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An Assessment of Financial Stability in the United States

Remarks by

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In the years since the start of the global financial crisis, an enormous amount of effort has gone into ensuring that we have a robust financial system that promotes responsible risk taking and an efficient allocation of resources. But despite these efforts, financial stability cannot be taken for granted, for financial decisions that benefit the people who make them can create systemic risk and harm society as a whole. Further, the phenomenon familiar from macroeconomics--and for that matter from life--of decisions that result in short-run happiness and long-run grief is visible also in the area of financial stability. For example, excessive leverage and reliance on short-term funding, which may reward risk takers whose bets pay off, may also increase the risk of fire sales and contagion, creating a fragile financial situation. The disruption in credit intermediation that typically accompanies such episodes can have lasting negative consequences for the real economy and welfare--some of which we are still seeing today. The Federal Reserve's financial stability responsibilities therefore strongly complement its dual-mandate objectives of achieving price stability and full employment.

Today I will review the monitoring framework we have implemented at the Federal Reserve, before providing an assessment of current U.S. financial stability conditions. I will conclude by arguing that while significant progress has been made in recent years toward making the financial system more stable and resilient, we should not ever be complacent.[1] We still lack sufficient information to understand some parts of the shadow banking system, and risks sometimes evolve outside the scope of prudential regulation, with potentially negative implications for financial stability. And sometimes

[1] I am grateful to Chiara Scotti and Filip Zikes of the Federal Reserve Board for their assistance. Views expressed in this presentation are my own and not necessarily those of the Federal Reserve Board or the Federal Open Market Committee.

we fail to understand the situation in which we find the financial system and the economy.

Framework for Monitoring Financial Stability

Participants in today's workshops have grappled with the question of what is the best framework to monitor financial stability. One approach is to focus on trends in, and interactions among, *financial vulnerabilities* across financial institutions, markets, and instruments. Another approach is to track *the resilience of institutions*, either broad categories or individual systemically important institutions. Good monitoring frameworks combine elements of both.

Let me start with the vulnerabilities-focused approach, as developed by Tobias Adrian, Daniel Covitz, and Nellie Liang.[2] That approach defines financial vulnerabilities as a collection of factors that may amplify financial shocks and, when elevated, have the potential to generate systemic risk. The focus is on vulnerabilities rather than shocks, because the timing of shocks, such as sudden drops in asset prices, are inherently hard to predict. Vulnerabilities, in contrast, tend to build up over time, and policies can be designed to help contain these vulnerabilities, reducing the likelihood of systemic events.

Some financial vulnerabilities are cyclical in nature, rising and falling over time, while others are structural, stemming from longer-term forces shaping the nature of credit intermediation. Informed by academic research, some of it in-house, we at the Federal Reserve focus on four broad cyclical vulnerabilities: (1) financial-sector leverage, (2) nonfinancial-sector borrowing, (3) liquidity and maturity transformation, and (4) asset

[2] See Adrian, Covitz, and Liang (2015).

valuation pressures.[3] Briefly, leverage, across a range of institutions, is a key amplifier of solvency shocks, leading to a greater chance of a credit crunch or fire sale. Liquidity and maturity mismatches can generate run risk, leading to fire sales and contagion. Finally, elevated valuation pressures, especially when combined with high leverage, can lead to excessive credit growth. When asset prices are appreciating rapidly and expected to continue to do so, borrowers and lenders are more willing to accept higher degrees of risk and leverage.

Using a range of indicators, we assess these cyclical vulnerabilities relative to past experience. That is, we evaluate where the current levels of these indicators stand compared with their historical values, to identify whether they point to a low, average, or high level of vulnerabilities. While we try to rely on quantitative indicators, in the end, this evaluation requires some degree of judgment. We also closely monitor potential structural vulnerabilities, such as funding models and institutions that provide critical plumbing services to the system. Because these structural vulnerabilities are less amenable to traditional quantitative monitoring, their identification and assessment follow a less formal process. I will leave that discussion to another time.

As mentioned, complementary to the vulnerabilities-oriented approach is an approach that focuses on institutions. If the financial system is overleveraged, that vulnerability has to be evident at particular institutions. An institutions-oriented framework can help us keep track of sector- or institution-specific structural vulnerabilities that may be masked by our overall assessment and provides additional

[3] For example, see Adrian, Covitz, and Liang (2015); Aikman and others (forthcoming); and the references therein.

ways to understand how distress at a particular institution or class of institutions may spill over to the wider financial system.

