Lael Brainard: An update on the Federal Reserve's financial stability agenda

Speech by Ms Lael Brainard, Member of the Board of Governors of the Federal Reserve System, at the Center for Global Economy and Business, Stern School of Business, New York University, New York City, 3 April 2018.

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I am grateful to John Schindler of the Federal Reserve Board for his assistance in preparing this text. The remarks represent my own views, which do not necessarily represent those of the Federal Reserve Board or the Federal Open Market Committee.

The Federal Reserve's work on financial stability is integral to our dual-mandate objectives of price stability and full employment. As the Global Financial Crisis demonstrated, when severe financial stress triggers a broad pullback from risk, the resulting disruption in financial intermediation can impose deep and lasting damage on American families, workers, and businesses.

The primary focus of financial stability policy is tail risk (outcomes that are unlikely but severely damaging) as opposed to the modal outlook (the most likely path of the economy). The objective of financial stability policy is to lessen the likelihood and severity of a financial crisis. Guided by that objective, our financial stability work rests on four interdependent pillars: systematic analysis of financial vulnerabilities; standard prudential policies that safeguard the safety and soundness of individual banking organizations; additional policies, which I will refer to as "macroprudential," that build resilience in the large, interconnected institutions at the core of the system; and countercyclical policies that increase resilience as risks build up cyclically.[1] This work also recognizes the important connections to our monetary policy objectives.

Assessment of Financial Vulnerabilities

The foundation for our financial stability work is our assessment of systemic financial vulnerabilities. Our assessment framework is informed by historical episodes of financial stress here at home and around the world, as well as by a growing body of research on key indicators of building imbalances.[2] Instead of attempting to forecast particular adverse shocks that could buffet the economy, the focus is on vulnerabilities—that is, on features of the financial system that amplify bad shocks, spreading damage to households and businesses. Each quarter, Federal Reserve Board staff assess a set of vulnerabilities relevant for financial stability: asset valuations and risk appetite, borrowing by the nonfinancial sector (households and nonfinancial businesses), liquidity risks and maturity transformation by the financial system, and leverage in the financial system.

It may be illuminating to briefly describe our current assessment in each of these areas. Valuations in a broad set of markets appear elevated relative to historical norms, even after taking into account recent movements. Estimates of risk premiums and spreads in a range of markets remain narrow by historical standards. Corporate bond yields remain low by historical comparison, and spreads of yields on junk bonds above those on comparable-maturity Treasury securities are near the lower-end of their historical range. Spreads on leveraged loans and securitized products backed by those loans remain narrow. Prices of multifamily residential and industrial commercial real estate (CRE) have risen, and capitalization rates—the ratios of operating income relative to the sale price of commercial properties—for these segments have reached historical lows. However, measures of credit conditions suggest that lenders are, to an extent, taking into account the potential for a reversion of valuations.

By contrast, prices of single-family homes appear to be closer to historical norms. House prices

have risen at a robust pace, and the price-to-rent ratio is high in absolute terms, but it does not appear to be far out of line with its longer-run trend. This broad national trend belies significant variation among local markets, however.[3]

One area that the Federal Reserve is monitoring is the extreme volatility evidenced by some cryptocurrencies. For instance, Bitcoin rose over 1,000 percent in 2017 and has fallen sharply in recent months.[4] These markets may raise important investor and consumer protection issues, and some appear especially vulnerable to money-laundering (BSA/AML, or Bank Secrecy Act/anti-money laundering) concerns. As in other highly speculative markets, individual investors should be careful to understand the possible pitfalls of these investments and the potential for losses. But it is less clear how the valuations of cryptocurrencies currently could pose a threat to financial stability. For instance, it is hard to see evidence of substantial leverage used in the purchase of the cryptocurrencies, or a material degree of use in payments, although our assessment of these markets is limited by their opacity. Nonetheless, we will continue to study them.

