

# **Commerce Bancshares, Inc. and Commerce Bank**

## **Company-Run Capital Stress Test Results Disclosure**

**Capital Stress Testing Results Covering the Time Period January 1, 2017 through March 31, 2019 for Commerce Bancshares, Inc. and Commerce Bank under a Hypothetical Severely Adverse Economic Scenario.**

**October, 2017**

## Explanatory Note

The Dodd-Frank Wall Street Reform and Consumer Protection Act and regulations issued by the Board of Governors of the Federal Reserve System require bank holding companies and bank subsidiaries with total consolidated assets of \$10 billion or more, including Commerce Bancshares, Inc. and Commerce Bank, to complete and publicly disclose results of company-run stress tests using a hypothetical, significantly stressed economic scenario. Since Commerce Bank is 99% of Commerce Bancshares, Inc., the following commentary applies to the Bank and Holding Company (“Commerce”). The stressed economic scenario, known as the Severely Adverse Scenario, was specified by the Federal Reserve<sup>1</sup>.

The purpose of the test is to assess the Company’s ability to understand and quantify risks and ensure capital adequacy under stressed conditions. This commentary serves as the required disclosure and summarizes the modeling approaches used. In addition, summarized estimates of losses, pre-provision net revenue, provision expense, net income, and regulatory required ratios are provided. The final section of this disclosure provides an explanation of the most significant causes for changes in regulatory capital ratios.

The results of the tests are not forecasts or even baseline estimates but conservative assessments of how Commerce might be impacted in a hypothetical extreme economic scenario. The processes and modeling methods used for these tests are specific to Commerce and well documented for the company’s primary regulators. While other bank holding companies and banks must meet the same requirements, including public disclosure, results will not be directly comparable to those of Commerce since modeling techniques, processes and assumptions could differ significantly across companies.

The stress tests span 9 quarters (Q1, 2017 through Q1, 2019) with general global and domestic economic conditions assumed to quickly deteriorate. While economic conditions are specified through 16 domestic and 12 international variables, these tests only used the domestic variables. The company is not required to use the international variables and does not consider them to be relevant since Commerce is a regional domestic bank with very limited international exposure. The domestic scenario assumes a significant recession and large reduction in asset prices.

<sup>1</sup> For more information, please refer to the “2017 Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule” published by the Federal Reserve on February 3, 2017.

Unemployment increases 5.25% while real GDP declines 6.5% from the pre-recession peak. Treasury yields of all maturities are significantly lower throughout the scenario but short-term rates remain positive. Stock market levels fall by 50%, house prices decline almost 25%, and commercial real estate prices decline 35%.

## **Types of Risks included in the Test**

Commerce designed the stress tests to examine the impacts of credit, liquidity, market, operational, and regulatory risks on capital and capital ratios through the economic scenario provided.

### Credit Risk

Credit risk is the risk of losses resulting from not being able to collect the principal balance and/or interest earned on a loan or other investment contract when it is due. This risk is predominately in the company's loan portfolio and generally increases as economic conditions deteriorate. Credit risk is taken into account in these tests through rigorous statistical analyses of the company's historical credit losses through economic cycles.

### Liquidity Risk

Liquidity risk is the possibility that Commerce would be unable to generate cash to meet its financial obligations to depositors, investors or borrowers as they come due. While liquidity risk is not a main focus of these tests, it was considered in the conservative modeling of the company's balance sheet. For instance, initial model projections of increasing liquidity through declining loan demand were eliminated by assuming loan balances grow at levels consistent with a moderate economic expansion. In addition, reliance on non-core or wholesale funding was limited to maintain strong liquidity while new bond purchases were assumed to maintain a consistent ladder of cash flows for liquidity purposes.

### Market Risk

Market risk is the possibility that Commerce will suffer losses due to factors affecting the financial markets. It includes risk of losses due to adverse movements in interest rates or market prices. The primary market risk that Commerce is exposed to is interest rate risk, which is the risk of reduction of net interest income due to changes in interest

rates. Net interest income was modeled using the same system and approach that the company uses to measure interest rate risk and project net interest income each month.

### Operational Risk

Operational risk represents potential losses resulting from human error, inadequate or failed internal processes and systems, and external events. It also encompasses reputational, compliance and legal risks. Reputational risk is the risk to business, earnings and capital levels resulting from damaging publicity, which could adversely affect the Company's ability to attract and retain customers. Commerce historical non-credit related loss data were used to assess reasonable levels of operational losses.

### Regulatory

Regulatory capital ratios present the potential risk that levels could fall below minimum regulatory levels in the stressed projections. While the risk seems obvious, because of the simplistic structure of the ratios, the ratios can decline even as the level of capital in dollars grows. This risk is captured through applying regulatory calculations to unbiased and conservative projections of the company's balance sheet and net income.

## **Summary Description of Methodologies**

The stress test process involved modeling the entire Company and the Bank based on the 16 domestic economic variables provided. Since the balance sheet and net interest income are modeled every month as part of the company's Asset/Liability Management ("ALM") processes, the ALM model was used for this stress test as well. Management believes it is important to create a cohesive process where all current data and model projections interact together within a single simulation to produce estimates of net income and capital.

