

# **2015 Annual Stress Testing Disclosure**

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## **Results of the FHFA Supervisory Severely Adverse Scenario**

**As Required by the Dodd-Frank  
Wall Street Reform and Consumer Protection Act**

## Summary

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- On November 26, 2013, the Federal Housing Finance Agency (“FHFA”) implemented stress testing rules for its regulated entities, as required by the Dodd-Frank Wall Street Reform and Consumer Protection Act.
- In accordance with the FHFA Orders issued to Fannie Mae for stress testing, Fannie Mae is providing public disclosure of the results for the Severely Adverse scenario using data as of September 30, 2014, on the nine quarters ending December 31, 2016. The Severely Adverse scenario is characterized by a severe recession, with home prices declining approximately 25% and the unemployment rate peaking at over 10%.
- Fannie Mae is subject to the Preferred Stock Purchase Agreement (“PSPA”) with the Department of the Treasury (“U.S. Treasury”). Under this agreement, U.S. Treasury has provided Fannie Mae with a funding commitment, of which \$117.6B remained available as of September 30, 2014, to provide funding, under certain conditions, to eliminate deficits in our net worth.
- Stress test results indicate that Fannie Mae would utilize an additional \$34B to \$95B of funding from U.S. Treasury under the specifications of the Severely Adverse scenario, depending on the accounting treatment of the valuation allowance (“VA”) on our deferred tax assets (“DTA”). The remaining available funding commitment from U.S. Treasury would be \$83B without re-establishment and \$23B with re-establishment of the VA on our DTA.

Note: Fannie Mae’s Severely Adverse scenario is not an expected forecast, but a hypothetical stress scenario using Fannie Mae’s internal projections by applying the rules and conditions set forth by FHFA.

## Background

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- Fannie Mae's projections under the Severely Adverse scenario comply with the instructions provided by FHFA, using Fannie Mae's internal stress testing methodology and process.
- The 2015 Dodd-Frank Act Stress Test ("DFAST") results disclosure included within this document has not been prepared under generally accepted accounting principles ("GAAP"). The stress test results under the FHFA Severely Adverse scenario, as disclosed in this document or otherwise, should not be viewed as forecasts of expected or likely outcomes for Fannie Mae. Rather, these projections are based solely on FHFA's hypothetical Severely Adverse scenario and other specific conditions required to be assumed by Fannie Mae. These include model assumptions necessary to project and assess the impact of the Severely Adverse scenario on the results of operations and capital position of Fannie Mae.
- Fannie Mae's financial information, prepared under GAAP, is available in reports filed with the Securities and Exchange Commission and on Fannie Mae's website, which include Fannie Mae's Annual Report on Form 10-K for the year ended December 31, 2014.

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## Key Assumptions of the Severely Adverse Scenario

