Morgan Stanley

# 2014 Dodd-Frank Act Stress Test (DFAST)

**Company-Run Dodd-Frank Stress Test submitted to the Federal Reserve on January 6, 2014**

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## 1. Background to Comprehensive Capital Analysis and Review ("CCAR") and Dodd-Frank Stress Tests

In July 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act") was signed into federal law requiring the Federal Reserve to conduct annual stress tests of Bank Holding Companies ("BHCs") with total consolidated assets of $50 billion or more ("Covered Company"). In connection with the CCAR process, the Federal Reserve issued final rules on capital plans ("Capital Plans") in November 2011, requiring large BHCs such as Morgan Stanley (the "Company" or the "Holding Company") to submit Capital Plans on an annual basis in order for the Federal Reserve to assess the BHCs' systems and processes that incorporate forward-looking projections of revenues and losses to monitor and maintain their internal capital adequacy. The final rules also require that such companies receive no objection from the Federal Reserve before executing a capital action.

### Dodd-Frank Stress Test Requirements

In October 2012, the Federal Reserve issued a final rule on Supervisory and Company-run Stress Test Requirements for Covered Companies, including the Company, which requires the Company to conduct semi-annual company-run stress tests under baseline, adverse and severely adverse economic scenarios. Under this rule, the Federal Reserve is also required to conduct an annual supervisory stress test of Covered Companies, including the Company. The rule requires Covered Companies to disclose publicly the results of their stress tests under the Federal Reserve's Severely Adverse Stress Scenario, which describes the hypothetical evolution of certain specific macroeconomic and market variables consistent with a severely adverse post-war recession. Each Covered Company is further required to employ the following assumptions (the "Dodd Frank Act Stress Testing Capital Actions") regarding its projected capital actions over the planning horizon:

- Payment of common stock dividends equal to the quarterly average dollar amount of common stock dividends paid in the previous year;
- Payments on any other instrument eligible for inclusion in the numerator of a regulatory capital ratio equal to the stated dividend, interest or principal due on such instrument; and
- No redemption or repurchase of any capital instrument eligible for inclusion in the numerator of a regulatory capital ratio.

Additionally, as one of the six large BHCs with substantial trading and counterparty exposures, the Company was required to apply a hypothetical, instantaneous global market shock to its trading book, private equity positions and counterparty credit exposures as of the market close on October 16, 2013. While the hypothetical global market shocks prescribed by the Federal Reserve were largely based on relative moves in asset prices, rates and spreads during the second half of 2008, the prescribed shocks reflected a combination of both historical and hypothetical events. As one of eight large BHCs with substantial trading or custodial operations, the Company was also required to incorporate the hypothetical, instantaneous and unexpected default of its largest counterparty across its derivatives and securities financing transaction activities into the supervisory stress scenarios. The as-of date for the counterparty default scenario component was also October 16, 2013.

In July 2013, the U.S. banking regulators promulgated final rules to implement many aspects of the Basel Committee on Banking Supervision's Basel III capital framework (the "Basel III final rule"). The Company became subject to the U.S. Basel III final rule on January 1, 2014. Certain requirements in the U.S. Basel III final rule, including the new minimum risk-based capital ratios, regulatory capital deductions and adjustments, and the U.S. Basel III standardized approach for calculating risk-weighted assets ("RWAs"), will commence or be phased in over several years. In September 2013, the Federal Reserve issued an interim final rule specifying how large BHCs, including the Company, should incorporate the U.S. Basel III capital standards into their 2014 Capital Plans and 2014 Dodd-Frank company-run stress tests. Among other things, the interim final rule requires large BHCs to

project both tier 1 common capital ratio[1] using the existing Basel I-based capital rules and regulatory capital ratios under the U.S. Basel III standardized approach (including, among others, the common equity tier 1 capital ratio[2]) after giving effect to phase-in provisions over the planning horizon.

The results of the Company's company-run stress test, under the Federal Reserve's severely adverse stress scenario, assuming the Dodd Frank Act Stress Testing Capital Actions, global market shock and counterparty default scenario component, (the "Supervisory Severely Adverse Scenario") are presented under "Company-Run Stress Test – Holding Company" included herein.

