Morgan Stanley

Dodd-Frank Act 2014 Mid-Cycle Stress Test

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Notice

The results presented herein contain forward-looking projections that represent estimates based on Morgan Stanley's (the "Company") Company-run stress test under a hypothetical Severely Adverse Scenario (as described in section 2 herein). The estimates also reflect certain required assumptions regarding the Company's capital actions, which are described on page 4. 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 hypothetical, highly adverse economic scenario.

The outputs of the analyses and the discussion contained herein may not align with those produced by other financial institutions conducting similar exercises, even if a similar hypothetical stress scenario were used, due to differences in methodologies and assumptions used to produce those outputs. In addition, the results contained herein may not be comparable to results of prior stress tests conducted by the Company, the Federal Reserve or other financial institutions due to the evolving regulatory framework and other factors.

1. Requirements for Mid-Cycle Company-Run Stress Test

- In October 2012, the Board of Governors of the Federal Reserve System (the "Federal Reserve") issued a final rule on Supervisory and Company-run Stress Test Requirements for Bank Holding Companies ("BHCs") with total consolidated assets of $50 billion or more ("Covered Company"), including the Company, and requires the Company to conduct mid-cycle company-run stress tests under baseline, adverse and severely adverse hypothetical economic scenarios.
- The rule requires Covered Companies to disclose publicly the results of their mid-cycle stress tests under their own internally developed severely adverse stress scenario.
- The planning horizon begins with actual results as of March 31, 2014 and includes a nine quarter forecast beginning June 30, 2014 and ending June 30, 2016.
- Each Covered Company is required to employ the following assumptions (the "Dodd Frank Act Stress Testing Capital Actions") regarding its projected capital actions beginning with the second quarter of the nine quarter forecast 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.
- The results of the Company's stress test, under the Company severely adverse stress scenario, assuming the Dodd Frank Stress Testing Capital Actions, are presented under section 3 "Company-Run Stress Test – Holding Company" included herein.

2. Description of the Company's Severely Adverse Scenario

- The Company's internally developed severely adverse stress scenario, assuming the Dodd Frank Act Stress Testing Capital Actions (the "Company Severely Adverse Scenario"), reflects macroeconomic and market conditions equivalent to or worse than the most severe recessions experienced over the past 50 years.
- In determining the Company Severely Adverse Scenario, the Company considered several key macroeconomic and market variables including but not limited to those discussed herein.
- **Global GDP:**
  - In the first year, both U.S. and euro zone real GDP growth rates are projected to be negative 4-6% compared with historical annual growth rates of 1-3%.
  - In the second year, real GDP in both regions is projected to grow modestly to approximately 2-3% by June 30, 2016.
  - Emerging markets real GDP experiences essentially zero growth by the end of 2014, well below the historical average of 5%, but begins to return to more normalized growth levels during 2015 and remains approximately 7% through the end of the forecast horizon.
- **Global Equity and Commodity Price and Volatility:**
  - Equity market indices experience a sharp decline during the first year of the forecast horizon - S&P 500 decreases 37% and the MSCI World declines 41% at the end of 2014.
  - US equity market volatility, as measured by the VIX index, peaks at 81 during the third quarter of 2014, a level consistent with that experienced during the 2008 – 2009 financial crisis.

2. Description of the Company's Severely Adverse Scenario

- **Global Equity and Commodity Price and Volatility (cont'd):**
  - Commodity prices initially decrease by 70%.
  - Both equity and commodity prices begin to recover during the later quarters of the forecast horizon, however, by the end of the second quarter of 2016, pricing levels remain below their starting point at the beginning of the forecast horizon.
- **U.S. Interest Rates:**
  - 3-Month Treasury and Fed Funds rates decline during the second quarter of 2014 and remain close to 1% throughout the forecast horizon.
  - The yield on the 10-Year Treasury note declines by 44% during the third quarter of 2014 and partly recovers during the beginning of the second year of the forecast horizon and remains unchanged throughout the remainder of the forecast horizon.
  - Throughout 2014 spreads on corporate bonds widen, ranging between 87-165%.
  - By the third quarter of 2015, corporate bond spreads contract 40-50% relative to their peak forecast levels and then remain unchanged through the end of the forecast horizon.