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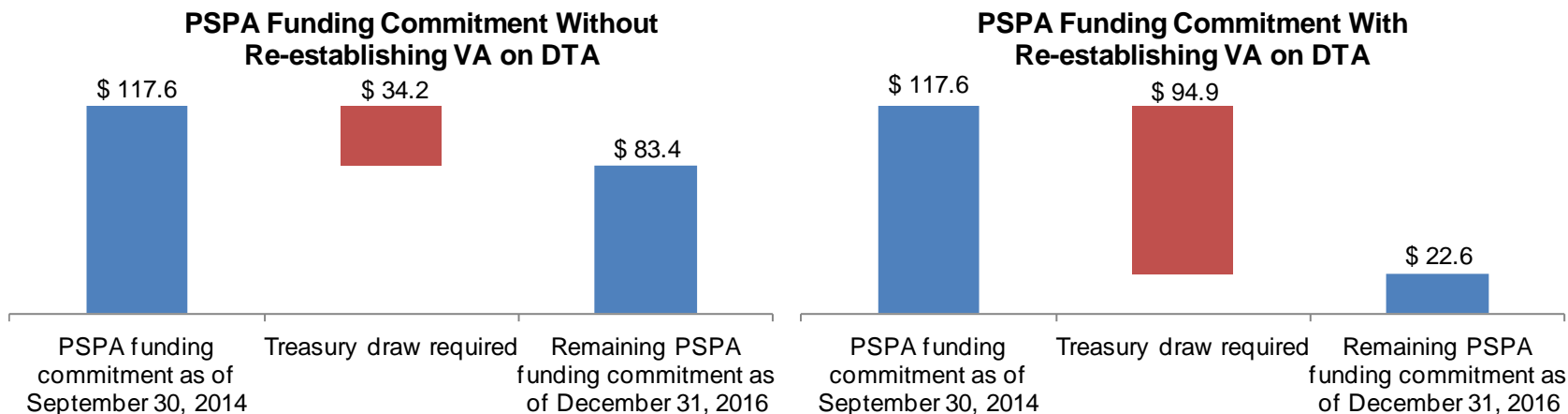
- The Severely Adverse scenario features a severe recession in which:
  - the unemployment rate peaks at over 10% in the middle of 2016,
  - real GDP declines approximately 4.5% through 2015,
  - house prices decline approximately 25% through 2016, particularly in areas that experienced brisk gains in recent years, and
  - commercial real estate prices decline nearly 35% at their trough.
- Interest rates reflect both severe economic weakness and a substantial decline in inflation:
  - short-term rates remain near zero,
  - the 10-year Treasury rate falls 160 basis points and remains below 2%,
  - core inflation declines to almost 1% in 2015, and
  - mortgage rates increase slightly, peaking at 5% in the middle of 2015.
- The Severely Adverse scenario assumes a global market shock (“GMS”) to the economic drivers of asset prices and also includes a counterparty default scenario component. These assumptions are viewed as exogenous to the macroeconomic and financial market environment specified in the scenario.
  - These results are taken as an instantaneous loss and reduction of capital in the first quarter of the testing horizon without any future recoveries.
  - As specified by FHFA, results include the greater fair value loss of either the GMS or the macroeconomic scenario.

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## Capital Planning and Funding Commitment

- Fannie Mae management does not expect to engage in significant capital management actions while Fannie Mae is under conservatorship.
- The PSPA prohibits Fannie Mae’s recapitalization through its quarterly dividend obligations, which are equal to our net worth as of the prior quarter-end minus a capital reserve amount. Under the PSPA, the capital reserve amount is \$1.8B in 2015 and is reduced by \$0.6B each year until it reaches zero on January 1, 2018.
- Under the conditions of the Severely Adverse scenario, depending on the treatment of the VA against our DTA, the range of U.S. Treasury draws is between \$34.2B and \$94.9B, and the range of remaining funding commitment available under the PSPA is between \$22.6B and \$83.4B.

(\$ in billions)



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# Pro-forma Financial Metrics Under the Severely Adverse Scenario

(\$ in billions)	Cumulative Projected Financial Metrics (Q4 2014 - Q4 2016)		
	Results without re-establishing valuation allowance on deferred tax assets	Impact of re-establishing valuation allowance on deferred tax assets	Results with re-establishing valuation allowance on deferred tax assets
1 Pre-provision net revenue <sup>1</sup>	19.2	-	19.2
2 (Provision) benefit for credit losses	(54.9)	-	(54.9)
3 Mark-to-market gains (losses) <sup>2</sup>	(7.3)	-	(7.3)
4 Global market shock impact on trading securities and counterparty	(4.1)	-	(4.1)
5 Net income before taxes	(47.2)	-	(47.2)
6 (Provision) benefit for taxes	17.3	(60.7)	(43.4)
7 Other comprehensive income (loss) <sup>3</sup>	(6.8)	-	(6.8)
8 Total comprehensive income (loss)	(36.6)	(60.7)	(97.4)
9 PSPA funding commitment as of September 30, 2014	117.6	-	117.6
10 Treasury draw required	34.2	60.7	94.9
11 Remaining PSPA funding commitment	83.4	(60.7)	22.6
12 Credit losses <sup>4</sup>	(24.9)	-	(24.9)
13 Credit losses (% of average portfolio balance)	0.85%	-	0.85%

1. Includes net interest income, security impairments, operational risk losses, foreclosed property income (expense), and other non-interest income/expenses

2. Includes fair value gains (losses) on derivative and trading securities, and other gains (losses) on investment securities.

