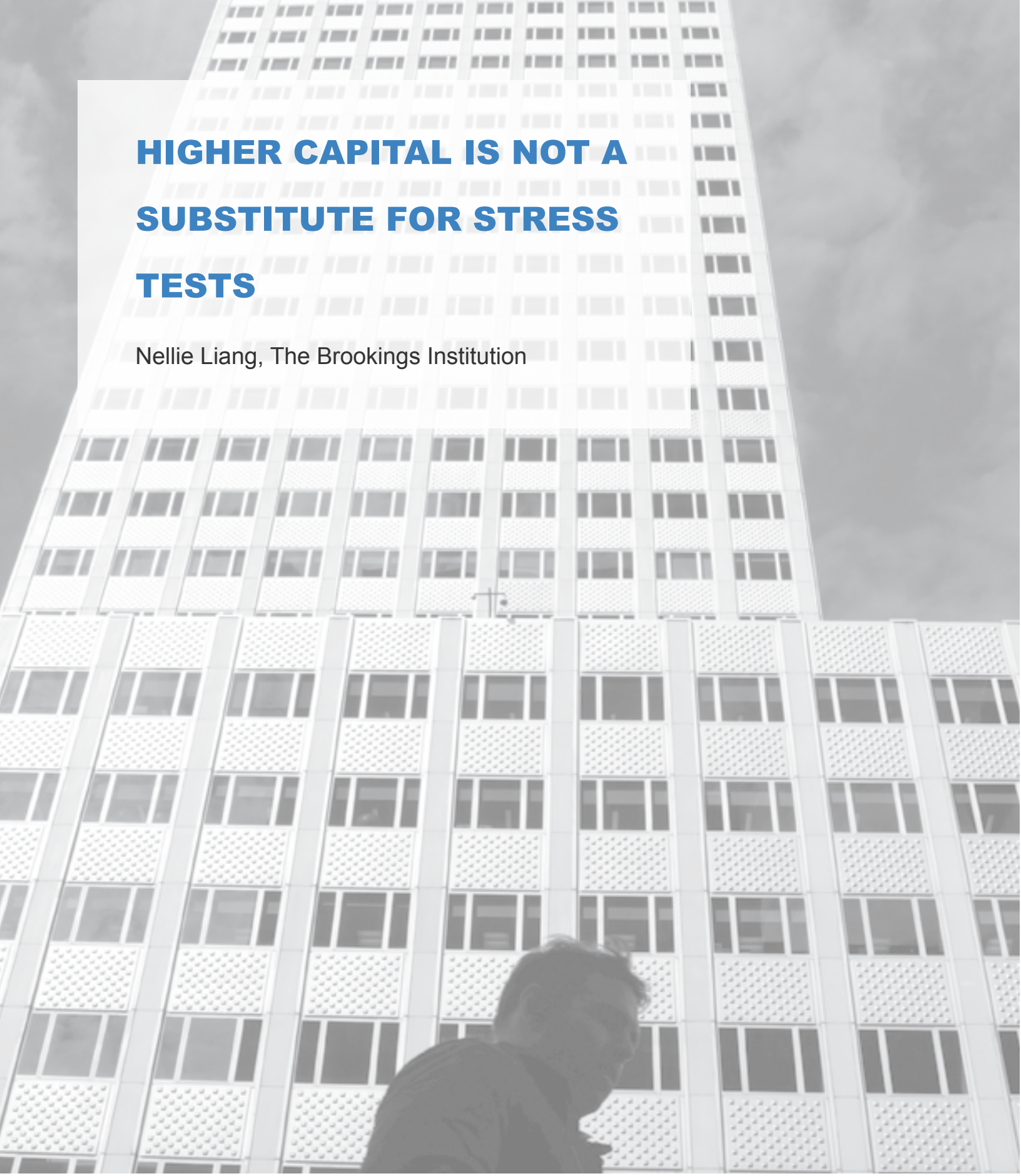

HIGHER CAPITAL IS NOT A SUBSTITUTE FOR STRESS TESTS

Nellie Liang, The Brookings Institution

B | Economic Studies at BROOKINGS

INTRODUCTION

One of the key innovations in financial regulation that followed the financial crisis was stress testing large banks. In early 2009, the Federal Reserve and the Federal Deposit Insurance Corp., as part of a government effort to stabilize the financial system, required 19 bank holding companies (BHCs) to estimate the losses they would face in an extreme adverse scenario of a deep recession and renewed financial crisis, and to take steps to ensure they would have enough capital to continue lending even in that scenario. The 2009 stress tests proved successful in restoring investor confidence in the financial health of the banks and increasing capital at the banks where it was needed. Since then, stress tests have evolved from a crisis-management tool to a supervisory function to help prevent another financial crisis by ensuring banks pre-emptively build capital. The Dodd-Frank Act of 2010 made supervisory stress tests mandatory for systemically important financial institutions.[1]