In the assessment of elevated asset valuations, the relatively low level of Treasury yields is a mitigating factor; many asset valuation metrics, such as price-to-earnings ratios, corporate bond yields, and property capitalization rates, appear notably less stretched when judged relative to low Treasury yields. That said, Treasury yields reflect historically low term premiums—the compensation investors demand to hold assets over a longer horizon. This poses the risk that term premiums could rise sharply—for instance, if investor perceptions of inflation risks increased. I will return to this risk later.

Although asset valuations are elevated, vulnerabilities due to debt owed outside the financial sector appear to be moderate—in the middle of their historical range. This reflects elevated leverage in the nonfinancial business sector and a moderate pace of borrowing in the household sector. In the nonfinancial business sector, the debt-to-earnings ratio has increased to near the upper end of its historical distribution, and net leverage at speculative-grade firms remains especially elevated. Overall, however, the ratio of nonfinancial-sector borrowing to gross domestic product has been below an estimate of its trend for several years as a result of the deleveraging of the household sector following the crisis. While the sustained period of post-crisis household deleveraging appears to have come to an end and savings rates have recently moved down, overall borrowing has been at a moderate pace and, on net, concentrated among borrowers with high credit scores. Even though the balance sheet of the household sector as a whole appears relatively strong, recent years have seen a rapid rise in student debt as well as rising default rates for borrowers with subprime credit scores on auto loans and, more recently, credit card balances.

Beyond the nonfinancial sector, the vulnerabilities associated with maturity and liquidity transformation in the financial system appear to have fallen significantly relative to the levels seen prior to the crisis. The amount of wholesale short-term funding, which proved to be a substantial source of run risk during the crisis, has dropped substantially since its peak in 2008. Money market funds, which had been an area of vulnerability in the crisis, have undergone important reforms, including a move to floating net asset values for prime institutional funds along with the imposition of fees and restrictions on redemption. The anticipation of the enactment of these reforms in October 2016 led to a large decline in the level of assets under management at the affected funds, which has since held steady. So far, the growth of alternative short-term investment vehicles that could pose similar risks appears to have been weak.

Finally, risks associated with leverage in the financial sector also appear to be subdued by historical standards. Leverage in the banking sector has declined notably since the crisis. Issuance of securitized products remains well below pre-crisis levels for most asset classes, with few signs of securitizations that involve maturity or liquidity transformation and limited issuance of complex securities whose opaque structures can contain significant leverage. And

the data that are available suggest that leverage at nonbank financial firms has been stable. That said, there are indications that the use of leverage has been increasing at some institutions; for example, margin credit provided by dealers to equity investors such as hedge funds has expanded.

Prudential, Macroprudential, and Countercyclical Policies

There is an important connection between the robustness of our financial regulatory framework and the assessment of resilience in the financial sector. The subdued level of vulnerabilities from liquidity and maturity transformation and leverage is due centrally to reforms undertaken in response to the financial crisis. The Federal Reserve has implemented a framework of rules and supervision that requires large, interconnected banking organizations to hold substantial capital and liquidity buffers. This framework requires banks to be forward looking in their capital decisions and to be prepared for the possibility of severely stressed conditions occurring. The framework is macroprudential in design so that banks internalize the costs of undertaking activities that pose risks to the system.

The core of the framework is the requirement of a substantial stack of common equity to build resilience against shocks and to provide an incentive for prudent risk management. Regulatory capital ratios for the largest banking firms at the core of the system have about doubled since 2007 and are currently at their highest levels in the post-crisis era. U.S. firms have substantially increased their capital since the first round of stress tests led by the Federal Reserve in 2009. The common equity capital ratio—which compares high-quality capital to risk-weighted assets—of the bank holding companies participating in the 2017 Comprehensive Capital Analysis and Review has more than doubled from 5.5 percent in the first quarter of 2009 to 12 percent in the fourth quarter of 2017. Their leverage ratios—defined as Tier 1 capital to total assets—increased from 7.3 percent to 8.6 percent over the same period.[5] There has also been an important shift in the distribution of high-quality capital so that the average ratio of high-quality common equity to risk-weighted assets at the largest banks now exceeds the average for smaller banks. The larger and more complex banking organizations are now holding more capital, commensurate with the greater risks their distress could pose.

