

# **Financial Stability and Monetary Policy in a Low-Interest-Rate Environment**



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## **Introduction**

I thank Kasper Roszbach and the Norges Bank for inviting me to present at this workshop on low-interest-rate and unconventional monetary policy. I applaud the Norges Bank for spurring research on this topic. In a period of less than two decades, the world has experienced two historically deep negative shocks to the global economy and financial system. While their causes were different, the global financial crisis of 2008 and the COVID-19 pandemic crisis each necessitated the intervention of central banks in ways not contemplated in earlier decades. Lessons from the actions taken during the 2008 crisis and recovery and from the large body of research that was generated thereafter helped to inform economic policy during the pandemic. I anticipate that our experience over the past year and a half, as well as research driven by that experience, will help guide policymakers now and in the future. Today, I will share my thoughts on the relationship between monetary policy and financial stability in a low-interest-rate environment. These thoughts are my own and not necessarily those of the Federal Reserve System or of my colleagues on the Federal Open Market Committee.

## **Financial Stability and Monetary Policy**

Let me start with a working definition of financial stability. When I refer to financial stability, I mean a financial system that is resilient to shocks. That is, one in which banks and nonbank financial institutions not only remain solvent but also continue to lend to creditworthy businesses and households during a significant economic downturn, and one in which financial markets continue to intermediate in an orderly fashion during periods of stress.

With this definition, it is clear that monetary policy and financial stability are linked in several ways.

First, monetary policy affects the real economy by affecting financial conditions. When financial markets

are disrupted, as they were during the global financial crisis and at the onset of the pandemic, the transmission of monetary policy to the economy is disrupted.

Second, the goals of monetary policy and financial stability are interconnected, usually in a complementary way. A stable financial system plays a key role in supporting the achievement of monetary policy goals. In the U.S. these goals are price stability and maximum employment.

Indeed, the FOMC's statement on its monetary policy strategy says that "sustainably achieving maximum employment and price stability depends on a stable financial system" and that the FOMC's monetary policy decisions "reflect its longer-run goals, its medium-term outlook, and its assessments of the balance of risks, including risks to the financial system that could impede the attainment of the Committee's goals."<sup>1</sup>

Volatility or minor disruptions in financial markets that represent the ebb and flow of a dynamic economy are not a concern, but disruptions to the financial system that interfere with its ability to provide valuable credit, risk-management, payment, and liquidity services to businesses and households can interfere with the economy's ability to achieve and maintain stable prices and maximum employment. An unstable financial system can propagate adverse macroeconomic shocks over broad economic sectors and over time to the detriment of macroeconomic stability. In the other direction, well-formulated and well-communicated monetary policy supports financial stability by allowing households, firms, and financial institutions to make better investment, saving, borrowing, and lending decisions, and price stability eliminates a source of asset-price volatility.

The linkages between monetary policy and financial stability are usually complementary, but at times policymakers will be faced with intertemporal tradeoffs and these tradeoffs will vary over the business

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<sup>1</sup> See FOMC (2021).

and credit cycles. For example, if the economy is already near its monetary policy goals of maximum employment and price stability, then continuing to keep policy rates very low to move even closer to these goals could contribute to a buildup of financial vulnerabilities. This creates the potential for a future period of financial instability that could jeopardize the achievement of monetary policy goals over time.

### **Changes to the Economic Environment**

Central banks have recognized these linkages between financial stability and monetary policy for a long time. What is different now is that the economic environment has changed in ways that affect both monetary policy and financial system stability. These changes in the economic environment were a catalyst for the FOMC's monetary policy framework review, whose conclusions were summarized in a revised monetary policy strategy statement announced in August 2020 and reaffirmed in January 2021.<sup>2</sup>

Over the past couple of decades, the U.S. and other advanced economies have seen a decline in the general level of interest rates consistent with sustainable growth and price stability. This decline in the equilibrium interest rate, so-called *r*-star, reflects several structural factors, including the aging of the population; changes in risk preferences, which affect savings and investment decisions; and a slowdown in productivity growth. Lower *r*-star means that the FOMC will have less policy space to support the economy during economic downturns; that its traditional policy tool, the fed funds rate, will spend more time at its effective lower bound; and that nonconventional policy tools will more often need to be used to add monetary accommodation.

Another change in the economic environment over the past two decades pertains to inflation dynamics. Resource slack in the labor market and in product markets has become less correlated with actual inflation than in past decades, and inflation expectations now play a larger role in determining inflation outcomes.

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<sup>2</sup> FOMC (2021).

This, coupled with the proximity of the policy rate to its effective lower bound, means there is a downward bias in inflation expectations and that bouts of low inflation may be more persistent than in the past.

