The Bank of New York Mellon Corporation

Company Run Stress Test
Mid-cycle Dodd-Frank Act Stress Test Results

October 9, 2019

Severely Adverse Scenario

Introduction

Throughout this document The Bank of New York Mellon Corporation on a consolidated basis is referred to as "BNY Mellon," the "Firm," "we," "our" and "us." BNY Mellon and The Bank of New York Mellon (the "Institutional Bank") are required to conduct company-wide stress tests pursuant to 12 C.F.R. part 252 (the "Regulation"). A summary of those results is also required to be published under the Regulation. Accordingly, we have developed the following disclosure, which contains the information required by the Regulation to be disclosed publicly and has been prepared in accordance with the Regulation. Any differences between the presentation of information concerning BNY Mellon in this disclosure and how we present such information for other purposes are solely due to our efforts to comply with the Regulation. The information presented in this disclosure does not, in any way, reflect changes to our organizational structure, business plans or practices, or strategy.

The projections contained herein are based on BNY Mellon's internally-developed Severely Adverse Scenario for the 2019 mid-cycle Dodd-Frank Act Stress Testing ("DFAST") exercise. The results of this exercise represent estimates of potential outcomes based on hypothetical stressed economic conditions. BNY Mellon's mid-cycle DFAST exercise seeks to incorporate loss events tailored to its unique risk profile. To capture the unique risks inherent in our core activities, BNY Mellon developed an idiosyncratic Severely Adverse Scenario that is premised on counterparty credit risk and includes additional idiosyncratic operational risk events.

The Firm's DFAST relies on various models to forecast performance under stressed conditions. These models cover loss estimates, revenue projections, scenario infrastructure, balance sheet projections and risk-weighted asset calculations. The projections contained within this disclosure represent hypothetical estimates that involve an economic outcome that is more adverse than expected, and accordingly these estimates are not forecasts of expected losses, pre-provision net revenue ("PPNR"), net income before taxes, or capital ratios.

The Regulation requires us, among other things, to make certain assumptions regarding capital actions ("Dodd-Frank Capital Actions") when computing pro forma capital ratios across the nine-quarter planning horizon. These Dodd-Frank Capital Actions include:

- For the first quarter of the stress test horizon, actual capital actions;
- For the second through ninth quarters of the planning horizon, the following capital actions:
  1. Common stock dividends equal to the quarterly average dollar amount of common stock dividends that BNY Mellon paid in the previous four quarters (that is, the first quarter of the planning horizon and the preceding three calendar quarters) plus common stock dividends attributable to issuances related to expensed employee compensation, or in connection with a planned merger or acquisition to the extent reflected in our pro forma balance sheet estimates;
  2. Payments on any other instrument that is eligible for inclusion in the numerator of a regulatory capital ratio equal to the stated dividend, interest, or principal due on that instrument during the quarter;
  3. An assumption of no redemption or repurchase of any capital instrument that is eligible for inclusion in the numerator of a regulatory capital ratio; and
  4. An assumption of no issuances of common stock or preferred stock, except for issuances related to expensed employee compensation or in connection with a planned merger or acquisition reflected in our pro forma balance sheet estimates.

In practice, if a severely adverse economic scenario were to in fact occur, we could change planned distributions and it is highly likely that we would respond with certain capital conservation actions consistent with internal policy. The stress test results summarized in this report should not be interpreted as expected or likely outcomes, but rather as a possible result under hypothetical, highly adverse economic conditions.

Severely Adverse Scenario Projections for BNY Mellon

As demonstrated by BNY Mellon's DFAST results, which are detailed below, we maintain excess regulatory capital in every quarter, for every ratio, over the entire planning horizon throughout the Severely Adverse Scenario. This success is driven by a number of factors, including the Firm's strong capital generation and its risk profile.

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Dodd-Frank Act Stress Testing Results

The capital ratios are calculated using the Dodd-Frank Capital Actions. These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of expected losses, revenues, net income before taxes, or capital ratios. The minimum capital ratio presented is for the period from the third quarter of 2019 through the third quarter of 2021.