Reduced vulnerability associated with liquidity and maturity transformation similarly is due importantly to key financial reforms instituted since the crisis. Large financial institutions are required to maintain substantial buffers of high-quality liquid assets (HQLA) calibrated to their funding needs and to their likely run risk in stressed conditions. Similar to the capital buffers, the liquidity buffers are greatest for those financial institutions that pose the greatest risks. Indeed, banks are holding buffers of HQLA in excess of their liquidity coverage ratio (LCR) requirements. Our largest banking firms have increased their holdings of HQLA from 13 percent of assets in 2011 to 20 percent in 2017 and have reduced their reliance on short-term wholesale funding from 36 percent of liabilities in 2011 to 29 percent in 2017.[6]

Just as our strengthened policy framework helps modulate vulnerabilities in the financial sector that could make the economy more vulnerable to shocks, so, too, our quarterly surveillance is intended to identify rising vulnerabilities early enough to be able to act to prevent disruptions that could damage the economy. In particular, the quarterly assessment of financial stability is a critical input into the Board's processes for adjusting the supervisory scenarios used in the stress test and the setting of the countercyclical capital buffer—the two tools that permit the Board to respond to vulnerabilities that build over time.

The supervisory stress test is intended to ensure that large banking institutions will be able to continue to function normally even under severely adverse macroeconomic conditions. It also assesses the resilience of the largest trading firms to risks of a large disturbance to global financial markets and the failure of the firms' largest counterparty. These components reflect some of the key linkages through which the distress or failure of one firm could affect others,

including direct credit losses as well as the severe financial disruptions that would be expected to accompany fire sales and an increase in risk aversion.

By design, the Fed's stress test is intended to incorporate some elements to make the tests more stringent when the economy and financial markets are heating up. These countercyclical features are intended to give the stress tests some utility as a macroprudential tool—that is, to mitigate the financial system's inherent pro-cyclicality. The most prominent countercyclical feature of the stress-test scenario architecture is the setting of the unemployment rate in the severely adverse scenario. The general rule is to increase the unemployment rate by 4 percent unless the baseline unemployment rate starts at levels below 6 percent, in which case the ultimate level of the unemployment rate reached in the severely adverse scenario is fixed at 10 percent. In addition, last December, the Board put out a proposal for comment to introduce a systematically countercyclical mechanism in the component of the scenario that shocks house prices.[7]

Beyond these systematic elements, the assessment of vulnerabilities is a critical input in the development of scenarios for the stress tests each year to strengthen resilience against vulnerabilities that may be identified. As I noted earlier, recent assessments have noted high levels of valuations across a broad set of asset markets and elevated business leverage in an environment where Treasury yields and term premiums have been relatively low by historical standards. In such circumstances, asset prices might be particularly susceptible to an unexpected development that accentuates downside risks to the macroeconomic outlook. For instance, a sharp increase in concerns about the potential for high inflation or in uncertainty about policy could boost term premiums on Treasury securities, which could trigger declines in asset prices across a range of markets.

The scenarios for this year's stress tests, which were announced in February, feature material decreases in asset prices—notably including CRE prices—along with a substantial rise in Treasury term premiums. Although the severely adverse scenarios always include severe recessions and sharp declines in asset prices, in past years, they have been accompanied by large declines in Treasury yields, which have resulted in capital gains on these securities.[8] In contrast, in this year's severely adverse scenario, yields on longer-maturity Treasury securities are flat. In this way, this year's severely adverse scenario addresses one of the salient vulnerabilities that have been identified. By encouraging institutions at the core of the system to build resilience against such an eventuality, we seek to lessen the severity of the distress to the overall financial system should asset prices fall and term premiums rise sharply in a challenging macroeconomic environment.

