

Designing Resilient Monetary Policy Frameworks for the Future: An Introduction to the 2016 Economic Policy Symposium

Troy Davig

Monetary policy will face two interconnected challenges in the future. First, nominal interest rates in developed economies are widely projected to remain much lower than in the past, reflecting a confluence of factors that have driven equilibrium real interest rates—the rates that keep growth in line with its potential trend and inflation near target—lower. Persistently low rates give rise to a second challenge, which is determining how monetary policy will be implemented in this environment as well as which tools central banks should have in their toolkit. Future encounters with the lower bound on short-term rates in more advanced countries may lead to aggressive balance sheet policies, forward guidance and even substantially negative rates. Such policies have domestic implications but also affect capital flows that can pose challenges to smaller, open economies.

As central banks address these challenges, they will need to adopt monetary policy frameworks that can weather future shocks and lower-bound constraints on nominal interest rates. The 2016 Jackson Hole Economic Policy Symposium addressed these issues and provided a forum to discuss designing resilient monetary policy frameworks for the future.

The Fed's Toolkit

Federal Reserve Chair Janet L. Yellen opened the symposium by highlighting how the Fed's operational toolkit was, in many respects, inadequate to respond to economic developments during the Global Financial Crisis (GFC). She noted, for example, that once reserves were no longer scarce—due to liquidity injections intended to stabilize financial conditions—the Fed's operational framework was unable to effectively steer the federal funds rate. And after aggressive reductions in the funds rate during the crisis, the lower bound on nominal interest rates limited further monetary accommodation—even though economic conditions likely warranted additional stimulus.

To address these concerns, she discussed how the Fed has expanded its operational toolkit. In terms of steering short-term interest rates, she highlighted that the Fed can now pay interest on reserves, which helps break the connection between the level of short-term rates and the amount of reserves in the financial system. She also highlighted the addition of the overnight repurchase agreement (ON RRP) facility to further strengthen the Fed's influence over short-term rates. In terms of providing additional stimulus, she discussed asset purchases and forward guidance as tools that can be effectively deployed when policymakers are constrained by the lower bound. She noted that these tools—particularly the ability to pay interest on reserves—allowed the Fed to aggressively engage in asset purchases by providing confidence that short-term rates could be raised when needed, even when reserves were abundant.

Chair Yellen then discussed how the expanded toolkit might be deployed in the future. She noted that in past recessions, the federal funds rate was cut on average by about 5.5 percentage points. If interest rates are lower in the future, possibly due to the declining equilibrium real rate, then policymakers may again face an encounter with the lower bound. Asset purchases and forward guidance might again be used in such a scenario, and these tools are thus likely to remain important components of the Federal Reserve's monetary policy toolkit.

Evaluating the Pass-Through of Monetary Policy

The first paper, presented by Professors Darrell Duffie and Arvind Krishnamurthy, both of Stanford University, makes the case that changes in money markets are limiting the pass-through of monetary policy actions to other short-term interest rates. Regulation, imperfect competition and other forms of market segmentation have led to an increased dispersion in money market rates. Duffie and Krishnamurthy illustrate these changes quantitatively with a new index measuring the dispersion of U.S. money market rates. The index shows markets became highly segmented during the GFC. However, the index increases notably after 2014, which the authors attribute to the implementation of two regulations—the Supplementary Leverage Ratio and Liquidity Coverage Ratio. Both ratios are frictions that limit linkages and arbitrage activity across money markets, and both appear to have played a role in increasing the dispersion in money market rates. The authors note that dispersion also jumped when the Federal Reserve increased interest paid on excess reserves and its ON RRP facility, reinforcing their point that frictions across segments of money markets prevented short-term rates from moving in tandem. However, Duffie and Krishnamurthy also discuss how the Federal Reserve’s ON RRP facility may have improved pass-through of the Fed’s policy changes to wholesale money market rates. The improvement may have come by drawing funds away from banks and into money market funds and Treasury bills. Consequently, deposits remaining in banks may be less interest-rate sensitive, resulting in less pass-through to retail deposits. The authors conclude by offering some recommendations that could improve pass-through efficiency, such as changing the infrastructure within repo markets to include more direct trading platforms and broader central counterparties.