Table 1: Projected Stressed Capital Ratios Through the Third Quarter of 2021 Under the Severely Adverse Scenario

	Actual[1]	**Stressed Capital Ratios**	
	2Q2019	**Ending**	**Minimum**
Common Equity Tier 1 capital ratio (%)	12.4%	8.8%	6.6%
Tier 1 capital ratio (%)	14.8%	12.0%	8.9%
Total capital ratio (%)	15.7%	13.6%	9.8%
Tier 1 leverage ratio (%)	6.8%	5.6%	4.9%
Supplementary leverage ratio (%)	6.3%	5.2%	4.5%

[1]Actual second quarter 2019 Common Equity Tier 1, Tier 1 and Total capital ratios are calculated using the Standardized Approach. At June 30, 2019 BNY Mellon's reported Common Equity Tier 1, Tier 1 capital, and Total capital ratios were 11.1%, 13.2%, and 14.0%, respectively, based on credit risk asset risk-weightings using the Advanced Approaches, which was the Firm's constraining measure for that quarter.

Table 2: Projected Risk-Weighted Assets ("RWA")

	Actual 2Q 2019	**Projected 3Q 2021**
RWA[1] ($ in Millions)	$149,226	$109,450

[1]RWA calculated using the U.S. capital rules' Standardized Approach methodology.

Table 3: Projected Loan Losses by Type of Loan for the Third Quarter of 2019 through the Third Quarter of 2021 Under the Severely Adverse Scenario

	Millions of Dollars	**Portfolio Loss Rates (%)[1]**
Loan Losses	$4,637	12.5%
First-lien mortgages, domestic	$16	0.2%
Junior liens and HELOCs, domestic	$0	0.0%
Commercial real estate, domestic	$390	11.3%
Credit cards	$0	0.0%
Commercial and industrial	$90	5.4%
Other consumer	$18	0.6%
Other loans	$4,124	19.5%

[1]Average loan balance used to calculate portfolio loss rates excludes loans held for sale and loans held for investment under the fair value option, and are calculated over nine quarters. Portfolio loss rates are rounded to the nearest tenth of a percentage point.

Table 4: Projected Pre-Provision Net Revenue ("PPNR"), Provisions, Losses, and Net Income Before Taxes for the Third Quarter of 2019 Through the Third Quarter of 2021 Under the Severely Adverse Scenario

	Millions of Dollars	**Percent of Average Assets[4]**
PPNR[1] ***Less***	$2,307	0.9%
Provisions	$4,847	1.9%
Realized losses/(gains) on securities Available-for-Sale/Held-to-Maturity ("AFS/HTM")	$216	0.1%
Trading and counterparty losses[2]	$1,341	0.5%
Other losses/(gains)[3]	$1,269	0.5%
Equals		
Net income before taxes	$(5,365)	(2.1)%
Other Comprehensive Income	$(1,821)	
Other effects on capital	**Actual 2Q 2019**	**3Q 2021**
AOCI included in capital (Millions of dollars)	$(2,688)	$(4,509)

[1]PPNR includes losses from operational risk events.

[2]Trading and counterparty losses include mark-to-market and credit valuation adjustments losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

[3]Other losses/(gains) includes projected change in Funding Value Adjustments/Overnight Index Swaps as well as CLO Impairment losses. In addition, counterparty default and collateral liquidation losses are included.

[4]Average assets are averaged over the nine-quarter planning horizon. Amounts are rounded to the nearest tenth of a percentage point.

Risks and Methodologies

BNY Mellon conducts Enterprise-Wide Stress Testing at regular intervals as part of its Internal Capital Adequacy Assessment Process (“ICAAP”). Enterprise-Wide Stress Testing evaluates all of the Firm’s lines of business, products, geographic areas, and risk types, incorporating the results given a certain stress-test scenario. It is an important component of assessing our capital adequacy, identifying any higher risk business activities, and providing our capital planning process with a forward-looking evaluation of our ability to execute planned capital actions in an economic environment that is more adverse than anticipated. Please refer to BNY Mellon’s Annual Report on Form 10-K for the year ended December 31, 2018 for a broader description of BNY Mellon’s capital planning and risk management processes.

A description of the types of risks included in the stress test, a general description of methodologies applied, and a summary of our company-run stress test results under the Severely Adverse Scenario follows.

Description of types of risk included in the stress test

When conducting the company-run stress test under the Severely Adverse Scenario, which, as noted above, incorporates Dodd-Frank Capital Actions, we evaluated and incorporated the principal risks that have been determined to influence us. These risks include:

Operational Risk. 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 Risk. The risk of loss due to adverse changes in the financial markets. Our market risks are primarily interest rate, foreign exchange, and equity risk. Market risk particularly impacts our exposures that are fair valued such as the securities portfolio, trading book, and equity investments.

Credit Risk. The risk of loss if any of our borrowers or other counterparties were to default on their obligations to us. Credit risk is resident in the majority of our assets, but primarily concentrated in the loan and securities books, as well as off-balance sheet exposures such as lending commitments, letters of credit, and securities lending indemnifications.