Even with these design features, the Fed's stress-testing framework has some limitations in counteracting the inherent pro-cyclicality in the availability of credit. Indeed, the stress tests have become less binding on banks as the recovery has gathered strength. Thus, losses on loans and positions in the severely adverse scenario among participating banks have declined over time as the economy has strengthened. For example, in the 2016 exercise, losses amounted to $526 billion, while in 2017 they had fallen to $493 billion, despite a larger increase in the unemployment rate in the scenario. As economic conditions strengthen, typical measures of underwriting quality look strong, delinquencies fall to low levels, and profits rise consistently, all of which could lead to lower projected stress losses. Of course, these effects tend to reverse during bad economic conditions: Underwriting deficiencies tend to be revealed, delinquencies to rise, and profits to fall. Thus, capital requirements based on stress tests alone are unlikely to completely compensate for the financial system's natural pro-cyclicality.

In part for that reason, we also have a specifically countercyclical capital requirement that applies to the largest banks. Countercyclical capital requirements can lean against a dangerous increase in financial vulnerabilities at a time when the degree of monetary tightening that would be needed to achieve the same goal would be inconsistent with the Federal Reserve's dual mandate of full

employment and price stability. The reverse is also true. The countercyclical capital buffer (CCyB) is designed to increase the resilience of large banking organizations when there is an elevated risk of above-normal losses, which often follow periods of rapid asset price appreciation or credit growth that are not well supported by underlying economic fundamentals. The CCyB is an additional margin of capital that the nation's largest banks can be asked to build to augment resilience at times of rising cyclical pressures and to release as the economy weakens in order to allow banks to lend more when it is most needed.

The CCyB framework, which was finalized in September 2016, requires the Federal Reserve Board to vote at least once per year on the level of the CCyB. Put simply, the criterion for raising the CCyB above its minimum value of zero is that financial risks are assessed to be in the upper one-third of their historical distribution. Our assessment of financial vulnerabilities is a key input into the Federal Reserve Board's decisions surrounding the setting of the CCyB, along with a variety of other model-based and judgmental criteria. On December 1, 2017, with overall risks assessed as moderate and with other measures that we routinely monitor sending a similar signal, the Board announced its decision to leave the CCyB at its minimum value of zero.

Of course, our assessments of financial vulnerabilities are also an important input into Federal Open Market Committee (FOMC) deliberations, recognizing that there is important interdependence between financial stability and our monetary policy objectives of full employment and price stability.[9] The FOMC Statement on Longer-Run Goals and Monetary Policy Strategy notes that "the Committee's policy decisions reflect...its assessments of the balance of risks, including risks to the financial system that could impede the attainment of the Committee's goals."[10] Generally speaking, lessons from a broad range of countries suggest financial crises occur with substantially lower frequency than business cycles, and there is no settled doctrine to date on the use of the short-term policy rate—the key instrument of monetary policy—to lessen the probability and severity of financial crises. While financial imbalances are an important consideration in monetary policymaking and the expected path of monetary policy can have important implications for financial vulnerabilities, both research and experience suggest there is no simple rule for accomplishing our dual-mandate and financial stability objectives through reliance on a single policy instrument.

Cyclical Considerations

As I have noted elsewhere, the recently enacted fiscal stimulus should boost the economy at a time when it is close to full employment and growing above trend. It is hard to know with precision how the economy is likely to respond. If unemployment continues to decline at the rate of the past year, it could reach levels not seen in several decades. Historically, such episodes tended to see a risk of accelerating inflation in earlier decades or a risk of financial imbalances in more recent decades. It is important to be attentive to the emergence of any imbalances, because we do not have much experience with pro-cyclical fiscal stimulus at a time when resource constraints are tightening and growth is above trend.

Despite elevated asset valuations, overall risks to the financial system remain moderate in no small part because important financial reforms have encouraged large banking institutions to build strong capital and liquidity buffers. History suggests, however, that a booming economy can lead to a relaxation in lending standards and an attendant increase in risky debt levels. At a time when valuations seem stretched and cyclical pressures are building, I would be reluctant to see our large banking institutions releasing the capital and liquidity buffers that they have built so effectively over the past few years, especially since credit growth and profitability in the U.S. banking system are robust.

