2019 Dodd-Frank Act Stress Test Severely Adverse Scenario Results

August 15, 2019

Executive Summary

- Freddie Mac's statutory mission is to provide liquidity, stability and affordability to the U.S. housing market. Consistent with its charter, the company's business is focused exclusively on the U.S. residential mortgage market.
- The company has been operating under conservatorship since September 6, 2008 under the direction of the Federal Housing Finance Agency (FHFA), as Conservator. Freddie Mac's ability to access funds from Treasury under the Senior Preferred Stock Purchase Agreement (PSPA) is critical to keeping the company solvent.
- Freddie Mac is required to conduct annual stress tests to assess capital adequacy under FHFA's rule implementing the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank) stress testing requirements. The 2019 Dodd-Frank Act Stress Test (DFAST) represents the sixth year that Freddie Mac is performing the stress test.
- FHFA's stress test specifications include four required scenarios (including Severely Adverse with and without a valuation allowance against our Deferred Tax Assets), each reflecting projections over a nine-quarter horizon (1Q19 - 1Q21). The Severely Adverse scenario includes a 26% decline in house prices, 35% drop in commercial real estate prices and a severe global market shock.
- Results are not expected outcomes. They are modeled projections based on hypothetical economic conditions. 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 2019 Dodd-Frank annual stress test in March 2019. The nine quarter planning horizon includes 1Q19 to 1Q21, beginning with the 12/31/2018 balance sheet information
- The 2019 stress test results were submitted to FHFA and the Federal Reserve (sent by FHFA) on May 17, 2019
- 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	**2019 DFAST**	**2018 DFAST**
Residential House Prices (9-Quarter Decline)	*-26%*	*-30%*
Commercial Real Estate (9-Quarter Decline)	*-35%*	*-40%*
Real Gross Domestic Product (peak-to-trough)	*-7.8%*	*-7.3%*
Unemployment Rate (Peak)	*10%*	*10%*
Interest-Rate Variables		
30-yr Mortgage Rate (Peak)	*4.5%*	*6.0%*
10-yr Treasury Rate (Ending)	*1.5%*	*2.4%*
Short-term Rate (Ending)	*0.13%*	*0.1%*
Global Market Shock		
Instantaneous Price Shocks on Non-agency securities	*RMBS: up to -83%;* *CMBS up to -78%*	*RMBS: up to -69%* *CMBS up to -20%*
Option-Adjusted-Spread (OAS) Shocks	*MBS OAS: + 50bps*	*MBS OAS: +192bps*

(1) Including $3.0 billion permitted capital reserve at January 1, 2019.

Severely Adverse Scenario Results

		Cumulative Projected Financial Metrics (Q1 2019 - Q1 2021)				
		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]	13.4	0.64%		13.4	0.64%
2	(Provision) benefit for credit losses	(16.5)			(16.5)	
3	Mark-to-market gains (losses)[2]	(2.1)			(2.1)	
4	Global market shock impact on trading securities and counterparty	(3.5)			(3.5)	
5	Net income before taxes	(8.8)	-0.42%		(8.8)	-0.42%
6	(Provision) benefit for taxes	1.8		(8.8)	(6.9)	
7	Other comprehensive income (loss)[3]	(1.5)			(1.5)	
8	Total comprehensive income (loss)	(8.4)	-0.40%	(8.8)	(17.2)	-0.83%
9	Credit losses[4]	(5.6)			(5.6)	
10	Credit losses (% of average portfolio balance)[5]	0.26%			0.26%	

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

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.

Appendix:
Stress Test Assumptions and Methodologies

Stress Test Components

Pre-Provision Net Revenue (PPNR)	Net interest income, security impairments, 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	▪ PPNR reflects business revenues and expenses prior to major stress loss components. ▪ Includes projections of net interest income, non-interest income, and non-interest expense for the existing book of business and new business during the nine-quarter horizon. ▪ Material risks covered include interest-rate risk, credit risk for non-agency MBS, and operational risk.
Methodologies	▪ Uses internal business assumptions for business volume, retained portfolio size, guarantee fees, risk-sharing transactions, debt funding mix, and spreads to LIBOR for assets and debt. ▪ Projects cash flows using a third-party model, incorporating internal business assumptions and FHFA-provided scenario interest-rate paths. ▪ Estimates forward prices on trading and AFS securities using third-party model for non-agency MBS, and internal model for agency MBS.

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

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

Description	▪ Reflects mark-to-market gains (losses) from changes in fair value of derivatives and MF held-for sale loans due to changes in interest rates. ▪ Material risk covered includes interest rate risk. ▪ We consider hedge accounting in our results.
Methodologies	▪ Applies FHFA-specified interest rate shocks to estimated changes in fair value of derivatives.

Global Market Shock (GMS)

Description	▪ The GMS is an instantaneous shock on Freddie Mac's assets and debt valued at fair value in the first quarter that is not recovered during the nine-quarter forecast horizon. This shock is treated as an add-on that is exogenous to the macroeconomic and financial market environment specified in the stress test scenario. ▪ The GMS captures market risks related to changes in interest rates, volatility, agency MBS OAS, as well as price shocks to non-agency MBS.
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. ▪ 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.
Market Risk including Interest Rate and Spread Risk	▪ Freddie Mac's GAAP financials are exposed to interest-rate risk. ▪ The retained portfolio is exposed to spread risk related to adverse changes in the spread between security prices in related market sectors.
Counterparty Credit Risk	▪ Counterparty credit 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, single-family seller/servicers that sell mortgage loans to the company and service the loans, mortgage insurers (MIs), and counterparties to derivative and repurchase agreement transactions.
Operational Risk	▪ Operational risk is the risk of direct or indirect loss resulting from inadequate or failed internal processes, people, systems, or from 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.