



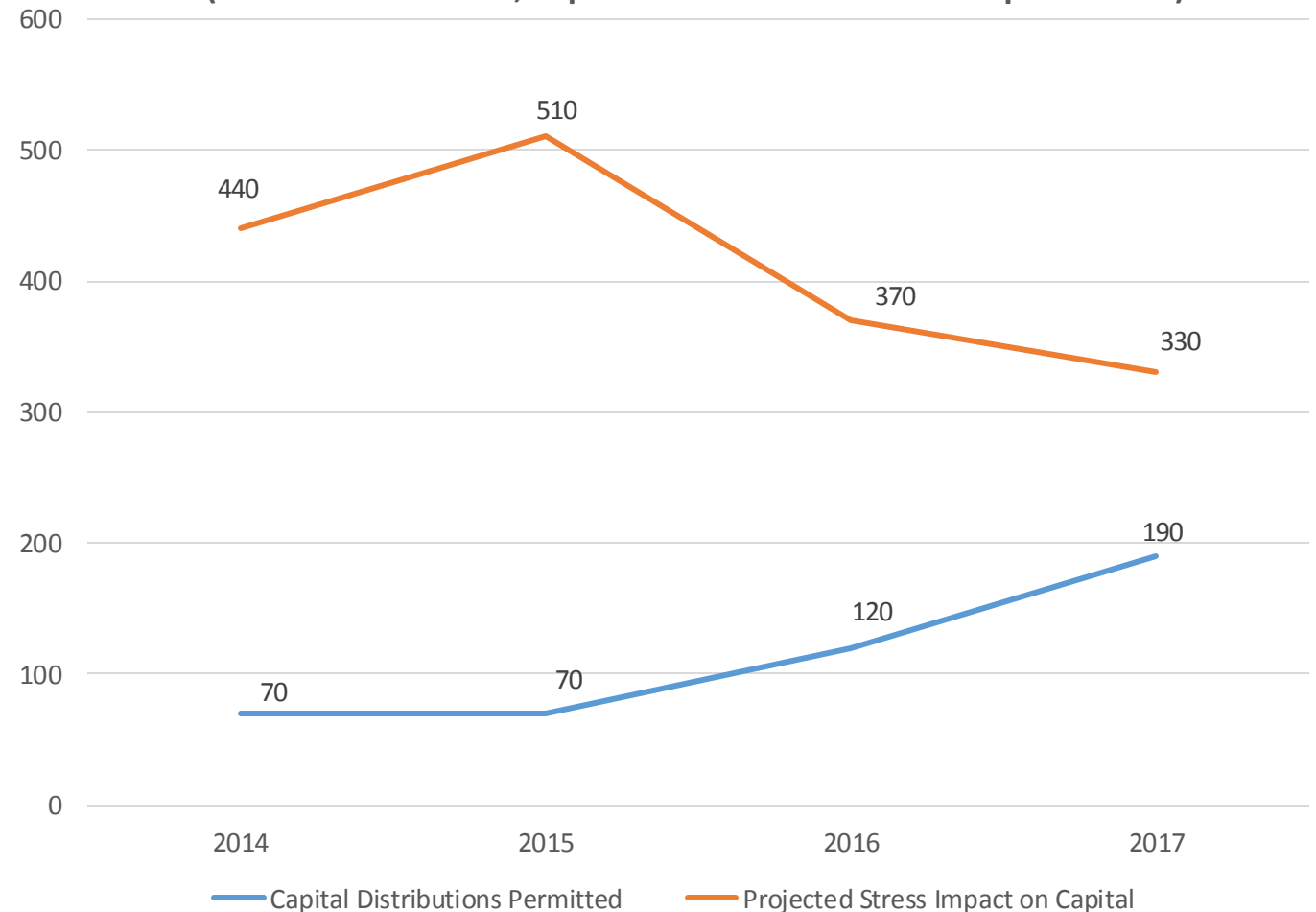
*Were The 2017 Stress Tests Less
Stressful Than Ever?*

The 2017 Stress Tests Appear Less Stressful Than Ever

- 2017 stress tests permitted banks to return more capital than ever before (190 basis points of risk-based capital).
- Stress models also had the lowest impact on bank capital recorded in recent years. The stress scenario reduced bank capital by just 330 BP.