In discussing the paper, Deputy Governor Minouche Shafik of the Bank of England (BOE) emphasized the importance of monetary policy pass-through, since the overall efficacy of policy rests on how well changes in monetary policy affect other money market rates. Her comments picked up on Duffie and Krishnamurthy’s theme that regulation can have significant and sometimes unintended

consequences on financial markets. Referencing her experience at the BOE, she described how close coordination between macroprudential and monetary policy was important, particularly when monetary policy was purchasing assets and increasing the amount of reserves in the banking system. The Financial Policy Committee (FPC) at the BOE noted that such policy could actually lead banks' leverage ratios to deteriorate, so the FPC decided to exempt reserves from the leverage calculation. In addition, Shafik commented that central banks' role in money markets has changed, citing both the Fed's ON RRP facility and also how central banks are now influencing interest rates, providing liquidity and designing the infrastructure supporting financial markets.

Breaking Through the Zero Lower Bound

In the next paper, Marvin Goodfriend, Friends of Allan H. Meltzer Professor of Economics at the Tepper School of Business at Carnegie Mellon University, makes a case for why and how central banks should adopt frameworks that would permit short-term nominal interest rates to go deeply negative. He highlights several countries that have taken their policy rates negative and suggests that for the United States, a future cyclical downturn will likely require sharply lower short-term interest rates.

In some respects, Goodfriend argues monetary policy has unshackled itself from past encumbrances that bear similarities to the zero lower bound (ZLB). For example, he views both the gold standard and fixed exchange rate regimes as having restricted central banks' flexibility to respond to cyclical downturns. In both cases, however, central banks were able to transition to alternative, more flexible frameworks. Today, the ZLB similarly encumbers the ability of central banks to engage in countercyclical interest rate policy. Breaking through this lower bound, however, may require deeply negative nominal interest rates.

Before delving into how central banks could implement negative rates, he provides a framework illustrating why interest rates have become so low. By appealing to the concept of the equilibrium real rate, which Chair Yellen also discussed, he highlights a number of factors

that may keep rates low. Expectations of lower productivity and income in the future, as well as increasing tax, regulatory and other distortions, can pull down the equilibrium rate and make encounters with the ZLB more likely. These factors, along with lower rates of inflation, more anchored inflation expectations and a declining term premium have also pushed longer-term interest rates down, leaving central banks with less scope to move short-term rates. Goodfriend also expresses skepticism about additional quantitative easing (QE) as a means to provide monetary stimulus, noting that such policies not only take on fiscal dimensions and risks on behalf of taxpayers, but also risk moving countries into the realm of inflationary finance. The ZLB may give the public the sense that monetary policy is somewhat incapacitated and less able to respond to adverse economic developments, thereby raising precautionary saving and applying additional downward pressure on the equilibrium rate.

Goodfriend views negative interest rates as an option that will again give central banks the policy levers needed to respond to shocks when at the ZLB. The challenge is how to implement deeply negative rates, to which he offers three solutions. The first is to abolish paper currency, though Goodfriend notes this may be met with resistance from the broader public. The second is to manage growth in paper currency in a way that would cause the public to be indifferent toward placing their funds in a bank account earning negative interest or holding paper currency that is expected to depreciate at the same pace as the negative rate. The third is for the central bank to offer deposits directly to households as an alternative to physical currency. The account could pay or charge interest depending on the stance of monetary policy. In this case, when rates need to be negative, the central bank would also need to actively manage the growth of physical currency to support the negative rate setting. Overall, Goodfriend sees negative rates as a policy option worthy of serious consideration by central banks, but notes that it is an idea that likely requires “some getting used to.”

Discussant Marianne Nessén, Head of the Monetary Policy Department at the Sveriges Riksbank, was not as optimistic about central banks’ ability to adopt deeply negative rates. Appealing to her

experience of working at a central bank that has implemented “mildly” negative interest rates, she discussed some practical observations. The first was that in countries that have implemented negative policy rates, other rates have also declined, though rates on retail deposits at banks have generally not fallen below zero. She also noted that there is a likely point at which the costs of negative interest rates, which can include impaired market function, excessive risk-taking and adverse signals, outweigh the benefits. Finally, she highlighted that negative rates are unpopular with the public, so moving to a framework with deeply negative interest rates will likely entail changes in social conventions as well as changes in how financial institutions adjust and facilitate financial intermediation.