3. Includes global market shock impact on available-for-sale securities

4. Credit losses are defined as charge-offs, net plus foreclosed property expenses

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## **Risk Methodologies**

- **Credit Risk**
- **Market Risk**
- **Counterparty Risk**
- **Operational Risk**
- **Other Methodologies**

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## Credit Risk Methodologies

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- Credit risk is the potential for loss arising from a borrower's failure to honor its financial obligations. Mortgage credit risk impacts Fannie Mae's financial results through:
  - credit losses to reflect recently recognized losses on loans that Fannie Mae guarantees or owns and
  - reduction or build in the loss allowance to reflect deteriorating or improving loan performance.
- Fannie Mae assesses mortgage credit risk through the use of macroeconomic and behavioral models. These models project the likelihood of different borrower behaviors for prepayment, default, or modification at the loan level. These projected behaviors vary according to the contractual terms of the mortgage, the borrower's characteristics, property types, current loan-to-value ratio and delinquency status as of the forecast date, and the projected market environment. Model outputs may be further refined to incorporate other trends or management judgment not captured originally.

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## Market Risk Methodologies

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- Market risk arises from fluctuations in the market value of positions, as a result of changes in market factors such as interest rates, implied volatility, and spreads. Fannie Mae's retained mortgage portfolio and debt, derivative, and non-mortgage asset portfolio, while economically hedged, contain market risk that impacts Fannie Mae's financial results through:
  - market value changes of held-for-trading ("HFT") securities and derivatives, recognized through net income, and
  - market value changes of available-for-sale ("AFS") securities, recognized through other comprehensive income ("OCI").
- Fannie Mae assesses market risk through the use of valuation models which incorporate behavioral models of mortgage performance and term structure models of the behavior of rates.
- We applied price and spread shocks prescribed by FHFA for the GMS to produce market value changes for our HFT and AFS securities holdings. These shocks, characterized by large rate moves, sharply widening spreads, and heightened volatilities, were applied to Fannie Mae's securities as of September 30, 2014, and, as required, were taken as an instantaneous loss and reduction of capital in Q4 2014, without future recoveries. As directed by FHFA, results reflect only the impact of the GMS, as it produced greater fair value losses than those produced by the macroeconomic scenario.

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## Counterparty Risk Methodologies

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- Counterparty risk is the risk that the parties with which we do business fail to meet their contractual obligations. Fannie Mae faces counterparty risk from our lender customers, mortgage insurers, derivative counterparties, and other financial institutions. Counterparty risk primarily impacts Fannie Mae's financial results through:
  - failures of lenders to settle their representation and warranties liabilities,
  - failures of credit enhancement providers, including mortgage insurers, financial guarantors, and recourse providers, to satisfy their contractual obligations to cover losses, and
  - inability of a counterparty to sufficiently cover losses through payment or collateral.
- The methodology for measuring losses from counterparty exposure is prescribed in the DFAST counterparty default guidance. We are required to assess counterparty risk on Fannie Mae's Securities Financing Transactions and derivative books. The values of these two books are shocked using the prescribed interest rates, implied volatility, and spread changes. The resulting exposures in these two books are aggregated for each counterparty to determine the counterparty with the largest exposure by total net stressed loss.
- The counterparty with the largest exposure to Fannie Mae after applying the counterparty default guidance is presumed to default. The loss from that default is recorded as fair value loss in Q4 2014, without future recoveries.

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## Operational Risk Methodologies

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- Operational risk is the risk of loss resulting from inadequate or failed internal processes, systems, human factors, or external events.
- Operational risk can impact Fannie Mae's financial results in a variety of ways, including:
  - errors,
  - fraudulent acts,
  - business interruptions,
  - inappropriate behavior of employees, and
  - business partners that do not perform in accordance with their arrangements.
- Operational risk for DFAST is currently assessed across Fannie Mae's business lines using methods drawn from the Basel framework, by applying a factor to average annual gross income from 2011 through 2013.

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## Other Methodologies

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- Pre-provision net revenue
  - Fannie Mae determines net interest income over the nine quarters by projecting portfolio balances and guaranty fee pricing and using the macroeconomic variables provided, such as house prices and mortgage rates.
  - Non-interest income and expense are determined at the business level using relevant macroeconomic variables and conservative management assumptions.
- (Provision) benefit for credit losses
  - Fannie Mae estimates the provision or benefit for credit losses using the approaches described under Credit Risk Methodologies.
  - Fannie Mae estimates the total loss reserves and related build or release by assessing the adequacy of the reserves based on the profile and performance of the loan portfolio under the macroeconomic conditions specified in the Severely Adverse scenario.
- Mark-to-market gains (losses) and other comprehensive income (loss)
  - Fannie Mae estimates fair value gains / (losses) using the approaches described under Market Risk Methodologies.
  - The impact of the GMS applied to Fannie Mae's AFS positions is reflected in OCI during the first quarter of the forecast period, without subsequent recoveries. No other AFS losses are incorporated, as directed by FHFA, since losses from GMS are greater than those from the macroeconomic environment.

