A Serenity Prayer for Monetary Policymakers

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Introduction

I thank Michael Drury and the Global Interdependence Center for inviting me to speak in their Central Banking Series. I have had the opportunity to attend many GIC programs over the years and I have always walked away with new insights into the global economy and financial markets. I have also been honored to speak at two earlier GIC events. I'm hoping that when the organizers invited me to be on today's program they weren't thinking, "the third time's the charm"! For my part, I feel privileged to share some of my views and I thank our local hosts in Singapore for providing such a beautiful setting in which to do it.

Rather than provide a standard economic outlook talk, I'd like to speak about a challenge that monetary policymakers face in the aftermath of the financial crisis and Great Recession. That challenge is managing expectations. When we think about expectations in the context of monetary policy, we usually mean expectations about inflation or expectations about the future path of policy. But today, what I mean is managing expectations about the role monetary policy can play in promoting a healthy economy. While I'll focus on the Federal Reserve, I believe a similar challenge applies to central bankers around the world. Of course, the remarks I'll provide are my own views and not necessarily those of the Federal Reserve System or my colleagues on the Federal Open Market Committee.

A decade has passed since the onset of the global financial crisis and the ensuing Great Recession. The U.S. economy has emerged from those dark days; it is now on sound footing. But it took a set of extraordinary actions outside the realm of normal monetary policy to get us back to this point. Because of the pain they caused, the global financial crisis and Great Recession rightly shined a bright light on the role of central banks. People who had never heard of the Federal Reserve before the crisis now hold strong opinions. There has been a healthy debate about the role monetary policy might have played in the run-up to the crisis, the effect of near-zero interest rates on the economy and financial markets, and the efficacy of the nontraditional tools used to address the Great Recession, including purchases of mortgage-backed securities and longer-maturity Treasuries.

Some critics of the Fed believe that monetary policy was excessively accommodative and a key driver of conditions that led to the crisis, while other critics believe that the economy could have emerged much more quickly from the deep recession had monetary policy reacted differently. On the other side, there are fans of the Fed who believe that the nontraditional actions taken by central banks were very successful – so successful that policymakers should consider expanding the use of monetary policy beyond its typical purview.

In my view, both sides represent exaggerated expectations of what monetary policy can achieve. And this distorted view is troubling because it makes it harder for the public to understand the rationale for policymakers' decisions and to evaluate their performance. It is no secret that there are several legislative proposals to change the way the Fed pursues its congressionally mandated monetary policy goals. Some proposals seek to restrict the Fed's ability to pursue these goals in a way that is insulated from short-run political influence. This restriction on monetary policy's independence would be a significant loss for the nation because, as a substantial body of research and actual practice indicate, when a central bank formulates monetary policy free from short-run political interference and is held accountable for its decisions, better economic outcomes result.

Accountability must go hand in hand with independence. That's why I believe it is time to recalibrate expectations of what monetary policy can achieve. The public needs to know what it can reasonably hold monetary policymakers accountable for. Indeed, even those who set policy would benefit if we kept in mind the serenity prayer: give me the serenity to accept the things I cannot change, the courage to change the things I can, and the wisdom to know the difference.

For the rest of my talk, I'll elaborate on what this serenity prayer means for four aspects of monetary policy: how monetary policy should address business cycle fluctuations; monetary policy and long-run growth; monetary policy vis-à-vis fiscal policy; and monetary policymakers' projections of the economy and future path of policy.

Monetary Policy and Business Cycle Fluctuations

At times during the recovery, the public discussion seemed to suggest that by setting interest rates appropriately, monetary policymakers could offset the deep shock that afflicted the economy and speed up the recovery. But this view ignores lessons from modern economic theory and historical experience. When a shock hits the economy, it takes some time for businesses to adjust their prices and for households to adjust their behavior. This delay allows monetary policy to affect the real side of the economy – output growth and employment – providing a bit of a cushion against the shock. However, it is a temporary effect that lasts only until prices adjust and the shock dissipates. We don't know the exact timing and magnitude of that impact; moreover, we can't predict with much precision the future shocks that will hit the economy. So attempting to fine-tune monetary policy to counteract the effects of a variety of temporary current and future shocks, some negative and some positive, is likely to lead to less economic stability rather than more.

In addition, not all shocks are transitory. Well-known research by Ken Rogoff and Carmen Reinhart documents that recessions associated with financial crises tend to be deeper and more prolonged than other types of recessions.[1] The loss in output after financial crises is usually not fully recovered.[2] In the case of the Great Recession, the housing crash required a large shift of resources out of that sector, and some Cleveland Fed research indicates that it typically takes the economy a long time to recover after a housing bust.[3] In other words, some part of the shock that caused the Great Recession was likely

[1] See Carmen M. Reinhart and Kenneth S. Rogoff, *This Time Is Different: Eight Centuries of Financial Folly*, Princeton: Princeton University Press, 2009.

