938
Repo-style transactions and margin lending		40,049		—		13,425		—		—		53,474
<b>Total credit risk exposure (d)</b>	<b>\$</b>	<b>177,367</b>	<b>\$</b>	<b>142,581</b>	<b>\$</b>	<b>48,058</b>	<b>\$</b>	<b>2,858</b>	<b>\$</b>	<b>854</b>	<b>\$</b>	<b>371,718</b>

Note: See the table titled "Credit risk exposure before effect of credit risk mitigation - quarter end and average" above for footnotes.

(e) Real estate includes high-volatility commercial real estate ("HVCRE") and income producing real estate ("IPRE").

Exposures by counterparty were primarily to corporate, sovereign and bank counterparties at Dec. 31, 2017.

- Corporate exposures were \$177.4 billion and primarily consisted of repo-style and margin lending transactions, pass through MBS, unused loan commitments, and non-pass through MBS.

- Sovereign exposures totaled \$142.6 billion and primarily consisted of interest-bearing deposits, debt securities, and FRB placements.
- Bank exposures were \$48.1 billion and primarily consisted of repo-style and margin lending transactions, interest-bearing deposits, and OTC derivatives.

The following table distributes credit exposure by remaining contractual maturity.

<b>Credit risk exposure before effect of risk mitigation by remaining contractual maturity (a)</b> <b>at Dec. 31, 2017</b> <i>(in millions)</i>	<b>Within 1 year</b>	<b>Between 1-5 years</b>	<b>After 5 years</b>	<b>Total</b>
Deposits with banks, securities and loans	\$ 141,673	\$ 33,643	\$ 89,326	\$ 264,642
Unused commitments (c)	20,119	13,288	257	33,664
OTC derivatives	13,727	1,631	4,580	19,938
Repo-style transactions and margin lending	50,011	3,221	242	53,474
<b>Total credit risk exposure (d)</b>	<b>\$ 225,530</b>	<b>\$ 51,783</b>	<b>\$ 94,405</b>	<b>\$ 371,718</b>

Note: See the table titled "Credit risk exposure before effect of credit risk mitigation - quarter end and average" above for footnotes.

As reflected in the table above, the \$371.7 billion in total EAD at Dec. 31, 2017 primarily consisted of exposures with maturities less than five years.

#### *Past Due/Nonaccrual/Impaired Loans*

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. Exceptions require approval of the Company's Chief Credit Officer ("CCO") or the CRO.

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. When doubt exists as to the collectability of the remaining investment in a nonaccrual asset, any interest payments received must be applied to reduce the recorded investment in the asset to the extent necessary to eliminate such doubt. However, as long as the remaining recorded investment in the asset is deemed fully collectable, some or all of the cash interest received may be treated as interest income. Placement of a loan on "interest-to-principal" basis or

recognition of interest on a cash basis requires the approval of the Company's CCO or the CRO.

As a general rule, a nonaccrual asset may be restored to accrual status when none of its principal and interest is due and unpaid, and the Company expects repayment of the remaining contractual principal and interest. These criteria may be met when (1) all principal and interest are reasonably assured of repayment within a reasonable period and (2) after a sustained period of repayment performance (which is generally a minimum of 6 months). However, such assets should continue to be reported as past due until they are brought completely current. A nonaccrual loan secured by residential real estate may be restored to accrual status only when none of its principal and interest is due and unpaid, and the Company expects repayment of the remaining contractual principal and interest.

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 on loans \$1 million or greater is required to be measured based upon the loan's market price, 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.

All residential mortgage loans (unpaid principal balance) are subject to impairment testing and resulting charge-off at 180 days delinquency. Any unpaid principal balance in excess of the value of the

property, less cost to sell, is classified as loss. Fraudulent loans should be classified as loss and charged off no later than 90 days of discovery or within the time frames specified within this classification policy, whichever is sooner.

The principal of commercial loans is charged off, either in whole or in part, when based on facts and circumstances a serious doubt arises as to the collectability of all or a portion of the principal. A charge-off memo is prepared by the account officer and must be approved by the CCO.

The tables below set forth information about our domestic impaired, past due, and nonaccrual loans. As of Dec. 31, 2017, there are no foreign impaired, past due, or nonaccrual loans.

#### Impaired, past due and nonaccrual loans at Dec. 31, 2017

(in millions)	Impaired loans		Days past due and still accruing			Total past due	Nonaccrual
	With an allowance	Without an allowance	30-59	60-89	>90		
Domestic							
Commercial real estate	\$ —	\$ —	\$ 44	\$ —	\$ —	\$ 44	\$ 1
Wealth management loans and mortgages	1	4	39	5	—	44	7
Other residential mortgages	—	—	18	5	5	28	78
Financial institutions	1	—	1	—	—	1	—
<b>Total</b>	<b>\$ 2</b>	<b>\$ 4</b>	<b>\$ 102</b>	<b>\$ 10</b>	<b>\$ 5</b>	<b>\$ 117</b>	<b>\$ 86</b>

#### 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. 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.

Consumer loans that are not secured by residential real estate are charged off when they become 120 days past due. Residential mortgage loans delinquent 180 days or more are charged off to the extent unpaid principal balance plus superior liens (such as taxes and co-op fees) exceed the appraised value less 10%. In addition, charge-offs may be taken at the discretion of management which in some cases may represent the full balance of the loan.

estimate of the probability of drawdown. 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 three elements of the allowance for loan losses and the allowance for lending-related commitments include the qualitative allowance framework. The three elements are:

- 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.

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 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.

The following table sets forth information on our allowance for credit losses activity.

<b>Allowance for credit losses activity for the quarter ended Dec. 31, 2017</b>										
<i>(in millions)</i>	Commercial	Commercial real estate	Financial institutions	Lease financings	Wealth management loans and mortgages	Other residential mortgages	All Other	Foreign	Total	
Beginning balance	\$ 81	\$ 75	\$ 23	\$ 9	\$ 21	\$ 21	\$ —	\$ 35	\$ 265	
Recoveries	—	—	—	—	—	2	—	—	2	
Net (charge-offs) recoveries	—	—	—	—	—	2	—	—	2	
Provision	(4)	1	—	(1)	1	(3)	—	—	(6)	
Ending balance	\$ 77	\$ 76	\$ 23	\$ 8	\$ 22	\$ 20	\$ —	\$ 35	\$ 261	
Allowance for:										
Loans 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.

## Credit Risk: Disclosures for Portfolios Subject to IRB Risk-based Capital Formulas

Under the Advanced Approaches risk-based capital rules, BNY Mellon uses the IRB advanced approach for quantifying risk in its credit portfolios. The IRB advanced approach is a method of calculating credit risk capital requirements using internal probability of default (“PD”), loss given default (“LGD”), and EAD models.

### Overview of Wholesale Internal Rating System

Our internal rating system includes two types of ratings – a borrower rating and a facility rating. A borrower rating is assigned to each customer; a facility rating is assigned to each exposure. A borrower rating is intended to reflect the statistical probability that a customer will default on its debt obligations during the next year. The PD associated with each borrower is calculated annually by the Enterprise Capital Adequacy Group. The PDs represent long-run default rates from both internal and external empirical data. The annually updated PD and LGD parameters are used in RWA and capital calculations after receiving approval from the Federal Reserve.

The facility rating reflects the percentage loss we would incur for that facility if the customer were to default on payment of a particular facility. A facility rating is determined by assessing the type of credit

exposure, the borrower’s corporate and capital structure, the nature of the borrower’s assets, and other aspects of the facility to arrive at an estimate of loss in the event of default. The LGD associated with each facility rating is calculated annually by the Enterprise Capital Adequacy Group. The LGDs are informed by historic loss rates from both internal and external empirical data.

### Ratings Assignment Process

BNY Mellon employs an internal system to facilitate the assignment of ratings, document the factors considered in the rating process and archive this data for historic analysis. A borrower rating is assigned when any new credit relationship is established; a facility rating is assigned when a new facility is approved.

Credit underwriters propose ratings on each deal, after which credit risk management reviews and approves the final ratings. Ratings are continually monitored for accuracy in the ordinary course of business as prescribed in the Company’s Risk Policy. All borrowers with credit exposure must be re-rated annually.

### Borrower Rating Process

We rely on a variety of inputs to assign wholesale borrower ratings. External ratings, internally-

developed scorecards and expert judgment are all employed to assign appropriate ratings to customers.

#### *Facility Rating Process*

Facility ratings derive from an internal model which considers facility type, structure, and collateral as the principal drivers of recovery, with expert judgment also allowed where these factors do not address all the potential facility risk.

#### *Ratings Migration*

Our rating scales incorporate longer-term fundamentals into the rating determination, while proactively downgrading during deteriorating conditions. Downgrades occur on a proactive basis, especially during credit downturns, while upgrades tend to lag credit conditions due to conservatism. Migration of ratings within the credit portfolio is tracked regularly and subject to annual auditing.

#### *Credit Risk Governance*

The Company manages its wholesale credit risk at both the individual exposure level and at the portfolio level. Credit risk at the individual exposure level is managed via the credit approval process, with risk management executives responsible for approving the size, terms, and maturity of all credit exposures, as well as assigning and maintaining borrower and facility ratings.

Credit risk at the portfolio level is managed by a centralized group, which calculates our economic capital for credit risk and loan loss reserves. Committees meet within risk management to review risk policies, modeling and quantitative approaches. They also meet on each sub-portfolio to set exposure limits, review concentrations, set portfolio strategy, and discuss improvements to the credit risk management framework.

#### *Quantification of Wholesale Risk Parameters, Summary of Advanced Approaches Requirements and Company Implementation*

Quantification is the process of translating observed risk characteristics into meaningful measurements based on observed data. Simply put, it is the process to derive the numerical components of the credit risk rating system for use in risk management. The

quantification process is subject to the governance processes described above.

The results of the quantification process are essential to the risk management function at the Company and are applied in risk quantification under regulatory capital standards. As these risk parameters are used to evaluate individual credits and the overall portfolio and will ultimately determine regulatory capital, they must be determined with a high degree of accuracy.

BNY Mellon has historically had a low default portfolio for wholesale exposures and consequently, has been forced to rely upon supplemental external data in order to calibrate the quantification system. BNY Mellon obtains the data from numerous external sources to augment its internal historic data. Internal systems have been improved to track all data relevant for quantification, but external data will likely continue to be necessary indefinitely, to address the size and low default profile of the portfolio.

#### *Quantification of PD*

Our PD quantification model uses information of credit ratings and observed default rates in Standard and Poor's ("S&P") measure of rating bands in order to estimate PD of given BNY Mellon internal borrower ratings. The PD estimates are long-run averages of default rates for S&P rating categories and then converted to the Company's internal rating scale. The Company relies upon external data from S&P in the absence of sufficient internal default data by rating.

Every borrower is assigned a borrower rating that maps to one-year PDs for use in credit risk management. The PD estimates are long-run averages of observed default rates based on obligors within a one-year window. The following paragraphs detail the process by which borrower ratings and PDs are generated.

#### *Borrower Ratings Basis Groups*

BNY Mellon has created rating groups in which borrowers with similar risk characteristics (and therefore similar default characteristics) are grouped together. Within each rating basis group, particular benchmarks are available as starting points for the internal rating assignment workflow. Available benchmarks include a range of publicly-available

ratings, as well as the output of internal scorecard models.

Once a borrower's benchmark is chosen, the rater may adjust the rating up or down based on certain factors. Adjustments address factors not appropriately considered by the chosen benchmark, such as credit enhancements (e.g. guarantees). Ratings are monitored and reviewed for continued accuracy in the ordinary course of business. All borrowers with credit exposure must be re-rated annually with few exceptions.

#### *PD Assignment*

Once a borrower has a final rating, PD rates are applied based on an annual quantification analysis. This analysis incorporates internal and external data to determine the most appropriate PD for each rating.

#### *Quantification of LGD*

The Company assigns a rating representing the predicted loss severity to each credit facility. The model incorporates the factors named above, and allows expert adjustment by the user, as in the case of borrower ratings, which addresses factors not appropriately considered by the model.

Once final facility ratings are assigned, each rating receives an LGD percentage for use in quantitative analysis. Internal and external data as well as

industry studies all contribute to the annual quantification process that sets the LGD percent for each facility rating.

#### *Quantification of EAD*

EAD reflects the entire portion of drawn amounts plus a percentage of undrawn availability. The rate of undrawn availability included in the final EAD is the usage given default ("UGD").

UGD is defined as the expected percent of the commitment that will be used in the event of default. The drawn portions of every facility carry an implicit UGD of 100%. Undrawn portions of facilities carry a UGD between 0% and 100% depending on the prospect for additional draws prior to default. The Company performs an annual quantification to determine the factors that affect facility usage leading up to default and to set UGD percentages based on those factors.

#### *Uses of Parameter Quantification*

We use the results of the quantification process for regulatory capital, economic capital and expected loss ("EL") analyses. The EL, in turn, drives the loan loss reserve calculation.

