

Putting Banks to the (Stress) Test

BY SETH RUBINSTEIN

Will banks be ready for the next crisis? Stress tests aim to find out

Many observers believe that the nation's banking sector was ill-prepared for the recession that began in 2007. Stress testing of banks has been one important part of the effort to prevent, or at least mitigate, a repeat crisis in the future. To stress-test banks, regulators impose a set of adverse economic assumptions — for example, extremely high unemployment — and estimate how a bank would fare under that scenario. The results of these tests can provide an idea of whether banks would be sufficiently prepared if the economy took a turn for the worse. The tests are also intended to restore and maintain market confidence in the financial system.

Several important questions about stress tests remain unanswered — and controversial. For instance, the desirability of disclosing firm-specific stress-test results to the public remains highly disputed. So, too, does the question of whether the tests should follow the traditional approach of focusing on the resilience of each bank individually or whether they should instead focus more on the resilience of the banking sector as a whole in response to a shock that hits many institutions at the same time.

When the first major stress test was introduced in 2009, arguably nothing like it had ever been attempted in the United States before. Without precedents to serve as a guide, stress testing in America has been somewhat experimental so far, putting to the test theories that academics and regulators had been contemplating for some time, but which had not yet made their way into the mean streets of bank supervision. At least one thing is certain: Stress tests are here to stay. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 mandates annual stress tests of the country's biggest financial institutions.

What Is a Stress Test?

At the root of stress testing is the requirement that banks hold capital. All banks hold capital to help serve as a buffer against unexpected losses, such as those suffered in a recession. In accounting terms, capital is the value that would remain if the bank were sold and all of its creditors paid. Capital raised by issuing common stock is often viewed as the strongest type of buffer against losses. Regulators mandate capital requirements for banks to ensure that in the event of an unexpected decline in asset values, perhaps resulting from a financial downturn, the banking sector's ability to meet its obligations to bondholders will not be impaired. The requirements also reduce the chance that the

Federal Deposit Insurance Corporation (FDIC) will incur losses from excessive risk-taking by banks.

Holding that capital, however, is expensive for banks; the investors who supply equity capital demand high returns on it, since they provide the buffer that bears losses first. Generally, moreover, shareholders of banks benefit from employing less equity capital (since issuing more shares to raise capital dilutes their earnings), while bondholders prefer for banks to hold more. Why? Because unlike bondholders, common stockholders have no fixed rights to the bank's assets; they simply receive anything left after the bank has paid bondholders. This is why bondholders prefer that banks have sizeable capital: It reduces their chances of suffering losses.

After the financial crisis hit, confidence in financial markets plummeted, and so did banks' lending, for a variety of reasons. As a tool to restore confidence in the financial system, boost lending, and ensure that banks had sufficient capital buffers in case the recession got even worse, the Fed conducted the Supervisory Capital Assessment Program (SCAP), the first major stress test, in early 2009. All U.S. bank holding companies (BHCs) with more than \$100 billion in assets had to participate. That group of 19 institutions collectively accounted for two-thirds of all assets held by U.S. BHCs. (Three of the firms — Bank of America, BB&T, and Capital One — are headquartered in the Fifth District.) The SCAP's successor was the Comprehensive Capital Analysis and Review (CCAR), performed in 2011 and 2012. While the CCAR examined the banks' capital levels under adverse economic assumptions (like the SCAP), it also evaluated the processes banks use internally to gauge their risks and capital levels. The Federal Reserve conducted the stress tests together with the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation.

How did the stress tests work? They began with statistical models, devised by the regulatory agencies, that were intended to predict how firms' income, losses, and other financial characteristics might respond to changes in macroeconomic variables. By applying data provided by each participating BHC to the same model, the regulators could then compare results across firms and get a sense for how the financial system might fare.

The banks were evaluated under both a baseline macroeconomic scenario and a "more adverse" scenario for the following two years. The baseline scenario represented an average expected forecast of the real U.S. economy at the time. The "more adverse" scenario, meanwhile, imagined an even worse recession than 2007-09 — one with higher unemployment, higher inflation, and lower housing price

indices — believed to have approximately a 10 percent to 15 percent likelihood of occurring.

