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

**September 16, 2013** 

Company-Designed Severely Adverse Scenario Dodd-Frank Capital Actions

12 CFR Section 252.148

#### Introduction

The Bank of New York Mellon Corporation ("BNY Mellon") is required to conduct mid-cycle company-run stress tests and disclose a summary of those results under the severely adverse scenario pursuant to the requirements of 12 CFR Section 252.148 (the "Regulation"). Accordingly, we have developed the following disclosure, which contains the information required by the Regulation to be disclosed publicly. The information contained in this disclosure has been prepared in accordance with the Regulation. Any differences in the presentation of information concerning BNY Mellon contained herein relative to how the firm presents such information for other purposes is solely due to our efforts to comply with the Regulations. The information presented herein does not, in any way, reflect changes to our organizational structure, business plans or practices, or strategy. The projections contained here represent hypothetical estimates that involve an economic outcome that is more adverse than expected, and accordingly these estimates are not forecasts of expected losses, revenues, net income before taxes, or capital ratios.

The Federal Reserve, through section 165(i) of the Dodd-Frank Act, requires each U.S. domiciled top-tier bank holding company with total consolidated assets of \$50 billion or more to conduct semi-annual stress tests. These mid-cycle Dodd-Frank Act Stress Test results provide an in-depth view into BNY Mellon's capital position under scenarios that are appropriate for its own risk profile and operations.

#### BNY Mellon's Business Model

BNY Mellon is a global leader in providing a comprehensive array of services that enable institutions and individuals to manage and administer their financial assets, operating in 36 countries and serving more than 100 markets worldwide. It strives to be the global provider of choice for asset management, wealth management, and investor services. BNY Mellon's global client base consists of financial institutions, corporations, government agencies, high-net-worth individuals and families, endowments, foundations and related entities. BNY Mellon does not engage in mass market consumer lending nor does it have a retail branch network.

BNY Mellon's businesses benefit during periods of global growth in financial assets and from the globalization of the investment process. BNY Mellon's financial goals are focused on deploying capital to accelerate the long-term growth of its businesses.

Additionally, the BNY Mellon business model is focused on maintaining financial stability throughout market cycles. Consistent with this imperative, we focus on maintaining a strong balance sheet. Consequently, we assume less risk than most other financial service companies of our size, with our primary risk being operational. The balance sheet is characterized by strong liquidity, high quality assets, ready access to external funding sources at competitive rates and a strong capital structure that supports BNY Mellon's risk taking activities and is adequate to absorb potential losses.

## Description of types of risks included in the stress test

When conducting the mid-cycle company-run stress test under the severely adverse scenario with Dodd-Frank capital actions, BNY Mellon evaluated and incorporated the principal risks that have been determined to influence the firm. These risks include operational/business risk, market risk, credit risk, and liquidity risk. The following table presents the primary type of risk typically embedded in on- and off-balance-sheet instruments.

Table 1: Risks of BNY Mellon's On- and Off-balance Sheet Instruments

Assets:	
Interest-bearing deposits with	
banks	credit
Federal funds sold and securities	
purchased under resale	
agreements	market, credit
Securities	market, credit
Trading assets	market, credit
Loans	credit
Goodwill	operational/business, market
Intangible assets	operational/business, market
Liabilities:	
Deposits	liquidity
Federal funds purchased and securities sold under	
repurchase agreements	liquidity
Trading liabilities	market, liquidity
Payables to customers and	
broker-dealers	liquidity
Commercial paper	liquidity
Off-balance-sheet instruments:	
Lending commitments	credit, liquidity
Standby letter of credit	credit, liquidity
Commercial letters of credit	credit, liquidity
Securities lending	
indemnifications	market, credit

<u>Operational Risk.</u> Operational risk is 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. Operational risk also includes fiduciary risk, reputational risk, and the risk of potential legal or regulatory actions. Operational risk is inherent in BNY Mellon's global business activities, and, in the case of an operational event, we could suffer a financial loss as well as damage to our reputation.

<u>Market Risk</u>. Market risk is the risk of loss due to adverse changes in the financial markets. Market risk arises from derivative financial instruments, such as futures, forwards, swaps, and options and other financial instruments including loans, securities, deposits, and other borrowings. BNY Mellon's market risks are primarily interest rate and foreign exchange risk, equity risk, and credit risk. Market risk particularly impacts our exposures that are marked-to-market such as the securities portfolio, trading book, and equity investments.

<u>Credit Risk</u>. Credit risk is the risk of loss attributable to counterparty default on obligations to us. Credit risk is resident in the majority of our assets, but BNY Mellon's primary exposure to the credit risk of a counterparty is concentrated in the loan and securities portfolios, off-balance-sheet exposures such as unfunded formal contractual commitments to lend, letters of credit, and securities lending indemnifications as well as overdrafts associated with our custody and securities clearance businesses.