In recognition of these changes in the economic environment, the FOMC revised its policy strategy by being explicit that in order to reach its 2 percent longer-run inflation goal and promote maximum employment, anchoring longer-term inflation expectations at levels consistent with 2 percent inflation is very important. And to do that, the FOMC would likely aim to achieve inflation moderately above 2 percent for some time following periods when inflation has been running persistently below 2 percent.

### **Nonconventional Monetary Policy Tools and Financial Stability Risks**

In the U.S., the nonconventional policy tools the FOMC has used include large-scale asset purchases, holding the policy rate at its effective lower bound for an extended period, and forward guidance that communicates an intention to maintain a very accommodative stance of monetary policy until certain economic improvements have been realized. Because these nonconventional tools raise the potential for a buildup in financial vulnerabilities and imbalances, monetary policymakers need to expend extra effort in assessing financial stability risks. Since the global financial crisis, the FOMC has increased its monitoring of financial vulnerabilities using a framework that recognizes the complex nature of the financial system in the U.S., with its mix of bank-based and market-based finance and its multiplicity of regulatory and supervisory bodies.<sup>3</sup>

There are several avenues through which the use of nonconventional monetary policy might create or contribute to financial system vulnerabilities. A commitment to a protracted period of very low interest rates could encourage risk-taking as investors search for yield; it could lead to a build-up in leverage; and

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<sup>3</sup> For a description of this framework, see Adrian, Tobias, and Liang (2015).

it could lead lenders to lower their credit standards and promote increased borrowing. While all of these are avenues through which monetary policy typically affects the economy, the concern is that these effects could be excessive and create or contribute to financial vulnerabilities.

Very low interest rates can also compress the risk premia in asset prices, leading to excessive valuations. Indeed, some empirical studies indicate that monetary policy affects asset prices mainly through its effect on risk premia.<sup>4</sup> Excessive valuations are a vulnerability because if risk appetites were to change suddenly, these valuations could fall suddenly, leading to margin calls and losses, especially if leverage is elevated, which is more likely in a low-interest-rate environment. Low interest rates could more directly impact the profitability of banks by lowering net interest margins and earnings, thereby limiting banks' capital levels and their ability to lend through a downturn and changing their appetite for risk. While the available empirical evidence suggests that the effects of changes in policy rates on asset prices and risk premia have been moderate relative to the typical fluctuations seen in these measures, the evidence is particularly limited since we have not had many extended periods with low interest rates.

High debt levels, both private debt and government debt, have to be intermediated by the financial sector, creating another potential vulnerability: periods of dysfunction in financial markets when there is a large shift in demand for liquidity. We experienced this at the beginning of the pandemic when the dash for cash put pressure even on the U.S. Treasury market, one of the most liquid markets in the world.

Although I've been speaking about long periods with low interest rates, sizable asset purchases by the central bank can have similar effects by creating imbalances. Depending on how large they are, a central bank's asset purchases could create vulnerabilities by encouraging investors to be less sensitive to risk or could impact market functioning and thereby the transmission mechanism of monetary policy.

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<sup>4</sup> See, e.g., Gertler and Karadi (2015) and Gilchrist, López-Salido, and Zakrajšek (2015).

Forward guidance can provide additional accommodation once the policy rate has been brought down to its effective lower bound by reducing uncertainty about the future path of the policy rate. In addition to the risks of holding interest rates lower for longer, by reducing uncertainty, forward guidance may mute financial market volatility and spur a buildup of leverage.

### **Addressing Financial Stability Risks**

While it is clear that monetary policymakers need to be aware of financial stability risks, a less settled question is how monetary policymakers should best address emerging financial stability risks, especially when taking actions to promote monetary policy goals might be in conflict with containing financial stability risks. In the U.K., the Financial Services Act recognizes potential tradeoffs between monetary policy and financial stability policy and explicitly says that the Financial Policy Committee is not authorized to act in a way that it feels is “likely to have a significant adverse effect on the capacity of the financial sector to contribute to the growth of the U.K. economy in the medium or long term.”<sup>5</sup>

Arguably, a post-crisis consensus has emerged that it is better to use supervisory, regulatory, and macroprudential tools to address financial stability risks and monetary policy tools to address macroeconomic stability risks. Since this type of separation is optimal in many models, a natural question is: What can we do to maximize the chances that we will be able to maintain this separation between monetary policy and financial stability policy and minimize periods when our macroeconomic stability goals and financial stability goals are in conflict. I will offer three recommendations:

- First, we need to ensure that the banking system remains structurally resilient across the business and financial cycles, with strong capital and liquidity requirements that are recalibrated to a low-interest-rate environment.

