2018 Dodd-Frank Act Stress Test Severely Adverse Scenario Results

August 7, 2018

Executive Summary

- Freddie Mac is required to conduct annual stress tests to assess capital adequacy under the Federal Housing Finance Agency (FHFA) rule implementing the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank) stress testing requirements.
  - » FHFA's stress test specifications include a Severely Adverse scenario, which reflects a 30% decline in house prices and a severe global market shock vs. 25% decline in house prices in 2017 stress test.

- The 2018 Dodd-Frank Act Stress Test (DFAST) is Freddie Mac's fifth year of public disclosure of the Severely Adverse scenario results.

- Freddie Mac has been operating under conservatorship since September 6, 2008 under the direction of the FHFA, as Conservator.

- Freddie Mac entered into a Preferred Stock Purchase Agreement (PSPA) with the U.S. Department of the Treasury (Treasury) pursuant to which Treasury purchased Senior Preferred Stock of Freddie Mac and agreed to make certain funding available to Freddie Mac as needed to prevent Freddie Mac from having a negative net worth.
  - » Freddie Mac has drawn $71.6 billion under the PSPA and currently has $140.2 billion of remaining funding available to it.
  - » The PSPA provides for a quarterly dividend equal to Freddie Mac's net worth in excess of an amount of capital that is $3 billion. Because of the sweep dividend requirement, Freddie Mac cannot accumulate or retain capital in excess of the $3 billion of capital permitted by the PSPA.

- As prescribed by FHFA, Freddie Mac is disclosing the results of the stress test in the Severely Adverse scenario in two different versions – one that does not reflect having to establish the valuation reserve on our deferred tax assets (DTA) and one that reflects having to establish the DTA valuation allowance.

- Stress test results show sufficient funding available under the PSPA after exhausting the $3 billion of capital that the company is allowed to retain under the PSPA.
  - » The Severely Adverse scenario (without establishing a valuation allowance (VA) on our DTA) indicates $22 billion of additional draws, leaving $118 billion of remaining PSPA funding.
  - » The Severely Adverse scenario (with establishing a VA on our DTA) indicates $35 billion of additional draws, leaving $105 billion of remaining PSPA funding.

Stress test results are not expected outcomes. They are modeled projections based on hypothetical economic conditions prescribed by FHFA. Actual outcomes may be very different.
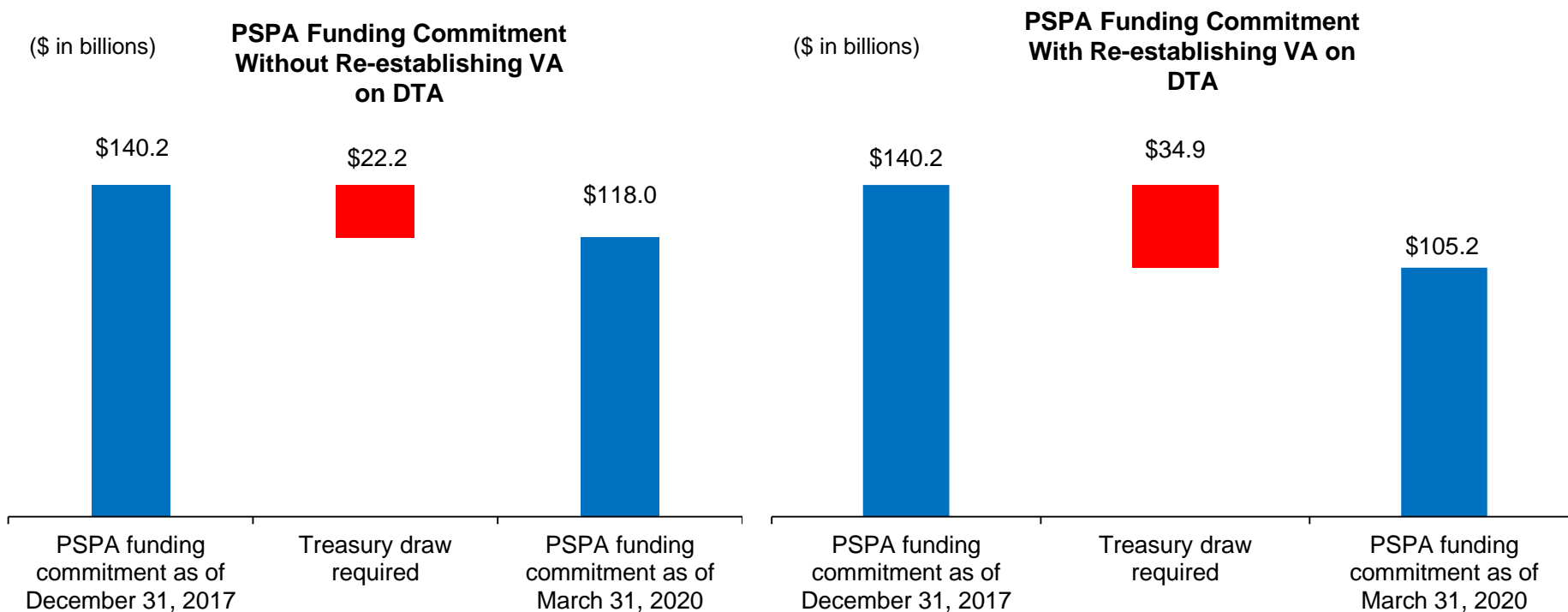
Stress Test Overview

