DFAST Results – 2016

Banks well placed to endure severely stressed environment

Key Highlights

DFAST Framework 2016

- 33 BHCs participating (compared to 31 in 2015)
- 28 Variables for each scenario (as in 2015)
- Scenarios more severe than in 2015
- Applied global market shock to trading portfolios of 6 BHCs (as in 2015)
- Applied counterparty default scenario components to 8 BHCs (as in 2015)
- 4.5% minimum required common equity tier 1 (CET 1)
- 4.0% minimum required tier 1 leverage

Severely Adverse Scenario Trajectory

- US unemployment rate up by 5 ppts to 10%
- Global recession due to heightened corporate financial stress
- 1% increase in headline CPI over the recessionary period
- Negative yield for short-term US Treasury securities

DFAST Results 2016 – Severely Adverse Scenario

- Projected losses: USD 526bn
- PPNR: USD 384bn
- Net income before tax: (USD 195bn)
- Capital ratios changes (Q4 2015 end to Q1 2018):
  - CET 1: 12.3% to 8.4%
  - Tier 1: 13.5% to 9.8%
  - Tier 1 leverage: 9.2% to 6.7%

DFAST Results 2016 – Adverse Scenario

- Projected losses: USD 324bn
- PPNR: USD 475bn
- Net income before tax: USD 142bn
- Capital ratios changes (Q4 2015 end to Q 2018):
  - CET 1: 12.3% to 10.5%
  - Tier 1: 13.5% to 11.8%
  - Tier 1 leverage: 9.2% to 8.0%

The US Federal Reserve released the results of Dodd-Frank Act supervisory stress testing (DFAST) on June 23, 2016. DFAST is one of the two annual assessment programs for bank holding companies (BHCs) with USD 50bn or more in total consolidated assets, the other being Comprehensive Capital Analysis and Review (CCAR) – results of which will be released on June 29, 2016.

Key premises of DFAST

- DFAST is a forward-looking quantitative evaluation
- It evaluates the impact of stressful economic and financial market conditions on BHC capital
- It shows how BHC capital ratios may change under a hypothetical set of economic conditions developed by the Fed
- It is used as an input for quantitative assessment in CCAR

Summary

- All firms passed for the second straight year
- All 33 banks have enough capital to withstand severe shock
- Tier 1 CE ratio came in low at 8.4%, well above 4.5% set by regulators
- Hypothetical scenarios were seen as tough
- These banks could lose USD 526bn under a most severe scenario
- Banks show own estimates; starkly different for certain assets

Projected Losses

Under the severely adverse scenario, aggregate losses are projected to be USD 526bn for the 33 BHCs cumulatively over the nine quarters of the planning horizon compared with last year's USD 490bn for the 31 BHCs. The USD 526bn loss can be attributed to USD 385bn in accrual loan portfolio losses, USD 113bn in trading losses, USD 11bn in OTTI and other realized securities losses and USD 17bn in additional losses.

USD 526bn

Cumulative aggregate losses projected over 9 months for 33 BHCs under a severely adverse scenario

- USD 385bn in accrual loan portfolio losses
- USD 113bn in trading losses
- USD 11bn in OTTI and other realized securities losses
- USD 17bn in additional losses

This year, the severely adverse scenario assumes a more severe global recession compared with 2015.

- A 5 ppts increase in the US unemployment rate to 10%
- Heightened period of corporate financial stress
- Negative yields for short-term US Treasury securities

Loan Losses

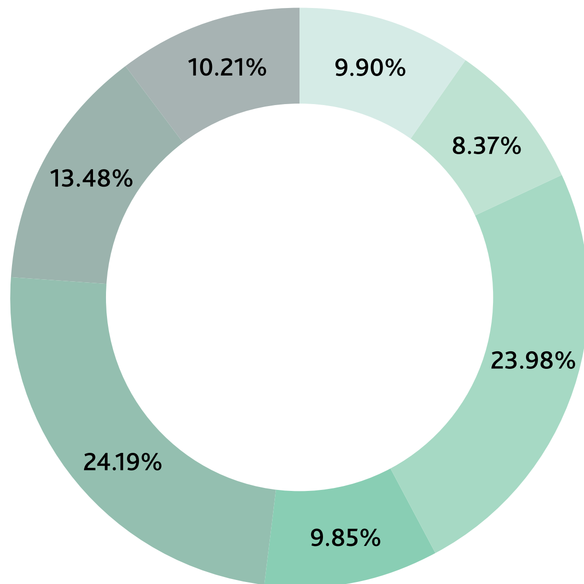
Loan losses under a severely stressed scenario amounted to USD 385bn for the 33 BHCs, up from USD 340bn in 2015. Consumer-related lending forms a major chunk of the loan losses (≈52%), consistent with the assumed economic scenarios of a rise in the unemployment rate and a fall in housing prices.