3. Company-Run Stress Test – Holding Company

Projected Capital Ratios through June 30, 2016

Under the Company Severely Adverse Scenario

		Stressed Ratios Under Company Severely Adverse Scenario (1) (2)	
	Actual As of March 31, 2014	As of June 30, 2016 (3)	Minimum Over Planning Horizon
Tier 1 Common Risk-based Capital Ratio	13.3%	10.0%	8.9%
Common Equity Tier 1 Risk-based Capital Ratio	14.1%	9.2%	8.7%
Tier 1 Risk-based Capital Ratio	15.6%	9.7%	9.5%
Total Risk-based Capital Ratio	17.7%	11.5%	11.3%
Tier 1 Leverage Ratio	7.6%	7.1%	6.3%

(1) The capital ratios are calculated using the Dodd-Frank Act Stress Testing Capital Actions described on page 4. 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) With respect to the Common Equity Tier 1, the Tier 1 and the total risk-based capital ratios, for each quarter in 2014, risk-weighted assets (“RWAs”) are calculated using Basel I and Basel 2.5, including certain transitional adjustments related to numerator deductions. For each quarter in 2015 and 2016, the U.S. Basel III standardized approach is used to calculate RWAs for credit risk and market risk. In addition, the numerator for all quarters in 2014 through 2016 reflects the U.S. Basel III transitional rules. However, with respect to the Tier 1 Common capital ratio, the numerator is calculated using Basel I and RWAs are calculated using Basel I and Basel 2.5 for all quarters of the planning horizon.

(3) The most significant cause of reduction in capital ratios under the Company Severely Adverse Scenario resulted from trading and counterparty losses that were modelled to occur in the first quarter of the forecast horizon. Ending capital ratios under the Company Severely Adverse Scenario reflected the ongoing accretion of earnings, net of operational risk and credit losses, as well as the level of assets and RWAs projected through the forecast horizon.

3. Company-Run Stress Test – Holding Company (cont'd)

Projected Risk-Weighted Assets as of June 30, 2016

Under the Company Severely Adverse Scenario

		Stressed RWAs Under Company Severely Adverse Scenario	
	Actual As of March 31, 2014 [1]	Basel I and Basel 2.5 [2]	U.S. Basel III Standardized Approach
Risk-Weighted Assets ($ in billions)	$398	$406	$492

(1) Actual RWAs as of March 31, 2014 are calculated using Basel I and Basel 2.5 including certain transitional adjustments related to numerator deductions.

(2) Basel I and Basel 2.5 RWAs as of June 30, 2016 represent the denominator for the Tier 1 common ratio and do not include transitional elements.

3. Company-Run Stress Test – Holding Company (cont’d)

Projected Losses, Revenue and Net Income before Taxes

March 31, 2014 Through June 30, 2016

Under the Company Severely Adverse Scenario

	Cumulative Amount ($Bn)	% of Average Assets [1]
Pre-Provision Net Revenue [2]	$8.3	1.2%
Other Losses [3]	0.0	
Less: Provision for Loan and Lease Losses	3.5	
Less: Realized Losses / Gain on AFS Securities [4]	0.0	
Less: Trading and Counterparty Losses [5]	9.0	
Less: Other Losses / Gains [6]	3.7	
Net Income Before Taxes	$(7.9)	(1.2)%
Memo Items:		
Other Comprehensive Income [7]	$0.1	
Other Effects on Capital	**2Q 2016**	
Accumulated Other Comprehensive Income [8]	$(0.6)	

(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 losses, change in credit valuation adjustment losses, and incremental default losses.
(6) Other losses/gains include projected stress losses on loans measured at fair value and loans held for sale as well as projected stress losses on the Company’s idiosyncratic risks identified through the Company’s Significant Risk Identification and Assessment process.
(7) Represents the change over the forecast horizon. Other comprehensive income primarily includes incremental unrealized losses/gains on AFS securities, defined benefit pension plan and projected changes in the Cumulative Translation Adjustment.
(8) Represents the inception-to-date balance of other comprehensive income as of 2Q 2016, adjusted to include 60% of unrealized gains or losses on AFS securities and defined benefit pension plan in the 2016 capital calculations.

3. Company-Run Stress Test – Holding Company (cont'd)

Projected Loan Losses by Type of Loans

March 31, 2014 Through June 30, 2016

Under the Company Severely Adverse Scenario

	Cumulative Amount ($Bn)	Portfolio Loss Rates [1]
Loan Losses	$3.3	4.2%
First Lien Mortgages, Domestic	0.2	1.2%
Junior Liens and HELOCs, Domestic	*	*
Commercial and Industrial	2.0	10.0%
Commercial Real Estate	0.2	6.5%
Credit Cards	N/A	N/A
Other Consumer	*	*
Other Loans [2]	0.8	3.5%