The following tables provide details of BNY Mellon's IRB advanced approach risk parameters used to calculate RWA and capital under the Advanced Approaches risk-based capital rules and set out the distribution of exposures by PD bands.

Wholesale exposures at Dec. 31, 2017		Weighted Average PD (a)	Weighted Average LGD (a)	Weighted Average RW (a)	Undrawn Amount (b)	Weighted Average CCF (c)
<i>(dollar amounts in millions)</i>		EAD				
<b>General Wholesale</b>						
0.00 to < 0.15%	\$ 275,937	0.05 %	36.81 %	15.36 %	\$ 49,348	58.76 %
0.50 to < 0.75%	12,102	0.56	37.98	65.85	2,795	62.31
0.75 to < 1.35%	5,082	0.90	35.38	72.29	2,492	90.30
2.50 to < 5.50%	3,649	2.74	45.76	121.70	552	85.52
5.50 to < 10.00%	586	8.48	39.16	158.94	213	54.57
20.00 to < 100.00%	84	39.29	45.75	249.01	51	48.07
100.00% (default)	13	100.00	41.52	100.00	—	—
General Wholesale Subtotal	297,453	0.15	36.95	20.04	55,451	60.60
<b>OTC Derivatives, Repo-style Transactions and Margin Loans</b>						
0.00 to < 0.03%	\$ 324	0.03 %	53.70 %	13.32 %	\$ —	— %
0.03 to < 0.10%	38,086	0.07	53.64	13.67	—	—
0.10 to < 0.15%	8,237	0.12	52.94	22.02	—	—
0.50 to < 0.75%	720	0.56	51.34	62.56	—	—
0.75 to < 1.35%	1,045	0.90	49.07	71.66	—	—
2.50 to < 5.50%	266	2.96	50.55	124.07	—	—
5.50 to < 10.00%	13	8.85	46.99	163.79	—	—
10.00 to < 100.00%	4	39.29	53.41	280.47	—	—
Eligible Margin Loans - 300% RW	27	—	—	300.00	—	—
OTC Derivatives, Repo-style Transactions and Margin Loans Subtotal	48,722	0.12	53.34	17.87	—	—
<b>Total</b>	<b>\$ 346,175</b>	<b>0.15%</b>	<b>39.11%</b>	<b>20.05%</b>	<b>\$ 55,451</b>	<b>60.60%</b>

(a) Weighted averages have been weighted by the sum of EAD within each of the PD bands.

(b) Undrawn amount is defined as the difference between the drawn balance and the limit.

(c) Weighted average credit conversion factor ("CCF") has been weighted by the sum of undrawn amount within each of the PD bands.

Wholesale exposures were \$346.2 billion at Dec. 31, 2017. The majority of the general wholesale exposures occurred in PD band 0.00% to less than 0.15%. These exposures primarily consisted of interest-bearing deposits, U.S. Treasury and other sovereign debt securities, pass through MBS, FRB placements, unused loan commitments, non-pass through MBS, real estate loans and other loans. OTC derivatives, repo-style transactions and margin loans consisted of primarily exposures to securities lending transactions, FX contracts, interest rate contracts and equity derivative contracts.

### Retail quantification

#### Retail Segmentation Process

The retail segmentation process uses various factors relevant to the credit risk of retail borrowers to group those borrowers into pools for risk quantification purposes. Quantification of each parameter (PD, LGD and EAD) then occurs at the pool level.

In the first phase of segmentation, the Company assigns each retail exposure to one of three retail subcategories:

- Exposures Secured by Residential Mortgages** – include primarily mortgages (first and subsequent) on one-to-four-family residential properties.
- Qualifying Revolving Exposures** – include revolving exposures unconditionally cancelable by the Company, with total exposure less than \$100,000.
- Other Retail Exposures** – include exposures where the Company provides consumer and non-consumer lines of credit to certain unaffiliated third-party borrowers that are secured by securities owned by the borrowers or certain unaffiliated-third party guarantors.

Within each of these broader segments, we delineate additional pools based on relevant risk criteria. The



pooling methodology aims to provide meaningful differentiation so that there are no material differences in the EL severity of individual exposures within each pool. Every retail exposure must be categorized in this way.

#### Retail Parameters

PD, LGD and EAD parameter calculations are performed on non-defaulted retail exposures. For defaulted exposures we do not need these parameters because they are automatically risk weighted at 100%. The calculations are done at both the pool and

sub pool level and mapped to each retail exposure within these pools. Historical data retention is a critical component of calculation and validation of retail parameters. External data augments our internal data where doing so provides more robust risk estimates.

#### Defaulted Retail Exposures

Retail exposures are considered defaulted if certain past due criteria are met. These criteria vary depending on segment and product type.

The following table presents BNY Mellon's retail exposures.

<b>Retail exposures by PD at Dec. 31, 2017</b>						
<i>(dollar amounts in millions)</i>						
	<b>EAD</b>	<b>Weighted Average PD (a)</b>	<b>Weighted Average LGD (a)</b>	<b>Weighted Average RW (a)</b>	<b>Undrawn Amount (b)</b>	
<b>Residential mortgage</b>						
0.10 to < 0.15%	\$ 320	0.12%	29.65%	8.10%	\$	—
0.25 to < 0.35%	10	0.26	49.38	24.05		—
0.50 to < 0.75%	174	0.62	36.68	33.23		—
1.35 to < 2.50	1	1.56	100.00	167.33		—
2.50 to < 5.50%	155	3.94	40.98	118.89		—
100.00% (default)	57	100.00	37.09	100.00		—
<b>Revolving</b>						
0.10 to < 0.15%	128	0.10	100.00	24.62		109
<b>Other Retail</b>						
7.00 to < 8.00%	9	7.16	100.00	154.51		—
<b>Total retail exposure</b>	<b>\$ 854</b>	<b>7.70%</b>	<b>45.22%</b>	<b>43.86%</b>	<b>\$</b>	<b>109</b>

(a) Weighted averages have been weighted by the sum of EAD within each of the PD bands.

(b) Undrawn amount is defined as the difference between the drawn balance and the limit.

Total retail EAD was \$854 million at Dec. 31, 2017. The majority of the exposures occurred in Residential Mortgage for PD bands 0.10% to less than 0.15%, 0.50% to less than 0.75%, and 2.50% to less than 5.50%. Residential mortgage exposures primarily consisted of mortgage loans.

#### Net Recoveries (Charge-offs)

Net recoveries of \$2 million in the fourth quarter of 2017 were reflected in the retail residential portfolio. There were net recoveries of \$1 million in the third quarter of 2017.

#### Counterparty Credit Risk for Derivative Contracts, Repo-style Transactions and Eligible Margin Loans

BNY Mellon engages in trading activities on behalf of its customers in the FX cash and derivatives markets. As a result BNY Mellon regularly enters into forward-settling financial contracts with customers ("counterparties"), the market values of which contracts will fluctuate day-to-day based on prevailing market conditions. Whenever the market value of such positions is positive, it represents an effective extension of credit by the Company to the customer. If the customer were not to perform on its obligations, BNY Mellon would be at risk of suffering an economic loss on the value of those contracts and may need to resort to recovering the lost value in bankruptcy proceedings. This risk is known as "counterparty default risk."

Types of counterparty default-risk include pre-settlement and settlement risk. Pre-settlement risk is the risk that a counterparty defaults before it has fulfilled all its contractual obligations causing a loss of any positive net market value to BNY Mellon. Settlement risk — sometimes called pay-away risk — is the risk that on the settlement of an FX contract, BNY Mellon pays its currency obligation to the counterparty, but the counterparty never pays its currency obligation to BNY Mellon causing a loss of the entire contract principal.

Additionally, BNY Mellon can suffer market losses due to the deterioration of the credit quality of a counterparty short of its non-performance or default. Because the counterparty's credit quality is factored into the market valuation of the portfolio held with that counterparty, falling credit quality can reduce this value and require a negative adjustment in our income statement. A significant and broad-based deterioration in credit quality across BNY Mellon's trading counterparties can result in a material loss of market value. This risk is known as CVA risk.

Counterparty default risk and CVA risk together represent two components of overall counterparty risk assumed by BNY Mellon in its FX and derivative trading activities.

BNY Mellon's counterparty risk is heavily concentrated in our largest bank subsidiary, The Bank of New York Mellon, resulting from activities of its Markets business which operates in FX cash markets and also in interest rate and FX derivative markets.

BNY Mellon engages in a variety of risk management activities to control and limit the degree of counterparty risk assumed by its businesses including managing credit risk at the counterparty, portfolio and country level. These risk management activities include:

- Limit management of various counterparty-level exposure metrics;
- Centrally cleared trades;
- Netting agreements and collateral exchange terms with counterparties;
- Approval and monitoring of collateral exchanges;
- Calculation and review of stress and sensitivity metrics;
- Monitoring of wrong-way risk reports;
- Review of country-level risk concentrations;
- Monitoring of settlement failures;
- Special review of “large-exposure” counterparties;
- Economic capital analyses;
- Active hedging of CVA risk by the business; and
- Other ad hoc analyses.

Additionally, we have executed legal agreements with many of our counterparties that help to reduce counterparty risk inherent in FX and derivative trading activity.

The most common legal agreement used by market participants is a master netting agreement that can significantly reduce exposure by permitting effective offsets to “negatively valued” trades existing with the counterparty.

Master netting agreements used in connection with our FX and derivative trading activity are usually based on two legal templates — the ISDA Master Agreement developed by the International Swaps and Derivatives Association (“ISDA”) or the Foreign Exchange and Currency Option Master Agreement. Additionally, within a master netting agreement, collateral exchange terms can be defined in a Credit Support Annex (“CSA”) to establish rules by which the trading counterparties are required to post collateral to each other against the market value of open trades covered by the agreement.

In certain cases, BNY Mellon will establish collateral exchange terms outside a CSA on a contract by contract basis. This is known as trade-specific collateral, and can take the form of an initial cash or security posting to cover the potential future exposure of a particular trade.

Additionally, optional termination triggers can be defined within a master agreement that permit BNY Mellon to force the counterparty to immediately cash-settle the current market value of all open contracts if the counterparty's credit rating falls below a certain trigger level. These termination events protect us from having to hold on to open contracts with a counterparty experiencing credit difficulties.

When both netting and collateral terms are actively implemented, counterparty risk can be reduced to a small fraction of what it would be otherwise. These arrangements never completely eliminate counterparty risk, but they are effective in significantly reducing that risk. There were no

counterparty default losses in the fourth quarter of 2017.

### *Economic Capital*

As discussed previously in the “Capital Adequacy” section of this Disclosure, BNY Mellon has implemented a methodology to estimate Company-wide economic capital needs to support the safe operation of its various businesses including the FX and derivative businesses, repo-style transactions and eligible margin loans. The computation and review of economic capital is a part of BNY Mellon’s ICAAP and, along with regulatory capital, represents a key risk management activity. This ensures that the actual level of capital held by the Company is commensurate with its risk profile and that it is sufficient to provide the financial flexibility to undertake future strategic business initiatives. See “Capital Adequacy - Economic Capital Required” in this Disclosure, for additional information regarding the development and approval of the framework and methodologies used to quantify each of our risk types.

### *Credit Limits*

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.

For FX and derivative businesses, Credit Underwriting teams set and monitor counterparty limits to control the pre-settlement and settlement risk of trades. For FX trading, daily settlement limits are established to control the aggregate size of FX notional amounts permitted to settle with a counterparty on any given settlement date.

Pre-settlement risk for the FX and derivative businesses is managed through limits established on a stressed exposure and the maximum tenor of contracts. The stressed exposure calculation — internally called Cross-Product Potential Risk (“CPPR”) — captures the 95th percentile peak exposure that could be produced by a counterparty’s portfolio over its lifetime. It is based on a Monte Carlo simulation of market factors that impact the pricing of the contracts and considers diversification

of exposures across product categories and any netting and collateral arrangements that may be in place. A tenor limit works in conjunction with the CPPR limit to control pre-settlement exposures and defines the longest trade maturity BNY Mellon is willing to accept with a counterparty.

Limits are actively monitored using intraday reports and desktop monitoring tools. Detailed policies and procedures govern the limit management process and cover activities such as:

- Formal acknowledgment procedures for limit excesses;
- On-site credit officers to exercise approval authorities and escalation procedures when those limits are exceeded;
- Approval and monitoring of collateral amounts and types posted and received;
- Monitoring of settlement fails; and
- Periodic portfolio and documentation reviews.

We manage credit risk at the individual exposure, portfolio and country level. Credit risk at the individual exposure level is managed through the credit approval system involving Operational Credit Managers (“OCMs”), Credit Portfolio Managers (“CPM”), Credit Division Heads, the CCO and the CRO. This group, collectively, “Credit Risk Management,” is responsible for approving the size, terms and maturity of all credit exposures as well as the ongoing monitoring of the exposures. BNY Mellon employs a “Signature System” for all credit approvals. A minimum requirement of the “Signature System” is that a proposal must have the signature approval of an OCM or CPM, or higher (unless delegated per policy). In addition, OCMs and CPMs are responsible for assigning and maintaining the risk ratings on each exposure.