**2. Forecast Methodologies Reflected in Company-Run Dodd-Frank Stress Test**

The Company's capital ratios under the Supervisory Severely Adverse Scenario reflect the effect of prescribed hypothetical macroeconomic and market environment on the revenues and the resources (e.g. assets, expenses and headcount) available to the major products or businesses within each of the Company's business segments. Under the Supervisory Severely Adverse Scenario, the Company employed various forecast methodologies to quantify the impact of the hypothetical assumptions over the forecast time horizon. Several of these forecast methodologies were based on models, which like all models, have certain limitations. The models were based on various assumptions such as the historical relationships between Company performance and relevant macroeconomic and market variables as well as expectations of customer behavior. Changes to these assumptions can materially affect forecast results.

Pre-Provision Net Revenue

The Company's forecast, under the Supervisory Severely Adverse Scenario, reflects a detailed process in which each major business developed revenue and expense projections that considered key business risks for each of the Company's business segments over the nine-quarter forecast horizon. The projections considered: (i) the key macroeconomic and market variables that historically demonstrated the highest correlation to the level and growth rate of industry and Company net revenues (ii) the business' expectations of customer behavior and competitive dynamics under this scenario and (iii) the impact of reduced market activity on operating costs, including projected headcount reductions and lower brokerage and clearing expenses, partially offset by an increase in operational risk related costs. The operational risk related costs are described below under "Losses".

Balance Sheet

The balance sheet forecast under the Supervisory Severely Adverse Scenario reflected a combination of historical data and forecast models tailored to the specific characteristics of each product line. The Company believes that its use of historical data represented the most appropriate and sufficiently conservative approach to projecting the level of assets available to the business under this scenario. Where appropriate, return on assets calculations were performed to evaluate the reasonability of revenue projections in light of the balance sheet forecast.

Risk-Weighted Assets

The RWA forecast under the Supervisory Severely Adverse Scenario reflects application of the Federal Reserve's capital rules in effect for a given quarter of the forecast horizon, per CCAR Summary Instructions and Guidance. The Company's methodology aligned projections of standardized market and credit risk calculations to projected

[1] Tier 1 common capital ratio is the ratio of a BHC's tier 1 common capital to its total RWAs calculated using the existing Basel I-based capital rules and the market risk capital framework amendment commonly referred to as "Basel 2.5".

[2] Common equity tier 1capital ratio is the ratio of a BHC's common equity tier 1 capital (as defined in the U.S. Basel III final rule as it is phased in) to its total RWAs calculated using the U.S. Basel III standardized approach final rule (as it is phased in) and Basel 2.5. Common equity tier 1 risk-based capital ratio is a new capital ratio introduced by the U.S. Basel III final rule.

movements in the balance sheet and tied projections of model-driven market risk RWAs to the market volatility indicators specified in the Supervisory Severely Adverse Scenario.

Losses

The Company's forecast under the Supervisory Severely Adverse Scenario measured potential stress losses from market risk, credit default risk, operational risk and other risks utilizing the following methodologies:

Market Risk: Market risk included all mark-to-market positions including credit valuation adjustments ("CVA"), and private equity investments, and loans carried at fair value or held for sale. Stress losses were estimated by re-pricing the Company's mark-to-market trading, private equity and CVA portfolios by applying the Federal Reserve's prescribed global market shock. Mark-to-market stress losses were calculated on loans measured at fair value and loans held for sale by computing changes in market value under the Federal Reserve's prescribed hypothetical macroeconomic and market environment.

Credit Default Risk: Credit default stress losses included losses on: (i) loans held for investment, including commercial and industrial, other consumer and other loans; (ii) loans measured at fair value and loans held for sale (iii) incremental default losses on mark-to-market positions; (iv) largest counterparty default; and (v) available for sale securities.

Credit default losses for commercial and industrial loans, including loans held for investment, loans measured at fair value and loans held for sale, were estimated using stressed Probability of Default, Loss Given Default and Exposure At Default under the prescribed stressed conditions. In addition, stressed credit transition matrices were used in the calculation of the changes to the Allowance for Loan Losses on loans held for investment.