[2] See Valerie Cerra and Sweta Chaman Saxena, "Growth Dynamics: The Myth of Economic Recovery," *American Economic Review* 98, March 2008, pp. 439–457.

[3] See Michael D. Bordo and Joseph G. Haubrich, "Deep Recessions, Fast Recoveries, and Financial Crises: Evidence from the American Record," Federal Reserve Bank of Cleveland Working Paper 12-14, June 2012, and Greg Howard, Robert

permanent or very persistent rather than the type of transitory shock monetary policy might temporarily cushion. Given the size of the shock, it took a long time for the economy to adjust. Monetary policy could not be expected to make up for that permanent loss.

That said, this doesn't mean that monetary policy should be unresponsive to changes in economic conditions. Monetary policy can ease the transitions the economy has to make after shocks hit by responding in a way that fosters monetary policy's longer-run goals, which for the Fed are price stability and maximum employment.[4] This means policy will vary over the business cycle as economic conditions change. For example, suppose there is a negative shock to aggregate demand. Firms will begin to cut their supply and reduce investment and employment. As output and employment fall, and demand and supply rebalance, the market level of interest rates will also fall. So long as inflation is near target, monetary policymakers would want to accommodate that fall in the market rate by reducing the short-term policy rate, supporting the economy's return to equilibrium. If policymakers didn't reduce the policy rate, prices would have to fall further and this would lead to disinflationary pressures, which is counter to promoting price stability.

Or consider a positive shock to productivity growth. In this case, firms would respond by increasing output and investment, and this would lead to a higher equilibrium interest rate in the economy. So long as inflation was near target, the central bank would want to raise its policy rate as the market interest rate rose. A failure to do so would allow inflationary pressures to build. In both of these cases, monetary policy isn't attempting to totally offset the shock. Instead, to foster price stability and maximum employment over the longer run, policymakers are moving the short-run policy rate consistent with changes in the equilibrium interest rate as the economy adjusts to shocks. Notice that in this view, the

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Martin, and Beth Anne Wilson, "Are Recoveries from Banking and Financial Crises Really So Different?" Board of Governors of the Federal Reserve System International Finance Discussion Papers 1037, November 2011.

[4] In the remainder of my talk, when referring to monetary policy's longer-run goals, I will use the Fed's goals of price stability and maximum employment. But my points apply to other central banks whose goals may be price stability alone, or are hierarchical, putting price stability before other goals.

maximum employment benchmark for evaluating the performance of monetary policy isn't static; it depends on the types of shocks that hit the economy and the time it will take for the economy to adjust. In terms of our serenity prayer, it's important to have the serenity to know there will be shocks to the economy that monetary policy should not attempt to offset, and the courage, instead, to set policy to promote the longer-run goals of price stability and maximum employment.

Monetary Policy and Long-Run Growth

My second topic is long-run growth. The recent discussion among economists and others about long-run growth has led some people to overestimate what monetary policy can achieve. A long-standing economic tenet is that while monetary policy can affect real growth in the short run, it cannot affect the economy's long-run growth rate. Unfortunately, this distinction between short-run and long-run effects has become somewhat muddled.

So let's take a step back and consider the drivers of long-run growth. The amount of goods and services an economy can produce depends on the amount of capital and labor it has – its inputs – and on how productively it can combine those inputs to create output. For the economy to grow, there needs to be an increase in labor or capital or an increase in productivity, or both. Labor force growth is largely determined by demographic factors like the birth rate, age distribution, and immigration. Labor force growth, along with labor force skills and the economy's infrastructure and institutional arrangements, such as the rule of law and well-developed financial markets, can all affect the quantity and quality of inputs and therefore the *level* of output a country can produce over the longer run. But sustained *increases* in output, that is, long-run economic growth, and increasing standards of living are determined by productivity growth. And productivity growth depends on factors like investment in human and physical capital and R&D that yields innovative products and processes.[5]

[5] In the elegant and seminal neoclassical growth model developed by Robert Solow and Trevor Swan, a higher savings rate will lead to higher investment and higher income per capita in the long run, but this can't happen indefinitely; eventually the economy reaches a new steady state. Only productivity growth can lead to an economy that continues to grow. (See Robert M. Solow, "A Contribution to the Theory of Economic Growth," *Quarterly*

It is these underlying fundamentals, and not monetary policy, that determine the economy's long-run growth rate and sustainable unemployment rate. In economists' terminology, in the long run, monetary policy is said to be neutral with respect to the real side of the economy and to affect only the price level and inflation rate.