### *Risk Tolerance*

BNY Mellon will assume credit risk to the extent that it can maintain Tier 1 capital in excess of economic capital at a 99.90% confidence interval. Credit risk is also managed by annually setting guideline limits on economic capital. The Risk Policy Manual, to which changes are reviewed annually by the Risk Committee of the Board of Directors, contains these guideline limits. In effect, internal credit guidelines are set and monitored for those activities that generate credit risk typically based on the size of the exposure and the maximum tenor of the extended credit.

*Credit Rating Downgrade*

Certain OTC derivative contracts and/or collateral agreements of The Bank of New York Mellon, our largest banking subsidiary and the subsidiary through which BNY Mellon enters into the substantial majority of its OTC derivative contracts and/or collateral agreements, contain provisions that may require us to take certain actions if The Bank of New York Mellon's public debt rating fell to a certain level. Early termination provisions, or "close-out" agreements, in those contracts could trigger immediate payment of outstanding contracts that are in net liability positions. Certain collateral agreements would require The Bank of New York Mellon to immediately post additional collateral to cover some or all of The Bank of New York Mellon's liabilities to a counterparty.

The following table shows the fair value of contracts falling under early termination provisions that were in net liability positions as of Dec. 31, 2017 for three key ratings triggers.

<b>If The Bank of New York Mellon's rating was changed to (Moody's/S&amp;P)</b>	<b>Potential close-out exposures (fair value) (a)</b>
A3/A-	\$ 92 million
Baa2/BBB	\$ 748 million
Ba1/BB+	\$ 2,007 million

(a) *The amounts represent potential total close-out values if The Bank of New York Mellon's rating were to immediately drop to the indicated levels.*

The aggregated fair value of contracts impacting potential trade close-out amounts and collateral obligations can fluctuate from quarter to quarter due to changes in market conditions, changes in the composition of counterparty trades, new business or changes to the agreement definitions establishing close-out or collateral obligations.

If The Bank of New York Mellon's debt rating had fallen below investment grade on Dec. 31, 2017, existing collateral arrangements would have required us to post an additional \$102 million of collateral.

*Derivatives*

The U.S. capital rules allow banks to use the Current Exposure Method ("CEM") or the Internal Models Method, after receiving prior written approval from the regulators, for estimating EAD associated with counterparty trades. BNY Mellon currently uses the CEM approach for estimating EAD which utilizes the Positive Fair Value EAD in combination with a regulatory defined Potential Future Exposure ("PFE"). The table below presents BNY Mellon's derivative exposure.

<b>Derivatives</b> <i>(in millions)</i>	<b>Dec. 31, 2017</b>							
	<b>OTC Derivatives</b>			<b>Cleared Derivatives</b>				
	<b>Positive Fair Value EAD</b>	<b>PFE</b>	<b>EAD</b>	<b>Positive Fair Value EAD</b>	<b>PFE</b>	<b>EAD</b>	<b>Total EAD</b>	
Interest rate contracts	\$ 4,224	\$ 986	\$ 5,210	\$ 2,759	\$ 1,124	\$ 3,883	\$ 9,093	
Foreign exchange contracts	5,277	7,510	12,787	—	—	—	12,787	
Equity derivative contracts	582	1,359	1,941	912	15	927	2,868	
Default fund contributions	—	—	—	142	—	142	142	
Total exposure	\$ 10,083	\$ 9,855	\$ 19,938	\$ 3,813	\$ 1,139	\$ 4,952	\$ 24,890	
Netting							(12,679)	
Netted EAD pre-collateral							\$ 12,211	
Collateral applied							(2,265)	
Total exposure after netting and collateral							\$ 9,946	

Total EAD on derivatives was approximately \$9.9 billion at Dec. 31, 2017, consisting of exposure to OTC derivatives and exposures to cleared derivatives. OTC and cleared derivatives exposures primarily consisted of interest rate contracts, foreign exchange

contracts and equity derivative contracts, partially offset by the effect of netting agreements and collateral applied. Collateral applied consists primarily of cash.

Periodically, we purchase single name credit default swaps, credit default swap index (“CDX”) and commercial mortgage-backed securities (“CMBS”) index protection or other forms of credit protection to reduce our exposure to certain institutions or industries. The table below shows the notional amount of credit derivatives which BNY Mellon used for its own credit portfolio. As of Dec. 31, 2017, BNY Mellon had purchased \$180 million of CDX protection. The exposure categories presented below represent those of the protection provider rather than the underlying borrower.

Credit derivatives (in millions)	Dec. 31, 2017	
	Purchased	Sold
CDX	\$ 180	\$ —
Total credit derivatives	\$ 180	\$ —

### Repo-style Transactions

A securities lending transaction is a fully

secured loan of securities to a borrower, typically a financial institution, for a period of time. The borrower provides collateral to the lender, typically in the form of cash or government securities, to cover the risk of the borrower's default. The collateral is held in a segregated account and is not available to the borrower. The borrower pays a fee to the lender for the use of the securities. The fee is typically based on the yield of the securities being lent. The fee is typically paid on a daily basis. The borrower is responsible for the safekeeping of the securities and for any dividends or interest payments received on the securities. The borrower is also responsible for the return of the securities to the lender at the end of the term of the transaction.

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. BNY Mellon has indemnified activity of \$432 billion as of Dec. 31, 2017. Securities lending indemnifications were secured by collateral of \$432 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, 2017, \$69 billion of borrowings at CIBC Mellon, for which BNY Mellon acts as agent on behalf of CIBC Mellon clients, were secured by collateral of \$73 billion. 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.

Under the U.S. capital rules, all indemnified securities lending activities, including securities lent with cash collateral received and all indemnified cash reinvestments into reverse repos are included in our RWA calculation.

For the above mentioned repo-style transactions, the U.S. capital rules allow banks to adjust EAD by using the collateral haircut approach. As an alternative to mitigating credit risk through an EAD adjustment, banks can apply an LGD adjustment used in calculating the risk weight and expected credit loss. BNY Mellon is currently either applying the collateral haircut approach or adjusting the LGD for repo-style transactions.

The following table provides EAD for all counterparty credit risk of repo-style transactions, by credit risk mitigation method and product type.

Counterparty credit risk exposure - analysis by product at Dec. 31, 2017			
(in millions)	EAD Adjustment Method	LGD Adjustment Method	Total
Securities Lending	\$ 32,986	\$ —	\$ 32,986
Repo/Reverse Repo and Securities Borrowing	5,530	—	5,530
Broker/Dealer and Margin Lending	1,398	871	2,269
Total	\$ 39,914	\$ 871	\$ 40,785

Total counterparty credit risk exposure for repo-style transactions at Dec. 31, 2017 was \$40.8 billion, primarily consisting of securities lending transactions.

### Credit Risk Mitigation

BNY Mellon manages credit risk through a variety of credit risk mitigation strategies including the following (each of which is discussed in additional detail below):

- Asset sales (for traditional loan products);
- Active collateralization (for repo-style transactions, foreign exchange and derivative transactions);
- Master agreements/netting arrangements (for foreign exchange, derivatives and securities

- financing transactions); and
- Credit derivatives.

Credit risk arises from several sources, including traditional lending activities and credit products, operational credit exposures, Securities Lending activities and Markets exposures. Each of these items is discussed below.

Traditional lending activities and credit products, include:

- Loans, lease commitments, advised and committed lines of credit (used or unused) and guidance lines for commercial transactions, whether secured or unsecured;
- Facilities to issue or confirm L/Cs;
- Acceptances;
- Overnight overdraft lines;
- Interbank money market/placement and federal funds;
- Federal funds swaps and segregated offset finance products;
- Receivables purchases without recourse to the seller;
- Swingline loans;
- Due from “Nostros” accounts;
- Secured overnight exposure to broker/dealers; and
- Repurchase agreements/reverse repurchase agreements.

Operational credit exposure consists of extensions of intraday credit provided as part of our investment services businesses, which include principally asset servicing, cash management, corporate trust, treasury services, broker-dealer services and collateral services. This type of credit exposure is associated with products with low historical credit losses.

Operational credit exposures are also short-term in nature and normally require the occurrence of two separate events to generate a loss (e.g. the transaction fails causing an extension of credit and then the counterparty defaults).

Examples of operational credit exposures include:

- Daylight and overnight lending facilities, including daylight overdrafts, day loans to broker/dealers; and
- Securities-related facilities, including tri-party target limits, custody and clearing facilities, margin deposit limits, guidance lines for

corporate trust and government securities clearance.

Securities lending activities consist of the temporary exchange of lendable securities for acceptable collateral between a lender and an approved borrower. The transaction is facilitated by a lending agent, as either agent or principal that stands between the lender and the ultimate borrower. Credit risk arises for Securities Lending activities when:

- The borrower fails to return the securities on loan and BNY Mellon is forced to replace them, either by purchasing or borrowing the securities which may have appreciated or depreciated, in value. The credit risk is limited to the difference between the market value of the collateral held and the cost of the replacement securities.
- BNY Mellon, acting as an agent, indemnifies its institutional lenders against loss on the cash or other collateral received.
- BNY Mellon, acting as a principal to the trades, in the event of a counterparty default, assumes the risk of both any difference between the market value of collateral held and the cost of replacement of securities, and the need to post an additional amount for margin posted when borrowing the securities.

Markets exposure consists of FX and derivative exposure used for trading and interest rate management purposes. In providing FX and derivative products to our clients, we are assuming counterparty credit risk. BNY Mellon would incur a loss on a derivative contract if rates move in our favor vis-à-vis the transaction and if the counterparty defaults. Certain derivatives are centrally cleared whereby BNY Mellon does not face the original counterparty, but instead the central counterparty (“CCP”). As a clearing member of a CCP, we have the potential for loss if one of the CCP’s counterparties were to default and the loss experienced by the CCP is larger than the collateral posted to the CCP by the defaulting counterparty and the reserve fund.

Examples of Markets exposure include:

- Foreign currency contracts;
- Foreign currency option contracts;
- Interest rate swaps, options, caps and floors;
- Futures and forward contracts;
- Equity options;
- Total return swaps; and
- Credit default swaps.

#### *Asset Sales*

In certain instances, we may also decide to sell part of our credit exposure. This type of mitigation is used primarily for traditional lending exposure. The decision to sell or hedge an asset is based on relative cost as well as the potential impact to the client. Under the terms of credit agreements, we are typically required to seek the client's approval before selling part of our exposure.

#### *Active Collateralization*

The acceptance of collateral with at least daily margining is used for various exposure types. In Securities Lending, for example, the borrower is required to post collateral for lending activity with additional margins that can range from 102% to 110%. The collateral received from the borrower falls within the acceptable collateral types defined under the U.S. capital rules, including cash collateral and other types of security collateral including sovereign bonds, both U.S. and non-U.S., and equity security collateral. The collateral amounts with the borrowers are adjusted at the beginning of every day to reflect the prior days' market activity and the collateral amounts are adjusted throughout the day for loan activity with the borrower.

Collateral is also used to mitigate the counterparty credit risk associated with FX and derivative transactions. Some collateral agreements may feature downgrade provisions that reduce the unsecured threshold if a counterparty were to be downgraded by a major rating agency such as S&P's, Moody's or Fitch.

Acceptable collateral for derivatives includes cash, U.S. Treasury securities, U.S. government agency securities and/or international equivalents and any other collateral that Risk Management may approve from time to time. The collateral is generally marked-to-market daily, and any haircuts applied to

these securities to determine the effective total amount posted must follow our internal policies. These haircuts are intended to protect BNY Mellon in case the value of the collateral suddenly falls under changing market conditions.

#### *Wrong-way Risk*

Credit Risk Management takes particular care to avoid wrong-way risk between collateral and exposures. Wrong-way risk results when the exposure to the counterparty increases when the counterparty's credit quality deteriorates. That is, it arises when default risk and credit exposure increase together.

There are two types of wrong-way risk. Specific wrong-way risk arises when the relationship between credit quality and exposure is explicit and direct. For example, if exposure is collateralized by a counterparty's own equity, it produces an obvious specific wrong-way risk situation. General wrong-way risk arises where the relationship is not explicit, but statistically material. For instance, if exposure is collateralized by a security that is strongly correlated with the counterparty's credit quality (i.e., security value tends to fall when credit quality falls), a general wrong-way risk situation may exist.

#### *Master Agreements and Netting*

Master agreements and netting are used to mitigate counterparty credit risk as a result of markets exposure. All counterparties that trade term exposures are expected to sign a master agreement containing netting provisions and clauses that seek to minimize credit exposures. The principal Master Agreements used are based on the following form agreements: the Master Repurchase Agreement, the Global Master Repurchase Agreement, the Master Securities Loan Agreement, the Global Master Securities Lending Agreement, ISDA Master Agreement and the International Foreign Exchange and Currency Option Master Agreement.