Losses for the largest counterparty default were computed by applying the prescribed shocks and revaluing the portfolio of OTC derivatives, along with collateral posted to or received from derivatives counterparties, and applying the prescribed recovery rate to the stressed exposures. The stressed default losses of the counterparties were then rank ordered and the largest selected.

Credit default losses for trading positions were estimated using the Company's Incremental Default Risk ("IDR") model. The IDR model represents a version of the Company's Incremental Risk Charge model, which is compliant with Basel 2.5, to calculate the default risk of mark-to-market exposures.

Operational Risk: Operational risk loss estimates were calculated based on the Company's Internal Loss Data ("ILD") model, which reflects the categories defined by the Basel Committee on Banking Supervision. The Company applied a loss distribution approach where the loss frequency and loss severity of operational loss events for each of the risk types are separately modeled and then aggregated across the risk types to obtain the Company's stress test result. In addition, the Company's operational risk loss estimates also include components that reflect the company's assessment of potential current and future operational risk.

Capital Position

The Company's capital position was projected by aggregating revenue and loss estimates as outlined above and deriving their respective impact on the levels of tier 1 common capital, common equity tier 1 capital, tier 1 capital and total capital on a quarterly basis over the nine-quarter forecast horizon.

**3. Company-Run Dodd-Frank Stress Test – Holding Company**

The results presented below contain forward-looking projections that represent estimates based on the hypothetical, severely adverse economic scenario prescribed by the Federal Reserve. The estimates also reflect certain required assumptions regarding the Company's capital actions, which are noted above. The quantitative outputs and qualitative discussion herein should not be viewed as forecasts of expected outcomes or capital ratios or as a measure of the Company's solvency or actual financial performance or condition. Instead, the outputs and discussions are estimates from forward-looking exercises that consider possible outcomes based on a set of hypothetical, highly adverse economic scenarios. In addition, the outputs of the analyses and the discussion contained herein may not align with those produced by the Federal Reserve and other financial institutions conducting similar exercises, even if a similar set of hypothetical stress scenarios were used, due to differences in methodologies and assumptions used to produce those outputs.

The most significant cause of reduction in capital ratios under the Supervisory Severely Adverse Scenario resulted from the application of the prescribed global market shock (reflected in Trading and Counterparty Losses) and, other than for the tier 1 common ratio, an increase in RWAs following the January 1, 2015 effective date for the calculation of Basel III standardized approach for calculating RWAs.

**Projected Capital Ratios through December 31, 2015**
**Under the Supervisory Severely Adverse Scenario**

| | | Stressed Ratios Under Supervisory Severely Adverse Scenario (1) | |
|---|---|---|---|
| | **Actual As of September 30, 2013** | **As of December 31, 2015** | **Minimum Over Planning Horizon** |
| Tier 1 common ratio…….. | 12.6% | 9.1% | 8.1% |
| Common equity tier 1 capital ratio (2)... | N/A | 8.2% | 7.6% |
| Tier 1 risk-based capital ratio……..... | 15.3% | 8.7% | 8.1% |
| Total risk-based capital ratio…….. | 16.1% | 10.6% | 10.0% |
| Tier 1 leverage ratio…….. | 7.3% | 6.1% | 5.9% |

With respect to the common equity tier 1 capital ratio, the tier 1 risk-based capital ratio and the total risk-based capital ratio, for each quarter in 2014, RWAs are calculated using the Basel I-based rules and Basel 2.5. For each quarter in 2015, the U.S. Basel III standardized approach is used to calculate RWAs for credit risk and Basel 2.5 is used to calculate RWAs for market risk. In addition, the numerator for all quarters in 2014 and 2015 reflects the Basel III transitional rules. However, with respect to the tier 1 common capital ratio, the numerator and RWAs are calculated using the existing Basel I-based rules and Basel 2.5 for all quarters of the planning horizon.