The FOMC's statement on longer-run goals and monetary policy strategy, which was adopted in 2012 and reaffirmed each year since, recognizes this distinction.[6] It clearly says that "the inflation rate over the longer run is primarily determined by monetary policy, and hence the Committee has the ability to specify a longer-run goal for inflation." In contrast, "the maximum level of employment is largely determined by nonmonetary factors that affect the structure and dynamics of the labor market. These factors may change over time and may not be directly measurable." It's true that poor monetary policy can inhibit the ability of the economy to achieve its long-run growth potential, but by promoting the longer-run goals of price stability and maximum employment, monetary policy can contribute to the economy's ability to reach its long-run growth rate, even though it cannot affect what that long-run rate is.

While monetary policy can't affect the economy's long-run growth rate, it cannot ignore it either, because the economy's long-run equilibrium real rate of interest, that is, the rate consistent with stable prices and maximum employment over the long run, is determined by the long-run growth of consumption and, therefore, of output. A sizable shock to the economy can affect the potential growth rate, and monetary

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Journal of Economics 70, 1956, pp. 65–94, and Trevor W. Swan, "Economic Growth and Capital Accumulation," *The Economic Record* 32, 1956, pp. 334–361.) A further advance is the endogenous growth model, which seeks to explain the source of productivity growth. In this model, there need not be diminishing marginal returns to capital if human capital increases with the stock of physical capital. But even if there are diminishing marginal returns, these can be offset if increases in R&D lead to innovative products and processes. Thus, ongoing growth can be sustained by investments in human capital and new technology. (Two early contributions to the endogenous growth literature are Robert E. Lucas, Jr., "On the Mechanics of Economic Development," *Journal of Monetary Economics* 22, July 1988, pp. 3–42, and Paul Romer, "Increasing Returns and Long-Run Growth," *Journal of Political Economy* 94, October 1986, pp. 1002–1037.)

[6] See Federal Open Market Committee, "Statement on Longer-Run Goals and Monetary Policy Strategy," adopted effective January 24, 2012; as amended January 31, 2017.

policy will need to take that into account. The financial crisis and Great Recession affected not only aggregate demand but also aggregate supply. Potential growth fell and, with it, so did the economy's equilibrium interest rate. There is ongoing research into the mechanism through which large shocks might affect potential growth. Regardless of the mechanism, the fact that potential growth fell had implications for monetary policy. The Fed's policy rate has been lower than what it would have been had there been no change in the equilibrium rate. The lower equilibrium rate is reflected in the FOMC's economic projections. For example, in January 2012, the median level of the longer-run fed funds rate was 4-1/4 percent. In the most recent projections, in December 2016, that level is 3 percent.

An easy way to see the effect of lower equilibrium interest rates is to look at simple monetary policy rules that are often used to assess the degree of monetary accommodation. I don't believe that monetary policy should be set mechanically using a single policy rule; no rule works well enough across a variety of economic models and in a variety of economic circumstances. But I do find it useful to look at the outcomes of an array of simple, robust monetary policy rules as a gauge. You can find updates for a set of seven rules and their outcomes across several forecasts on the Cleveland Fed's website.[7] The equilibrium interest rate is a parameter in most of these rules, and when it falls, so does the policy outcome from these rules, indicating that policy should respond to changes in these fundamental aspects of the economy.

But this is different from trying to actively use monetary policy to affect the longer-run growth rate of the economy or the longer-run unemployment rate. As Chair Janet Yellen said in her press briefing after the December FOMC meeting, this is not a strategy she has recommended, and rightly so.[8] I am very doubtful that monetary policy could be targeted to spur a strong pickup in the types of investment in human capital and physical capital that would raise productivity growth. Monetary policy is a blunt

[7] See "Simple Monetary Policy Rules," Federal Reserve Bank of Cleveland. In addition to posting current outcomes for the set of rules, the web page includes a tool that allows the user to customize the rules and the forecasted inputs into the rules to generate alternative policy paths.

[8] See "Transcript of Chair Yellen's Press Conference," December 14, 2016, p. 9.

instrument, and despite very low interest rates, we certainly haven't seen that type of effect during this cycle. Indeed, one of the conundrums has been the low productivity growth rates we've been experiencing. Attempting to use monetary policy to spur productivity growth would be a risky experiment, both in terms of our ability to achieve our longer-run goal of price stability and in terms of financial stability given the excessive accommodation such a strategy would require. So once again, we need the serenity to accept that monetary policy cannot affect the economy's long-run growth rate, and the courage to keep monetary policy focused on what it is capable of achieving: price stability that promotes maximum employment.