Details of Implementing Monetary Policy

In the paper “Evaluating Monetary Policy Operational Frameworks,” Ulrich Bindseil, Director General of Market Operations at the European Central Bank, reviews an array of features and considerations relevant to implementation frameworks. He first discusses what could be viewed as the 2007 consensus, that the target should be a single, well-defined short-term interest rate steered using a simple framework, such as a symmetric corridor of standing facilities around the target rate. He also discusses areas of nonconsensus, such as the extent to which a central bank should have sovereign exposure as well as collateral and counterparty frameworks.

Developments since 2007, however, have prompted several additional considerations regarding operational frameworks. For example, Bindseil notes that policymakers now need both the capacity to address crises “forcefully and quickly” and the scope to push the effective lower bound lower than in the past. Expanding frameworks in these dimensions, however, should not build up imbalances that may lead to future crises and should be sufficiently flexible to accommodate changes to the regulatory environment. Combining these considerations, he lays out a number of guiding principles for operational frameworks—specifically, that they provide effective control of the overnight rate; that they be lean, efficient and automated; and that they support financial stability.

Discussant Jean-Pierre Danthine of the Paris School of Economics viewed Bindseil's paper from two perspectives. First, Danthine largely agreed with the analysis of various operational frameworks, taking the view that a central bank's approach to steering short-term interest rates depends on factors that are likely specific to individual countries and their financial systems. Second, he discussed a number of issues Bindseil raises from a Swiss perspective. For example, while he found the idea of a "lean" central bank balance sheet useful, he noted that economic conditions would not necessarily warrant moving to such a balance sheet from one the size of the Swiss National Bank's (SNB). He also discussed how the SNB approached its lender-of-last-resort policies. Danthine views a systematic approach as most appropriate, rather than policies with vague conditions for the provision of liquidity. In the case of the SNB, he highlighted how banks pre-pledge collateral, which ensures a limited amount of liquidity in any circumstance. Finally, he discussed negative rates. He noted that commercial banks are reluctant to pass negative rates onto retail customers, largely because they are quite unpopular and risk a key funding source. Despite this issue, he noted policy rates can be made negative by imposing a fee on wholesale withdrawals of paper currency. To protect bank profits, exempting some central bank reserves from negative rates may be appropriate. And for small open economies with extensive currency appreciation, negative market rates may be a valuable policy tool for alleviating some of the pressure.

Simon Potter, Head of the Markets Group at the Federal Reserve Bank of New York and System Open Market Account Manager, also discussed Bindseil's paper and raised three questions about what central banks need to learn to evaluate implementation frameworks. One question is whether some types of money market activity are more preferable than others. For example, in settings with a lean central bank balance sheet and scarce reserves, money market trading often reallocates reserves within the banking system. In settings with a large central bank balance sheet and significant excess reserves, money market trading often reflects arbitrage activities between financial institutions that have access to the central bank's deposit facility and those that do not. A second question is how central banks

should provide broad-based liquidity, particularly given the stigma that often comes from receiving direct liquidity support from a central bank. A third question is how central banks should reconcile the goal of a lean balance sheet with asset purchase programs that provide accommodation through expectations that the banks will hold these assets for a long time. Reconciling these two competing dimensions of asset purchases can be achieved, Potter points out, by having sufficiently long periods between visits to the ZLB relative to the duration of assets on the balance sheet. Central banks could also sell assets, but as they have little experience with such operations, the effects on markets are uncertain. Finally, Potter notes that in the more concerning scenario where visits to the ZLB are frequent, a lean balance sheet would be quite challenging to achieve.

The Role of Fiscal Policy

In the luncheon address, Christopher A. Sims of Princeton University, a Nobel Laureate in Economics, discussed a range of issues that highlight the importance of fiscal policy when thinking about the role of central banks and how they achieve their objectives. He highlighted that monetary policy actions, in general, have fiscal implications. As a result, if significant monetary actions are not properly explained, they can result in political scrutiny. One dimension of this scrutiny can arise from changes in the market value of a large central bank balance sheet that occurs when interest rates change. In a rising rate environment, a central bank will likely face capital losses and the fiscal authority will face rising interest costs, both of which can raise questions and increase political pressure on monetary policy decisions. Sims reframes these interactions through a framework that illustrates that monetary and fiscal policy play roles in determining inflation—namely, through the fiscal theory of the price level. In a period of low inflation, central bank actions to raise inflation are most effective when accompanied by public expectations that fiscal policy will be supportive—not only politically, but also by raising expectations that future fiscal surpluses will decline. For example, lower interest rates will be most effective at raising inflation if the public also expects persistently higher government spending or lower taxes. In this context, fiscal policy plays a central role, just as monetary policy, in determining the rate of inflation.