Netting provisions are contained in the Master Agreements described above. Netting may take two different forms: close-out netting and settlement netting. Close-out netting refers to an agreement between BNY Mellon and a counterparty so that upon specified events of default, the non-defaulting party can require that:

- All open transactions be marked-to-market (present valued) and summed;
- A single net payment be made as final settlement to whichever party holds the overall profit from those transactions; and
- Collateral be liquidated (if held).

Settlement netting (also called payment netting) requires that all payment obligations between us and a counterparty, that are payable on the same settlement date, be netted to produce a single payment obligation for each currency pair traded.

#### *Credit Derivatives*

Credit Derivatives may be used with traditional lending and extensions of credit under four circumstances: (1) to hedge large individual name concentrations (2) to hedge large industry concentrations (3) to hedge idiosyncratic risk, in unique situations where such risk is present and (4) to manage CVA risk. For more information on our Credit Derivatives, see the “Counterparty Credit Risk for Derivative Contracts, Repo-style Transactions and Eligible Margin Loans” section of this Disclosure.

#### *Concentration Risk*

While traditionally concentration risk is associated with credit risk, we have taken a broader view of concentration risk. We define concentration risk as the risk of loss not only associated with outsized credit granted to individual or interrelated borrowers but also to any significant interrelated risk exposures that may produce large losses or may threaten the safety and soundness of BNY Mellon. Concentration risk may arise from connected factors which are not readily apparent and identifiable. It can take the form of intra-risk concentrations and cross-risk concentrations. Intra-risk credit concentrations may arise from out-sized credit (default) risk exposures to one or more exposure characteristics, such as a single obligor or interconnected obligors, economic sector, geographic location and/or financial instrument/product type. Cross-risk concentrations arise from out-sized exposures to one or more common exposure characteristics when viewed across multiple risk types.

We have well-established policies and procedures to identify, manage and measure credit risk concentrations through the use of the following specific limits and underwriting guidelines:

- Target portfolio values should not exceed industry or country notional exposure portfolio limits;
- Target portfolio values should not exceed industry economic capital portfolio limits; and
- Prior to the credit underwriting approval process, requests for committed credit facilities and advised lines of credit are reviewed to confirm that total relationship revenue relative to aggregate customer risk exposure is adequate. Global Client Management, Lines of Business and Credit Risk Management functions present transactions in a weekly meeting chaired by the Chief Corporate Lending Officer or an authorized delegate. Exceptions to this process are bilateral letters of credit of less than: (i) \$5 million per transaction or (ii) \$10 million in the aggregate per customer.

Additionally, BNY Mellon’s Portfolio Management Committees identify and manage credit risk concentrations by periodically reviewing exposures to identify “Pools of Risk.” Pools of Risk are delineated by:

- An entity where BNY Mellon is deemed to have an ownership interest having exposure to BNY Mellon that exceeds \$500 million;
- Exposures administered under a special industries lending group;
- Individual country exposures administered by the Global Banks Credit Group;
- Any industry which has an industry lending guideline; and
- Any group of exposures or customers within an industry which, as a group, pose significant credit or operational risks to the Company due to the nature of our business in that industry or due to the financial condition of the industry.

Each Portfolio Management Committee recommends specific Pools of Risk that warrant a more comprehensive review. The reviews are conducted by the appropriate Credit Division Head, one or more Credit Risk Managers, one or more representatives from Basel & Capital Adequacy Group and may include one or more representatives from the appropriate Global Client Management or Business Division. This group produces a report identifying the quantity, quality, and liquidity of the credit



exposure to the Pools of Risk by calculating the total exposure, exposure composition and the weighted-average borrower and facility ratings. The report and its conclusions are presented to the appropriate Portfolio Management Committee.

BNY Mellon also accounts for credit risk concentrations in its capital estimates through its credit risk economic capital model.

Additionally, we use enterprise-wide stress testing to evaluate cross-risk concentrations. One of the goals of enterprise-wide stress testing is to assess the worst impact resulting from a stressed scenario on one or more interrelated exposure characteristics across all risk types so that potentially significant cross-risk concentrations can be understood.

For more detail regarding our credit risk management practices, see the “Credit Risk: General Disclosures” and “Credit Risk: Disclosures for Portfolios Subject to IRB Risk-based Capital Formulas” sections of this Disclosure.

## Securitization Exposures

### *Overview*

We are exposed to securitization products as a result of either purchasing securitizations originated by others into our investment portfolio, as a derivative counterparty to securitization transactions, or through extending credit to special purpose vehicles or non-operating companies defined as securitization exposures under the U.S. capital rules. The exposure amount and RWA for securitization exposures found in the banking book, and non-covered positions from the trading book are calculated in accordance with the U.S. capital rules hierarchy of approaches. At Dec. 31, 2017, BNY Mellon was primarily utilizing the Simplified Supervisory Formula Approach (“SSFA”). Currently, we do not hedge our securitization portfolio.

### *Risk Governance*

Our ALCO, which reports to the SRMC, has several responsibilities related to balance sheet management, including providing oversight of the investment portfolio, monitoring interest rate sensitivity, monitoring balance sheet and capital ratios and ensuring adequate liquidity. The SRMC is the most senior management body responsible for evaluating

emerging risks and for reviewing any material breaches to our risk appetite and approves action plans required to remediate any issues. The SRMC provides oversight for the risk management, compliance and ethics framework.

### *Objectives of the Company’s Securitization Activity*

BNY Mellon is exposed to securitization exposures primarily from four activities: investment portfolio exposures, resecuritization exposures, as a derivative counterparty to securitization transactions and as an investor in Variable Funding Notes (“VFNs”). These securitization activities are described in more detail in the following paragraphs.

### Investment Portfolio Exposures

BNY Mellon is an investor in securities that qualify as securitization exposures under Basel III. These are composed mostly of highly rated, investment grade securities and include, among other types, investments in residential mortgage-backed securities (“RMBS”), CMBS and other asset-backed securities (“ABS”). The investment portfolio in its entirety is managed by our Corporate Treasury function and the portfolio’s direction, composition, and riskiness is monitored on a daily basis.

As discussed in additional detail below, RWA for securitization exposures are calculated using either the Supervisory Formula Approach (“SFA”), SSFA, a 100% risk weight (for OTC derivatives that meet the criteria) or the 1250% risk weighting approach depending on the appropriate treatment for the exposure.

### Resecuritization Exposures

BNY Mellon’s investment portfolio includes \$8 million of resecuritization exposures with an RWA of \$33 million. The resecuritization RWA amount is primarily driven by RMBS exposures.

### Derivative Counterparty to Securitization Transactions

BNY Mellon has Interest Rate and Foreign Exchange derivative exposures, that support securitization transactions and are considered securitization exposures under the U.S. capital rules. These exposures generally receive a 100% risk-weight.

## Variable Funding Notes

BNY Mellon extends a limited number of VFNs to specific securitization vehicles. Typically, these exposures are subject to the SFA treatment, although certain VFNs are subject to the SSFA if the SFA cannot be applied.

### *Accounting Policies*

For a discussion of the Company's accounting policies for securitization activities, see Note 1 - Summary of significant accounting and reporting policies, Note 4 - Securities, Note 12 - Variable interest entities and securitizations, Note 18 - Fair value measurement and Note 19 - Fair value option of the Notes to Consolidated Financial Statements in our 2017 Annual Report.

### *Calculation of RWA for Securitization Exposures*

Consistent with section 939A of the Dodd-Frank Act, the Final Capital Rules remove the Advanced Approaches risk-based capital rule's ratings-based approach and internal assessment approach for securitization exposures. Under the U.S. capital rules, the hierarchy for securitization exposures is as follows:

- Banking organizations are required to deduct from CET1 any after-tax gain-on-sale resulting from a securitization and apply a 1250% risk weight to the portion of credit-enhancing interest-only strip ("CEIO") that does not constitute an after-tax gain-on-sale. If the after-tax gain-on-sale results from a securitization transaction that meets the operational criteria for recognizing the transfer of risk the deduction of any after-tax gain-on-sale is not required. BNY Mellon currently does not have any securitization exposures that are subject to this deduction or CEIOs that would require a 1250% risk weight.
- For those securitization exposures not subject to capital deduction, a banking organization is

required to assign a risk weight to the securitization exposure using the SFA where data to calculate the SFA is available. As of the third quarter of 2017, BNY Mellon adopted the SFA treatment for its securitization exposures that are VFNs, CDOs, and CLOs. Prior to the third quarter of 2017, BNY Mellon used the SFA treatment only for its securitization exposures that are VFNs.

- Banking organizations not adopting the SFA are permitted to apply the SSFA under certain situations. The SSFA does not rely on credit ratings when determining the amount of risk that securitization exposures represent.
- Banking organizations may assign a risk weight of 100% to certain derivatives that have a first priority claim on cash flows from the underlying exposures of a securitization exposure under the U.S. capital rules.
- Securitization exposures that do not fall under any of the foregoing categories are assigned a 1250% risk weight. In addition, a banking organization must assign a 1250% risk weight to any securitization exposures with respect to which it fails to satisfy applicable due diligence requirements.

The following table presents securitization exposures determined under the U.S. capital rules segmented by the risk weight methodology. The RWA for most securitization exposures is calculated using the SSFA. For exposures, such as certain VFNs and certain CDO/CLOs, for which BNY Mellon has sufficient data, RWA is computed using the SFA treatment. OTC derivatives that support securitization exposures, with the exception of those that do not have first priority on the cash flow waterfall from the underlying exposure, receive a 100% risk weighting. All other securitization exposures without available treatment, or with respect to which a banking organization failed to satisfy applicable due diligence requirements receive a 1250% risk weight.

Outstanding traditional securitization exposures by exposure type at Dec. 31, 2017								
(in millions)		Securitization exposure amount			Securitization RWA			
Risk weight method	Exposure Category	On-balance	Off-balance	Total	On-balance	Off-balance	Total	
SSFA	RMBS	\$ 1,853	\$ —	\$ 1,853	\$ 2,825	\$ —	\$ 2,825	
SSFA	ABS	1,045	—	1,045	649	—	649	
SSFA	CMBS	1,369	—	1,369	447	—	447	
SSFA	CDO/CLO	6	—	6	20	—	20	
SSFA	VFNs/Other	—	500	500	—	156	156	
<b>Subtotal SSFA exposures</b>		<b>4,273</b>	<b>500</b>	<b>4,773</b>	<b>3,941</b>	<b>156</b>	<b>4,097</b>	
SFA	CDO/CLO	3,051	—	3,051	1,321	—	1,321	
SFA	VFNs/Other	48	49	97	9	14	23	
100% (a)	OTC derivatives	—	71	71	—	71	71	
1250%	Securitization exposures without available data or due diligence	23	3	26	296	32	328	
<b>Total outstanding securitization exposures</b>		<b>\$ 7,395</b>	<b>\$ 623</b>	<b>\$ 8,018</b>	<b>\$ 5,567</b>	<b>\$ 273</b>	<b>\$ 5,840</b>	

(a) Securitization exposures that support derivative transactions receive a 100% risk weight and are included in the SSFA line item in the FFIEC 101 schedule.

The total amount of outstanding securitization exposures and RWA at Dec. 31, 2017 was \$8.0 billion and \$5.8 billion, respectively. BNY Mellon did not

have any synthetic securitization exposures as of Dec. 31, 2017.

The following table presents securitization exposures by risk weight bands.

Securitization positions retained or purchased by risk-weight bands at Dec. 31, 2017							
(in millions)		Exposure amount			Capital requirements		
Risk weight band	Securitization	Resecuritization (a)	Total	Securitization	Resecuritization (a)	Total	
Subject to SSFA Approach:							
20% to <= 25%	\$ 2,252	\$ —	\$ 2,252	\$ 36	\$ —	\$ 36	
>25% to <= 35%	686	—	686	17	—	17	
>35% to <= 75%	205	—	205	8	—	8	
>75% to <= 250%	1,314	1	1,315	177	—	177	
>250% to <= 650%	285	7	292	68	3	71	
>650% to <= 1250%	23	—	23	18	—	18	
<b>Total SSFA approach</b>	<b>4,765</b>	<b>8</b>	<b>4,773</b>	<b>324</b>	<b>3</b>	<b>327</b>	
Subject to SFA Approach:							
20% to <= 25%	\$ 3,054	\$ —	\$ 3,054	49	—	49	
>25% to <= 35%	—	—	—	—	—	—	
>35% to <= 75%	9	—	9	—	—	—	
>75% to <= 250%	21	—	21	3	—	3	
>250% to <= 650%	11	—	11	3	—	3	
>650% to <= 1250%	53	—	53	53	—	53	
<b>Total SFA approach</b>	<b>3,148</b>	<b>—</b>	<b>3,148</b>	<b>108</b>	<b>—</b>	<b>108</b>	
Subject to 100% OTC or 1250% methods:							
100%	71	—	71	6	—	6	
1250%	26	—	26	26	—	26	
<b>Total other methods</b>	<b>97</b>	<b>—</b>	<b>97</b>	<b>32</b>	<b>—</b>	<b>32</b>	
<b>Total securitization positions retained or purchased</b>	<b>\$ 8,010</b>	<b>\$ 8</b>	<b>\$ 8,018</b>	<b>\$ 464</b>	<b>\$ 3</b>	<b>\$ 467</b>	

(a) Resecuritization exposures relate to structured products. The credit mitigation and guarantees related to resecuritization positions are not material.