N/A – Not Applicable
(1) The capital ratios are calculated using the Dodd Frank Act Stress Testing Capital Actions described above. 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 ratios do not necessarily occur in the same quarter of the planning horizon.
(2) As a result of the U.S. Basel III final rule, the Company became subject to the common equity tier 1 capital ratio requirement beginning on January 1, 2014.

**Projected Losses, Revenue and Net Income before Taxes**
**September 30, 2013 through December 31, 2015**
**Under the Supervisory Severely Adverse Scenario**

| | Cumulative Amount ($ in billions) | % of Average Assets (1) |
|---|---|---|
| Pre-provision net revenue (2)…… | $6.4 | 0.9% |
| Other losses (3)……. | (0.1) | |
| Less: Provision for loan and lease losses…….. | 2.4 | |
| Less: Realized losses / gain on AFS securities (4)……... | 0.1 | |
| Less: Trading and counterparty losses (5)…… | 10.5 | |
| Less: Other losses / gains (6)…… | 2.9 | |
| Net income before taxes…… | $(9.6) | (1.4)% |
| **Memo items:** | | |
| Other comprehensive income (7)……..... | $(0.3) | |
| ***Other effects on capital***…..…..…….. | **Q4 2014** | **Q4 2015** |
| Accumulated other comprehensive income (8)…… | $(1.5) | $(1.3) |

N/A – Not Applicable
(1) Average assets reflect the nine-quarter average of total assets.
(2) Pre-provision net revenue includes losses from operational risk events, mortgage put-back expenses and other real estate owned (OREO) costs.
(3) Other losses include one-time expenses, and the results of discontinued operations, which are not reflected in pre-provision net revenue.
(4) Represents available-for-sale ("AFS") securities. The Company does not have held-to-maturity securities.
(5) Trading and counterparty losses include mark-to-market and CVA losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.
(6) Other losses/gains include projected stress losses on loans measured at fair value.
(7) Represents the change over the forecast horizon. Other comprehensive income primarily includes incremental unrealized losses/gains on AFS securities and projected changes in the Cumulative Translation Adjustment.
(8) Represents the inception-to-date balance of other comprehensive income included in capital as of Q4 2014 and Q4 2015, adjusted to include 20% of unrealized gains or losses on AFS securities in the 2014 capital calculations and 40% of unrealized gains or losses on AFS securities in the 2015 capital calculations.

**Projected Loan Losses by Type of Loans**
**September 30, 2013 through December 31, 2015**
**Under the Supervisory Severely Adverse Scenario**

| | Cumulative Amount ($ in billions) | Portfolio Loss Rates (1) |
|---|---|---|
| Loan Losses | $2.0 | 2.5% |
| First lien mortgages, domestic……. | 0.0 | 0.2% |
| Junior liens and HELOCs, domestic…… | 0.0 | 0.1% |
| Commercial and industrial……... | 1.3 | 6.6% |
| Commercial real estate……. | 0.2 | 8.0% |
| Credit cards…….. | N/A | N/A |
| Other consumer…… | 0.0 | 0.1% |
| Other loans (2)……. | 0.4 | 1.2% |

N/A – Not Applicable

(1) Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans measured at fair value, and are calculated over nine quarters. Portfolio loss rates represent cumulative portfolio losses as a percentage of the average loan portfolio balance.

(2) Other loans include loans to depositories and other financial institutions and loans for purchasing or carrying securities.

**4. Company-Run Dodd-Frank Stress Test – Morgan Stanley Bank N.A. ("MSBNA")**

Section 165(i)(2) of the Dodd-Frank Act requires national banks and federal savings associations with total consolidated assets of more than $10 billion to conduct annual stress tests. For 2014, the Company's wholly owned subsidiary MSBNA was subject to the Office of the Comptroller of the Currency's ("the OCC") stress test rules for national banks and federal savings associations with total consolidated assets of more than $50 billion. Accordingly, MSBNA conducted a Dodd-Frank company-run stress test under the supervisory scenarios and guidance provided by the OCC. The quantitative output included herein should not be viewed as forecasts of expected outcomes or capital ratios or as a measure of the MSBNA's solvency or actual financial performance or condition. Instead, the outputs are estimates from forward-looking exercises that consider possible outcomes based on a set of hypothetical, highly adverse economic scenarios. The Company's other wholly owned subsidiary national bank, Morgan Stanley Private Bank, National Association, with consolidated assets of greater than $10 billion but less than $50 billion, was provided an exemption from the 2014 stress test by the OCC.