Background

- Dodd-Frank requires certain financial companies with more than $10 billion in assets that are regulated by a primary federal financial regulatory agency to perform annual stress tests to assess capital adequacy

- For the GSEs, the FHFA-prescribed stress test assesses capital adequacy through the sufficiency of the remaining funding commitment under the PSPA[1]

- FHFA provided the key scenario assumptions for the 2018 Dodd-Frank annual stress test in March 2018. The nine quarter planning horizon includes 1Q18 to 1Q20, beginning with the 12/31/2017 balance sheet information

- The 2018 stress test results were submitted to FHFA and the Federal Reserve (sent by FHFA) on May 18, 2018

- Overall stress test results were reviewed by Freddie Mac's Board of Directors, Chief Executive Officer, Chief Financial Officer, Chief Enterprise Risk Officer, and other key stakeholders

Key Economic Variables for the Severely Adverse Scenario as prescribed by FHFA

Macroeconomic Variables	2018 DFAST	2017 DFAST
Residential House Prices (9-Quarter Decline)	-30%	-25%
Commercial Real Estate (9-Quarter Decline)	-40%	-35%
Real Gross Domestic Product (peak-to-trough)	-7.3%	-6.5%
Unemployment Rate (Peak)	10%	10%
Interest-Rate Variables		
30-yr Mortgage Rate (Peak)	6.0%	4.6%
10-yr Treasury Rate (Ending)	2.4%	1.5%
Short-term Rate (Ending)	0.1%	0.1%
Global Market Shock		
Instantaneous Price Shocks on Non-agency securities	RMBS: up to -69%; CMBS up to -20%	RMBS: up to -92% CMBS up to -20%
Option-Adjusted-Spread (OAS) Shocks	MBS OAS: +192 bps	MBS OAS: +158bps

(1) Including $3.0 billion permitted capital reserve at January 1, 2018.

Severely Adverse Scenario

Freddie Mac

($ in billions)

PSPA Funding Commitment Without Re-establishing VA on DTA

($ in billions)

PSPA Funding Commitment With Re-establishing VA on DTA

$140.2 — PSPA funding commitment as of December 31, 2017

$22.2 — Treasury draw required

$118.0 — PSPA funding commitment as of March 31, 2020

$140.2 — PSPA funding commitment as of December 31, 2017

$34.9 — Treasury draw required

$105.2 — PSPA funding commitment as of March 31, 2020

Note: Numbers may not foot due to rounding

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	Cumulative Projected Financial Metrics (Q1 2018 - Q1 2020)				
	Results without establishing valuation allowance on deferred tax assets		Impact of establishing valuation allowance on deferred tax assets	Results with establishing valuation allowance on deferred tax assets	
	Billions of dollars	Percent of average assets[6]		Billions of dollars	Percent of average assets[6]
1 Pre-provision net revenue[1]	12.7	0.61%		12.7	0.62%
2 (Provision) benefit for credit losses	(23.5)			(23.5)	
3 Mark-to-market gains (losses)[2]	(2.1)			(2.1)	
4 Global market shock impact on trading securities and counterparty	(7.8)			(7.8)	
5 Net income before taxes	(20.7)	-1.00%		(20.7)	-1.00%
6 (Provision) benefit for taxes	4.3		(12.7)	(8.4)	
7 Other comprehensive income (loss)[3]	(5.7)			(5.7)	
8 Total comprehensive income (loss)	(22.1)	-1.06%	(12.7)	(34.8)	-1.68%
9 Dividends paid	-			-	
10 PSPA funding commitment as of December 31, 2017	140.2			140.2	
11 Treasury draws required	22.2		12.7	34.9	
12 Remaining PSPA funding commitment	118.0		(12.7)	105.2	
13 Credit losses[4]	(7.4)			(7.4)	
14 Credit losses (% of average portfolio balance)[5]	0.34%			0.34%	

Note: Numbers may not foot due to rounding

[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 and not included in global market shocks.

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

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

[5] Average portfolio balance over the nine-quarter planning horizon.

[6] Average total assets over the nine-quarter planning horizon.