Monetary Policy vs. Fiscal Policy

Rather than monetary policy, other forms of economic policy are better suited to affecting the fundamentals that drive productivity growth and potential growth. Policies and programs that encourage higher levels of investment in R&D and innovation, that help workers displaced from jobs because of technological change or globalization to transition to other jobs, and that spur investments in education to help people gain the skills needed in the modern economy all have the potential to raise productivity and longer-run growth. Tax-code changes, immigration policy, and trade policy also have the potential to affect the economy's longer-run growth rate, but whether in a positive or negative direction depends on the particular changes that are made, how they are implemented, and how they are financed.

Government spending and tax policies fall under the purview of fiscal policy, not monetary policy. The distinction is important, yet it has become somewhat muddled in the aftermath of the crisis. During the financial crisis, the Federal Reserve established some special credit and liquidity programs that went beyond traditional monetary policy. Some of these programs, like the term auction facility, which auctioned longer-term credit to depository institutions, were related to the Federal Reserve's role as lender of last resort. Other lending programs targeted specific markets, like the commercial paper market. In addition, to put downward pressure on longer-term yields and to support the housing market, the Fed purchased large volumes of housing agency debt and agency-guaranteed mortgage-backed securities.

These purchases had the desired effect of adding accommodation once the traditional tool of policy, the fed funds rate, had reached its effective lower bound. But they also entailed the Fed's allocating credit to a particular sector, housing, something the Fed traditionally has not done.

These programs were necessary, but they did have some negative aspects. One was that they opened up the Fed to requests to aid other industries or to use its balance sheet to fund government initiatives. During December 2008, as Congress debated a bailout for American automakers, several members of Congress requested of then-Chair Ben Bernanke that the Fed lend directly to auto companies. Needless to say, the Fed was reluctant to go down this path, which would have put it squarely in the midst of industrial policy, a responsibility of Congress.[9] More recently, the 2015 Fixing America's Surface Act, or FAST Act, tapped the Fed's surplus account to pay for highways.

To avoid the erosion of monetary policy's independence, it is important to bring monetary policymaking back to more normal footing. The Fed recognized this need from the very start of its use of nontraditional tools. For example, many of the special lending facilities were designed to be self-liquidating as credit-market conditions improved. And the Fed clearly states in its policy normalization principles that it intends, in the longer run, to hold no more securities than necessary to implement monetary policy efficiently and effectively, and that the composition of assets will return to being primarily Treasury securities.[10] This will mean a smaller balance sheet than what we hold today, regardless of the longer-run policy implementation framework the Fed ultimately adopts.[11] The return to primarily Treasuries will take some time, but it will be welcome because it will minimize the effect of the Fed's asset holdings on the allocation of credit across sectors of the economy, and it may help guard against future calls for the

[9] See the discussion in Chapter 17 of Ben S. Bernanke, *The Courage to Act: A Memoir of a Crisis and its Aftermath*, New York: W.W. Norton and Company, 2015.

[10] See Federal Open Market Committee, "Policy Normalization Principles and Plans," September 17, 2014.

[11] The FOMC has undertaken an extended effort to evaluate different frameworks for implementing monetary policy in the long run. See the "Minutes of the Federal Open Market Committee Meeting," July 28–29, 2015, July 26–27, 2016, and November 1–2, 2016.

Federal Reserve to enter into the realm of fiscal policy. We need the serenity to accept that monetary policy and fiscal policy are distinct, and the courage to push against attempts to use monetary policy for goals that fall under the purview of fiscal policy.

FOMC Projections

The final topic I'd like to discuss is the FOMC's projections of the economy and federal funds rate path. The FOMC is not prescient, nor should we expect it to be. Four times a year, the FOMC provides a summary of economic projections across FOMC participants, conditional on the path of policy that each participant sees as appropriate. The media focuses attention on changes in the projections over the year, and at the end of the year, stories are written about what actually came to pass compared to what the FOMC was projecting at the start of the year. For example, according to the central tendency of FOMC participants' projections, at the start of 2012, real GDP growth for the year was expected to be 2.2 to 2.7 percent. It turns out that the economy grew at only a 1.3 percent pace that year, a forecast miss of around 1.0 to 1.5 percentage points. On the other hand, participants underestimated the improvement seen in the unemployment rate in 2012. At the start of the year, they projected an unemployment rate of 8.2 to 8.5 percent by the fourth quarter, but unemployment ended up lower, at 7.8 percent. The FOMC also was more optimistic about growth at the start of 2015 than what came to pass, and inflation ran below projections over 2013–2015.