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<sup>5</sup> See U.K. (2012).

- Second, we need to take steps to increase the structural resiliency of nonbank financial firms and markets and improve our ability to monitor risks in the nonbank financial sector.
- Third, we need to be more explicit in our monetary policy framework that there will be times when macroeconomic and financial stabilities will come into conflict and include consideration of financial stability risks when issuing forward guidance on monetary policy.

Let me elaborate on each of these to conclude my remarks. Regarding the first recommendation, the benefits of a resilient banking system in supporting the attainment of macroeconomic goals became very clear during the pandemic. After the last financial crisis in which banks were front and center, steps were taken to shore up the resiliency of the commercial banking system through higher capital levels, liquidity requirements, and stress testing. These steps paid off. Banks were in a strong enough position going into the pandemic that, with support from their regulators, they played an important role in ensuring that credit kept flowing to households and small businesses. This helped to mitigate some of the economic effects of the pandemic. The strength of the banking system also allowed monetary policymakers to use their tools fully to support the economy.

In the U.S., maintaining the structural resiliency of the banking system throughout the cycle is made even more important by the limits on the macroprudential tools available to address vulnerabilities that vary over the business and credit cycles. There is a complex constellation of regulators and a variety of financial institutions in the U.S. The use of macroprudential tools has to be coordinated across multiple regulators and, in some cases, follow legally required administrative procedures like public comment periods, which delay application of the tools. The U.S. does not have some of the tools that Norway and some other countries have, including limits on loan-to-value ratios and debt-to-income ratios that vary over the cycle and are targeted to particular sectors like housing or household credit to control leverage



regardless of lender. Instead, the main cyclical macroprudential tools available in the U.S. are the stress tests and countercyclical capital buffer.<sup>6</sup>

Stress tests (the Comprehensive Capital Analysis and Review) that apply to the largest banks in the U.S. might be adapted to serve as a macroprudential tool to the extent that the systemic vulnerabilities of concern can be built into the stress scenarios. But, typically, these scenarios are set well in advance and are not aimed at macroprudential goals, but rather at microprudential risks. Nonetheless, last year, as the economy shut down because of the pandemic, the Board of Governors adapted stress testing techniques to conduct sensitivity tests of bank capital levels and solvency in several plausible downside scenarios amid great uncertainty about how the pandemic would affect the economy. This information was used to inform decisions about whether to halt dividend payments and stock buybacks.

Our other tool, the countercyclical capital buffer, is designed to be increased so that banks raise capital in good economic times when vulnerabilities build and then lowered to support continued lending when economic conditions deteriorate. The social return to lending in this state of the world would be relatively high, so optimally we should be willing to trade off somewhat lower lending in a healthy economy in order to support lending in a weak economy. The Federal Reserve Board has indicated that it will use this tool only when systemic vulnerabilities are “meaningfully above normal” and that, when using the tool, it intends to increase the buffer gradually and give organizations substantial notice.<sup>7</sup> This makes the tool less useful as a method for addressing vulnerabilities that arise quickly or may be detected only after they have had time to develop. In the U.S., the buffer has never been raised above zero. In contrast, Norway’s

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<sup>6</sup> Other cyclical tools available in the U.S. are supervisory guidance and changes to margin requirements. Supervisory guidance has been used to limit banks’ exposures in certain markets, for example, commercial real estate and leveraged lending. But the guidance is not legally binding and would need to be coordinated with the set of U.S. bank regulators, which takes time. The Federal Reserve Board has the ability to set margin requirements on equity purchases, but it has not used this power since the early 1970s. To be effective, changes in margin requirements would need to be coordinated across jurisdictions, which takes time. Research suggests that such requirements are not that effective in addressing vulnerabilities.

<sup>7</sup> See Board of Governors of the Federal Reserve System (2016).

countercyclical capital buffer is ordinarily set above zero and varies over the cycle.<sup>8</sup> It is worth considering whether recalibrating this tool in the U.S. to be above zero in normal times would lead U.S. policymakers to be more willing to use it.

In my view, given the limits on cyclical macroprudential tools in the U.S., focus is better placed on improving the resiliency of the financial system's structure across the business and financial cycles. As I discussed, the potential for financial vulnerabilities to build up in a low-equilibrium-interest-rate (*r*-star) environment is elevated, all else equal. This means that the current minimum capital and liquidity requirements are likely not properly calibrated to deliver the same degree of resiliency as they did when these minimums were set under Basel and *r*-star was higher.<sup>9</sup> As part of their work to ensure a resilient financial system, policymakers and the research staffs that support them should begin an assessment of the benefits and costs of recalibrating these minimums to the new low-interest-rate environment.