Banks frequently complain about the stress tests because they are expensive to implement and they are another capital requirement. Now some lawmakers are also questioning whether they are too costly. One proposal is to eliminate stress tests, or reduce their frequency, for the largest, most complex BHCs if the firms were to meet higher capital requirements.[2] However, higher capital requirements on their own would not provide many of the significant benefits of current stress testing practices. The stress tests enforce important risk management practices that banks might not invest in on their own, and are an important macroprudential tool to ensure that banks can support the broader financial system and economy even in extreme circumstances. Steps can and should be taken to reduce the burden of stress tests, but stress tests should not be eliminated or reduced at large, complex BHCs in exchange simply for higher capital.

WHAT ARE THE STRESS TESTS?

The stress tests actually involve two separate, but closely related exercises, the Dodd Frank Act Stress Test (DFAST) and the Comprehensive Capital Analysis and Review (CCAR). In the congressionally mandated DFAST, the Federal Reserve is required to conduct and publish the results of an annual stress test of BHCs with $50 billion or more in total consolidated assets; these firms also are required to conduct their own semi-annual stress tests. The Fed projects losses, revenues, assets, and post-stress capital ratios over a planning horizon based on alternative macroeconomic scenarios, including a “severely adverse” scenario, to evaluate whether BHCs have enough capital necessary to absorb losses under severe economic conditions. The severely adverse scenario is based on a severe recession with a substantial increase in the unemployment rate, and likely includes some salient risks, such as arising from high real estate prices or corporate sector leverage. In DFAST, supervisors calculating whether BHCs have enough capital assume

1 Specifically, Section 165(i) of the Dodd-Frank Act requires the Federal Reserve Board, in coordination with the appropriate agencies, to conduct an annual supervisory stress test of BHCs with $50 billion or greater in total consolidated assets, and to require BHCs and state member banks with total consolidated assets of more than $10 billion to conduct company-run stress tests at least once a year.
2 See https://www.bloomberg.com/news/articles/2017-04-11/hensarling-to-propose-bill-gutting-dodd-frank-in-coming-weeks

that dividends will equal last year's levels and share repurchases will be zero. This means that the results reflect the quality of the firms' balance sheets rather than distributions, and enhances comparability across the firms. Each year, the Federal Reserve publishes detailed DFAST results for the individual BHCs; in 2016, there were 33 BHCs.

The CCAR, in contrast, is a Federal Reserve supervisory program that has been applied to the same BHCs—those with $50 billion or more in total consolidated assets—to evaluate both capital adequacy in severe conditions and the quality of the internal processes that BHCs use to assess their own capital needs. In practice, there are two significant differences between DFAST and CCAR. First, in CCAR, supervisors make a qualitative assessment of the BHCs' practices for risk management (identification and measurement), internal controls, and governance. Second, the quantitative part of CCAR incorporates the individual BHC's proposed plans for dividends and share repurchases rather than the assumed plans in DFAST. Once firms are given the supervisors' DFAST estimates of post-stress capital ratios before they are disclosed, they can determine immediately if their proposed dividends and share repurchases would put them below a minimum threshold. If so, firms can reduce their planned distributions before the CCAR results are published to avoid a public objection to their capital plan based on quantitative grounds.

The capital requirements from stress tests are dynamic in the sense that they link bank capital to evolving economic and financial conditions. Integrating this link into supervision is an important way to enhance financial stability because banks are affected by the state of the economy, and, in turn, affect the economy. The capital requirements also measure capital needs in "left-tail" scenarios, when the stability of the entire financial system is potentially at risk, which more-static capital requirements are not as well equipped to do.