Pre-Provision Net Revenue

The PPNR under a severely stressed scenario is projected to be USD 384bn for the 33 BHCs cumulatively over nine quarters (Q1 2016: Q1 2018) compared with last year's USD 310bn for the 31 BHCs. This year, the severely adverse scenario features a negative short-term interest rate, so PPNR estimates have low levels of net interest income.

Severely adverse scenario: Projected loan losses

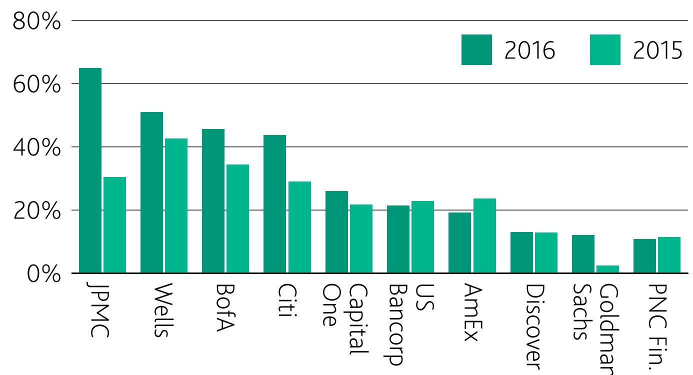
Loan lossets: $384.9 bn.



- First-lien mortgages, domestic
- Junior liens and HELOCs, domestic
- Credit cards
- Other consumer
- Commercial and industrial
- Commercial real estate, domestic
- Other loans

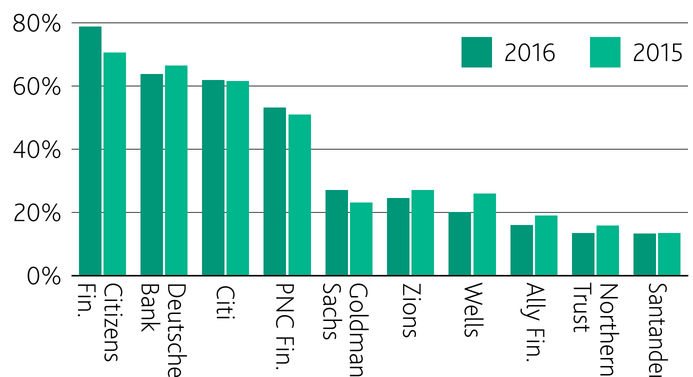
Severely adverse scenario: Top 10 PPNR results

In $ bn.



Adverse scenario: Top 10 PPNR results

In $ bn.