My second recommendation recognizes that much of our regulatory, supervisory, and macroprudential apparatus is focused on banks, yet financial activity is increasingly moving outside of the banking system. Nonbank financial intermediation, through investment funds, insurance companies, pension funds, and other financial entities, has risen over time. These entities now hold almost half of global financial assets, up from 42 percent in 2008.<sup>10</sup> This means that credit risk is increasingly being intermediated and held outside the banking sector. Yet limited transparency around the risk exposures of hedge funds, family offices, and other leveraged financial entities makes monitoring emerging risks more difficult for both regulators and counterparties. The Financial Stability Board has recognized the need to better understand

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<sup>8</sup> In December 2018, on the recommendation of the Norges Bank, Norway's Ministry of Finance decided to raise the countercyclical buffer to 2.5 percent, effective at the end of 2019. The buffer was subsequently reduced to 1 percent in March 2020, the early days of the pandemic; it will be raised to 1.5 percent at the end June 2022. See Norway Ministry of Finance (2018, 2020, and 2021).

<sup>9</sup> See Tucker (2018) for discussion.

<sup>10</sup> Financial Stability Board (2020), p. 12.

the interconnections between bank and nonbank intermediation, the amplification of shocks, and the overall resiliency of the nonbank financial sector.<sup>11</sup>

Some of the nonbank intermediation is bank-like in that it involves short-run funding of longer-run assets and is subject to runs that can spill over to the broader financial system. During both the global financial crisis and the pandemic, prime (nongovernment) money market mutual funds, because of their structure, were subject to significant outflows in a very short period of time. In the U.S., \$125 billion flowed out of prime money market funds in March 2020, which was 11 percent of their assets.<sup>12</sup> Outflows forced the funds to redeem their commercial paper holdings, thereby creating more stress in short-term funding markets. These runs were severe enough to require the Fed to intervene with emergency facilities. Reforms to the structure of these funds to reduce the risk of runs are now being considered by U.S. regulators.<sup>13</sup> These reforms include swing pricing, widely used in Europe, whereby investors redeeming shares receive a lower price when the fund's redemptions rise above a certain level.

The pandemic also revealed some structural issues in the U.S. Treasury market, one of the most important and most liquid markets in the global financial system. In March 2020, amid great uncertainty about the emerging global pandemic, many investors sought to move into cash and began liquidating their positions, even their positions in U.S. Treasuries, which are usually viewed as safe-haven assets. Pressure to sell was widespread and overwhelmed the dealers who play a central role in this market by intermediating between buyers and sellers. Stresses rose to a level that necessitated aggressive actions by the Fed, including purchasing large volumes of Treasury securities and agency mortgage-backed securities and conducting operations in the repo market. While these actions were able to re-establish smooth functioning in the Treasury market, they did not address the underlying structural issues that

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<sup>11</sup> Financial Stability Board (2020).

<sup>12</sup> See Financial Stability Board (2020), p. 19.

<sup>13</sup> See U.S. Department of the Treasury (2020), U.S. Securities and Exchange Commission (2021), and Brainard (2021).

propagated the stresses. Several reforms have been suggested, including moving toward centralized clearing with less dependency on broker-dealers and better collection of data and increased transparency around the positions of participants in the market.<sup>14</sup> The Treasury market is a crucial global financial market. Improving its structural resiliency needs to be a top priority, and all of the suggested reforms need to be carefully evaluated with some urgency.

My last recommendation recognizes that while the desire is to maintain separation with macroprudential tools focused on financial stability and monetary policy tools focused on fostering macroeconomic stability, in a low  $r$ -star environment and with limited macroprudential tools, it behooves monetary policymakers to consider the financial stability implications of its monetary policy settings. In January 2020, as part of its monetary policy framework review, the FOMC discussed how financial stability considerations should be incorporated into the conduct of monetary policy, with policymakers generally agreeing that supervisory, regulatory, and macroprudential tools should be the primary means to address financial stability risks.<sup>15</sup> I do not disagree, but I would like to see financial stability considerations explicitly incorporated into the monetary policy framework, with an acknowledgment that nonconventional monetary policy has the potential to increase the risks to financial stability by spurring search-for-yield behavior, eroding lending standards, and increasing leverage. I do not see financial stability as a separate goal for monetary policy. But monetary policymakers need to be clear-eyed that the actions they take to achieve monetary policy goals, while most often complementary to fostering financial stability, can at times contribute to financial stability risks that could jeopardize the achievement of monetary policy goals over time. Macroprudential and microprudential tools should be the first line of defense against building financial stability risks. However, if these prove inadequate, monetary policymakers should follow a risk-management approach and be open to the possibility of adjusting their

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<sup>14</sup> See Duffie (2020), Brainard (2021), and Treasury Market Practices Group (2019).