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## Other Methodologies (Continued)

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- Deferred tax assets
  - As directed by FHFA, the results reflect a range with and without the re-establishment of the VA against our DTA in Q4 2014. The impact of the VA is reflected in additional U.S. Treasury draws and a smaller remaining funding commitment under the PSPA.
- Management judgment and governance
  - Modeled projections and definitions of key business assumptions may be supplemented with management judgment in cases where data and historical relationships are insufficient to produce reliable results or model limitations require further adjustment to output. Consistent application of judgment is governed through a cross-functional control and governance structure incorporating multiple levels of review, challenge, and approval.
  - Senior management and the Board of Directors review DFAST stress testing results. The Risk Policy and Capital Committee, a sub-committee of the Board of Directors, reviews DFAST stress testing results and key assumptions, and also evaluates process and methodology weaknesses, limitations, and uncertainties.

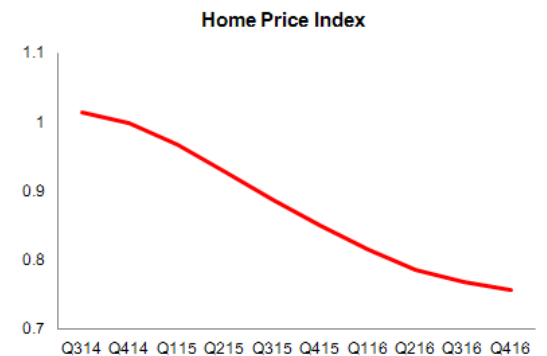
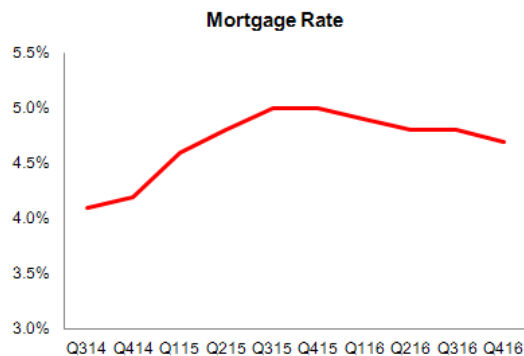
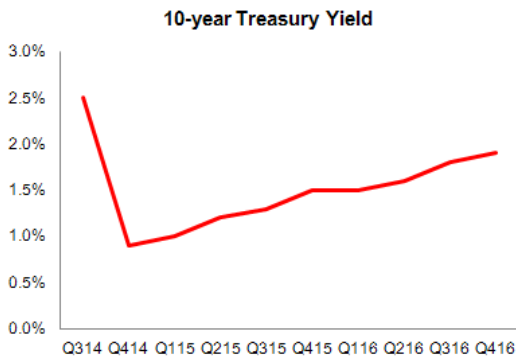
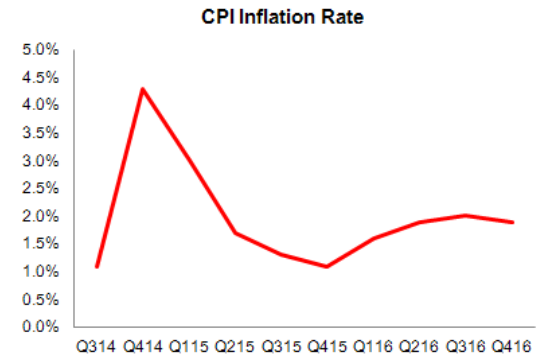
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# Appendix

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# Severely Adverse Scenario – Macroeconomic Variables



**Additional variables provided:**

- Market volatility index
- Yields on 3-month and 5-year Treasuries
- Market shocks to securitized products and municipal and agency bonds
- 10-year BBB corporate bond yield
- Prime rate
- Commercial real estate price index

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