The total amount of outstanding securitization exposures subject to risk weighting were \$8.0 billion

at Dec. 31, 2017. Capital requirements for those

securitization exposures were \$0.5 billion at Dec. 31, 2017.

## 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 cyber-attacks. Potential legal or regulatory actions that could arise as a result of noncompliance with applicable laws and/or regulatory requirements also fall within the operational risk category. In the case of an operational event, we could suffer a financial loss as well as damage to our reputation.

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, 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, suspicious activity reporting, and operational risk.

### *Advanced Measurement Approach (“AMA”) Methodology*

BNY Mellon’s AMA methodology for calculating the capital requirement for operational risk is based on a Loss Distribution Approach (“LDA”). Under the

LDA, loss frequency distribution and loss severity distribution are separately estimated from historical loss data, and then combined using Monte Carlo simulations to generate a loss distribution. The loss distribution is used to derive the EL, unexpected loss (“UL”) and capital.

BNY Mellon’s LDA model uses internal and external loss data as inputs and estimates an annual loss distribution for each unit of measure, and an aggregate annual loss distribution for the corporation with a bottom-up approach. External losses, including fines and penalties levied against institutions in the financial services industry, particularly those that relate to businesses in which we operate, could impact the amount of capital that we are required to hold. The model calculates capital without dependence assumption (i.e., without diversification benefit) and capital with assumption of dependence across units of measure (i.e., with diversification benefit). The dependence is modeled with a copula method using the correlations of annual losses between units of measure, with the correlations being estimated from historical internal loss data. The regulatory capital and economic capital over a one-year time horizon are the diversified capital, and are derived from the annual loss distribution with a confidence level of 99.9%. The capital includes UL and EL without any offsets to the EL.

The Model Risk Management Group (“MRMG”) is responsible for reviewing and challenging the operational risk model or changes to the model. The model is run quarterly based on updated parameters. Independent validation of the model is performed annually by the MRMG. The Head of MRMG is responsible for approving the model for use.

The majority of operational risk at BNY Mellon is in our Asset Servicing, Global Collateral Services and Corporate Trust business lines.

### *Operational Risk Management (“ORM”)*

We have established ORM 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. These activities include Board oversight and governance, accountability of businesses, Corporate Operational Risk Management, and Technology Risk Management. Each of these

activities are described in more detail in the following paragraphs.

#### *Board Oversight and Governance*

The Risk Committee of the Board oversees our ORM strategy in addition to credit and market risk. The Risk Committee meets regularly to review ORM initiatives, discuss key risk issues, and review the effectiveness of the risk management systems. It is composed entirely of independent directors and meets to review and assesses the control processes with respect to the Company's inherent risks. It also reviews and assesses the Company's fiduciary risk policies and activities and at least annually, reviews the effectiveness and approves the Company's risk-based capital assessment report which includes the Company's capital ratios calculated under the U.S. capital rules. Policy formulation and approval is delegated to the Operational Risk Committee. Additionally, day-to-day oversight is performed by the Chief Operational Risk Officer ("CORO").

Reporting to both the Risk Committee and the Audit Committee of the Board is the SRMC. The SRMC is responsible for evaluating emerging risk issues to ensure they are weighted against our risk appetite. The SRMC also ensures that any material amendments to the risk appetite and the risk appetite statement are properly vetted and recommended to the Executive Committee and the Board for approval. The roles and responsibilities of the SRMC are more fully detailed in the "Credit Risk: General Disclosures" section of this Disclosure.

The Risk Committee oversees all risk management activities while the SRMC provides senior management oversight. Reporting to SRMC are three operational risk managing committees including the Technology and Information Risk Committee, the Operational Risk Committee, and the Strategic Risk Committee.

We also have a number of management committees that monitor risk. The Technology and Information Risk Committee oversees all enterprise information technology risk management activities, including significant Information Technology ("IT") High Risk Events and the Firm's Cybersecurity Service Program. The Operational Risk Committee provides oversight of operational risk and executive guidance on the operational risk framework, policy design, and implementation/adherence tracking. The Strategic

Risk Committee oversees the Company's strategic risk profile and monitors and manages the associated risks. Senior line of business operations managers, Senior Technology Managers, Business Chief Risk Officers, and representatives from Legal, Compliance and Audit serve on these committees.

The operational risk committees, organizational structure, tools and controlling policies are designed to execute the risk management framework, effectively mitigating the risk of loss and damage to our reputation.

Internal Audit is an independent, objective assurance function. Internal Audit 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.

#### *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. Co-chaired by the heads of the relevant lines of business and the Business CRO, the Business Risk Committee meetings are a key aspect of the ORM process and are designed to enhance transparency of the key risk and control issues facing the respective businesses. Other meeting attendees include representatives of our Operations, Compliance, Technology, Finance, Legal and Internal Audit functions.

#### *Corporate Operational Risk Management ("CORM")*

CORM reports to the CORO, who in turn reports to the CRO, and is responsible for developing risk management policies and tools for assessing, measuring, monitoring and managing operational risk for BNY Mellon. The tools include a business environment and internal control factor self-assessment, key risk indicators and internal operational loss event data. CORM reports operational risk data to various risk committees.

BNY Mellon has established an Operational Risk Assurance ("ORA") Team as part of the organization's governance and control environment within the BNY Mellon Risk Management Group. ORA reviews and provides objective validation of the adequacy, conceptual soundness, effectiveness and

accuracy of outputs of BNY Mellon's Operational Risk Framework.

### *Technology Risk*

The Technology Group is responsible for developing policies, methods and tools for identifying, assessing, measuring, monitoring and governing information and technology risk for BNY Mellon. Technology Risk partners with the businesses to help maintain and protect the confidentiality, integrity and availability of the portfolio reviews.

### *Operational Risk Tools and Framework*

We have developed several enterprise-wide tools to aid in understanding and monitoring operational risk. The tools are on a common reporting platform and have been developed for capture of internal losses and business environment self-assessments. Key Risk Indicators are also used to monitor operational effectiveness and to monitor trends in operational risk.

### *Reporting of Losses*

Operational losses are captured in the general ledger accounts that are mapped to the seven operational risk event categories specified in the U.S. capital rules. Information on operational losses that exceed \$10,000 must be maintained in a central database. We have established policies that require business managers to escalate operational risk events where the most likely outcome based on available information is a financial impact of \$50,000 or greater. This notification is sent to Business/Business Partners, the Business Chief Risk Officer, the CORO, and for higher threshold amounts, the CRO, the CFO and General Counsel are also notified. The event information from the central database is input to the operational risk capital model along with external loss data.

### *Business Environment Self-Assessments*

Business environment self-assessments are captured at the business unit and process levels. Business unit "High Level Assessments" are completed by the Business/Business Partner for major businesses and other selected businesses. A High Level Assessment is a consolidated view of the risk assessments that analyzes the quality of controls. The assessment

takes into consideration both internal and external risks to form an overall assessment of the Business.

Risk and Control Self Assessments ("RCSAs") are completed by the Business/Business Partner to identify the risks associated with their key business practices. The RCSA policy includes a matrix which is a qualitative guideline to assist the risk owner when assessing inherent risk, quality of controls and residual risk.

### *Key Risk Indicators ("KRIs")*

KRIs are metrics that are used to monitor activities that can potentially cause the most significant loss or reputation damage to the Company and its affiliates. Results are measured against predetermined standards or thresholds.

### *Operational Loss Review*

The monthly Operational Loss Review is a form of operational risk reporting that highlights operational losses and provides commentary on trends or drivers of losses, total losses by sector and losses expressed as a percentage of revenue. To allow for comparison and to permit focus on problem areas, the report includes information across multiple time horizons.

### *Client & Product Risk Oversight*

The BNY Mellon Client and Product Risks Oversight provides oversight of the BNY Mellon risk framework related to governance over client relationships and products.

### *Business Continuity*

We regularly assess and monitor operational risk in our business and provide for disaster and business recovery planning, including geographical diversification of our facilities. We are prepared for events that could damage our physical facilities, cause delay or disruptions to operational functions, including telecommunications networks, or impair our employees, clients, vendors and counterparties. Key elements of our business continuity strategies are extensive planning and testing and diversity of business operations, data centers and telecommunications infrastructure. For a further discussion on this topic, see "Management's Discussion and Analysis of Financial Condition and

Result of Operations - Business Continuity” in our 2017 Annual Report.

#### *Use of Insurance for the Purpose of Mitigating Operational Risk*

BNY Mellon mitigates operational risk with a broad range of insurance policies that cover operational events. The insurance policies that BNY Mellon holds include Financial Institutions Bond, Bankers Professional Liability, Directors’ and Officers’ Liability, All Risk Property policies, and Enterprise Cyber/Privacy Liability. Operational loss data are provided to our Corporate Insurance Group in order to raise awareness of significant operational risk issues to ensure appropriate insurance coverage is in place or to enhance existing insurance policies. An ORM policy is in place that describes the process for reporting operational loss data to the Corporate Insurance Group. Although we maintain insurance policies to mitigate operational events, insurance recoveries are not included in the loss information used in our operational risk capital model.

#### **Equities Not Subject to Market Risk Rule**

The principal functions of the securities portfolios are to generate net interest revenue or capital gains over time, to adjust the interest rate sensitivity gapping position of the Company, to support the liquidity management and funding of the Company, to satisfy deposit pledging requirements, and to meet requirements of certain agencies with which the Company does business. In recognition of these different functions, the Company’s securities portfolio is divided into three portfolios: trading securities (market risk), available-for-sale (“AFS”) securities, and held-to-maturity securities.

#### *Accounting and Valuation Methodologies*

Equity securities are generally classified as AFS securities or other assets when they are purchased. Securities are classified as AFS 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. Our investments in mutual funds and other equity securities with readily determinable fair values are reported as AFS investment securities for regulatory reporting purposes.

Other securities held for other than profit or yield enhancement purposes include securities held for merger and acquisition objectives and securities of certain government corporations held to conduct certain forms of business, including FRB and Depository Trust Company (“DTC”) stock. These investments are valued on a lower of cost or impaired value basis, depending on the nature of the investment. For example, FRB stock and DTC stock are recorded in other assets at the lower of cost or impaired value.

Equity securities (other than trading) are accounted for using one of four methods:

- Cost Method
- Equity Method
- Consolidation Method
- Fair Value Method

For more information on the Accounting and Valuation Methodologies of equity investments see Note 1 - Summary of significant accounting and reporting policies and Note 18 - Fair value measurement of the Notes to Consolidated Financial Statements in our 2017 Annual Report.

#### *Risk-Weighting Approaches*

As described below, we use three approaches to risk weight our equity exposures that are not subject to the Market Risk Capital Rules: Simple Risk-Weight Approach (“SRWA”), Simple Modified Look-Through Approach (“SMLT”), and Full Look-Through Approach (“FLTA”).

#### SRWA

BNY Mellon determines the RWA amount for equity exposures, except for equity exposures to investment funds, by multiplying the adjusted carrying value of the equity exposure by the lowest applicable risk weight. Under SRWA:

- Equity investments in sovereigns, certain political subdivisions, renewable energy, the Federal Home Loan Bank or Farmer Mac may be risk-weighted below 100%.
- A “non-significant equity exposure,” equity exposures (excluding significant investments in the capital of an unconsolidated financial institution in the form of common stock and

exposures to certain investment firms) with an aggregate adjusted carrying value of 10% or less of a bank's total capital, is risk weighted at 100%.

- An investment in the same equity instrument that exceeds 10% of total capital will be risk weighted at 300% (publicly traded equities) or 400% (non-publicly traded).
- Equity exposures to qualified community development investments are risk-weighted at 100%.
- Significant investments in unconsolidated financial institutions in the form of common stock that are not deducted from regulatory capital are weighted at 250%, while investments in certain firms with securitization features are risk weighted at 600%.

### SMLT

The SMLT approach is used to calculate the RWA amount of equity exposure to investment funds. Under the SMLT approach, the RWA amount for this type of equity exposure is equal to the adjusted

The table below details BNY Mellon's equity exposures.

carrying value of the equity exposure multiplied by the highest risk weight that applies to any exposure within the fund allowed by the prospectus to be held.