Regardless of whether we are looking at vulnerabilities or institutions, a key feature of this monitoring framework is its forward-looking nature. For example, evidence suggests that periods of elevated risk appetite are frequently accompanied by a rise in leverage at financial intermediaries.[4] This evidence implies that elevated asset valuation pressures today may be indicative of rising vulnerabilities tomorrow.[5]

Of course, while a framework provides a disciplined way to evaluate financial stability, we constantly evaluate the framework so that we can identify new risks and vulnerabilities, which may arise as the financial system evolves--for example, in response to market-driven innovation or regulatory reform. Federal Reserve staff research helps us understand and evaluate the evolving, dynamic financial system.

Before turning to the assessment of the current state of U.S. financial stability, let me discuss how we communicate our views on this matter. The Federal Reserve, unlike many other central banks, does not publish a financial stability report. The United States already has two congressionally mandated financial stability reports, one authored by the independent Office of Financial Research and a separate report published by the Financial Stability Oversight Council that represents the views of the range of financial regulators, including the Federal Reserve. Additional views of Federal Reserve officials can be reflected in a range of other venues, including, notably, the Board's semiannual *Monetary Policy Report,* the Board's annual report, and speeches, such as this one.

[4] See Adrian and Shin (2012).
[5] See Aikman and others (forthcoming).

Current Assessment

That was the framework, now for the current assessment: In the interest of time, my main focus will be on the four cyclical vulnerabilities--leverage, borrowing by households and non-financial firms, liquidity and maturity transformation, and asset valuations--but I will also briefly touch on the most salient structural vulnerabilities. To summarize the assessment, overall, a range of indicators point to vulnerability that is moderate when compared with past periods: Leverage in the financial sector is at historically low levels, and, following the reforms of money market mutual fund regulations by the Securities and Exchange Commission (SEC) last fall, vulnerabilities associated with liquidity and maturity transformation appear to have decreased. However, the increase in prices of risky assets in most asset markets over the past six months points to a notable uptick in risk appetites, although this shift has not yet led to a pickup in the pace of borrowing or a sizable rise in leverage at financial institutions.

Leverage

To start with, leverage: Regulatory capital at large banks is now at multidecade highs. The largest banks have already met their fully phased-in capital requirements, including the conservation buffer and the capital surcharge for the global systemically important banks. Also, the largest banks have been able to meet the post-stress capital requirements in the past couple of stress-test exercises run by the Federal Reserve. Measures of earnings strength, such as the return on assets, continue to approach pre-crisis levels at most banks, although with interest rates being so low, the return on assets might be expected to have declined relative to their pre-crisis levels--and that fact is also a cause for concern.

Borrowing by households and businesses

In the private nonfinancial sector, which includes corporations and households, total debt remains well below its long-run trend, largely driven by subdued borrowing among households. However, the corporate business sector appears to be notably leveraged, with the current aggregate corporate-sector leverage standing near 20-year highs.

Some studies, including one by the International Monetary Fund in this April's *Global Financial Stability Report*, have recently highlighted this vulnerability, so let me briefly offer my perspective.[6] Despite the elevated levels of corporate borrowing, recent developments show signs of improvement. Leverage has declined slightly since its peak a year ago, and firms with high debt growth appear relatively healthy. Interest expenses relative to earnings also declined of late and are below their median value since 2001. Furthermore, the fraction of corporate debt due within one year relative to total debt stands at historically low levels. Thus, positive shocks to interest rates may adversely affect the ability of some firms to service debt, but this risk may have only limited system-wide effects. Nonetheless, elevated leverage leaves the corporate sector vulnerable to other shocks, such as earnings shocks.