<u>Liquidity Risk</u>. Liquidity risk is the risk that BNY Mellon cannot meet its cash and collateral obligations at a reasonable cost for both expected and unexpected cash 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. Thus, liquidity risk can be inherent in the majority of our balance sheet exposures.

BNY Mellon's mid-cycle company-run stress test scenario was designed to understand wide-ranging impacts across multiple risk areas including the principal risk types identified above. To incorporate these risks into our mid-cycle stress test, BNY Mellon identifies and stresses key risk drivers and assumptions to estimate how losses might be incurred under certain scenarios and how an event in one risk may migrate into other areas. The next section discusses BNY Mellon's methodology for translating the severely adverse scenario's factors into various financial impacts including expected losses, net income, on-or of-balance sheet, liquidity, leverage, and capital positions. Please refer to BNY Mellon's Annual Report on Form 10-K for the year ended December 31, 2012 for a broader description of the firm's capital planning and risk management process.

## General description of methodologies

BNY Mellon has forecast projected losses, pre-provision net revenue, provision for loan and lease losses and other factors affecting capital using a series of models and estimation techniques that translate the economic and financial variables in the mid-cycle severely adverse scenario to BNY Mellon's 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, BNY Mellon ensures 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.

<u>Provision for loan losses</u>. BNY Mellon has developed a series of models 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 2: Credit Portfolio Loss Methodologies and Assumptions** 

Loan Type	Description of Methodology	Key Assumptions
Domestic Mortgages	Statistical model estimated using loan-level data on mortgage characteristics and performance supplemented by macroeconomic indicators and house price data	Macroeconomic factors such as:     Housing Price Index (HPI)     Unemployment rate     Mortgage rates
HELOCs	Loss given default (LGD) approach based on historical relationships between macroeconomic factors and non-accrual loan balance data	Macroeconomic factors such as:     Housing Price Index (HPI)     Unemployment rate
Domestic Commercial Real Estate	Expected Loss (EL) model relying on probability of default (PD), loss given default (LGD), and usage given default (UGD)	Migration analysis including both default and non-default predictions based on historical relationships
Corporate Wholesale & Other*	Expected Loss (EL) model relying on probability of default (PD), loss given default (LGD), and usage given default (UGD)	Migration analysis including both default and non-default predictions based on historical relationships

<sup>\*</sup>C&I, loans to depositories and other financial institutions, loans for purchasing or carrying securities, overdrafts, and leases

<u>Realized gains/losses on securities.</u> BNY Mellon uses instrument-specific methodologies to forecast other-than-temporary impairment ("OTTI") on the Company's investment portfolio. These securities are divided into two separate and distinct classes: securities we intend to hold to maturity are held to maturity ("HTM"), and all other securities are classified as available-for-sale ("AFS"). Loss estimates are recognized in accordance with BNY Mellon's established accounting policy. The table below identifies major security types and key assumptions used to derive loss estimates.

Table 3: Securities Portfolio OTTI Methodologies and Assumptions

Security Type	Description of Methodology	Key Assumptions
Domestic Non- Agency RMBS	Statistical model estimated using loan-level data on mortgage characteristics and performance supplemented by macroeconomic indicators and house price data	Collateral type and characteristics     Macroeconomic factors such as:     Housing Price Index (HPI)     Unemployment rate     Mortgage rates
Foreign RMBS	Region-specific econometrics models to project delinquency, default, and prepayment based on historical relationships that influence cash flow projections	<ul> <li>Collateral type and characteristics</li> <li>Macroeconomic factors such as:         <ul> <li>Housing Price Index (HPI)</li> <li>Unemployment rate</li> <li>Interest rates</li> </ul> </li> </ul>
US CMBS	Deterministic loan-level loss and cash flow projections based on underlying loan/collateral deal characteristics	Loan details     Property type and characteristics
Consumer ABS	Loan-level prepayment/default/delinquency/loss severity models driven by underlying deal characteristics	Collateral type and characteristics     Macroeconomic factors such as:     Unemployment rate     Interest rates
Bond Portfolio*	Probability of default (PD)/loss given default (LGD) approach	Product-specific ratings transition analysis
CLOs	Bottom-up cash flow modeling approach in which performance is projected at the underlying collateral level	Underlying collateral metrics including:     Prepayment rate     Default rate     Severity rate

<sup>\*</sup>Corporate bonds, municipal bonds, sovereign bonds, and covered bonds

<u>Operational losses.</u> In addition, BNY Mellon used 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, BNY Mellon utilized a stressed loss distribution from the Advanced Measurement Approach ("AMA") capital model. BNY Mellon stressed both the frequency and severity of parameters of the operational risk capital model to generate a stressed, quarterly loss distribution based on the stressed parameters. The expected loss was derived by looking at a certain percentile of parameters based on the severity of scenario.