### FLTA

The FLTA is used to calculate the RWA amount of the equity exposure to investment funds for which we are able to compute an RWA for each of the exposures held by the investment fund. Under the U.S. capital rules, a bank is required to calculate the RWA for each of the exposures held by the investment fund as if the exposures were held directly by us based on our proportional interest. Depending on whether the exposures were wholesale, retail, securitization, or equity exposures, a bank would apply the appropriate IRB risk-based capital treatment.

### Carrying Value and Fair Market Value

At Dec. 31, 2017, the carrying value and the fair market value of the equity investments were \$4.87 billion and \$4.89 billion, respectively.

<b>Equity exposures at Dec. 31, 2017</b> <i>(in millions)</i>	<b>EAD</b>	<b>RW %</b>	<b>RWA</b>	<b>Capital Required</b>
Simple Risk Weight Approach:				
Federal Reserve Bank stock	\$ 477	— %	\$ —	—
Federal Home Loan Bank	82	20 %	16	1
Community development	1,124	100 %	1,124	90
Renewable energy investments	1,368	100 %	1,368	109
Non-significant equity treatment:				
Publicly traded	206	100 %	206	16
Non-publicly traded	102	100 %	102	8
Pension fund assets	693	100 %	693	55
Significant investment in unconsolidated subs and covered funds	513	100 %	513	41
Funds with greater than material leverage	56	600 %	338	27
<b>Subtotal- Simple Risk Weight Approach</b>	<b>4,621</b>		<b>4,360</b>	<b>347</b>
Simple Modified Look-through Approach:				
Money market funds	152	20 %	30	2
Funds subject to 1250% RW	39	1,250 %	484	39
Other	507	107 %	542	43
<b>Subtotal- Simple Modified Look-through Approach</b>	<b>698</b>		<b>1,056</b>	<b>84</b>
Full Look-through Approach:				
Company owned life insurance	2,886	38 %	1,085	87
Other	545	32 %	175	14
<b>Subtotal- Full Look-through Approach</b>	<b>3,431</b>		<b>1,260</b>	<b>101</b>
<b>Total</b>	<b>\$ 8,750</b>		<b>\$ 6,676</b>	<b>\$ 532</b>



*Equity Exposures Gains and Losses*

There were net realized gains of \$13 million and net unrealized losses of \$1.6 million for the fourth quarter of 2017. The net realized gains were through sales or liquidations while the unrealized losses were recognized through equity. The net realized gains and unrealized losses amounts are included in CET1, Tier 1 and Total Capital.

**Market Risk**

The U.S. capital rules' market risk capital rules section (the "Market Risk Capital Rule") requires us to make publicly available quantitative disclosures at least quarterly. Specifically, we are required to disclose, among other items, certain quantitative information on the following measures as applicable to the Company, including for example:

- Value-at-Risk ("VaR") based measures
- Stressed VaR based measures
- Incremental risk capital ("IRC") requirements
- Comprehensive risk measure ("CRM") capital requirements

The quantitative and qualitative information included in this quarterly disclosure is provided at the consolidated Company level.

*Covered Positions*

The Market Risk Capital Rule requires us to calculate the market risk regulatory capital based on the population of covered positions. Covered positions include all foreign exchange and commodity positions as well as assets and liabilities in our trading book that meet minimum regulatory requirements making them subject to market risk regulatory capital requirements in the Market Risk Capital Rule.

Due to the regulatory requirements for covered positions, the population of positions included in our regulatory VaR is different from the population of positions in management VaR we disclose in our Form 10-Q and Annual Reports. Management VaR includes positions subject to internal management VaR limits. The population of covered positions in our regulatory VaR is a subset of the population of positions included in our management VaR.

*Securitizations*

As of the end of the fourth quarter of 2017, the Company's population of covered positions does not include any positions that meet the definition of a securitization position in the Market Risk Capital Rule.

*Correlation Trading Positions*

During the fourth quarter of 2017, the Company's population of covered positions did not include any correlation trading positions.

*Measurement and Monitoring*

The following table summarizes the minimum capital requirement and RWA for market risk calculated in accordance with the Market Risk Capital Rule.

Component (dollars in millions)	Dec. 31, 2017	
	Capital	RWA
VaR (a)	\$ 45.1	\$ 564.0
Stressed VaR (b)	155.6	1,945.3
Specific Risk Standard Charge	91.8	1,147.3
<b>Total Market Risk Capital and RWA</b>	<b>\$ 292.5</b>	<b>\$ 3,656.6</b>

(a) Represents the daily average of the previous 60 business days from the period end-date times a multiplication factor determined in accordance with the Market Risk Capital Rule.

(b) Represents the weekly average of the previous 12 weeks from the period end-date times a multiplication factor determined in accordance with the Market Risk Capital Rule.

*VaR-Based Measures*

VaR is a measure of the dollar amount of potential loss at a specified confidence level from adverse market movements in an ordinary market environment. Our VaR methodology is based on a historical simulation. BNY Mellon uses the same modeling methodology and base market data inputs for its shareholder reporting, internal risk management and regulatory VaR calculations, relying on a 500-day look back with a weighting scheme and incorporating non-linear pricing behavior of products. Regulatory VaR captures a 99% confidence level loss on a ten-day holding period. However, for shareholder reporting and internal risk management VaR, BNY Mellon captures a 99% confidence level loss based on a one-day holding period.

The following table indicates the calculated regulatory VaR amounts for the overall portfolio of covered positions as well as separate measures for interest rate, foreign exchange, equity and credit components of VaR for the fourth quarter of 2017 and at Dec. 31, 2017.

VaR (a) (dollars in millions)	4Q17			Dec. 31, 2017 (b)
	Mean	Low	High	
Interest rate	\$ 9.4	\$ 8.7	\$ 13.0	\$ 7.6
FX	14.7	7.9	15.1	27.0
Equity	0.6	0.3	0.8	0.6
Credit	3.6	3.1	5.5	4.0
Diversification	(13.3)	N/M	N/M	(10.5)
Total portfolio	\$ 15.0	\$ 12.5	\$ 28.7	\$ 28.7

(a) The ten-day, 99% confidence regulatory VaR metrics in this table are calculated over the previous 60 business days from the period end-date.

(b) VaR is calculated on the previous business day from the period end-date, last day of the calendar quarter

N/M - Because the minimum and maximum may occur on different days for different risk components, it is not meaningful to compute a portfolio diversification effect.

The following section provides additional information regarding the specific components of VaR set forth in the table above.

#### *Composition of material portfolios of covered positions*

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: debt securities, MBS, 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, and 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, debts with exposures from corporate credit spreads, and mortgage prepayments.

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 the fourth quarter of 2017, interest rate risk ("IRR") generated 33% of average gross VaR, foreign exchange risk accounted for 52% of average gross VaR, equity risk generated 2% of average gross VaR and credit risk generated 13% of average gross VaR.

#### *Stressed VaR Based Measures*

Stressed VaR is a measure of the dollar amount of potential loss at a specified confidence level from adverse market movements in an environment of significant market stress. Stressed VaR uses the same model as our regulatory VaR, but incorporating inputs calibrated to historical data from a continuous one year stress period selected based on empirical studies. The calculation of our regulatory Stressed VaR assumes a ten-day holding period, utilizes a 99% confidence level, a 250 day look-back with a weighting scheme, and incorporates non-linear product characteristics. The ten-day regulatory Stressed VaR is derived by scaling one-day Stressed VaR to a ten-day holding period.

The following table indicates the calculated regulatory Stressed VaR amounts for the overall portfolio of covered positions as well as separate measures for interest rate, foreign exchange, equity and credit components of Stressed VaR for the fourth quarter of 2017 and at Dec. 31, 2017.

Stressed VaR (a) (dollars in millions)	4Q17			Dec. 31, 2017
	Mean	Low	High	
Interest rate	\$ 36.5	\$ 22.3	\$ 37.2	\$ 25.9
FX	65.4	18.3	50.1	45.8
Equity	2.4	1.7	2.7	3.0
Credit	11.7	16.2	26.1	13.9
Diversification	(64.1)	N/M	N/M	(44.2)
Total portfolio	\$ 51.9	\$ 41.3	\$ 92.3	\$ 44.4

(a) The ten-day, 99% confidence, regulatory Stressed VaR metrics in this table are calculated over the previous 12 weeks from the period end-date

N/M - Because the minimum and maximum may occur on different days for different risk components, it is not meaningful to compute a portfolio diversification effect.

During the fourth quarter of 2017, IRR generated 32% of average gross Stressed VaR, foreign exchange risk accounted for 56% of average gross Stressed VaR, equity risk generated 2% of average gross Stressed VaR and credit risk generated 10% of average gross Stressed VaR.

### Specific Risk Measures

Specific risk means the risk of loss on a position that could result from factors other than broad market movements and include event risk, default risk, and idiosyncratic risk. The Market Risk Capital Rule requires us to measure the specific risk for debt, equity and securitization positions using either our internal models (e.g., VaR, IRC and CRM) provided our regulators approve the use of these models to measure specific risk, or the standardized measurement method. The following three sections describe our specific risk measures.

### Specific Risk Standard Charge

We calculate the specific risk standard charge on a quarterly basis under the standardized measurement method. It measures specific risk pursuant to fixed risk weights, which are prescribed by the Market Risk Capital Rule.

### IRC Requirements

IRC is a measure of the dollar amount of potential loss from the exposure to default and migration risks for fixed income positions in trading books. We do not use an IRC model for the calculation of our market risk regulatory capital.

### CRM Requirements

CRM is a measure of the dollar amount of potential loss from the exposure to all price risks in correlation trading portfolios. The CRM model is not applicable because we do not have correlation trading positions in our population of covered positions.

### Regulatory VaR Backtesting

On a daily basis, we compare one-day 99% regulatory VaR to trading profits and losses excluding fees, commissions, reserves, net interest income, and intraday trading to determine the backtest multiplier for VaR and Stressed VaR for purposes of calculating the market risk regulatory capital. This daily backtesting is also done at a sub-portfolio level and facilitates the assessment of the performance of our VaR model.

During the fourth quarter of 2017, for the Company, there were no occurrences where daily trading loss excluding fees, commissions, reserves, net interest income and intraday trading exceeded the calculated regulatory VaR of the overall portfolio of covered positions. For the one-year period ending fourth quarter of 2017, there were no occurrences where daily trading loss excluding fees, commissions, reserves, net interest income and intraday trading exceeded the calculated regulatory VaR of the overall portfolio of covered positions, resulting in a regulatory backtest multiplier of 3 (the minimum backtest multiplier).

For further information on market risk governance, see "Risk management" in our 2017 Annual Report.

### Valuation Process

Business line trading units are responsible for estimating fair value pricing for trading assets and liabilities, including covered positions, on the Company's balance sheet. An independent valuation control function, which is part of the Company's Finance team, is responsible for verifying these estimates and making valuation adjustments, if necessary, to ensure that such financial instruments are recorded at fair value.

For full details on the Company's fair value measurement policies and valuation hierarchy, see Note 18 - Fair value measurement of the Notes to

Consolidated Financial Statements in our 2017 Annual Report.

### *Stress Testing*

The Company performs a suite of market risk stress tests as an integral part of its risk management process, complementary to the Company's other risk measures such as VaR and Stressed VaR. The market risk stress scenarios include low probability yet plausible events that could create extraordinary losses and gains, with reduced liquidity conditions, and significantly altered correlation relationships. The scenarios target specific portfolio risk characteristics and concentrations.

Market Risk Management runs stress tests on a periodic basis as part of routine risk management, and when appropriate will perform ad-hoc stress analysis to address specific events or concerns. Market Risk Management works with business line management to design historical and hypothetical stress scenarios. These scenarios include both comprehensive scenarios, which stress all major risk factors (equity, foreign exchange and interest rates) across the Company's entire portfolio of covered positions, and scenarios that target specific risk factors, or to address specific market events or concerns.

The stress testing results are computed using a full revaluation of the portfolio. These results are reviewed and discussed with trading management on a regular basis. Stress tests incorporate risk factors not included in the VaR model so these risks can be better understood and managed.

### *Model Risk Management*

The Model Risk Management Group maintains a comprehensive inventory of models used in the Company and monitors the firm's exposure to modeling errors and problems. For every model relied upon, we aim to understand conceptual soundness, accuracy, and sensitivity. To do so, we perform methodological reviews, backtesting analysis, and similar tests, gaining continuous insight into how models could fail or be misused. Based on this, Model Risk establish controls.

For additional information, see "Risk management" in our 2017 Annual Report.

### *Soundness Standard*

The Company's soundness standard is set forth above in the "Capital Adequacy" section and implemented through the ICAAP. The ICAAP was established to address the following three fundamental objectives:

- Identifying and measuring material risks
- Setting and assessing internal capital adequacy goals that relate directly to risk
- Ensuring the integrity of internal capital adequacy assessments

The Company has established a robust governance framework for the ICAAP to ensure that all aspects of the methodology and capital adequacy assessment receive appropriate review by the designated management committees and the Board of Directors. The governance framework leverages established roles and responsibilities and committee charters for the global management of risk and incorporates enhancements based on additional requirements established by the ICAAP. The ICAAP was approved by the Board of Directors.