The public has to hold the FOMC accountable for its performance, but it should not hold monetary policymakers to an unrealistic standard. To evaluate the performance of the FOMC's projections, it is important to put these forecast misses into context by remembering that forecast errors of this magnitude, both above and below actual outcomes, are the norm among economic forecasters, not the exception.[12] Forecasting is difficult because the economy is constantly being buffeted by shocks, data are revised over

[12] It is also worth remembering that the FOMC projections are conditional on what each participant views as the appropriate policy path and not necessarily what the participant views as the most likely policy path. For a clear and very useful explanation of what the FOMC projections are and are not, see Ben S. Bernanke, "Federal Reserve Economic Projections: What Are They Good For?" Brookings Institution blog post, November 28, 2016.

time, and there is uncertainty about which model will best predict the future path of the economy at any given time. In its Summary of Economic Projections, the FOMC publishes a table of the average historical forecast errors across various private-sector and government forecasts.[13] For real GDP growth, a 70 percent confidence interval around the forecast one year out is about ±1-3/4 percentage points. The forecast the FOMC made in early 2012 was within the interval. The confidence bands around forecasts of unemployment and inflation one year out are also wide: about ±3/4 percentage point for the unemployment rate, and about ±1 percentage point for inflation. So the FOMC projection performance is quite reasonable by this metric.

Similar scrutiny has been applied to changes in the policy path that the FOMC includes in its projections. A small change in the path can generate many headlines. But we should expect the policy paths to be responsive to changes in economic conditions and changes in fiscal and other government policies, to the extent that they change the outlook. Changes in appropriate policy that are based on sound monetary policymaking principles and are systematically related to changes in underlying conditions that affect the medium-run outlook provide useful information on the Fed's reaction function, helping the public better anticipate how the Fed will change policy when economic conditions change.

As a way to convey some of the uncertainty around our future policy path and outlook, I have been an advocate of the FOMC's publishing confidence bands around its projections.[14] The Committee is

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[13] For example, see p. 11 of the Summary of Economic Projections, included in the "Minutes of the Federal Open Market Committee Meeting, December 13–14, 2016."

[14] See Loretta J. Mester, "Forward Guidance in Extraordinary Times, in Normal Times, and Betwixt the Two," remarks at the Money Marketeers of New York University, Inc., New York, NY, November 6, 2014; Loretta J. Mester, "Forward Guidance and Communications in U.S. Monetary Policy," Imperial College, London, U.K., November 20, 2014; Loretta J. Mester, "The Outlook for the Economy and Monetary Policy Communications," National Association for Business Economics 2015 Economic Policy Conference, Washington DC, March 9, 2015; Loretta J. Mester, "Recent Inflation Developments and Challenges for Research and Monetary Policymaking," The 47th Konstanz Seminar on Monetary Theory and Monetary Policy, Insel Reichenau, Germany, May 12, 2016; Loretta J. Mester, "Acknowledging Uncertainty," Shadow Open Market Committee Fall Meeting, New York, NY, October 7, 2016.

discussing it.[15] Confidence bands will help the public understand some of the risks around our projections and remind them of the reasonable amount of variation to expect in outcomes relative to projections. The bands will also illustrate that while the dispersion across FOMC participants' projections of the policy path often gets a lot of attention, this dispersion is actually quite narrow compared with the confidence bands. Finally, confidence bands will also be a helpful reminder to policymakers themselves of the uncertainty we constantly live with. So, we all need the serenity to accept that policymakers aren't prescient and their forecasts will change over time, and the courage to hold policymakers accountable for being principled and systematic in how they react to changes in economic conditions.

Conclusion

In summary, I am a strong supporter of insulating monetary policy decisions from short-run political considerations. Accountability must go hand in hand with such independence. For the public to be able to hold policymakers accountable for their policy decisions, it must understand what it is appropriate to expect from monetary policy. Today, I talked about four areas where expectations need some recalibration: how monetary policy should address business cycle fluctuations; the relationship between monetary policy and long-run growth; monetary policy vis-à-vis fiscal policy; and monetary policymakers' economic and policy path projections. The serenity prayer provides some guidance for that recalibration: We need the serenity to accept the things that cannot be changed by monetary policy (and look for more appropriate solutions). We need the courage to change the things we can (by keeping monetary policy focused on its longer-run goals of price stability and maximum employment). And we need the wisdom to know the difference.

[15] See "Minutes of the FOMC Meeting, January 26–27, 2016."