For litigation loss estimates, BNY Mellon's forecasting methodology relies on a combination of high frequency, low severity cases and low frequency, high severity cases that draw from historical experience as well as potential losses associated with new litigation that may arise over the normal course of business (within the projection horizon).

<u>Pre-provision net revenue.</u> Consistent with the balance sheet and exposure assumptions used for loss estimation, BNY Mellon developed a model to project all key elements of pre-provision net revenue including net interest income, non-interest income, and non-interest expense.

<b>PPNR Component</b>	Description of Methodology	Key Assumptions
Net Interest Income	<ul> <li>Current balance sheet positions and cash flows are modeled by product type and reflect loss projections estimates</li> <li>Cash flow projections for financial instruments with embedded optionality rely on a stochastic modeling process while those without rely on a static cash flow methodology</li> </ul>	<ul> <li>Future balance sheet growth</li> <li>Runoff and pricing assumptions</li> <li>Macroeconomic factors such as interest rates</li> </ul>
Non-Interest Revenue	<ul> <li>Total non-interest revenue projection is comprised of a series of granular projection models for individual revenue lines developed using historical data.</li> <li>A majority are regression models tied to the external economic factors and used to describe the forward scenarios. In cases where regression models were insufficiently robust, historical averages were employed.</li> </ul>	<ul> <li>Asset and trading volumes</li> <li>Growth rates</li> <li>Macroeconomic factors such as: <ul> <li>GDP</li> <li>Equity indices</li> <li>Volatility</li> </ul> </li> </ul>
Non-Interest Expense	<ul> <li>Variable expenses were modeled based on historical expense to revenue relationships</li> <li>Distinct Board-approved initiatives identified by management are additionally layered into the projections over the projection horizon</li> </ul>	Revenue and volume projections     Growth rates     Headcount

<u>Capital position.</u> Finally, BNY Mellon's forecasting process employed a set of methodologies to layer in the effect of losses, pre-provision net revenue, and provision for loan and lease losses on pro forma capital levels and ratios.

Future balance sheet growth, runoff and pricing assumptions were derived from business line forecasts, historical trends, market dynamics, and balance sheet strategy input from senior management and are reflective of the economic and interest rate environments being analyzed under the mid-cycle severely adverse scenario. BNY Mellon forecasts risk-weighted assets ("RWA") based on the changes in its individual asset components in each quarter of the projection horizon. Total RWA was projected using existing Basel I standards, including the final U.S. market risk rules (Basel II.5).

BNY Mellon's mid-cycle severely adverse scenario post-stress capital position reflects Basel I regulatory capital adjusted for the phase-out of certain trust preferred securities and inclusive of stress losses and PPNR. Additionally, BNY Mellon's mid-cycle severely adverse scenario post-stress capital includes a set of capital actions based on historical capital distributions, including common stock dividends, contracted payments, and a general assumption of no redemptions, repurchases, or issuances of capital instruments. These projections do not reflect BNY Mellon's currently planned capital actions.

## Description of Severely Adverse Scenario

For the 2013 severely adverse scenario of the mid-cycle company-run stress test, BNY Mellon designed and selected a severely adverse scenario premised on direct unsecured counterparty credit risk to capture the unique risks inherent in one of its core activities.

Given its unique business model, BNY Mellon developed an idiosyncratic severely adverse stress test that is premised on counterparty credit risk to capture the unique risks inherent in our core activities. Based on both external feedback as well as a desire to create an optimally severe stress event, management selected a direct unsecured credit counterparty whose default generated substantial losses and would meaningfully stress both regulatory and tangible capital to satisfy the requirements of the 2013 mid-cycle severely adverse scenario standards.

BNY Mellon considers the potential default of a large unsecured credit counterparty to be a key risk and is aware of emerging risks and vulnerabilities to which it is exposed given the size and recent growth of its deposit exposure with other financial institutions. If any of these counterparties fail, BNY Mellon could be exposed to large idiosyncratic default losses on these exposures. 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. Management reviewed the current exposures considering the type of exposure and subsequently the potential severity of the loss to select a counterparty for the mid-cycle severely adverse scenario. Furthermore, to ensure conditions that stress regulatory capital ratios in a manner that is overall more severe than those associated with other mid-cycle scenarios, BNY Mellon designed the severely adverse scenario to include the combination of a macroeconomic downturn more prolonged and severe than that of the adverse scenario in addition to a significant loss resulting from the default of our single largest non-sovereign financial unsecured counterparty.

The accompanying set of macroeconomic variables and parameters was 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.