In the household sector, new borrowing is driven mostly by borrowers with higher credit scores, and the amount of debt that borrowers have relative to their incomes is falling, suggesting that the debt is more manageable. That said, two pockets in the household sector deserve scrutiny. Auto loan balances and delinquency rates are high for borrowers with lower credit scores, meaning that the riskiest borrowers are borrowing

[6] See International Monetary Fund (2017).

more and not paying it back as often. Of note, delinquencies on recently issued auto loans have also increased, indicating that underwriting standards in the auto loan industry may be deteriorating. Student loan balances keep rising, and delinquency rates on those loans are near historical highs. These strains within the household sector leave such borrowers vulnerable to adverse shocks and probably weigh on their spending. At first glance, one is tempted to say that the potential for this distress to adversely affect the financial system seems moderate, because both subprime auto loan and student loan borrowers account for a small share of other debt categories. But, on second thought, one should remember that pre-crisis subprime mortgage loans were dismissed as a stability risk because they accounted for only about 13 percent of household mortgages, and not take excessive confidence.[7]

Liquidity and maturity transformation

Similar to my assessment of leverage, I believe that the primary vulnerability associated with liquidity and maturity transformation--that of a self-fulfilling run--is relatively low. In recent years, banks have shifted away from more run-prone short-term wholesale sources of funds toward more stable sources such as core deposits. Large domestic banks have also significantly boosted their holdings of high-quality liquid assets, making them more resilient to funding stress.

In the nonbanking sector, the SEC revised the regulations governing money market mutual funds, first adopted in 2014, with the aim of reducing the key structural vulnerabilities exposed by the massive and destabilizing run on the funds in late 2008. The second round of reforms went into full effect in October 2016; ahead of this date,

[7] See Gerardi and others (2008).

$1.2 trillion flowed out of prime money funds--the more fragile funds that also provide direct funding to large banking institutions--toward government money funds, which are constrained to hold government-guaranteed assets. Those assets include repurchase agreements (or repos) with private banks backed by Treasury securities and the liabilities of government-sponsored enterprises, such as, notably, the Federal Home Loan Banks (FHLBs). While the current configuration of money markets reveals a reduced financial stability risk compared with the situation prior to the recent reforms, this configuration may not yet represent the final equilibrium. It will be important to keep an eye on the growth of alternative investment vehicles that perform liquidity transformation in money markets.

Of note, in part supported by increased demand from government-only money funds, the FHLB system has increased its issuance of shorter-maturity liabilities, which are more attractive to money funds. In turn, this development has led to an increase in the FHLB system's maturity transformation because its assets--loans to banks and insurance companies--have remained relatively long maturity. As a result, the FHLBs face an increased need to roll over maturing liabilities and thus greater vulnerability should they encounter liquidity pressures. I should note that the FHLBs' regulator, the Federal Housing Finance Agency (also known as the FA-FA) flagged this issue more than a year ago and is working with the FHLBs (the FLUBS) to address it.

Asset valuations

Let me conclude my assessment of current financial stability conditions with a discussion of asset valuation pressures. Prices of risky assets have increased in most major asset markets in recent months even as risk-free rates also rose. In equity markets,

price-to-earnings ratios now stand in the top quintiles of their historical distributions, while corporate bond spreads are near their post-crisis lows. Prices of commercial real estate (CRE) have grown faster than rents for some time, and measures of the amount of operating income relative to the sale price of commercial properties--the capitalization rate--have reached historical lows, suggesting continued pressures in the CRE market despite some tightening in credit conditions. Valuation pressures in single-family residential real estate markets appear, at most, modest, with price-to-rent ratios only slightly higher than their long-run trend.

The general rise in valuation pressures may be partly explained by a generally brighter economic outlook, but there are signs that risk appetite increased as well. For example, estimates of equity and bond risk premiums are at the lower end of their historical distributions, and, relative to some non-price-based measures of uncertainty, the implied volatility index VIX is particularly subdued. So far, the evidently high risk appetite has not lead to increased leverage across the financial system, but close monitoring is warranted.

Conclusion

Let me conclude by offering my view on where we stand in our effort to promote financial stability in the United States. There is no doubt the soundness and resilience of our financial system has improved since the 2007-09 crisis. We have a better capitalized and more liquid banking system, less run-prone money markets, and more robust resolution mechanisms for large financial institutions. However, it would be foolish to think we have eliminated all risks. For example, we still have limited insight into parts of

the shadow banking system, and--as already mentioned--uncertainty remains about the final configuration of short-term funding markets in the wake of money funds reform.

The U.S. financial system is inherently dynamic, with a range of institutions competing to offer a changing mix of financial products. New financial technologies promise great benefits but will no doubt carry novel risks. As a result, we monitor these vulnerabilities, and we are vigilant with respect to economic and financial developments across markets and institutions within the United States and around the world. And we know that complacency must be avoided.

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