For additional information, see "Risk management overview" in our 2017 Annual Report.

### **Interest Rate Risk for Non-trading Activities**

BNY Mellon is committed to implementing and maintaining sound practices for managing IRR. Our IRR management structure ensures that we meet and maintain this objective.

IRR is inherent in the business of banking. BNY Mellon's policy is to manage IRR exposures using processes and systems commensurate with our earnings and capital levels, complexity, business model, risk profile and scope of operations.

The Board of Directors and its designees oversee risk management processes, including policy oversight and annual approval. It also sets the overall tolerance for IRR, and delegates to the ALCO a mandate to oversee the management of these risks. It also delegates to the ALCO responsibility for devising and executing IRR strategies and policies consistent with BNY Mellon's defined risk appetite. The Corporate Treasurer is required to report to the Board of Directors or its delegated committee at least quarterly regarding BNY Mellon's IRR exposure, along with a

review of any significant strategies undertaken to monitor and control such risks.

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, balance changes on core deposits, 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. As a result, the earnings simulation model cannot precisely estimate net interest revenue or the impact of higher or lower interest rates on net interest revenue. 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.

Generally, there has been an inverse relationship between interest rates and client deposit levels. To the extent that actual behavior is different from that assumed in the models, there could be a significant change in net interest revenue sensitivity.

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. 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 change in net interest revenue (dollars in millions)	Dec. 31, 2017
up 200 bps parallel rate ramp vs. baseline (a)	\$ (151)
up 100 bps parallel rate ramp vs. baseline (a)	17
Long-term up 50 bps, short-term unchanged (b)	105
Long-term down 50 bps, short-term unchanged (b)	(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.  
bps - basis points.

The baseline scenario used for the calculations in the estimated changes in net interest revenue table above as of Dec. 31, 2017 is based on our quarter-end balance sheet and the spot yield curve. The 100 basis point ramp scenario assumes rates increase 25 basis points above the yield curve in each of the next four quarters and the 200 basis point ramp scenario assumes a 50 basis point per quarter increase.

Our net interest revenue sensitivity table above incorporates assumptions about the impact of changes in interest rates on depositor behavior based on historical experience. Given the current historically low interest rate environment and the potential change to the implementation of monetary policy, the impact of depositor behavior is highly uncertain. The lower sensitivity in the ramp up 200 basis point scenario compared with the 100 basis point scenario is driven by the assumption of increased deposit runoff and forecasted changes in the deposit pricing as rates rise.

Growth or contraction of deposits could also be affected by the following factors:

- Global economic uncertainty;
- Our ratings relative to other financial institutions' ratings; and
- Regulatory reform.

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, 2017
Rate change:	
up 200 bps vs. baseline	(3.7)%
up 100 bps vs. baseline	(1.5)%

### Supplementary Leverage Ratio

Advanced Approaches banking organizations are required to disclose their SLR although they are not required to comply with a minimum SLR requirement until Jan. 1, 2018.

The following table presents BNY Mellon's summary comparison of accounting assets and total leverage exposure at Dec. 31, 2017.

Part 1: Summary comparison of accounting assets and total leverage exposure (dollars in millions)	Dec. 31, 2017
Total consolidated assets as reported in published financial statements	\$ 371,758
PFE adjustment for derivative exposures	6,603
Counterparty credit risk adjustment for repo-style transactions	1,086
Adjustment for off-balance sheet exposures (a)	21,960
Adjustment for deductions from Tier 1 capital	(19,186)
Adjustment for frequency of calculations	(20,972)
<b>Total leverage exposure</b>	<b>\$ 361,249</b>

(a) Conversion to credit equivalent amounts of off-balance sheet exposures.

The following table presents the details of BNY Mellon's SLR using transitional Basel III capital components at Dec. 31, 2017.

Part 2: Supplementary Leverage Ratio (dollars in millions)	Dec. 31, 2017
<b>On-balance sheet exposure:</b>	
On-balance sheet assets (a)	\$ 319,371
Amounts deducted from Tier 1 capital	(19,186)
Total on-balance sheet exposures (a)	300,185
<b>Derivative exposures:</b>	
Replacement cost for derivative exposures, net of cash variation margin	3,003
Add-on amounts for PFE for derivative exposures	6,603
Total derivative exposures	9,606
<b>Repo-style transactions:</b>	
On-balance sheet assets for repo-style transactions (b)	42,521
Reduction of the gross value of receivables in reverse repurchase transactions	(14,109)
Counterparty credit risk for all repo-style transactions	1,086
Total exposures for repo-style transactions	29,498
<b>Other off-balance sheet exposures:</b>	
Off-balance sheet exposures at gross notional amounts	55,911
Adjustments for conversion to credit equivalent amounts	(33,951)
Total off-balance sheet exposures	21,960
<b>Capital and total leverage exposure:</b>	
Tier 1 capital	\$ 22,044
Total leverage exposure	\$ 361,249
<b>Supplementary Leverage Ratio</b>	<b>6.10%</b>

(a) Excluding on-balance sheet assets for repo-style transactions and derivative exposures, but including cash collateral received.

(b) Including the gross value of receivables for reverse repurchase transactions and the value of securities that qualified for sales treatment that must be reversed, but excluding the value of securities received in a security-for-security repo-style transaction where the securities lender has not sold or re-hypothecated the securities received.

## Forward-looking Statements

Additional information related to the Company is contained in the Company's reports filed with the SEC, including the Annual Report on Form 10-K for the year ended Dec. 31, 2017 (the "2017 Annual Report"), Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K (each, a "'34 Act Report"). These periodic '34 Act Reports can be viewed, as they become available, on the SEC's website at [www.sec.gov](http://www.sec.gov) and at [www.bnymellon.com](http://www.bnymellon.com). Information contained in '34 Act Reports that the Company makes with the SEC subsequent to the date of this Disclosure may modify, update and supersede the information contained in this Disclosure.

This Disclosure and the Company's '34 Act Reports referred to above contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements, which may be expressed in a variety of ways, including the use of future or present tense language, relate to, among other things: all statements about the future results of BNY Mellon, statements with respect to the expected outcome and impact of regulatory actions, the implementation of regulations and any projections or estimates, including those related to revenue, losses, default rates or recovery rates. In addition, these statements are based on the Company's current beliefs and expectations and are subject to significant risks and uncertainties that are subject to change based on various important factors (some of which are beyond the Company's control), including those factors described in our 2017 Annual Report under "Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") - Risk Factors" and risk factors included in any subsequent '34 Act Report. 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 2017 Annual Report, such as extensive government rulemaking, regulation and supervision, which have, and in the future may, compel us to change how we manage our businesses, could have a material adverse effect on our business, financial condition and results of operations and have increased our compliance and operational risks and

costs; a determination that our resolution plan is not credible and any material negative impact on our business, reputation, results of operations and financial condition and the application of our Title I preferred resolution strategy or resolution under the Title II orderly liquidation authority and any adverse effects on our liquidity, financial condition and security holders; regulatory or enforcement actions or litigation and any material adverse effect on our results of operations or harm to our businesses or reputation; failure to satisfy regulatory standards, including "well capitalized" and "well managed" status or capital adequacy and liquidity rules, and any resulting limitations on our activities, or adverse effects on our business and financial condition; operational risk and any material adverse effect on our business; failure or perceived weakness of any of our significant counterparties, and our assumption of credit and counterparty risk, which could expose us to loss and adversely affect our business; failure of our risk management framework to be effective in mitigating risk and reducing the potential for losses; changes in accounting standards and any material impact on our reported financial condition, results of operations, cash flows and other financial data; and the failure or circumvention of our controls and procedures and any material adverse effect on our business, reputation, results of operations and financial condition.

In this Disclosure and the '34 Act Reports, words such as "estimate," "forecast," "project," "anticipate," "likely," "confident," "target," "expect," "intend," "continue," "seek," "believe," "plan," "goal," "could," "should," "would," "may," "will," "strategy," "synergies," "opportunities," "trends" and words of similar meaning, may signify forward-looking statements.

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 Disclosure.

## Acronyms

<b>ABS</b>	Asset-backed security	<b>ICAAP</b>	Internal Capital Adequacy Assessment
<b>ALCO</b>	Asset liability committee	<b>IPRE</b>	Income producing real estate
<b>AMA</b>	Advanced measurement approach	<b>IRB</b>	Internal ratings-based
<b>APAC</b>	Asia-Pacific region	<b>IRC</b>	Incremental risk capital
<b>BCBS</b>	Basel Committee on Banking Supervision	<b>IRR</b>	Interest rate risk
<b>BHC</b>	Bank holding company	<b>ISDA</b>	International Swaps and Derivatives Association
<b>CCAR</b>	Comprehensive Capital Analysis and Review	<b>KRI</b>	Key risk indicator
<b>CCO</b>	Chief Credit Officer	<b>L/C</b>	Letters of credit
<b>CDO</b>	Collateralized debt obligation	<b>LDA</b>	Loss distribution approach
<b>CDX</b>	Credit default swap index	<b>LGD</b>	Loss given default
<b>CEM</b>	Current Exposure Method	<b>LIBOR</b>	London Interbank Offered Rate
<b>CET1</b>	Common Equity Tier 1 capital	<b>MBS</b>	Mortgage-backed security
<b>CFO</b>	Chief Financial Officer	<b>MRMG</b>	Model Risk Management Group
<b>CLO</b>	Collateralized loan obligation	<b>OCC</b>	Office of the Comptroller of the Currency
<b>CMBS</b>	Commercial mortgage-backed security	<b>OCM</b>	Operational Credit Manager
<b>CORM</b>	Corporate Operational Risk Management	<b>ORM</b>	Operational risk management
<b>CPM</b>	Credit portfolio manager	<b>OTC</b>	Over-the-counter
<b>CPPR</b>	Cross-Product Potential Risk	<b>PD</b>	Probability of default
<b>CRM</b>	Comprehensive risk measure	<b>PFE</b>	Potential Future Exposure
<b>CRO</b>	Chief Risk Officer	<b>RMBS</b>	Residential mortgage-backed security
<b>CSA</b>	Credit Support Annex	<b>RWA</b>	Risk-weighted assets
<b>CVA</b>	Credit valuation adjustment	<b>S&amp;P</b>	Standard & Poor's
<b>DFAST</b>	Dodd-Frank Act Stress Test	<b>SEC</b>	Securities and Exchange Commission
<b>DVA</b>	Debit valuation adjustment	<b>SFA</b>	Supervisory Formula Approach
<b>EAD</b>	Exposure at Default	<b>SLR</b>	Supplementary Leverage Ratio
<b>EL</b>	Expected loss	<b>SMLT</b>	Simple Modified Look-Through Approach
<b>EMEA</b>	Europe, the Middle East and Africa	<b>SRMC</b>	Senior Risk Management Committee
<b>FASB</b>	Financial Accounting Standards Board	<b>SRWA</b>	Simple Risk-Weight Approach
<b>FDIC</b>	Federal Deposit Insurance Corporation	<b>SSFA</b>	Simplified Supervisory Formula Approach
<b>FLTA</b>	Full Look-Through Approach	<b>UGD</b>	Usage given default
<b>FRB</b>	Federal Reserve Bank	<b>UL</b>	Unexpected loss
<b>FX</b>	Foreign exchange	<b>VaR</b>	Value-at-risk
<b>GAAP</b>	Generally accepted accounting principles	<b>VFN</b>	Variable funding note
<b>G-SIB</b>	Global systemically important bank	<b>VIE</b>	Variable interest entity
<b>HVCRE</b>	High-volatility commercial real estate		



## Glossary

**Americas**—Includes locations in North and South America.

**Asset-backed security (“ABS”)**—A financial security backed by a loan, lease or receivables against assets other than real estate and MBS.

**Asset liability committee (“ALCO”)**—A risk-management committee in a bank or other lending institution that generally comprises the senior-management levels of the institution. The ALCO’s primary goal is to evaluate, monitor and approve practices relating to risk due to imbalances in the capital structure.

**Bank exposure**—An exposure to the following entities: (1) “Banks, U.S. and Foreign” and “Depository Institutions in the U.S.” as those terms are defined in the Glossary of the Federal Financial Institutions Examination Council’s Consolidated Reports of Condition and Income; (2) securities firms; and (3) multi-lateral development banks that do not have full faith and credit backing of sovereign entities.

**Cleared transaction**—An exposure associated with an outstanding derivative contract or repo-style transaction that a banking organization or clearing member has entered into with a central counterparty (that is, a transaction that a central counterparty has accepted).

**Collateral haircut approach**—An approach used to recognize the credit risk mitigation benefits of financial collateral that secures an eligible margin loan, repo-style transaction, collateralized derivative contract or single-product netting of such transactions. Generally a banking organization determines the exposure amount by applying standard supervisory haircuts or, with regulatory approval, its own estimates of haircuts, and multiplies the exposure amount by the risk weight associated with the counterparty or guarantor.