Liquidity and Funding Risk. The risk that we cannot meet our cash and collateral obligations at a reasonable cost for both expected and unexpected cash flows, without adversely affecting daily operations or financial conditions. Liquidity risk can arise from cash flow mismatches, market constraints from the inability to convert assets to cash, the inability to raise cash in the markets, deposit run-off, or contingent liquidity events.

Strategic Risk. The risk that BNY Mellon does not effectively manage and protect the Firm’s market positioning and stability. This includes risks associated with the inability to maintain a strong understanding of clients’ needs, provide suitable product offerings that are financially viable and fit within the Firm’s operating model and adapt to transformational change in the industry.

General Description of Methodologies

We have forecasted projected losses, PPNR, and other items affecting capital using a series of models and estimation techniques that translate the economic and financial variables in the Severely Adverse Scenario to losses and revenues.

Occasionally it is necessary to supplement modeled projections with expert judgment where historical data may be inadequate to project loss and revenue estimates or historical relationships may not hold up under

forward-looking hypothetical scenarios. In these cases, which are referred to as qualitative frameworks, we ensure consistency of projections with the conditions of the stress test through a cross-functional governance structure and control environment that incorporates multiple levels of review, challenge, and approval.

Loan Losses. We have developed a series of models and qualitative frameworks to estimate losses on various types of loans. Loss projection methods are product-specific and link economic variables to credit performance based on historical and expected relationships. The table below identifies major loan types and key assumptions used to derive loss estimates.

Table 5: Credit Portfolio Loss Methodologies and Drivers

Loan Type	Description of Methodology	Key Drivers
Domestic Residential Mortgages	Statistical model estimated using loan-level data on mortgage characteristics and performance supplemented by macroeconomic indicators and housing price data.	Macroeconomic factors such as: • Housing Price Index ("HPI") • Unemployment rate • Mortgage rates
Domestic Commercial Real Estate Loans	Individually assigning counterparties stressed ratings by adjusting the inputs to BNY Mellon's commercial real estate ("CRE") credit rating scorecard, which produces a stressed probability of default ("PD") rating for each quarter. For each impaired exposure, a downturn loss given default ("LGD") percentage is applied to the exposure at default ("EAD") to generate an immediate credit loss.	Macroeconomic factors such as: • Unemployment rate • BBB corporate yield • Commercial real estate price index • Prime rate
Wholesale and Other*	Expected loss model relying on stressed transition matrix, PD, LGD, and usage given default ("UGD"). The stressed transition matrix, LGD and UGD were linked to macroeconomic factors through statistical models. For each impaired exposure, a stressed LGD percentage is applied to the EAD to generate an immediate credit loss.	Macroeconomic factors such as: • CBOE Volatility Index ("VIX") • Equity indices • GDP growth rate • Treasury yields • Unemployment

**Commercial and industrial, loans to depositories and other financial institutions, loans for purchasing or carrying securities, overdrafts, and leases.*

Provision for Loan Losses. The credit loss allowance is our estimate of incurred losses inherent in our portfolio. We use a quantitative methodology (product of the long run PD, LGD, and EAD) and a qualitative framework in determining the allowance. The qualitative framework employs management judgment when assessing internal risk factors and environmental factors to compute an additional allowance for each component of the loan portfolio. Changes in the allowance balance are reflected through the provision to provide adequate coverage for potential future losses.

Realized Gains/Losses on Securities. We use instrument-specific methodologies to forecast other-than-temporary impairment ("OTTI") on the investment securities portfolio. The inherent credit risk for most AFS and HTM securities is forecasted using product-specific cash flow models and tools which utilize a variety of macroeconomic factors (HPI, unemployment rate, GDP, interest rates, etc.) and takes into account collateral type and characteristics. Loss estimates are recognized in accordance with our established accounting policy.

Operational Losses. We use a methodology to estimate operational losses that incorporates both internal and external data. We forecast both litigation and non-litigation operational losses under separate methodologies. For non-litigation loss estimates, the estimates are developed with two components: 1) large, idiosyncratic losses, and 2) smaller day-to-day or business-as-usual ("BAU") losses.

For non-litigation loss estimates, our forecasting methodology centers on workshops organized around the risks in our operational risk taxonomy, led by our Chief Operational Risk Officer. These workshops include participants from our business, business partner, and risk teams. Subject matter experts ("SMEs") consider and discuss the outputs of our operational risk framework elements (*e.g*., Risk and Control Self-Assessment data, as well as internal and external event data) and other key information such as risk drivers, including macroeconomic factors, to challenge and supplement our Material Risk Inventory. For large idiosyncratic operational loss events, SMEs develop specific storylines and estimates. For BAU losses, historic operational losses are used as a reference point in developing the forecast, supplemented with expert judgment to incorporate anticipated future impacts based on risk drivers.