MICROPRUDENTIAL BENEFITS OF STRESS TESTS

Stress tests require banks to evaluate capital and shareholder payouts on a forward-looking basis, not just based on recent performance. They force banks to evaluate difficult "what if" scenarios, not just "most likely" scenarios. "What if" exercises are especially important at systemically important banks because their distress can lead to a pullback in aggregate credit and increase downside risks to the macro economy. While banks might undertake these types of exercises on their own, the stress tests help to ensure that these exercises are done rigorously and top risk officers are actively engaged.

Banks argue they have their own incentives to invest in forward-looking stress analysis, and they have learned their lessons from the great financial crisis. But good risk management is not cheap. It takes well-organized data and expertise, and the attention of senior officers, to conduct rigorous and credible analysis. Banks and supervisors learned the hard way during the crisis that many banks had not structured their data in ways to project losses under alternative scenarios. Some banks that had grown rapidly through acquisitions had not harmonized their computer systems as

rapidly. These banks could not consolidate their loans across subsidiaries, evaluate total exposures to an asset class, and might not have known if they held both the first and second liens on the same house. Other banks recorded mortgages with the billing address of the investor rather than the property address, making it impossible to evaluate the value of the home backing the mortgage. At the same time, risk officers did not consider seriously how new financial products that had never been through a downturn, such as second liens or subprime mortgage-backed securities, would perform when house prices fell sharply. Without strong incentives from the stress tests, banks would almost surely backslide on data and risk management as they face constant pressure to boost profits by cutting back-office operations.

In addition to better risk measurement and management, stress tests provide higher-quality disclosures about forward-looking risks than standard disclosures. Unlike risk disclosures that are released at different times and under different scenarios, DFAST disclosures make comparisons possible across firms and loan categories on an apples-to-apples basis. Once a year, supervisors and banks each report estimated losses and reductions in capital based on the same severely adverse macro scenario and common assumptions about shareholder distributions. In addition, the common backdrop enforces that not all banks can be better than average at the same time. The stress tests contribute to market discipline by making estimated stress losses for individual firms and various asset classes available to be analyzed.

Stress tests yield another, perhaps under-appreciated benefit: they improve the quality of supervision. This annual process is highly visible and is subject to public scrutiny and accountability. Supervisors, like banks, pay special attention to results they are required to disclose. Supervisors also benefit from being able to evaluate simultaneously all firms under common scenarios, and at the same time the banks are doing their own evaluations. This process leads to more informed and productive conversations with the banks since supervisors gain insight into best practices across many banks. Other less-standardized supervisory practices cannot impose the same type of discipline or consistency.

MACROPRUDENTIAL BENEFITS OF STRESS TESTS

Stress tests are an important macroprudential tool in that they are focused on improving the resilience of the broad financial system and the economy in a left-tail scenario, in addition to promoting the safety and soundness of individual institutions. A key objective of the original stress tests in 2009 was that banks should have sufficient capital to be able to lend in a downturn, and so the test was designed so that banks could not shrink their balance sheets to meet the capital requirements. Preserving the ability to lend in extreme downturns has been a feature of all subsequent stress tests.

In addition, capital requirements from stress tests are designed to reflect macroeconomic risk factors that emerge in stress periods. Some assets are more sensitive to downside macro performance, and some assets, such as residential mortgages, have more negative externalities than others, which might not be captured in static capital requirements. Stress tests scenarios that

focus on common downside macro risks can reduce risks to macroeconomic stability because banks have pre-positioned capital for assets with these characteristics, which helps them to maintain their important role as a credit provider in such scenarios.[3]

Capital requirements from stress tests also are forward-looking, which offsets the dynamic of other capital requirements to look strong even as the marginal borrower gets riskier if the economy were to weaken. Point-in-time capital ratios—risk-based capital and leverage ratios—typically do not capture increasing risks until there is clear evidence that asset quality has started to deteriorate. In contrast, stress tests deliberately try to offset this pro-cyclicality in capital ratios through the macroeconomic scenarios. Scenarios are designed such that there would be a typical rise in the unemployment rate when the economy is in a recession and the starting current unemployment rate is already high, but a greater-than-typical increase in boom periods when the starting unemployment rate is at a low level, in order to reach a minimum level.[4] By assuming an above-average increase when the unemployment rate is low, it offsets the pro-cyclical tendencies to assume that good times will continue and credit quality will remain strong. And by assuming a typical or below-average increase in the unemployment rate when it is already high, it offsets natural tendencies to tighten even more. This feature is an important enhancement to static capital requirements.[5]

SOME UNANTICIPATED CONSEQUENCES?