Fostering Financial Stability

To start the second day, Professors Robin Greenwood, Samuel G. Hanson and Jeremy C. Stein, all from the Harvard Business School, presented a paper that argues the Fed could use some of its new tools—namely, the ON RRP—to help foster financial stability. Their thesis focuses on the incentives financial intermediaries have to fund longer-lived assets with short-term “moneylike” liabilities. Such maturity transformation may pose risks to financial stability, since intermediaries may not be able to roll over their liabilities in stressful periods and might be forced to sell their longer-dated assets, potentially at heavily discounted prices. The authors see the potential for government institutions, either the central bank or finance ministry, to mitigate these incentives for short-term borrowing by providing larger quantities of short-term liabilities. The increased supply would likely reduce the difference or “money premium” between very short-term liabilities and those with a slightly longer maturity, such as six months. As a result, financial intermediaries would have less incentive to borrow at the absolute shortest horizon available. In the United States, they see the ON RRP as a viable tool to provide more short-term liabilities, though this would require the Fed to keep its balance sheet much larger than in the past. The composition of the balance sheet could also shift from mortgage-backed and longer-dated Treasury securities toward shorter-maturity Treasury securities. The Fed would also need to make other adjustments to the configuration of short-term rates, such as narrowing the spread between the ON RRP rate and interest paid on reserves, to help attract investors and “crowd out” private-sector maturity transformation the authors see as posing risks to financial stability.

Randall S. Kroszner of the Booth School of Business at the University of Chicago discussed the paper. Although he viewed using a central bank balance sheet to foster financial stability as innovative, he had several questions. For example, even if a larger balance sheet could help foster financial stability through the mechanisms the authors described, the optimal size of the balance sheet would be unclear. He noted other presenters at the symposium, such as Sims and Bindseil, expressed a preference for a leaner balance sheet. Along

similar lines, Kroszner noted crowding out private-sector maturity transformation may not always be optimal, as some lenders may want risky borrowers to frequently roll over their debt as a way to enhance monitoring. He also noted other issues that could arise if the central bank chose to use a large balance sheet to foster financial stability, such as coordinating actions with the Treasury, the potential for a “run” to the central bank in times of financial stress and the potential for the relationship between the supply of short-term, safe assets and the amount of private maturity mismatch to shift if the central bank attempted to exploit it. Overall, Kroszner viewed the authors’ proposal as something central banks should take under serious consideration but adopt only after additional study and cost-benefit analysis.

A Focus on the Liability Side of the Central Bank’s Balance Sheet

In the last paper, Professor Ricardo Reis of the London School of Economics evaluates how the liability side of a central bank’s balance sheet affects inflation. In some advanced economies, reserves held by banks increased sharply due to QE policies. Reis argues that the increase has been so marked that demand for reserves is essentially saturated. He then examines whether QE raises inflation. He finds early rounds of QE likely moved inflation, but this effect faded as the amount of reserves in the banking system expanded. He notes that central banks can still adjust the interest rate paid on reserves to steer inflation toward its goal. However, paying interest on reserves is costly, and high levels of reserves could threaten central bank solvency and, consequently, independence. Because reserves are costly, Reis assesses the upper limit on funding QE with reserves. Using a framework that places the upper bound on reserves as equal to the discounted present value of all future seigniorage, Reis finds the risk of insolvency for the Fed, given the current size of its balance sheet, “is still far away.”

Since the upper bound on a central bank’s balance sheet appears quite high by his estimates, Reis examines how the balance sheet might be used to more effectively control inflation. He considers three options. The first is “helicopter money,” whereby the monetary authority effectively purchases government bonds that are subsequently written off

from its balance sheet. Overall, Reis is skeptical that helicopter money would be effective in raising inflation, particularly when interest paid on reserves is positive. The second option is to index the return on reserves to inflation, which he argues will provide a central bank a tool to better control inflation. And the third option is for a central bank to offer reserves with longer maturities to better control the yield curve, thereby potentially providing another tool to help central banks better achieve their objectives. Looking ahead, Reis argues that maintaining a high level of reserves in the banking system is consistent with a “lean” balance sheet, though the appropriate level is likely less than what the Fed currently provides.