For litigation loss estimates, we use a forward-looking, scenario-based process as a core component of our litigation loss estimation methodology. This methodology is centered on the use of expert judgment and scenario-based determinations and leverages subject matter expertise in our Legal Department. This methodology generally estimates severe yet reasonably plausible litigation-related costs for key active matters and certain possible claims in stress scenarios.

Balance Sheet. We have developed a suite of models using statistical and qualitative estimation methodologies to project each major balance sheet segment. The statistical models are based on logical relationships to economic drivers. For balance sheet segments where developing a model was inappropriate, a rules-based qualitative approach was developed with pre-determined, repeatable, data-driven processes in order to generate projections. An aggregate secondary statistical model exists for a subset of balance sheet segments to aid in review and challenge.

Pre-Provision Net Revenue. Consistent with balance sheet development and exposure assumptions used for loss estimation, we use a suite of estimation methods to project all key elements of PPNR including net interest income, noninterest income, and noninterest expense.

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Table 6: PPNR Methodologies and Assumptions

PPNR Component	Description of Methodology	Key Assumptions
Net Interest Income	Current and forecasted balance sheet positions are modeled by product type and reflect growth, runoff, prepayment, and loss projection assumptions.	Future balance sheet growth Runoff and pricing assumptions Interest rates and macroeconomic indicators
Noninterest Income	Total noninterest income projection is composed of a series of distinct projection models, each of which creates a fee revenue projection for some aspect of the business using historical fee revenue and business volume data. Regression models were tied to the business and economic drivers, while certain areas are estimated using other techniques such as management judgment, seasonality and historical averages.	Business dynamic and strategy assumptions Relationship to economic drivers such as: • Fixed income and equity asset prices • Interest rates • Volatility measurements • Volume measurements
Noninterest Expense	Variable expenses were modeled based primarily on historical expense to noninterest revenue relationships or its relationship to pre-incentive PPNR. Expenses deemed to be fixed in nature are projected generally in line with inflation.	Noninterest revenue projections Pre-incentive PPNR Growth rates

Capital Position. Our forecasting process employs a set of methodologies to reflect losses and PPNR on pro forma capital levels and ratios. Future balance sheet growth, runoff, and pricing assumptions were developed using the framework and suite of models described under the "Balance Sheet" section above and are reflective of the economic and interest rate environments being analyzed under the Severely Adverse Scenario. We forecast RWA based on the changes in individual asset components in each quarter of the projection horizon. Credit RWA was projected in a manner consistent with U.S. capital rules and applicable regulatory guidance, which required us to use the U.S. capital rules' Standardized Approach risk-weighting framework (the "Standardized Approach") to calculate credit RWA. Additionally, the U.S. capital rules' market risk capital rules were used to calculate market risk RWA.

The Firm recognizes that the Advanced Approaches has been the Firm's constraining measure. Additionally, as discussed above, our Severely Adverse Scenario assumes , in the second through ninth quarters of the planning horizon, the Dodd-Frank Capital Actions. As noted, these actions prescribe a series of assumptions regarding capital actions such as common stock dividends and contracted payments. They also require firms to assume no redemptions, repurchases, or issuances of capital instruments, with limited exceptions. These assumptions do not reflect currently planned capital actions, and might not reflect behavior in an actual severely stressed environment.

Description of the Severely Adverse Scenario

For this mid-cycle DFAST, BNY Mellon designed and selected a Severely Adverse Scenario premised on counterparty credit risk that is designed to capture the unique risks inherent in our core activities. As

discussed below, key elements of BNY Mellon's Severely Adverse Scenario include the default of a large credit counterparty, a severe macroeconomic downturn, and idiosyncratic non-litigation operational risk events that emerge simultaneously related to technology and operational resiliency, quality resource contention, and fiduciary risk.

BNY Mellon considers the potential intra-day default of a large credit counterparty with a substantial level of unsecured intra-day and term limits to be a key risk. If a top BNY Mellon counterparty fails, BNY Mellon could be exposed to large idiosyncratic default losses on its exposures to the failed counterparty. To effectively capture direct credit counterparty default risk in a stress scenario and assess the potential impact, it is critical to select a counterparty to which BNY Mellon has exposure large enough to generate substantial losses and drive a meaningful stress to our capital. Based on a review of, among other matters, BNY Mellon's particular vulnerabilities and current exposures, considering the type of exposure and potential severity of the loss, BNY Mellon selected a direct credit counterparty whose intra-day default would generate substantial losses and would meaningfully stress regulatory capital.