Of course, if cyclical pressures continue to build and financial vulnerabilities broaden, it may become appropriate to ask the largest banking organizations to build a countercyclical buffer of capital to fortify their resilience and protect against stress. Alternatively, if there were to be a

material adjustment to the calibration of the structural buffers held by the large banking institutions, it would be important to make a compensating adjustment to the countercyclical buffer in order to achieve the same overall resilience to financial vulnerabilities.

As a rough rule of thumb—and as described in the Board's framework for implementing the CCyB, which was finalized in September 2016—the criteria for setting the CCyB are calibrated so that the CCyB will be above its minimum value about one-third of the time, assuming that vulnerabilities evolve as they did pre-crisis. It is worth noting that some other jurisdictions have designed their countercyclical buffer requirement to be above zero roughly half of the time—spanning a greater range of economic conditions than in the United States. This may reflect a difference in the relative emphasis on structural buffers relative to cyclically varying buffers. It is worth noting that, although U.S. structural buffers are on the stronger end of the range internationally, the U.S. banking system is also among the healthiest and most competitive in the world. Credit growth is robust, and banks are registering strong profitability relative to their international peers.

Conclusion

Our financial stability agenda seeks to reduce the likelihood and severity of financial crises. In the wake of the 2007–09 financial crisis and recession, we learned important lessons about the critical necessity of monitoring emerging financial vulnerabilities in a systematic fashion and taking corresponding prudential, macroprudential, and countercyclical policies to build resilience. We undertake systematic assessment of financial vulnerabilities as an important input into our policymaking processes—helping to calibrate the prudential, macroprudential, and countercyclical policies that are our first lines of defense, in addition to informing FOMC deliberations because of the important feedback loops between financial conditions and our dual-mandate goals. This work is complemented by the efforts of our domestic and international partners through the Financial Stability Oversight Council and the Federal Financial Institutions Examination Council here at home and through the Financial Stability Board and the International Monetary Fund internationally.

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1 In this work agenda, the Federal Reserve cooperates closely with other regulators to facilitate joint responsibility for financial stability while respecting that each independent agency has its own specific statutory mandate and governing body.

2 In addition to cyclical vulnerabilities, structural vulnerabilities, such as those that arise from the complexity and interconnectedness of large financial institutions, also remain potential sources of risk to the financial system. The Federal Reserve assesses structural vulnerabilities in support of its financial stability and supervision and regulation responsibilities. For instance, cybersecurity is the subject of ongoing monitoring and policy efforts.

3 For example, the price-to-rent ratios in Los Angeles, Miami, and Denver are 10 to 20 percent above their long-run trends, compared with 4 percent at the national level.

4 Similar volatility was seen in some other cryptocurrencies, such as Ether, XRP, and Litecoin.

5 These statistics are for the 18 bank holding companies that participated in both the 2009 and 2017 stress tests. The risk-based capital statistics for 2009 report tier 1 common equity, and for 2017 report Basel III common equity tier 1.

6 These statistics reflect the 18 advanced approaches bank holding companies subject to the standard LCR.

7 See Board of Governors of the Federal Reserve System (2017), "Policy Statement on the Scenario Design Framework for Stress Testing," proposed rule (Docket No. OP-1588), *Federal Register,* vol. 82 (December 15), pp. 59533–59547.

8 Over the years, our adverse scenarios, which are not designed to be the binding scenario for capital planning purposes, have featured large increases in Treasury yields across the maturity curve.

[9] See the box "Developments Related to Financial Stability" in Board of Governors of the Federal Reserve System (2018), *Monetary Policy Report* (Washington: Board of Governors, February), pp. 24–26.

[10] For the most recent statement, see Board of Governors of the Federal Reserve System (2018), "Federal Open Market Committee Reaffirms Its 'Statement on Longer-Run Goals and Monetary Policy Strategy,' " press release, January 31.