N/A—Not Applicable

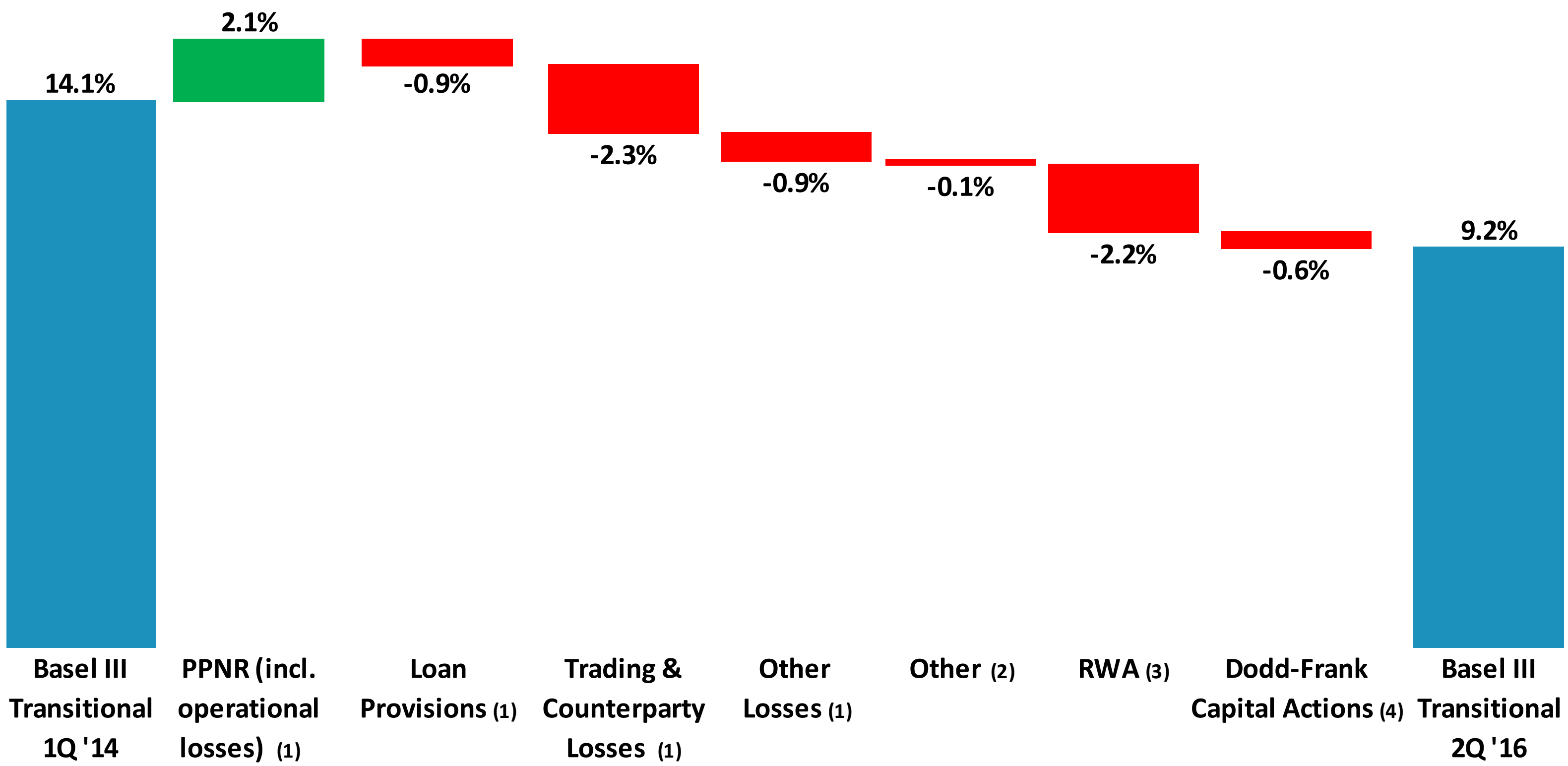
* Cumulative losses are minimal and loss rates on these portfolios are not statistically meaningful.

(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.

3. Company-Run Stress Test – Holding Company (cont'd)

Key Drivers of Mid-Cycle Company Severely Adverse Scenario Pro Forma Common Equity Tier 1 Capital Ratio



Notes:
(1) Reflects pre-tax impact.
(2) Other includes adjustments for deferred tax assets, employee incentive plan shares, tax provisions, intangible amortization and other capital adjustments.
(3) Increase in RWAs primarily driven by the transition to Basel III Standardized Approach.
(4) Reflects share repurchases (2Q14 only) and cash dividends declared on common and preferred stock in accordance with the assumptions prescribed in the Dodd Frank Act Stress Testing Capital Actions discussed on page 4.