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Appendix:
Stress Test Assumptions and Methodologies

Stress Test Components

Pre-Provision Net Revenue (PPNR)	Net interest income, security impairments, estimated operational risk losses, foreclosed property income (expense), and other non-interest income (expense)
Loan Loss Provision	Credit loss provision expenses related to estimated single-family (SF) credit losses, troubled debt restructurings (TDRs), potential losses from recovering less than 100% of the company's exposure to mortgage insurer (MI) counterparties, and multifamily (MF) credit provisions
Mark-to-Market Gains (Losses)	Mark-to-market gains (losses) related to changes in fair value of derivatives and trading securities, and other gain (losses) on investment securities not included in global market shock
Global Market Shock (net of tax)	Instantaneous global shocks of interest rates, volatility, agency MBS OAS, and non-agency MBS prices applied to trading and AFS securities, and the estimated impact of a default of the company's largest capital markets counterparty. Includes tax benefit on AFS securities that the company intends to hold to recovery

Pre-Provision Net Revenue (PPNR)

Description	▪ Reflects projections of net interest income, security impairments, estimated operational risk losses, foreclosed property income (expense), and other non-interest income (expense) over the nine-quarter planning horizon. ▪ Material risks covered include interest-rate risk, credit risk for non-agency MBS, and operational risk.
Methodologies	▪ Projects cash flows using a third-party model, incorporating internal business assumptions and FHFA-provided scenario interest-rate paths. ▪ Estimates operational risk losses based on model that combines results from historical data and forward-looking scenario analyses. Model uses reasonably conservative assumptions when combining results from different data.

Loan Loss Provision (LLP)

Description	▪ Reflects credit loss provision expenses related to estimated SF credit losses, TDRs, potential losses from recovering less than 100% of the company's exposure to MI counterparties, and MF credit provisions. ▪ Captures mortgage credit risk.
Methodologies	▪ Estimates SF provision expenses using Freddie Mac's internal models, enhanced credit loss forecasting methodology and key house-price and interest-rate inputs provided by FHFA. ▪ Incorporates estimated impacts of other relevant FHFA-provided macroeconomic variables, such as unemployment rate and GDP decline. ▪ SF loss projections also reflect haircuts to MI payment obligations and the assumption that current loan modification programs will continue. ▪ Estimates MF loan loss provision using regression of material macroeconomic variables provided by FHFA (unemployment, 3-month Treasury yield, commercial real estate price index) versus Freddie Mac's historical loan loss reserves.

Other Components

Freddie Mac

Mark-to-Market Gains (Losses) (MTM)

Description	■ Reflects mark-to-market gains (losses) from changes in fair value of derivatives, and trading securities, and other gains (losses) on investment securities due to changes in interest rates not included in global market shock. ■ Material risk covered includes interest-rate risk.
Methodologies	■ Applies FHFA-specified interest rate paths to estimate changes in fair value of derivatives and trading securities, and other gains (losses) on investment securities.

Global Market Shock (GMS)

Description	■ The GMS is an instantaneous loss on Freddie Mac's trading and AFS securities in the first quarter that is not recovered during the nine-quarter planning horizon. This shock is treated as an add-on to the macroeconomic and financial market environment specified in the stress test. ■ Includes impact of a default of the company's largest capital markets counterparty or mortgage insurer.
Methodologies	■ Applies FHFA-specified shocks for interest rates, volatility, agency MBS OAS, and non-agency price shocks to the company's MBS holdings. ■ Includes tax effect on AFS securities that the company has both the intent and ability to hold to recovery. ■ Estimated impact of default of largest counterparty in the stress test. Assumes instantaneous default in the first quarter of the planning horizon with zero recovery.

Description of Key Drivers

Mortgage Credit Risk

- Mortgage credit risk is the risk that a borrower fails to make timely payments on a mortgage owned or guaranteed by Freddie Mac.

- SF credit risk varies significantly by book year. Since 2008, Freddie Mac has enhanced its credit and underwriting policies and purchased fewer loans with higher risk characteristics, which has contributed to improvements in the credit quality of the SF guarantee business. Freddie Mac has also entered into risk transfer transactions on SF loans to reduce credit risk on these loans.

- MF credit risk is substantially reduced as a result of the K-deal securitization program, where Freddie Mac guarantees only the most senior tranches of K-deals, resulting in a significant portion of credit risk being transferred to the investors in subordinated tranches.

Interest-Rate and Other Market Risk

- Interest-rate risk is the risk that changes in interest rates could result in a loss of value or future earnings. Freddie Mac is exposed to interest-rate risk primarily in its retained portfolio.

- The retained portfolio also exposes the firm to spread risk, where changes in the spread between retained portfolio assets and related funding and derivatives could result in a loss.

Counterparty Credit Risk

- Counterparty risk is the risk that a counterparty will fail to meet its contractual obligations to Freddie Mac. The company's counterparty credit exposures include, but are not limited to, MIs, counterparties to derivative and repurchase agreement transactions and single-family seller/servicers that sell mortgage loans to the company and service the loans.

Operational Risk

- Operational risk is the risk of direct or indirect loss resulting from inadequate or failed internal processes, systems, human factors, or external events. Operational risk is inherent in the company's business activities and can manifest itself in various ways, including accounting or operational errors, business interruptions, fraud and technology failures.