The reduction in MSBNA's capital ratios under the Supervisory Severely Adverse Scenario primarily reflected provisions for loan and lease losses, changes in the value of loans measured at fair value, continued balance sheet and loan growth throughout the forecast horizon and, other than for the tier 1 common ratio, an increase in RWAs following the January 1, 2015 effective date of the Basel III standardized approach for calculating RWAs for credit risk.

**Projected Capital Ratios through December 31, 2015**
**Under the Supervisory Severely Adverse Scenario**

| | | Stressed Ratios Under Supervisory Severely Adverse Scenario (1) | |
|---|---|---|---|
| | **Actual As of September 30, 2013** | **As of December 31, 2015** | **Minimum Over Planning Horizon** |
| Tier 1 common ratio…… | 14.5% | 12.8% | 12.6% |
| Common equity tier 1 capital ratio (2)… | N/A | 11.2% | 10.9% |
| Tier 1 risk-based capital ratio…….. | 14.5% | 11.2% | 10.9% |
| Total risk-based capital ratio……... | 16.7% | 13.2% | 12.8% |
| Tier 1 leverage ratio……..... | 10.8% | 9.0% | 8.8% |

Because certain of MSBNA's capital ratios under the Supervisory Adverse Scenario are lower than those under the Supervisory Severely Adverse Scenario, MSBNA's capital ratios under the Supervisory Adverse Scenario are also presented below. The lower ratios primarily reflect increased RWAs from relatively higher business growth and an increase in unrealized losses on AFS securities reflected in accumulated other comprehensive income. Unlike MSBNA, the Holding Company's capital ratios under the Supervisory Adverse Scenario are higher than those under the Supervisory Severely Adverse Scenario and therefore are not presented herein.

**Projected Capital Ratios through December 31, 2015**
**Under the Supervisory Adverse Scenario**

| | | Stressed Ratios Under Supervisory Adverse Scenario (1) | |
|---|---|---|---|
| | **Actual As of September 30, 2013** | **As of December 31, 2015** | **Minimum Over Planning Horizon** |
| Tier 1 common ratio…… | 14.5% | 12.8% | 12.8% |
| Common equity tier 1 capital ratio (2)… | N/A | 11.0% | 10.6% |
| Tier 1 risk-based capital ratio…….. | 14.5% | 11.0% | 10.6% |
| Total risk-based capital ratio……... | 16.7% | 12.7% | 12.3% |
| Tier 1 leverage ratio……..... | 10.8% | 9.7% | 9.3% |

With respect to the common equity tier 1 capital ratio, the tier 1 risk-based capital ratio and the total risk-based capital ratio, for each quarter in 2014, RWAs are calculated using the Basel I-based rules and Basel 2.5. For each quarter in 2015, the U.S. Basel III standardized approach is used to calculate RWAs for credit risk and Basel 2.5 is used to calculate RWAs for market risk. In addition, the numerator for all quarters of 2014 and 2015 reflects the Basel III transitional rules. However, with respect to the tier 1 common capital ratio, the numerator and RWAs are calculated using the existing Basel I-based rules and Basel 2.5 for all quarters in the planning horizon.

N/A – Not Applicable
(1) The capital ratios are calculated using the Dodd Frank Act Stress Testing Capital Actions described above. 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 ratios do not necessarily occur in the same quarter of the planning horizon.
(2) As a result of the U.S. Basel III final rule, MSBNA became subject to the common equity tier 1 capital ratio beginning on January 1, 2014.

Forward-Looking Statements

The information above contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995. Readers are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date on which they are made and which reflect current estimates, projections, expectations or beliefs. These forward-looking statements are subject to numerous risks and uncertainties, and there are important factors that could cause actual results to differ materially from those in any such forward-looking statements, many of which are beyond the control of Morgan Stanley.