Professor Laura Veldkamp of New York University discussed the paper, focusing on one question Reis raised—namely, why are banks holding so much liquidity? She noted that for banks, assets similar to reserves are actually quite scarce. In addition, regulatory changes have increased banks’ demand for highly liquid, safe assets. As a result, she views the increase in liquidity at banks as unsurprising. However, Veldkamp took the question one step further to ask why nonfinancial firms and households have likewise significantly increased their holdings of safe, highly liquid assets. She cited that precaution, uncertainty and fear still linger after the GFC, which reminded investors that tail risks can be realized. As result, the demand for safe assets climbed after the crisis and remains high. She suggested monetary policy—and even regulatory policy—may have a role to play in limiting concern about future tail risks and thereby encouraging more risk-taking.

Central Banker Perspectives on Monetary Policy Tools and Frameworks

Concluding the symposium was a panel of Governor Agustín Carstens from the Bank of Mexico, Benoît Coeuré from the European Central Bank’s (ECB) Executive Board, and Governor Haruhiko Kuroda from the Bank of Japan. Governor Carstens opened the panel by looking at monetary frameworks from an emerging market perspective. Rather than focusing on the operational aspects of monetary policy, he discussed changes in monetary policy strategy in emerging markets that, in many countries, produced lower and more

stable rates of inflation. He highlighted the autonomy emerging market central banks have been granted to conduct monetary policy, along with their adoption of price stability as a primary goal, as the most important factors. Flexible exchange rates and better capitalized banks, along with more developed capital markets, also played a role. In addition, he noted that “fiscal dominance” in many emerging markets was less prevalent, allowing central banks to pursue their objectives without pressure to monetize fiscal deficits.

Turning to Europe, Executive Board Member Coeuré highlighted some unique aspects of the ECB’s operational framework as well as possible challenges that lie ahead. For example, he noted that the ECB had many more counterparties and accepted a much wider range of collateral than the Fed. This framework was flexible and aided in the ECB’s response to the GFC. Some changes were needed, however, raising questions about whether the challenges that compelled the adjustments were permanent or temporary. One challenge he cited were shifts in financial intermediation, such as the regional fragmentation that occurred during the GFC or movement toward unregulated forms of finance as regulations change. While regional fragmentation is likely temporary, he views policies to mitigate risk in the future, such as maintaining a wide collateral framework, as still important. In terms of nonbank finance, he noted that monetary policy might need to focus more on how to provide liquidity, as well as how much liquidity to provide, to this part of the financial system. Another challenge he discussed is how central banks will address the effective lower bound on interest rates. He suggested unconventional policies might need to be deployed more frequently, though such policies have drawbacks such as exacerbating shortages of safe assets or threatening financial stability.

The final speaker, Governor Kuroda, discussed how low inflation and low interest rates are likely to coexist in the longer run, potentially eroding central banks’ ability to use conventional monetary policy. He stressed the importance of well-anchored longer-term inflation expectations to guard against inflation rates below target. He highlighted one recent example concerning oil prices: the decline that began in 2014 appeared to pull inflation expectations down in

Japan, but not in the United States. Inflation then rebounded less quickly in Japan than in the United States, possibly due to a downshift in Japanese expectations. He suggested this might reflect that expectations are not yet fully anchored around the 2 percent target in Japan. He also discussed negative interest rates, which the Bank of Japan introduced in January 2016, and how the new policy resulted in lower longer-term borrowing costs that stimulated borrowing by firms and households.

Postscript

The 2016 Jackson Hole Economic Policy Symposium raised several questions about how central banks should think about and design their operating frameworks. Later that year, the Federal Reserve raised interest rates for the second time since the financial crisis, while other central banks in large, advanced economies continued to provide policy accommodation. Overall, the global economy improved, suggesting monetary policy might soon need to begin normalizing across more countries. If moderate growth proceeds as many expect, determining the longer-run size of a central bank's balance sheet, its composition, and how best to foster financial stability and implement new frameworks will become increasingly important. But even as central banks look to a more normal setting for monetary policy, they will continue to prepare to address future downturns and financial strains. Resilient monetary policy frameworks will help central banks facilitate the normalization process while also having the tools in place to effectively stabilize the economy and financial markets in the face of destabilizing shocks.