The SCAP found that 10 of the 19 participating institutions needed to raise their capital buffers by a collective amount of about \$75 billion. To prevent any panic, the Department of Treasury created the Capital Assistance Program (CAP), which offered a way to assist BHCs if they could not raise private capital. As it turned out, however, not one firm utilized CAP. The 10 institutions that had failed the test raised the required capital on their own by November 2009, mainly by issuing common stock.

In the Wake of the Crisis

Federal Reserve Board Gov. Daniel Tarullo noted in a 2010 speech, in reference to the SCAP, that “effective responses to dire situations often require bold actions that would be unthinkable in calmer times.” So it was with the stress tests, particularly 2009’s trailblazing SCAP, which drew considerable controversy. The debate over how best to conduct stress tests still persists in the regulatory, academic, and banking communities today.

Disclosure of results has been one of the most controversial topics. The Fed Board released the SCAP’s results in May 2009 with an unprecedented level of transparency, including firm-specific data. Why? As economist Til Schuermann, a partner at management consulting firm Oliver Wyman, summarized, “To regain credibility, supervisory authorities needed to disclose enough to allow the market to ‘check the math.’” Many economists agree that the approach was appropriate in the midst of the crisis, back in 2009. But now that economic conditions and market confidence have improved, there’s much debate over the transparency and disclosure of stress-test results in the future. The CCAR program in 2011 experimented with disclosing no results, while 2012’s CCAR tried again to release the firm-specific data.

The main benefit to disclosure in 2009 was the credibility it established for the stress-test exercise. More generally, greater disclosure is usually associated with greater market discipline. That is, market participants will be able to make better decisions, and financial institutions might behave more appropriately, if stress-test results are disclosed to the public. Another benefit is that of “supervisory discipline,” the idea that higher transparency will cause the regulators themselves to be held to higher standards of accountability since their work will be subject to public scrutiny.

Some question, however, whether these benefits outweigh the costs. Itay Goldstein, a professor of finance at the University of Pennsylvania’s Wharton School of Business, and Haresh Sapra, a professor of accounting at the University of Chicago’s Booth School of Business, recently presented a paper analyzing the costs and benefits of disclosure. They identified three major costs to disclosing the firm-specific stress-test results. First, they argued that disclosure may lead to “window dressing” within banks — that is, banks that know their stress-test results will be disclosed

could be tempted to gather portfolios that will solely help them pass the test in the short run, but which might not be beneficial to stability in the long run. Second, they argued that people tend to place excessive weight on publicly disclosed information under certain conditions, with the result that disclosure could lead the market to overreact to stress-test results. Third, they argued that the Fed’s disclosure of results decreases the private sector’s incentives to produce its own information and trade on it, thereby limiting the government’s ability to learn from the market.

Goldstein and Sapra proposed a sort of “median” compromise between full, firm-specific disclosure and no disclosure. They suggested disclosing only aggregate results, along with a description of each bank’s risk exposures (without the complete stress-test verdict). They argued that “[aggregate] disclosure of stress test results will achieve the macro-prudential role of helping to stabilize the financial system as a whole,” while the risk exposure description still keeps it difficult for banks to window-dress in order to pass the test, thus preserving some market discipline.

Another controversial aspect of the stress tests conducted by the Fed is whether they should have a micro-prudential or macroprudential orientation. A microprudential approach focuses on the solvency and capital levels of an individual bank, and evaluates each individual firm in isolation. This approach has historically been the norm for bank supervision, though many economists argue it was a reason why the regulatory framework before the financial crisis was deficient. On the other hand, a macroprudential approach focuses on the banking system overall, examining how the capital levels of banks are likely to hold up in response to a systemwide shock, where one bank may be affected by its exposure to problems at other banks. This approach aims to minimize the likelihood of distress for the whole banking system.

The SCAP, with the explicit goal of ensuring adequate capital across the banking system so as to boost confidence and facilitate lending, was mainly macroprudential in nature, another one of its trailblazing aspects. Yet it also had some microprudential elements, namely the firm-specific analysis. The question of how U.S. stress tests in the future should balance microprudential and macroprudential elements is up in the air.