<sup>15</sup> See FOMC (2020).

monetary policy settings in light of financial stability risk because this might be the best way to foster sustainable attainment of their monetary policy goals over time.

Policymakers need to consider the intertemporal tradeoffs. For example, in an economy near its monetary policy goals, should financial vulnerability be sufficiently high and not able to be addressed with macroprudential policy, policymakers may want to dial back monetary accommodation. This would likely mean it would take somewhat longer to fully achieve the monetary policy goals, but the benefit would be to lower the risks of a future period of financial instability that could harm macroeconomic stability in the future. In contrast, in an economy that is far from its monetary policy goals, policymakers should be more cautious in tightening monetary policy on financial stability grounds because the likelihood that financial imbalances would rise to problematic levels in such an environment is low and the current macroeconomic costs would likely outweigh the potential gains to future macroeconomic stability.

Following this approach suggests that forward guidance on the future path of monetary policy, including the policy rate and asset-purchase programs, should explicitly include escape clauses for financial stability risks, similar to those that have been used by the Bank of England.<sup>16</sup> The evolution of financial stability risks is uncertain, and these escape clauses allow policymakers to deviate from their forward guidance if financial vulnerability and risks become sufficiently elevated. Escape clauses have a cost: by increasing flexibility, they undermine the commitment value of the forward guidance and thus can lower its effectiveness. But escape clauses also have some benefits: they allow forward guidance to include longer-run commitments and they preserve the credibility of policymakers who may find themselves

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<sup>16</sup> In August 2013, the Bank of England's Monetary Policy Committee initiated forward guidance that it would hold interest rates low and consider additional asset purchases at least until the unemployment rate had fallen to 7 percent. But it also said that a condition that would vacate this guidance would be if the Bank of England's Financial Policy Committee found that the stance of monetary policy was threatening financial stability in a way that couldn't be contained by the available macroprudential tools. Kohn (2014) discusses this example. Also, see Bank of England (2013).

having to adjust policy before the conditions in the forward guidance are met. Maintaining the credibility of this policy tool will permit it to be effectively used in the future. In my view, the benefits of escape clauses for forward guidance outweigh the cost, and I would like to see them used routinely when monetary policymakers issue forward guidance.

When to trigger the escape clause will depend on the conditions in the economy and financial system. It will involve some judgment, but a decision to trigger should be tied to policymakers' analysis of financial stability vulnerabilities and risks, which is communicated to the public on a regular basis. This regular communication should not be too difficult. In the U.S., this analysis already forms an important part of monetary policy discussions, as indicated in the minutes of FOMC meetings. In addition, the Board of Governors, which constitutes part of the FOMC, now releases a biannual financial stability report, which discusses the framework and their assessment.<sup>17</sup> Because some of the tools used to build the resiliency of the financial system are beyond the purview of the FOMC, monetary policymakers will need to develop a good understanding of actions being considered by other financial regulators in evaluating financial vulnerabilities and make a decision on whether to trigger the escape clause. In the U.S. we are still a distance away from developing a clear strategy about the circumstances under which monetary policy would be used to combat financial vulnerabilities, but I believe developing a set of principles to guide these decisions would be a useful addition to our monetary policy deliberations in a low-interest-rate world.

## **Conclusion**

To conclude, maintaining and enhancing the resiliency of the global financial system has clear benefits. It supports the attainment of our macroeconomic goals over time, and it allows monetary policymakers to fully use their policy tools. After the global financial crisis, steps were taken to shore up the resiliency of

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<sup>17</sup> See Board of Governors (2021).

the commercial banking system. Today, systemically important banking institutions have higher capital and liquidity buffers and better risk-management systems, and the banking system was able to lend important support to households and businesses throughout the pandemic. However, we cannot take this resiliency for granted. The resiliency of the banking system needs to be reassessed in light of the low-interest-rate environment. In addition, the pandemic uncovered vulnerabilities in the nonbank financial sector, in short-term money markets, and in the U.S. Treasury market that need to be addressed. Changes in the economy will necessitate the use of nonconventional policy tools more often than in the past. So enhancing our ability to monitor risks to financial stability, including those that may be heightened by our monetary policy settings, will remain of key importance for monetary policymakers. I am hopeful that conferences like this one will encourage researchers to further develop models and perform empirical studies that enhance our knowledge of the interactions between monetary policy and financial instability. This work has taken on even more urgency in a time of very low equilibrium interest rates.

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