**Collateralized debt obligation (“CDO”)**—A type of asset-backed security and structured credit product constructed from a portfolio of fixed-income assets.

**Collateralized loan obligation (“CLO”)**—A debt security backed by a pool of commercial loans.

**Commercial mortgage-backed security (“CMBS”)**—An asset-backed security whose cash flows are backed by principal and interest payments of a set of commercial mortgage loans.

**Common Equity Tier 1 capital (“CET1”)**—The sum of surplus (net of treasury stock), retained earnings, accumulated other comprehensive income (loss), and CET1 minority interest subject to certain limitations, minus certain regulatory adjustments and deductions.

**Copula**—A probability and statistical technique used to model dependence between random variables. It is a common technique used in operational risk modeling to model the dependence of operational losses in different units of measure (i.e., loss event categories) to derive a diversification benefit.

**Corporate exposure**—An exposure to a company that is not: (1) an exposure to a sovereign, the Bank for International Settlements, the European Central Bank, the European Commission, the International Monetary Fund, a multi-lateral development bank, a depository institution, a foreign bank, a credit union or a public sector entity; (2) an exposure to a government sponsored entity; (3) a residential mortgage exposure; (4) a pre-sold construction loan; (5) a statutory multifamily mortgage; (6) a high-volatility commercial real estate exposure; (7) a cleared transaction; (8) a default fund contribution; (9) a securitization exposure; (10) an equity exposure; or (11) an unsettled transaction.

**Counterparty risk (default risk)**—The risk that a counterparty will not pay as obligated on a contract, trade or transaction.

**Covered funds**—Generally, any issuer that would be, among other entities, an investment company as defined in the Investment Company Act of 1940 but for section 3(c)(1) or 3(c)(7) of that Act with a number of express exclusions and additions as determined by the agencies.

**Credit conversion factor (“CCF”)**—Converts the amount of a free credit line and other off-balance sheet transactions (with the exception of derivatives) to an EAD amount.

**Credit default swaps (“CDS”)**—A financial contract executed under standard industry documentation that allows one party (the protection purchaser) to transfer the credit risk of one or more exposures (reference exposure(s)) to another party (the protection provider) for a certain period of time.

**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-enhancing interest-only strip (“CEIO”)**—An on-balance sheet asset that, in form or substance, (i) represents the contractual right to receive some or all of the interest and no more than a minimal amount of the principal due on the underlying exposure; and (ii) exposes the banking organization to credit risk directly or indirectly associated with the underlying exposures that exceeds the pro rata share of its claim on the underlying assets whether through subordination provisions or other credit enhancing techniques.

**Credit exposure**—The total amount of credit extended to a borrower by a lender. The magnitude of credit exposure indicates the extent to which the lender is exposed to the risk of loss in the event of the borrower’s default.

**Credit risk**—The risk of loss due to borrower or counterparty default.

**Credit risk mitigation**—A technique to reduce the credit risk associated with an exposure by application of credit risk mitigants such as collateral, guarantees and credit protection.

**Credit Support Annex (“CSA”)**—A legal document which regulates credit support (collateral) for derivative transactions. The trade is documented under a standard contract called a master agreement, developed by the ISDA. The two parties must sign the ISDA master agreement and execute a CSA before they trade derivatives with each other.

**Credit valuation adjustment (“CVA”)**—The market value of counterparty credit risk on OTC derivative transactions.

**Current exposure method (“CEM”)**—A system used by financial institutions to measure the credit risk of losing anticipated cash flows from forwards, swaps, options and other derivatives contracts they are party to, in the event the counterparty to the contract should default. An investor’s total exposure, under the CEM, is equal to the replacement cost of all marked-to-market contracts currently in the money, plus the credit exposure risk of potential changes in future prices or volatility of the underlying asset.

**Debit valuation adjustment (“DVA”)**—The market value of our credit risk on OTC derivative transactions.

**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 CDS or financial or commodity indices.

**Dodd-Frank Wall Street Reform and Consumer Protection Act (the “Dodd-Frank Act”)**—Regulatory reform legislation signed into law on July 21, 2010. This new law broadly affects the financial services industry and contains numerous provisions aimed at strengthening the sound operation of financial services sector.

**Economic capital**—The amount of capital required to absorb potential losses and reflects the probability of remaining solvent over a one-year time horizon.

**Eligible margin loans**—An extension of credit that is collateralized exclusively by liquid and readily marketable debt or equity securities, or conforming residential mortgages. The collateral is marked to fair value daily, and the transaction is subject to daily margin maintenance requirements.

**Expected loss (“EL”)**—A regulatory calculation of the amount expected to be lost on an exposure using a 12-month time horizon and downturn loss estimates. EL is calculated by multiplying the PD (a percentage) by the EAD (an amount) and LGD (a percentage).

**Exposure**—A claim, contingent claim or position which carries a risk of financial loss.

**Exposure at default (“EAD”)**—The amount expected to be outstanding after any credit risk mitigation, if and when a counterparty defaults. EAD reflects drawn balances as well as the expected future draws on undrawn amounts of commitments and contingent exposures over a one-year horizon.

**External Credit Assessment Institution**

**(“ECAI”)**—Institutions such as Moody’s Investors Service, Standard & Poor’s Ratings Group or Fitch Group.

**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 exchange contracts**—Contracts that provide for the future receipt or delivery of foreign currency at previously agreed-upon terms.

**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.

**High-volatility commercial real estate**

**(“HVCRE”)**—A credit facility that finances or has financed the acquisition, development or construction of real property, prior to conversion to permanent financing.

**Home equity line of credit**—A line of credit extended to a homeowner who uses the borrower’s home as collateral.

**Impairment**—When an asset’s market value is less than its carrying value.

**Income producing real estate (“IPRE”)**—A method of providing funding to real estate (such as, office buildings to let, retail space, multifamily residential buildings, industrial or warehouse space, and hotels) where the prospects for repayment and recovery on the exposure depend primarily on the cash flows generated by the asset.

**Interest rate options, including caps and floors**—

Contracts to modify IRR 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 risk (“IRR”)**—Exposure of a bank’s financial condition to adverse movements in interest rates.

**Interest rate sensitivity**—The exposure of net interest income 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.

**Internal Capital Adequacy Assessment Process**

**(“ICAAP”)**—The Company’s own assessment of the levels of capital that it needs to hold through an examination of its risk profile from regulatory and economic capital viewpoints and related processes.

**Internal Models Method (“IMM”)**—One of three approaches defined by Basel III to determine exposure values for counterparty credit risk.

**Internal ratings-based (“IRB”) advanced**

**approach**—A method of calculating credit risk capital requirements using internal PD, LGD and EAD models.

**ISDA master agreement**—A standard agreement used in OTC derivatives transactions. The ISDA master agreement is a document that outlines the terms applied to a derivatives transaction between two parties. Once the two parties agree to the standard terms, they do not have to renegotiate each time a new transaction is entered into.

**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.

**Leverage ratio**—Tier 1 capital divided by quarterly average total assets, as defined by the regulators.

**London Interbank Offered Rate (“LIBOR”)**—An interest rate at which banks can borrow funds, in marketable size, from other banks in the London interbank market. The LIBOR is fixed on a daily basis by the British Bankers’ Association. The

LIBOR is derived from a filtered average of the world's largest banks interbank deposit rates for larger loans with maturities between overnight and one full year.

**Loss given default (“LGD”)**—The estimated percentage of the loss on an exposure to the amount outstanding at default (i.e., EAD) upon default of a counterparty.

**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.

**Monte Carlo simulation**—A problem solving technique used to approximate the probability of certain outcomes by running multiple trial runs, called simulations, using random variables.

**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.

**Netting**—The ability of a bank to reduce its credit risk exposures, by offsetting the value of any company exposure to counterparty exposure to the same counterparty, or under ISDA master netting agreement for derivative contracts.

**Over-the-counter (“OTC”) derivative**—A derivative contract that is not a cleared transaction. An OTC derivative includes a transaction: (1) between a bank that is a clearing member and a counterparty where the bank is acting as a financial intermediary and enters into a cleared transaction with a central counter party (“CCP”) that offsets the transaction with the counterparty; or (2) in which a bank that is a clearing member provides a CCP a guarantee on the performance of the counterparty to the transaction.

**Potential future exposure (“PFE”)**—An estimate of the bank's maximum expected credit exposure over a fixed time horizon with a high level of confidence.

**Probability of default (“PD”)**—The probability that an obligor will default within a one-year time horizon.

**Qualifying revolving exposure**—An exposure (other than a securitization exposure or equity exposure) to an individual that is managed as part of a segment of exposures with homogeneous risk characteristics, not on an individual-exposure basis, and is (1) revolving, (2) unsecured and unconditionally cancelable by the bank to the fullest extent permitted by Federal law and (3) has a maximum exposure amount (drawn plus undrawn) of up to \$100,000.

**Ratings-Based Approach**—One of three calculation methods defined under the IRB approach to securitizations. The approach uses risk weightings based on ECAI ratings, the granularity of the underlying pool and the seniority of the position.

**Regulatory capital**—The minimum capital that a financial institution is expected to hold against the risk it faces. This minimum is determined by the financial institutions calculations for credit, market and operational risk, plus any additional capital deemed appropriate under applicable regulatory capital rules.

**Repo-style transactions**—includes securities lending, securities borrowing, repurchase or reverse-repurchase transactions that are based solely on liquid securities and are marked-to-market daily.

**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.

**Resecuritization**—A securitization that has more than one underlying exposure and in which one or more of the underlying exposures is a securitization exposure.

**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.

**Reverse repurchase agreement (“Reverse repo”)**—A purchase of securities with an agreement to resell them at a higher price at a specific future date. This is essentially a loan of the security at a specific rate.

**Risk-weighted assets (“RWA”)**—Calculated by assigning a degree of risk expressed as a percentage (risk weight) to an exposure in accordance with the applicable standardized or IRB approach rules.

**Securities lending transaction**—A fully collateralized transaction in which the owner of a security agrees to lend the security 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, which generally matures in less than 90 days.

**Securitization**—Includes transactions whereby the credit risk associated with an exposure, or pool of exposures, is tranching and where payments to investors in the transaction are dependent upon the performance of the underlying exposures. A traditional securitization involves the transfer of the exposures being securitized to a special purpose entity which issues securities. In a synthetic securitization, the tranching is achieved by the use of credit derivatives and the exposures are not removed from the balance sheet of the originator.

**Simplified Supervisory Formula Approach (“SSFA”)**—A formula that starts with a baseline derived from the capital requirements that apply to all exposures underlying a securitization and then assigns risk weights based on the subordination level of an exposure. SSFA was designed to apply relatively higher capital requirements to the more risky junior tranches of a securitization that are the first to absorb losses, and relatively lower requirements to the most senior exposures.

**Sovereign**—A central government (including the U.S. government) or an agency, department, ministry, or central bank of a central government. A sovereign exposure is a direct exposure to a sovereign; or an exposure directly and unconditionally backed by the full faith and credit of a sovereign.

**Special purpose vehicle (“SPV”)**—A corporation, trust or other non-bank entity, established for a narrowly defined purpose, including for carrying on securitization activities. The structure of the entity and activities are intended to isolate the obligations of the SPV from those of the originator and the holders of the beneficial interests in the securitization.

**Standardized Approach (“SA”)**—In relation to credit risk, a method for calculating credit risk capital requirements using supervisory risk weights.

**Subordinated debt**—Debt which, in the event of insolvency or liquidation of the issuer, is subordinated to the claims of depositors and other creditors of the issuer.

**Supervisory formula approach (“SFA”)**—SFA is one of several approaches available to a banking organization when calculating RWA for securitization exposures. To implement the SFA for a given securitization exposure, a banking organization must calculate several input parameters: the exposure’s credit enhancement level and thickness; the exposure-weighted average LGD for the underlying exposures to the securitization transaction; and the effective number of underlying exposures.

**Supplementary Leverage Ratio (“SLR”)**—An Advanced Approaches 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).

**Total return swaps**—A swap agreement in which one party makes payments based on a set rate, either fixed or variable, while the other party makes payments based on the return of the underlying asset, which includes both the income it generates and any capital gains. In total return swaps, the underlying asset, also referred to as the reference asset, is usually an equity index, loans or bonds. This is owned by the party receiving the set rate payment.

**Unfunded commitments**—Legally binding agreements to provide a defined level of financing until a specified future date.

**Usage given default (“UGD”)**—The expected percent of the commitment that is likely to be drawn in the event of default.

**Value-at-Risk (“VaR”)**—A measure of the dollar amount of potential loss at a specified confidence level from adverse market movements in an ordinary market environment.

**Variable funding notes (“VFN”)**—An arrangement that allows for drawings on a revolving basis and have been issued pursuant to the Variable Funding Note Purchase Agreement.

**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 return.

**Wrong-way risk**—The risk that arises when an exposure to a particular counterparty is positively correlated with the probability of default of such counterparty itself.



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