The global economy in the severely adverse scenario enters a significant economic downturn that persists for several quarters; recovery does not begin until late 2014. GDP growth does not return until the seventh quarter of the projection period, while equity markets decline for five straight quarters (a decline of more than 50% in aggregate from their starting point). Unemployment peaks near 12% and home prices decline throughout the entire projection horizon. U.S. Treasuries see a flight to quality (10 yr. rates falling initially and remaining low for multiple quarters), while credit spreads widen dramatically, and volatility lingers throughout much of the projection period.

BNY Mellon incorporated the full set of material exposures, activities, and risks, both on and off the balance sheet, in the company-run severely adverse stress scenario.

- Credit risk was captured through the default of one of the Company'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 securities portfolio, trading book, and equity investments.
- Operational risk was captured in the scenario through the significant market volatility built into the macroeconomic variables, and the scenario considers the potential for increased operational losses across all BNY Mellon lines of business that may result from such volatility. Additionally, BNY Mellon's severely adverse scenario considers the impact to sponsored funds and potential operational losses that may arise from such exposures and relationships in the event that a major financial institution defaults.
- 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

Throughout the forecast period, BNY Mellon continues to generate increases in regulatory and tier 1 common capital. The most significant cause for changes to BNY Mellon's regulatory capital ratios and tier 1 common ratio is losses related to the default of a major credit counterparty, which occurs in the first projection quarter. Additionally, declines in BNY Mellon's regulatory capital ratios and tier 1 common ratio early in the projection horizon were driven by impairments within the securities portfolio, additional provision expense associated with credit portfolio deterioration, operational losses (including litigation), and trading book losses.

However, to offset losses that initially generated declines in BNY Mellon's regulatory capital ratios and tier 1 common ratio, the Company's fee-based business model permitted the generation of capital over the course of the projection horizon even in the stressed environment. BNY Mellon's capital ratios initially decline due to losses resulting from the counterparty default and severe economic downturn, but ultimately increase at the end of the projection period due to our fee-based business model.

## BNY Mellon - Tables of Statistical Results. COMPANY-RUN RESULTS

# **Dodd-Frank Act Stress Testing Results**

Projected Stressed Capital Ratios BNY Mellon Estimates in the Severely Adverse Scenario

The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. 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 period Q2 2013 to Q2 2015.

Projected Basel I* Capital Ratios through	Q2 2015 under the Severe	Severely Adv	Scenario Verely Adverse Scenario tressed Capital Ratios	
	Actual			
	1Q 2013	2Q 2015	Minimum	
Tier 1 Common Capital Ratio	12.2	12.6	11.2	
Tier 1 Capital Ratio	13.6	14.0	12.8	
Total Risk-Based Capital Ratio	14.7	14.7	13.8	
Tier 1 Leverage Ratio	5.2	5.3	4.8	

Projected Losses, Revenue, and Net Income Before Taxes for 2Q 2013 through 2Q 2015 under the Severely Adverse Scenario (Aggregate over the planning horizon)

	Billions of Dollars	Percentage of Average Assets
Pre-Provision Net Revenue	\$4.2	1.2%
Other Revenue	\$0.0	
less		
Provisions	\$1.1	
Realized Loss/Gains on Securities	\$0.5	
Trading and Counterparty Losses	\$0.1	
Other Losses/Gains equals	\$0.0	
Net Income Before Taxes	\$2.5	0.7%

Projected Loan Losses by Type of Loans for 2Q 2013 through 2Q 2015 under the Severely Adverse Scenario (Aggregate over the planning horizon)

	Billions of	Portfolio
	Dollars	Loss Rates <sup>1</sup>
Lacra Lacras	ćoo	2.00/
Loan Losses	\$0.9	2.0%
First Lien Mortgages, Domestic	\$0.1	2.5%
Jr Lien Mortgages, HELOCs	\$0.0	4.7%
Commercial and Industrial	\$0.1	2.3%
Commercial RE, Domestic	\$0.0	1.4%
Credit Cards	\$0.0	0.0%
Other Consumer	\$0.0	0.0%
Other Loans	\$0.7	2.0%

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<sup>&</sup>lt;sup>1</sup> Percent of average portfolio balance.

Additional information related to BNY Mellon is contained in BNY Mellon's reports filed with the Securities and Exchange Commission (the "SEC"), including the Quarterly Report on Form 10-Q for the quarter ended June 30, 2013 (the "2Q13 Form 10-Q"), the Annual Report on Form 10-K for the year ended December 31, 2012 (including the Annual Report to Shareholders (the "Annual Report") included with the 10-K) (the "2012 Form 10-K"), 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 makes with the SEC subsequent to the date of the 2Q13 Form 10-Q and the 2012 Form 10-K may modify, update and supersede the information contained in the 2Q13 Form 10-Q and the 2012 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 2012 Form 10-K 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.