Source and impacts: DFAST and CCAR releases from Federal Reserve, 2014-2017. Capital returns estimated by comparing projected DFAST risk-based ratios without capital distributions to CCAR ratios with capital distribution. Stress test impacts estimated by comparing starting risk-based ratios to minimum projected risk-based ratios during stress periods.

STRESS TEST IMPACTS AND CAPITAL DISTRIBUTIONS
(In Total Basis Points; Impacts On Tier 1 Risk-Based Capital Ratios)

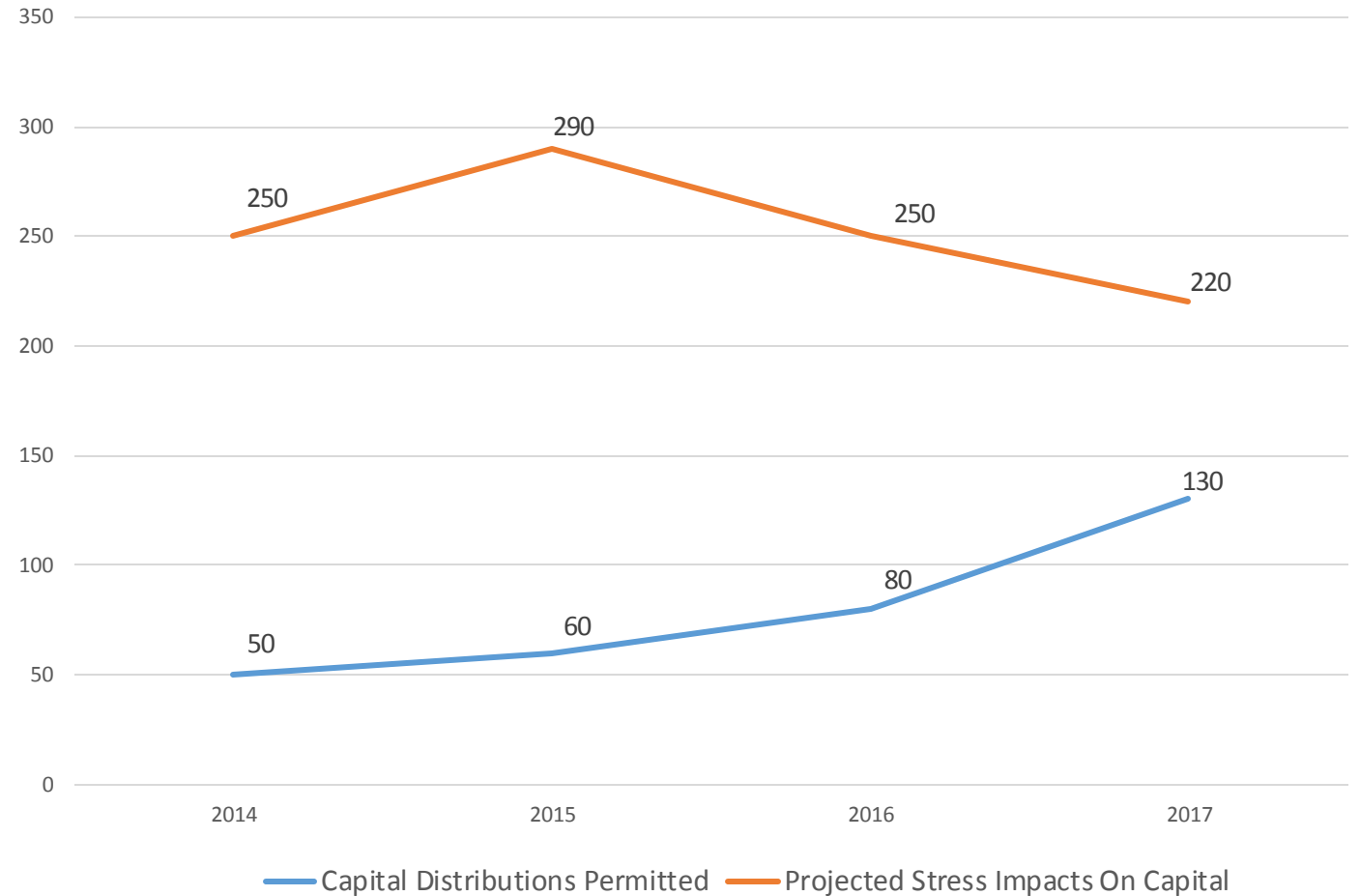


Similar Impacts for Leverage Ratios

- Finding are not due to changes in risk weights over the period.
- Returns as a fraction of leverage capital were at an all-time high (130 BP) and modeled stress was less “stressful” than ever (220 BP).

SOURCES AND NOTES: DFAST and CCAR releases from Federal Reserve, 2014-2017. Capital returns estimated by comparing projected DFAST leverage ratios without capital distributions to CCAR ratios with capital distribution. Stress test impacts estimated by comparing starting leverage ratios to minimum projected risk-based ratios during stress periods.

STRESS TEST IMPACTS AND CAPITAL RATIOS
(In Total Basis Points; Impact on Tier 1 Leverage Ratios)