As Tarullo noted, “I doubt that anything as ambitious as the SCAP would have been tried ... but for the exigencies of the financial crisis.” Indeed, the financial crisis led regulators in the United States to turn previously untried, ambitious stress-testing concepts into actual policy.

Stress Tests Outside the Fed

The Fed isn’t the only entity that carries out stress tests. For one, banks and other financial institutions regularly perform internal stress tests within their own risk management departments as a way to forecast the company’s estimated losses and revenues under possible future economic scenarios. That raises the question: If banks were running their

own internal stress tests, why were they so wholly unprepared when the actual crisis began?

Andrew Haldane, the Bank of England's head of financial stability, explained in a 2009 speech that banks' internal stress tests had become far too easy. For starters, there was a principal-agent problem within the banks, a misalignment of incentives between risk managers and risk-takers. Haldane recalled that there was "absolutely no incentive for individuals or teams [within banks] to run severe stress tests and show these to management. ... If there were such a severe shock, they would very likely lose their bonus and possibly their jobs."

Haldane also suggested that banks' internal stress testing "was being used to manage regulation," and not necessarily to manage risk. He wryly suggested that banks' internal stress testing amounted to "regulatory camouflage."

The European stress-test experience may hold lessons for our own. As part of the European Union's response to the worldwide recession, the Committee of European Banking Supervisors (CEBS), the predecessor to the current European Banking Authority (EBA), conducted a round of stress tests in 2009 and 2010 across 20 countries in the European Union, with 91 banks participating. The attempts garnered a great deal of criticism from economists, however, for being too microprudential in nature and too easy on the banks.

The 2010 CEBS examination found that of the 91 banks tested, a total of seven banks needed to raise a mere 3.5 billion euros in capital, equivalent to roughly \$4.3 billion at recent exchange rates. This figure was made to look even more questionable the following year, when Ireland performed a stress test of its own banks, all of which had been in CEBS' group of 91 banks and had passed. Ireland, however, found a total capital shortfall of a whopping 24 billion euros, and disclosed its full stress-test results and methodology, thereby earning far more credibility than CEBS had.

Perhaps in response to the Irish experience, the European Union's 2011 stress test, conducted by the EBA, increased its disclosure of methodology and results, almost reaching the high-water mark set by Ireland the previous year. The test itself didn't improve much in the way of credibility, however, according to some economists. After

stress-testing 90 banks across the European Union, the EBA's final result was that a mere eight banks had a collective capital shortfall of 2.5 billion euros, yet again drawing criticism from economists for going too easy on the banks and for being too microprudential in nature.

Stressed Out About the Future

Stress tests appear to be a permanent part of the regulatory landscape. The Dodd-Frank Act mandates that the Fed conduct yearly stress tests on BHCs with at least \$50 billion in assets. Furthermore, those financial institutions and select others with more than \$10 billion in assets must also conduct annual or semi-annual internal stress tests (with the frequency depending on the type of firm), and submit a report on the results to the Fed. The Dodd-Frank stress tests will, like the SCAP, yield a quantitative result — a number representing the capital shortfall — as its main outcome, unlike 2011 or 2012's CCAR. Finally, from now until 2019, the United States will be phasing in new and more stringent capital requirements, based on international standards known as "Basel III." The capital requirements of Basel III are generally higher than the ones previously employed by U.S. regulators.

Beyond this, however, little is set in stone. The issue of macroprudential versus microprudential approaches in U.S. stress testing remains undetermined. As for the issue of transparency, the Dodd-Frank Act does not explicitly specify the extent of the disclosure of the results; it merely states that the Fed will publish a summary of the results. Goldstein, co-author of the cost-benefit analysis paper, says that there will certainly be some role for disclosure in stress tests in the future. After all, "If you don't disclose the results in any form, then the benefit from the tests is clearly limited." Still, Goldstein notes, "You want to treat it with some care. ... You want to be aware of the potential problems with disclosure and design disclosure to alleviate those problems."

The stress tests of the past few years seem to have yielded some success in fostering market confidence, while provoking many questions. With the Dodd-Frank Act's annual stress test requirement, perhaps the next few years will see some of those questions answered. **RF**

READINGS

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