Stress tests potentially have some unintended consequences. One is that the focus on common macroeconomic risks and credit risk could lead to the rise of new unanticipated systematic risks, perhaps as activities move out of the regulated banking sector. But unanticipated risks can arise for any number of reasons, as they did before the stress tests were used in the U.S., such as the sharp rise of shadow banks funded by wholesale liabilities before the crisis. Indeed, had stress tests as conducted now been in place before the crisis, they could have made firms more resilient to unexpected losses, and at a minimum could have given supervisors the ability to question banks' continued dividend and share buybacks in the quarters leading to the height of the crisis.

Another potential cost is that the salient risks in the scenarios could lead to credit allocation decisions banks might not have made as they adjust their balance sheets to reduce projected losses. For example, if the scenario included unusual stress for a sector with rapid debt growth, banks could restrict credit to that sector to avoid higher projected losses in the stress tests. But two current practices reduce this risk. One, scenarios are applied to balance sheets in place before the scenarios are released, so banks would have to guess what the salient risks might be and reduce

---

3 These stress tests are not meant to replace other risk management practices for other types of risks, such as some operational risks, which are not tied to macroeconomic performance.

4 Policy Statement on the Scenario Design Framework for Stress Testing https://www.gpo.gov/fdsys/pkg/FR-2013-11-29/pdf/2013-27009.pdf

5 The estimated capital buffer from stress tests differs from the countercyclical capital buffer (CCyB). The CCyB is a regulatory requirement which can be increased for all covered banks if there are signs of aggregate credit excesses to provide additional resilience to firms to absorb future losses, and then subsequently decreased when risks recede so that banks have scope to increase lending and support the economy. Capital requirements from stress tests are bank-specific, while CCyB is common to all banks.

their exposures ahead of time. Two, the Fed varies the salient risks over time, which should help to prevent any sustained cutback in lending to particular sectors.

WHAT CAN BE IMPROVED OR SIMPLIFIED?

Executing stress tests and improving risk management is resource intensive for both banks and supervisors. Banks may view their private costs to be too high. But, on their own, banks would not internalize the potential costs that their own failure would impose on the broader financial system, that is, their systemic risk to the system. It seems clear that stress tests have made banks more resilient and are supporting the economy, as banks have been lending at a robust pace. Loans and leases at commercial banks have grown at an average annual rate of 7 percent during 2014 to 2016, faster than nominal GDP. Still, there are a number of ways to improve and simplify stress tests while maintaining their benefits as a tool to reduce risks to financial stability.

Reduce the number of BHCs and banks that have mandatory stress tests. The GAO reported that in 2016, 33 BHCs with more than $50 billion had required annual supervisory stress tests and semi-annual company-run stress tests. In addition, 47 BHCs with assets between $10 and $50 billion in assets and 22 state member banks with assets of more than $10 billion had required annual company-run stress tests.[6] The number of firms that have mandatory stress tests could be cut significantly without leading to a material increase in risks to financial stability. The Federal Reserve recently finalized a rule to exempt smaller, less complex BHCs from the qualitative assessment of CCAR.[7] In particular, BHCs with between $50 billion and $250 billion in assets, are not complex, and have mandatory Dodd-Frank supervisory tests would get significant relief.

However, stress tests should be preserved and conducted annually for the largest and most complex BHCs. Doing stress tests less frequently, such as only once every two years, would not be frequent enough to meaningfully promote financial stability. First, firms make choices about dividends and share repurchases at least once a year. Capital planning which should incorporate projected capital positions and risks to those positions should not be done less frequently than decisions about shareholder payouts.

Second, as with most exercises, if they are not repeated frequently, they become difficult to execute. Preserving the institutional knowledge for rigorous risk management for stress tests and capital planning would be difficult if banks did not frequently conduct these exercises. Instead, there likely are ways to simplify and reduce the burden of the qualitative assessment of capital planning for BHCs. As BHCs have made significant improvements in recent years, many parts of the supervisory review of risk management, internal controls, and governance could be folded into regular supervisory functions rather than disclosed publicly in the annual stress tests.

