2020 DODD-FRANK ACT STRESS TESTS RESULTS SEVERELY ADVERSE SCENARIO

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Federal Housing Finance Agency

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August 2023 Update

In November 2022, Fannie Mae announced that it was reevaluating its 2020 stress test results and associated reporting due to the recent identification of errors in an underlying model. Fannie Mae has completed its evaluation and determined that the errors were not material and therefore will not post revised stress test results for this year.

I. Overview

Fannie Mae and Freddie Mac (the "Enterprises") are required to conduct annual stress tests pursuant to Federal Housing Finance Agency (FHFA) rule 12 CFR § 1238, which implements section 165(i)(2) of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"). Section 165(i)(2) of the Dodd-Frank Act, as amended by section 401 of the Economic Growth, Regulatory Relief, and Consumer Protection Act ("EGRRCPA") requires certain financial companies with total consolidated assets of more than $250 billion, and which are regulated by a primary federal financial regulatory agency, to conduct periodic stress tests to determine whether the companies have the capital necessary to absorb losses as a result of severely adverse economic conditions. These statutory changes became effective on November 24, 2019. This is the seventh implementation of the Dodd-Frank Act Stress Tests (DFAST) for the Enterprises.

In September 2008, FHFA suspended capital requirements after placing Fannie Mae and Freddie Mac into conservatorships. The Senior Preferred Stock Purchase Agreements that were established between the Department of the Treasury and each Enterprise limited the amount of capital that each Enterprise can hold to a Capital Reserve Amount of $3.0 billion. However, on September 27, 2019, the FHFA acting in its capacity as the conservator of the Enterprises, and Treasury entered into a letter agreement modifying the dividend and liquidation preference provisions of the senior preferred stock held by Treasury. Effective with the third quarter 2019 dividend period, the Enterprises were not required to pay further dividends to Treasury until they accumulated over $25 billion in net worth at Fannie Mae and $20 billion in net worth at Freddie Mae.

Notwithstanding the capital limits stipulated in the Senior Preferred Stock Purchase Agreements, FHFA requires the Enterprises to conduct DFAST annually in order to provide insight into risk exposure and potential sources of losses in the prescribed conditions. This report provides updated information on possible ranges of future financial results of the Enterprises under severely adverse conditions. The severely adverse conditions assumed are identical for both Enterprises.

The projections reported here are not expected outcomes. They are modeled projections in response to "what if" exercises based on assumptions about Enterprise operations, loan performance, macroeconomic and financial market conditions, and house prices. The projections do not define the full range of possible outcomes. Actual outcomes may be different.

The 2020 DFAST Severely Adverse scenario is described on page 3. The Enterprises used their respective internal models to project their financial results based on the assumptions provided by

FHFA. While this results in a degree of comparability between the Enterprises, it does not eliminate differences in the Enterprises' respective internal models, accounting differences, or management actions.

II. Description of Severely Adverse Scenario

The 2020 DFAST Severely Adverse scenario is based upon a severe global recession accompanied by stressed commercial real estate and corporate debt markets. The scenario is not a forecast, but instead is a hypothetical future economic environment designed to assess the strength of the Enterprises and other financial institutions and their resilience to unfavorable market conditions. The planning horizon for the implementation of the 2020 DFAST is over a nine-quarter period from December 31, 2019 through March 31, 2022.

In the 2020 DFAST Severely Adverse scenario, U.S. real GDP declines by about 8.5 percent from its pre-recession peak, reaching a trough in the third quarter of 2021. The rate of unemployment increases from 3.5 percent at the beginning of the planning horizon to a peak of 10.0 percent in the third quarter of 2021. The annualized consumer price inflation rate falls to about 1.25 percent after the first quarter of 2020 and then gradually rises to an average of 1.75 in 2022.

As a result of the severe decline in real economic activity and low inflation levels, short-term Treasury rates decline to near zero and remain there through the end of the planning horizon. The 10-year Treasury falls to a trough of about 0.75 percent in the first quarter of 2020 and then gradually increases to 2.25 percent at the end of the planning horizon. As a result, the yield curve gradually steepens over most of the planning horizon.

Due to these macroeconomic developments, asset prices decline sharply as financial conditions in corporate and real estate lending markets become severely stressed. Spreads on domestic investment-grade corporate bonds versus long-term Treasury securities increase to 5.5 percent by the third quarter of 2020, an increase of 4 percentage points relative to year-end 2019. The spread between mortgage rates and the 10-year Treasury yield increases to about 3.5 percent over the same period. In addition, equity prices fall by approximately 50 percent by the end of 2020, and equity market volatility increases substantially. Home prices decline by about 28 percent nationally, and commercial real estate prices fall by 35 percent during the nine-quarter planning horizon. The home price decline is slightly more severe while the commercial real estate price decline is unchanged relative to the 2019 DFAST reporting cycle.

Compared to last year's DFAST, the 2020 severely adverse scenario includes a larger increase in the unemployment rate, and the magnitude of the decline in the 10-year

Treasury yield is lower due to the lower beginning rate level for this year's planning horizon. The declines in equity prices are similar to those included in the 2019 DFAST.