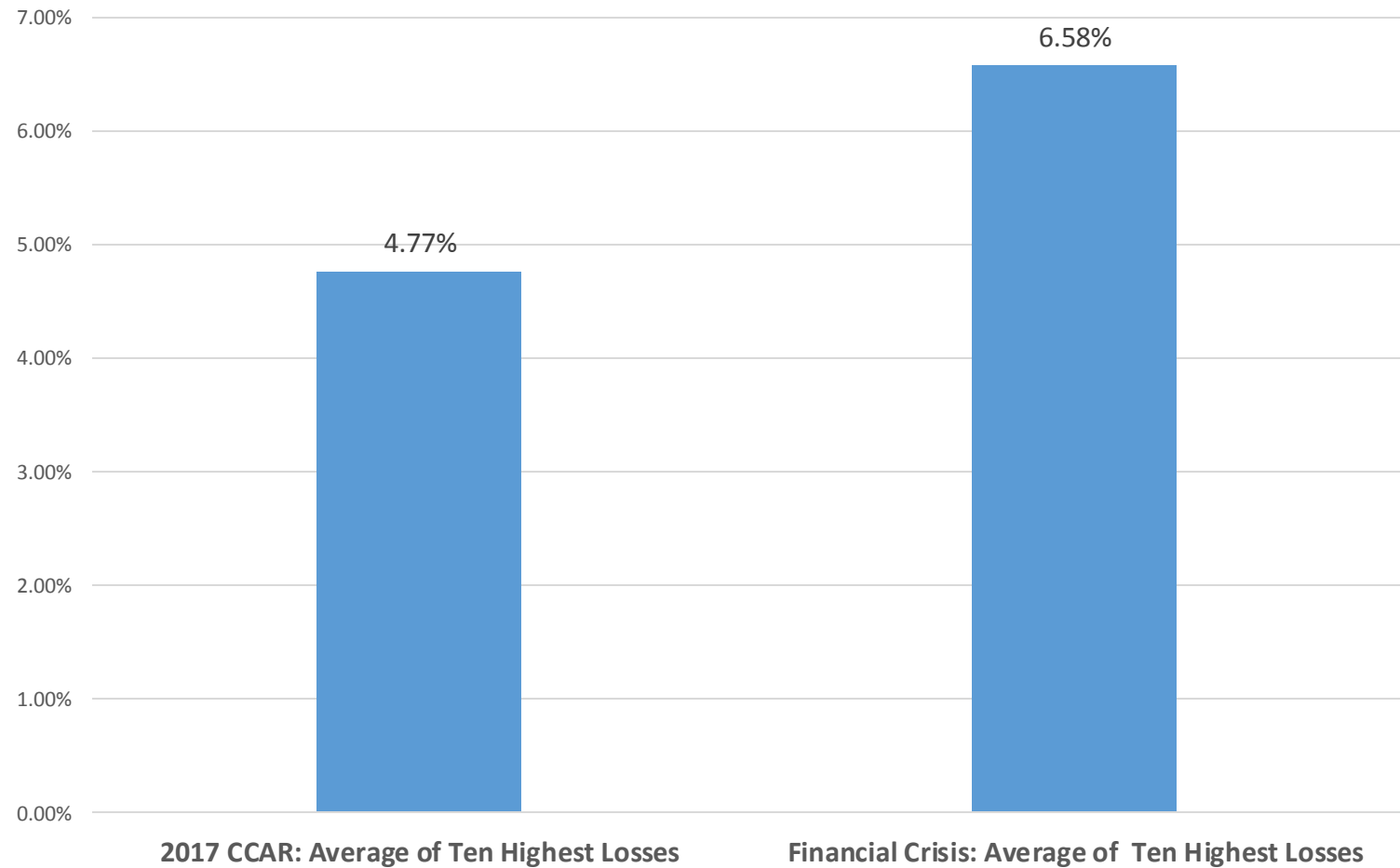


2017 CCAR Model Losses Lower Than Financial Crisis Losses

- The average 2017 CCAR modeled loss of 3.3% was far below the 6.58% average loss at the top ten largest banks in the 2008 financial crisis, as estimated by the Boston Fed.
- Comparing the average of the top ten largest losses in the CCAR to the top ten estimated losses in the 2008 financial crisis also gives a far lower figure.
- The Boston Federal Reserve estimates of are likely a **significant underestimate** as they do not take into account all government assistance.

SOURCES: 2017 Federal Reserve CCAR Release; Strah, Scott, Jennifer Hynes and Sanders Shaffer, "The Impact of the Recent Crisis On The Capital Positions of Large Financial Institutions", Working Paper, Federal Reserve Bank of Boston, July 16, 2013. See chart on page 17

Average of Highest Losses: 2017 CCAR Compared to Financial Crisis
(Risk Based Capital; Estimated Crisis Loss From Boston Federal Reserve Study)