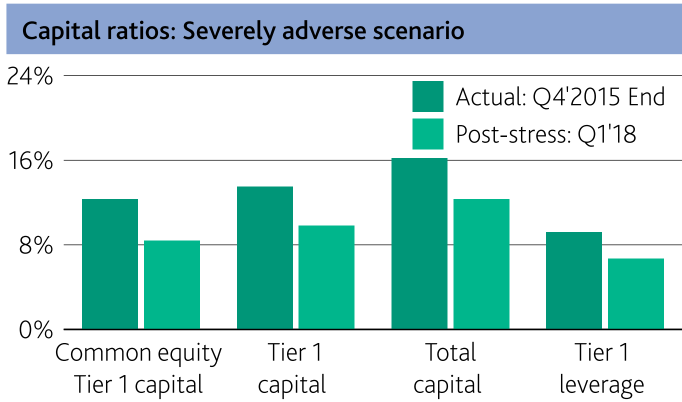


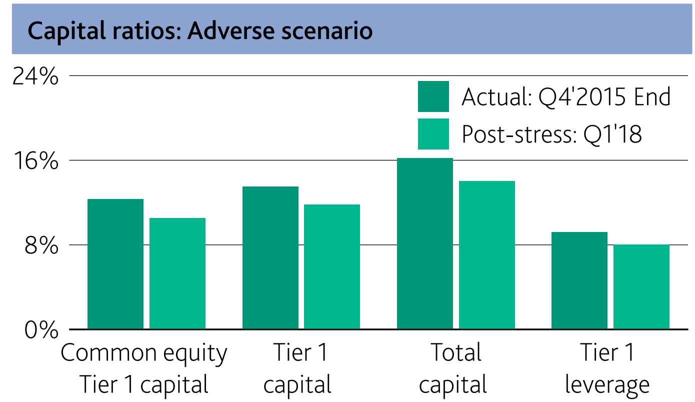
Capital Ratios

Under a severely adverse scenario, the common equity tier 1 capital ratio is projected to fall to 8.4% from 12.3% aggregate for all banks over Q1 2016 to Q1 2018. The leverage ratio is projected to fall to 6.7% from 9.2%. The minimum requirement for common equity tier 1 capital is 4.5% and all Large Institution Supervision Coordinating Committee (LISCC) banks are far above the minimum capital requirements in severely adverse scenarios.

Among the LISCC firms, Morgan Stanley's leverage ratio is expected to decline to 4.9, just enough to clear the threshold requirements of 4%. Besides Morgan Stanley, the Bank of New York Mellon Corp's and State Street Corp's leverage ratio is expected to come in at 5.5% & and 5.4%, respectively. The remaining SIBs are far above the minimum leverage ratio requirements.

On the whole, the result shows that all 33 banks would face huge losses and erosion of capital under severely adverse scenarios compared with last year. However, these banks have sufficient capital to withstand severely adverse scenarios.





Key Model Changes

- **Operational Risk:** To improve model stability and reduce year-over-year variation in projected losses. Changes were made in the risk projection methodology with additional modifications in the historical simulation model used in projecting operational risk losses. Changes resulted in an increase in operational risk losses (as percentage of RWAs), effectively higher losses for firms reporting fewer tail risks but still vulnerable to losses from such events
- **MRWA Model:** To better differentiate the sensitivity of each component to scenario variables and to align the estimations more closely to the market risk rule. The effect of changes could be seen in the positively correlated movement of incremental risk charge and comprehensive risk measure with projected credit market volatility. A moderate decline in projected MRWA in the aggregate.
- **Supervisory Capital Calculation:** To improve precision. Changes included the incorporation of greater precision in capital ratio denominator adjustments, and in assumptions in the relationship between mortgage servicing assets and associated deferred tax liabilities. Changes resulted in lowered capital ratios, affecting items fully deducted from regulatory capital.

This year, DFAST results were particularly better than last year. Even with the stringent scenarios put forward this year, the post-stress aggregate capital ratio for common equity tier-1 capital stood at 8.4% in severely adverse and 10.5% in adverse scenarios.

This is well above the regulatory requirement of 4.5% and the BHCs can be considered "well-capitalized" at an aggregate level. The increase in capital levels despite more conservative scenarios can be attributed to the Fed giving more-than-expected credit to the big banks for more revenues in the test period.

Although most banks show considerable increase in their capitals, it is the Qualitative aspect of the capital planning that will continue to be the area of
observation. For banks with marginal results in DFAST, it would be an uphill task to increase their capital scores by assuring the Fed with some form of security. All in all, the big banks' DFAST numbers appear quite robust.

However, CCAR has been agnostic to the numbers alone in the past – there will be a lot of focus on Citi Group and Bank of America as the CCAR results loom.

RESULT COMPARISONS: DFAST 2016 v/s DFAST 2015

» In aggregate, banks had a stronger balance sheet that that in the 2015 results

» There was an increase in capital with an improvement in credit quality of some of the material loan portfolios

» Results also showed reductions in illiquid securitization exposures on the trading books and projected losses due to mortgage-related litigations and settlements

» In 2015, the severely adverse scenario included assumptions of corporate credit quality worse than the severe recession, resulting in the amplification of already widening corporate bond spreads, a decline in equity prices and an increase in equity price volatility

» In 2016, the severely adverse scenario includes a severe recession and negative short-term interest rates, moderating the decline in equity prices and the increase in market volatility

» Changes in the scenario were expected to show an increase in projections for net income in the aggregates. However, the effects are varied across firms

» With lesser stress in equity markets, firms active in trading and market activities saw smaller losses in net income, while firms involved in more traditional lending activities were affected more from negative short-term rates and greater stress in the real economy

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