---

6 See GAO Report 17-48, Federal Reserve: Additional Actions Could Help Ensure the Achievement of Stress Test Goals, Nov. 2016, Table 2, p. 9.

7 Specifically, BHCs with total consolidated assets of between $50 billion and $250 billion that are not complex (limited nonbank assets and not identified as a globally systemically important bank) were exempted. https://www.federalreserve.gov/newsevents/pressreleases/bcreg20170130a.htm

Simplify the stress test program. Some key areas for improving the execution of the stress test program itself are based on the comprehensive review of the Fed's stress test program at its five-year mark.[8] In addition to building on its own lessons learned, the review engaged equity and bond investors, academics, bank executives, and consumer groups on what could be improved. While these potential changes have not been proposed formally by the Federal Reserve, a few areas are notable for their potential significant improvements to the program:

Relax the supervisors' assumption that all of a firm's planned dividends and repurchases would proceed through the two-year planning horizon. Banks have complained that the assumption that they would continue to pay shareholders was not realistic if they were to actually fall below minimum capital requirements, but supervisors have pointed to the continuation of dividends and share repurchases in 2007 and 2008 just as expected losses were escalating. Given that stress tests now are conducted annually, the prospect that banks could continue to make shareholder distributions for two years even as their financial condition was deteriorating is limited, making this supervisory practice less necessary. Relaxing this assumption would reduce the estimated capital needed over the stress horizon relative to current stress test practices.

Implement a stress capital buffer (SCB). The SCB would integrate the capital losses estimated in the stress tests with regulatory capital requirements, and simplify banks' capital requirements. Stress tests would be used, as they are now, to calculate the reduction in capital under stress each year, which would then replace the constant 2.5% capital conservation buffer, as specified in Basel III requirements. This change simplifies capital requirements by replacing separate supervisory and regulatory requirements with one set of requirements, and would make capital requirements more dynamic. Depending on other possible implementation changes, the SCB could lead to either higher or lower capital requirements relative to current stress test practices. Estimates suggest that the SCB combined with relaxing the assumption of continued shareholder payouts as capital fell below minimum requirements would likely lead to less required capital for smaller, less complex BHCs, but likely to higher required capital for global systemically important banks (GSIBs) firms when the GSIB capital surcharge is also included in the stress tests.[9]

Eliminate the soft constraint on dividends of 30 percent of expected earnings. In the immediate aftermath of the crisis before new capital requirements were established, the Fed issued a supervisory letter that set out a "soft limit" on dividends to not exceed 30 percent of expected earnings. This letter reflected that firms appear more reluctant to cut dividends than to scale back share repurchases, consistent with negative stock price effects when dividend cuts are announced. However, with the process of annual stress tests in place to provide estimates of how much capital can be distributed and still remain above minimum requirements, a limit on how firms choose to distribute capital—dividends versus share repurchases—is unnecessary.

---

8 Daniel K. Tarullo, shortly before he left the Federal Reserve Board, summarized the five-year review and proposed areas for improvements in two speeches. See "Next Steps in the Evolution of Stress Testing," speech delivered at the Yale University School of Management Leaders Forum, New Haven, CT, Sep. 26, 2016, and "Departing Thoughts," speech delivered at the Woodrow Wilson School, Princeton University, Princeton, NJ, Apr. 4, 2017.

9 Estimates for the non-GSIB firms are reported in Daniel Tarullo, April 4, 2017, p.20, and are based on previous CCAR results.

Simplify models of the balance sheet. Replace models to estimate loans and other assets under stress with a simple assumption that the size of the balance sheet remains unchanged. This would reduce the number of models that banks and supervisors would need.

Improve countercyclicality. Reduce the increase in the unemployment rate from 4 percentage points to 3 percentage points, but maintain the floor of 10 percent. This change would reduce capital costs when the economy is already weak, while offsetting pro-cyclicality when the economy is expanding.

CONCLUSION

Stress tests provide many benefits aside from estimating capital requirements under severe macroeconomic scenarios. Most fundamentally, it requires banks to have data analytic systems in place to evaluate potential risks on a forward-looking basis. Supervisory stress tests are not meant to guarantee that banks will never fail again. But they help to significantly reduce the likelihood that banks collectively weaken and amplify shocks because of common macroeconomic risks, at a time when the economy especially needs them to provide credit and support household and business spending.