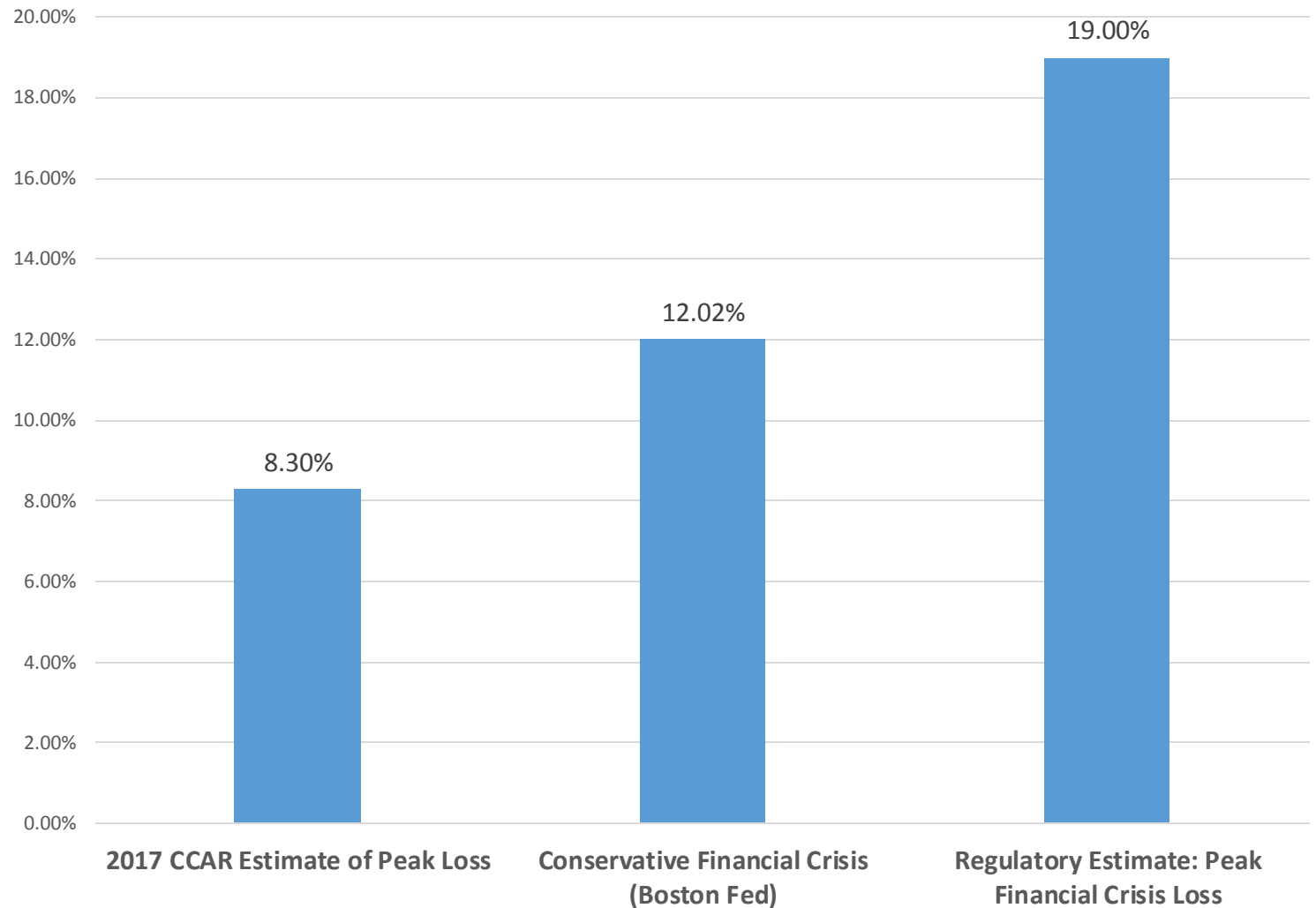


2017 CCAR Model Losses Lower Than Financial Crisis Losses

- 2017 CCAR estimate of the highest financial crisis loss (peak loss at any major bank) is much lower than financial crisis peak loss.
- Regulators' best estimate of 2008 financial crisis peak losses, including effects of government assistance, is 19 percent. (Calibration exercise performed for the TLAC rule)

SOURCES AND NOTES: 2017 Federal Reserve CCAR Release; Strah, Scott, Jennifer Hynes and Sanders Shaffer, "The Impact of the Recent Crisis On The Capital Positions of Large Financial Institutions", Working Paper, Federal Reserve Bank of Boston, July 16, 2013. CFR 8274 in Federal Reserve Board of Governors, "Total Loss-Absorbing Capacity, Long-Term Debt, and Clean Holding Company Requirements", Final Rule, Federal Reserve System 12 CFR 252, Federal Register Volume 82, Number 14, January 24, 2017. Peak losses estimated as highest loss in risk-based capital at any major bank.

High Water Marks (Peak Losses): 2017 CCAR vs Financial Crisis



Do apparently weaker 2017 stress tests signal new direction by Federal Reserve?

Deregulatory pressure from Treasury and Congress (CHOICE Act, other channels e.g. Senator Toomey's February letter on CCAR)

Some Things to Remember...

- Stress tests are a valuable tool because they force banks and regulators to do forward-looking risk assessments.
- But stress test results are *extremely model and assumption dependent*. They rely both on parameters in complex regulatory models and on the results of internal bank models that are accepted as inputs by regulators.
- Stress testing processes can easily be weakened so much they are meaningless – for example, the OFHEO stress tests of the housing agencies before the financial crisis completely failed to predict failure of the GSEs.

Many Industry Arguments Regarding Stress Test Implications Make No Sense

We Passed The Stress Tests So...

- “We can lower minimum capital requirements!”
- “We can weaken stress test procedures!”
- “We can weaken bank oversight in other ways!”

Reality of Stress Tests...

- Minimum capital ratios are below levels needed to pass strong stress tests. They are a crucial protection against weakening tests
- Stress tests are highly procedure and model-dependent and can be made so weak they are meaningless.
- Stress tests do not cover many areas of bank risk, such as resolution or liquidity.