The Severely Adverse Scenario includes, among other elements, a severe economic downturn lasting for several quarters that leads to further financial pressures for BNY Mellon.

The macroeconomic variables used in the Severely Adverse Scenario are consistent with a global economy that enters a significant economic downturn that persists for several quarters; recovery does not begin until 2021. U.S. GDP growth does not return until the seventh quarter of the projection period, while U.S. equity markets decline for five straight quarters (a decline of over 65% in aggregate from their starting point). U.S. unemployment peaks at 10%, while home prices decline throughout the entire projection horizon. U.S. Treasuries see a flight to quality (10-year rates falling initially and remaining low for multiple quarters), while credit spreads widen dramatically, and volatility lingers throughout much of the projection period.

These macroeconomic variables and parameters were projected in consideration of both historical events and forward-looking circumstances. Where possible, BNY Mellon relied on historically observed reactions of key variables to the default of a primary market participant. In cases where market circumstances varied from historical precedent, expert judgment was used to develop a comprehensive set of assumptions over the projection horizon consistent with the magnitude and nature of such a stress event.

BNY Mellon incorporated a full set of material exposures, activities, and risks, both on and off the balance sheet, in the Severely Adverse Scenario. Certain key risks captured include, among others, the following:

Credit risk was captured through the intra-day default of one of the Firm's largest unsecured credit counterparties, through the general deterioration of its credit portfolio, and through credit-driven devaluations in the securities portfolio due to the scenario's significant economic downturn.

Market risk was captured through the scenario's significant economic downturn (including sharp equity market declines and volatility in foreign exchange and interest rate markets) and its impact on BNY Mellon's Over-the-Counter ("OTC") derivatives portfolio, securities portfolio, trading book, and equity investments.

Operational risk was captured in the scenario through the scenario's consideration of the potential for increased litigation and non-litigation operational losses across all BNY Mellon lines of business that may result from such volatility, as well as through the incorporation of idiosyncratic non-litigation operational risk event losses related to technology and operational resiliency, quality resource contention, and fiduciary risk.

Liquidity risk was considered in the context of a major financial institution default and the impact such an event might have on credit and the general flow of funds. BNY Mellon considered the potential impact on cash flows, liquidity position, profitability, and other aspects of its financial condition to assess the potential for liquidity to become impaired over the projection horizon as a result of the stress event.

Explanation of the Most Significant Causes for Changes in Regulatory Capital

Impairments within the securities portfolio, losses related to the default of a major counterparty, credit losses and operational risk losses contribute to the decline in BNY Mellon's regulatory capital ratios.

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Forward-Looking Statements

Additional information related to BNY Mellon is contained in BNY Mellon's reports filed with the Securities and Exchange Commission (the "SEC"), including the Annual Report on Form 10-K for the year ended December 31, 2018 (including the Annual Report to Shareholders (the "Annual Report") included with the 10-K) (the "2018 Form 10-K"), the Quarterly Reports on Form 10-Q and the 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 and at www.bnymellon.com. Information contained in '34 Act Reports that BNY Mellon provides to the SEC subsequent to the date of the 2018 Form 10-K may modify, update and supersede the information contained in the 2018 Form 10-K and provided in this document.

This document and BNY Mellon's '34 Act Reports referred to above contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "estimate," "forecast," "project," "anticipate," "confident," "target," "expect," "intend," "seek," "believe," "plan," "goal," "could," "should," "may," "will," "strategy," "opportunities," "trends" and words of similar meaning, signify forward-looking statements. These statements are based on the current beliefs and expectations of BNY Mellon's management and are subject to significant risks and uncertainties that are subject to change based on various important factors (some of which are beyond BNY Mellon's control). Actual results may differ materially from those set forth in the forward-looking statements. Factors that could cause BNY Mellon's actual results to differ materially from those described in the forward-looking statements can be found in the "Risk Factors" section of the 2018 Form 10-K, the Quarterly Reports on Form 10-Q for the periods ended March 31, 2019 and June 30, 2019, and other subsequent '34 Act Reports filed with the SEC. All forward-looking statements speak only as of the date on which such statements are made and BNY Mellon does not undertake to update the forward-looking statements to reflect the impact of circumstances or events that may arise after the date of the forward-looking statements.