Oversight of methodologies was provided throughout the process by various lines of business leaders, Internal Audit, the Federal Reserve, the DFAST Steering Committee, the Enterprise Risk Management Committee, the Audit and Risk Committee, and the Board of Directors.

In the simplest terms, the stress test modeling process and methodologies can be described through the following steps.

Current data: The ALM model was populated with all December 31, 2016 data. This includes all rate, asset and liability data necessary to simulate cash flows for current assets and liabilities.

Pre-provision projections: Extensive historical company and economic data were used to produce regression models that Management believes represent reasonable and appropriate relationships between the projected items and the high-level economic variables used to define the economic scenario. Models and model results were reviewed for reasonableness through the levels of governance noted previously. The formulas found through the modeling and oversight processes were then used with the stress test economic variable projections to produce projections of the Company specific items mentioned. These projections were used in the company's ALM model.

Allowance and Provision: Projected levels of the Allowance and provision expense were modeled using linear regression. The model attempts to replicate the Allowance as % of total loan balances. It does this by projecting the change based upon changing unemployment rates and changing nominal incomes. The model fit was deemed to be strong.

Regulatory Capital: All current data, projections, and estimates of the Allowance and provision expense were processed together within the ALM model. All modeled balance sheet, income, and equity results were used to find final regulatory capital ratios. Final regulatory ratios, capital, and income results were reviewed for reasonableness through the levels of governance noted previously.

## Model Estimates

### Commerce Bancshares, Inc.

Regulatory Ratios	Actual	Stressed Ratios <sup>1</sup>	
	<u>Dec., 2016</u>	<u>Q1, 2019</u>	<u>Minimum</u>
Common equity tier 1 risk based capital ratio	11.62%	11.21%	11.21%
Tier 1 risk-based capital ratio	12.38%	11.92%	11.92%
Tier 1 leverage ratio	9.55%	9.68%	9.43%
Total risk-based capital ratio	13.32%	13.27%	13.10%

<sup>1</sup> Q1, 2019 is the final quarter of the modeled horizon. Minimum is the lowest level over the 9 quarters.

9 Quarter Cumulative Results (\$millions)	
Losses <sup>2</sup>	379
Pre-Provision Net Revenue	828
Provision for Loan and Lease Losses	422
Net Income	287

<sup>2</sup> Cumulative losses noted in the table above include loan losses (\$292 million), OTTI losses (\$22 million), and miscellaneous and operational losses (\$65 million).

### Commerce Bank

Regulatory Ratios	Actual	Stressed Ratios <sup>1</sup>	
	<u>Dec., 2016</u>	<u>Q1, 2019</u>	<u>Minimum</u>
Common equity tier 1 risk based capital ratio	11.17%	10.76%	10.76%
Tier 1 risk-based capital ratio	11.17%	10.76%	10.76%
Tier 1 leverage ratio	8.59%	8.75%	8.51%
Total risk-based capital ratio	12.00%	12.01%	11.79%

<sup>1</sup> Q1, 2019 is the final quarter of the modeled horizon. Minimum is the lowest level over the 9 quarters.

9 Quarter Cumulative Results (\$millions)	
Losses <sup>2</sup>	369
Pre-Provision Net Revenue	866
Provision for Loan and Lease Losses	422
Net Income	311

<sup>2</sup> Cumulative losses noted in the table above include loan losses (\$292 million), OTTI losses (\$22 million), and miscellaneous and operational losses (\$55 million).

## **Explanation of the most significant causes for the changes in the regulatory capital ratios**

For all periods, capital ratios remained well in excess of regulatory 'well-capitalized' levels. The leverage ratio indicates continued modest leverage through the modeled horizon. Holding Company cash dividends are assumed to grow 5% annually while cash dividends from the Bank to the Holding Company are assumed to decline modestly in order to support capital ratios at the Bank. No share repurchases are assumed.

Main drivers pushing capital ratios to the minimum levels shown above are higher risk weighted assets due to higher projected loan balances as well as lower capital dollars due to lower net income. Net income declines in this stressed scenario due mainly to lower net interest income and higher provision expense. Net interest income was projected to fall from current levels due to extremely low rates pushing net interest margin yields lower. The weakening economy was projected to result in higher losses and provision expense. Non-interest expense was also projected to increase.

## **Forward-Looking Statements**

Pursuant to the regulations issued by the FRB under the DFA, CBI and Commerce Bank are required to conduct a forward-looking company-run stress test exercise and to publicly disclose the results of that exercise.

This release contains certain forward-looking statements as defined in the Private Securities Litigation Reform Act of 1995, including projections of financial condition, results of operations, plans, objectives, future performance or business under a hypothetical Supervisory Severely Adverse Scenario that incorporates a set of assumed economic and financial conditions prescribed by the FRB. These statements may address issues that involve significant risks, uncertainties, estimates, expectations, and assumptions made by management. The projections are not intended to be a forecast of expected future economic or financial conditions or a forecast of CBI's expected future financial results or condition and actual results may differ materially from current projections and will be influenced by actual economic and financial conditions and various other factors as described in CBI's periodic and current reports filed with the Securities and Exchange Commission which are available at [www.sec.gov](http://www.sec.gov). CBI undertakes no obligation to revise these statements following the date of this release.