The 2020 DFAST Severely Adverse scenario also includes a global market shock component that impacts the Enterprises' retained portfolios. This year's global market shock is consistent with a macroeconomic background in which the US economy has entered a sharp recession, characterized by widespread defaults on a range of debt instruments. There is a significant widening in credit spreads for non-investment grade and low investment grade bonds. Asset values for private equity experience significant declines as leveraged firms face lower earnings and a weak economic outlook. Short-term U.S. Treasury rates fall sharply due to an accommodative monetary policy. Longer-term Treasury rates fall more modestly as the U.S. benefits from a flight-to-quality. Compared to the 2019 DFAST cycle, this year's global market shock emphasizes a heightened stress to highly leveraged markets that causes collateralized loan obligations (CLOs) and private equity investments to experience larger market value declines. European equity markets weaken at more modest levels and U.S. equity markets fall more sharply compared to last year's reporting cycle.

The global market shock also includes a counterparty default component that assumes the failure of each Enterprise's largest counterparty. The global market shock is treated as an instantaneous loss and reduction of capital in the first quarter of the planning horizon, and the scenario assumes no recovery of these losses by the Enterprises in future quarters. For those positions subject to the global market shock, FHFA directed the Enterprises to report the greater of the global market shock losses or the losses attributable to the macroeconomic scenario for the identical positions.

III. FHFA Guidance

FHFA instructed the Enterprises to extrapolate any scenario variables beyond the projection date as required. FHFA provided one year of scenario assumptions beyond the nine-quarter planning horizon to be used by the Enterprises as needed. Additionally, FHFA provided historical data on scenario variables in the event that models required that information.

FHFA instructed the Enterprises to comply with the terms of the Senior Preferred Stock Purchase Agreements, as amended, to determine the level of dividends to be paid during each quarter of the planning horizon.

FHFA communicated specific instructions to address particular issues relevant to the Enterprises' unique lines of business. FHFA required the Enterprises to use aligned regional house price paths to improve the comparability of stress test results. Additionally, FHFA broadened the definition of counterparties to be considered in the largest counterparty default component of the global market shock to include mortgage insurers, unsecured overnight deposits and providers of multifamily credit enhancements.

IV. Severely Adverse Scenario Results Detail

Important contributors to losses in the Severely Adverse Scenario included the following:

- The provision for credit losses was the largest contributor to comprehensive losses at both Enterprises.
- The second largest contributor to comprehensive losses at both Enterprises was the global market shock impact, including the counterparty default scenario component.

Note: The severely adverse scenario results do not reflect any COVID-19 related impact.

The following tables reflect the Enterprises' results on the Dodd-Frank Act Stress Tests.

Table 1: DFAST Severely Adverse Scenario Results – Combined

	Cumulative Projected Financial Metrics (Q1 2020 - Q1 2022)				
	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]
Pre-provision net revenue[1]	$41.5	0.73%		$41.5	0.73%
(Provision) benefit for credit losses	(41.9)	-0.74%		(41.9)	-0.74%
Mark-to-market gains (losses)[2]	(0.6)	-0.01%		(0.6)	-0.01%
Global market shock impact on trading securities and counterparty	(6.3)	-0.11%		(6.3)	-0.11%
Net income before taxes	(7.4)	-0.13%		(7.4)	-0.13%
(Provision) benefit for taxes	1.6	0.03%	(22.0)	(20.4)	-0.36%
Other comprehensive income (loss)[3]	(1.3)	-0.02%		(1.3)	-0.02%
Total comprehensive income (loss)	(7.1)	-0.13%	(22.0)	(29.1)	-0.51%
Credit losses[4]	($13.6)			($13.6)	
Credit losses (% of average portfolio balance)[5]	0.24%			0.24%	

[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.

Numbers may not foot due to rounding.

Table 2: DFAST Severely Adverse Scenario Results – Fannie Mae

	Cumulative Projected Financial Metrics (Q1 2020 - Q1 2022)				
	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]
Pre-provision net revenue[1]	$24.2	0.68%		$24.2	0.69%
(Provision) benefit for credit losses	($22.5)			($22.5)	
Mark-to-market gains (losses)[2]	$0.7			$0.7	
Global market shock impact on trading securities and counterparty[3]	($2.3)			($2.3)	
Net income before taxes	$0.1	0.00%		$0.1	0.00%
(Provision) benefit for taxes	($0.0)		(14.5)	($14.5)	
Other comprehensive income (loss)[3]	($0.1)			($0.1)	
Total comprehensive income (loss)	($0.0)	0.00%	(14.5)	($14.5)	-0.41%
Credit losses[4]	($7.5)			($7.5)	
Credit losses (% of average portfolio balance)[5]	0.22%			0.22%	

[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.

Numbers may not foot due to rounding.

Table 3: DFAST Severely Adverse Scenario Results – Freddie Mac

	Cumulative Projected Financial Metrics (Q1 2020 - Q1 2022)				
	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]
Pre-provision net revenue[1]	$17.3	0.82%		$17.3	0.82%
(Provision) benefit for credit losses	(19.4)			(19.4)	
Mark-to-market gains (losses)[2]	(1.3)			(1.3)	
Global market shock impact on trading securities and counterparty	(4.0)			(4.0)	
Net income before taxes	(7.5)	-0.35%		(7.5)	-0.35%
(Provision) benefit for taxes	1.6		(7.5)	(5.9)	
Other comprehensive income (loss)[3]	(1.2)			(1.2)	
Total comprehensive income (loss)	(7.1)	-0.34%	(7.5)	(14.6)	-0.69%
Credit losses[4]	($6.1)			($6.1)	
Credit losses (% of average portfolio balance)[5]	0.27%			0.27%	

[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.

Numbers may not foot due to rounding.