4. Forecast Methodologies – Company Severely Adverse Scenario

Overview

- The Company's capital ratios reflect the effect of the Company's forecast 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.
- The Company employed various forecast methodologies, including but not limited to those discussed in this section, to quantify the impact of the hypothetical assumptions over the forecast 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 the 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 ("PPNR")

- The Company's forecast reflected a detailed process in which each major business developed a projection over the nine-quarter forecast horizon. The projection considered:
  - key macroeconomic and market variables that historically demonstrated the highest correlation to the level and growth rate of industry and Company net revenues; and
  - the business' expectations of customer behavior and competitive dynamics under this scenario.
- The Company's forecast also considered the key business risks for each of the Company's business segments. A description of the impact of the Company's forecast on each of the business segments is provided on page 13.

4. Forecast Methodologies – Company Severely Adverse Scenario (Cont'd)

Revenue

Institutional Securities:

- The significant increase in the level of corporate bond spreads and a sharp decline in equity prices projected under the Company's forecast drove a reduction in asset values and the level of client activity resulting in lower sales and trading revenues.
- Market factors combined with projected global macroeconomic contraction also led to a decline in the level of investment banking activity.

Wealth Management:

- The projected decline in equity markets reduced the balance of client assets under management as well as the level of client activity which resulted in lower revenues over the nine-quarter planning horizon.
- Revenues were also negatively affected by lower projected levels of loan activity and loan spreads consistent with the macroeconomic assumptions.

Investment Management:

- Traditional Asset Management - the projected reduction in equity market levels drove a decline in the level of assets under management as net flows decreased across all asset classes resulting in lower revenues.
- Merchant Banking and Real Estate - revenue reductions were driven by a lower level of new capital raises and a lower rate of return on new and existing funds.

4. Forecast Methodologies – Company Severely Adverse Scenario (Cont'd)

Expenses

- The Company's forecast included projections for the level of compensation and non-compensation expenses for each business segment that reflected 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, which are described on page 16 under "Losses".

Balance Sheet

- The Company's balance sheet forecast reflected a combination of historical data and forecast models tailored to the specific characteristics of each product line.
- The Company utilized historical data to ensure the forecast reflected a level of assets consistent with the macroeconomic and market assumptions and also utilized return on asset calculations to evaluate the reasonability and consistency of revenue and balance sheet projections.

Risk-Weighted Assets

- The Company's RWAs forecast reflected the application of the Federal Reserve's capital rules in effect for a given quarter.
- The Company's methodology aligned projections of standardized market and credit risk calculations to projected movements in the balance sheet and tied projections of model-driven market RWAs to the market volatility indicators included in the Company's forecast.

4. Forecast Methodologies – Company Severely Adverse Scenario (Cont'd)

Losses

- **Market Risk** included all mark-to-market positions including credit valuation adjustments ("CVA"), loans carried at fair value or held for sale and private equity investments.
- **Credit Default Risk** included losses on: (i) loans held for investment, including commercial and industrial, other consumer and other loans; (ii) secured financing transactions, including repurchase agreements and stock loans; (iii) AFS securities; as well as (iv) incremental default losses on mark-to-market and CVA positions.
  - Market and credit risk estimates were calculated based on the Company's Stress Value-at-Risk Model ("S-VaR"), which:
    - represents a single integrated stress testing framework that estimates the Company's market and credit risks, capturing the most material risks in the Company's trading, banking and investment portfolios.
    - simulates many market scenarios, based on multi-cycle market data series, and identifies those scenarios that are most harmful to the Company's current exposures.
    - measures mark-to-market, event and default risks where relevant for a broad spectrum of risk exposures including commodities, corporate credit, foreign exchange, emerging markets, interest rates, lending, public and private equity, securitized products and structured credit products.
    - reflects different liquidity characteristics of the various intervening risks via the assignment of different liquidity horizons to each risk type reflecting the Company's ability or inability to hedge or unwind the risk exposure in a stressed market environment.

4. Forecast Methodologies – Company Severely Adverse Scenario (Cont'd)

Losses (cont'd)

- **Operational Risk** loss estimates were calculated based on the Company's Internal Loss Data ("ILD") model which is compliant with the U.S. Basel III advanced measurement approaches for calculating operational risk capital.
  - The ILD has seven units of measure, each of which corresponds to one of the seven risk types 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.
- **Other Risk** loss estimates, for material residual risks deemed insufficiently captured in either the S-VaR or ILD models, were included in the Company's forecast based on the Company's Significant Risk Identification and Assessment process. This process identified and estimated stress losses associated with risks that are specific to the Company.
- The stress test methodologies make various assumptions about the probability distributions and liquidity of the market risk factors, the frequency and severity of the loss events, correlations between market risk factors and confidence level. Changes to these assumptions can materially affect results.

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, Common equity tier 1 capital, Tier 1 capital and total capital on a quarterly basis over the nine-quarter forecast horizon.