

Monetary Policy and Uncertainty: Adapting to a Changing Economy— An Introduction to the Bank's 2003 Economic Symposium

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Under normal circumstances, monetary policy is a challenging endeavor. Policymakers are routinely faced with making reliable forecasts in the presence of both difficulties in gauging the current state of the economy and uncertainty about the nature and persistence of economic shocks. This complexity becomes magnified when the economic structure is thought to be undergoing significant changes. In these situations, traditional relationships among economic variables may break down and the information content of economic indicators may be altered, reducing policymakers' confidence in their ability to understand the economy and produce reliable forecasts.

In recent years, there is widespread evidence that the economic structure in many countries may be undergoing significant change, with important implications for monetary policy. For example, some key features of the business cycle appear to have changed. In a number of countries, the amplitude of business cycle fluctuations appears to have declined significantly. Moreover, as central banks around the world have succeeded in lowering inflation, there is growing evidence that the inflation process may be changing, and the prospect of deflation has emerged as a new policy concern in some countries. In addition, financial liberalization and financial market innovation in many countries appear associated with

increased leverage by consumers and firms, greater volatility of asset prices, and an increased incidence of financial crises.

To understand these developments and examine their implications for monetary policy, the Federal Reserve Bank of Kansas City sponsored a symposium, “Monetary Policy and Uncertainty: Adapting to a Changing Economy,” at Jackson Hole, Wyoming, on August 28-30, 2003. The symposium brought together a distinguished group of central bankers, academics, and business and financial economists to discuss how uncertainty about the economy influences the theory and practice of monetary policy.

This introduction provides a brief overview of some of the main themes raised at the symposium, highlighting three topics: the types of uncertainty faced by policymakers, key changes in the economy and financial markets, and how uncertainty affects the design and conduct of monetary policy.

Types of uncertainty faced by policymakers

The extensive literature on monetary policy under uncertainty identifies several different types of uncertainty. Broadly speaking, policymakers may face data and measurement uncertainty, uncertainty about the nature and persistence of economic shocks, and uncertainty about the structure of the economy.

Data and measurement uncertainty arise when policymakers do not have a very accurate picture of the current state of the economy or have imprecise estimates of key economic concepts that are used to guide policy. Some measures of economic activity, such as GDP, are only available with a lag and may also be subject to significant revision. In addition, some key economic concepts used by policymakers, such as potential output, the natural rate of unemployment, and the equilibrium real rate of interest, are inherently difficult to estimate accurately. Thus, policymakers typically must make decisions based on potentially inaccurate information about the economy’s current condition.

Policymakers also face considerable uncertainty about the nature and persistence of economic shocks that may cause the path of the economy to deviate from forecasts. Sometimes these shocks are relatively easy to identify, and most of the uncertainty concerns how long they are likely to persist. Examples are a large change in oil prices or a sudden drop in stock prices. For other shocks, there may be considerable uncertainty about both their nature and their persistence. For example, during the latter part of the 1990s, business investment spending in the United States was unusually strong, while over the past few years it has been unusually weak. In both situations, economists and policymakers have had difficulty in identifying the source of these changes in investment behavior and have tended to underestimate their persistence. Generally speaking, policymakers want to respond to persistent shocks that may have long-term detrimental effects on the economy but not to transitory shocks. Thus, uncertainty about the nature and persistence of shocks can pose significant difficulties for monetary policy.

Policymakers also face uncertainty about the structure of the economy. Changes in the institutional structure of the economy or in the behavior of consumers and firms may alter how the economy responds to economic shocks and how monetary policy actions affect the economy. For example, changes in the structure of the financial system could affect the ability of monetary policy to influence interest rates or alter how the economy responds to interest rates. Structural changes can be good or bad, depending on whether they make the economy more or less stable in response to economic shocks. For example, fiscal policy changes that enhance automatic stabilizers in the tax system may make the economy more stable. However, changes in the structure of the financial system as a result of deregulation and financial innovation could potentially make the economy more stable or less stable. Regardless of whether these structural changes are ultimately beneficial or harmful, however, in the short-run they can cause serious difficulties for monetary policy to the extent that they are not captured in the models used by policymakers to analyze the economy and to forecast future economic activity.

Key changes in the economy and financial markets

The first day of the symposium focused on the implications for monetary policy of three changes in the macroeconomic environment experienced by a number of countries in recent years. James Stock and Mark Watson examined the recent moderation in the business cycle, Kenneth Rogoff discussed changes in the behavior of inflation, and Claudio Borio and William White focused on the connections between financial liberalization, financial crises, and macroeconomic stability. A common theme in the three papers was a focus on whether these changes represented fundamental changes in the structure of the economy or, instead, resulted from temporary factors whose effects would dissipate over time.

In their paper, Stock and Watson document the moderation in the business cycle across a number of countries in recent years. Then, using empirical models of the U.S. and eurozone economies, they attempt to determine whether the moderation in economic volatility was due to improved monetary policy, sectorial changes in the structure of the economy, or smaller economic shocks. Based on their analysis, Stock and Watson conclude that relatively little of the decrease in volatility is due to monetary policy or structural changes in the economy. Instead, they suggest that most of the decline in volatility appears due to smaller economic shocks in recent years. An implication of these findings is that larger shocks in the future could reverse the trend toward a more stable economy and pose increased difficulties for monetary policy.

In his paper examining changes in the inflation process, Rogoff documents the remarkable decline in global inflation over the past decade. While acknowledging the very important role played by monetary policy in reducing inflation in many countries, Rogoff argues that additional factors are needed to explain the trend toward lower inflation common to almost all developed and developing countries. According to Rogoff, a key factor is increased international competition resulting from globalization and deregulation. Rogoff

shows that increased competition has a short-term effect in lowering inflation and also increases the incentive of a central bank to maintain a commitment to price stability. He notes, however, that if the short-run effects of increased competitiveness and other temporary factors wear off, there could be a reversal of recent inflation trends, and inflation could reemerge as a problem for monetary policy.

While the Stock and Watson and Rogoff papers suggest that policymakers have benefited to some degree from good luck in recent years, Borio and White offer a different perspective on the causes and consequences of recent financial crises. They are critical of the view that these crises are largely a temporary response to financial market deregulation and so are likely to dissipate over time. Instead, Borio and White suggest that structural changes in financial markets have made the economy less stable and more prone to crises. They argue that financial market changes coupled with monetary policy that focuses exclusively on maintaining price stability can allow the buildup of financial imbalances in the form of increased debt levels and asset price bubbles. When these imbalances unwind, they have potentially serious implications for macroeconomic performance. Consequently, Borio and White believe that monetary policy should be actively used to prevent the buildup of financial imbalances.

These three papers generated considerable discussion and some controversy. A number of participants suggested that Stock and Watson and Rogoff had underestimated the role of better monetary policy in reducing output variability and lowering inflation and had overemphasized the role of economic shocks. Consequently, these participants were more optimistic that the favorable economic developments of recent years were likely to continue. Discussion of Borio and White tended to focus less on their interpretation of structural changes in the economy and more on their recommendations for monetary policy. Some participants were skeptical that policymakers could accurately identify a buildup of financial imbalances and argued for using regulation and supervisory policy rather than monetary policy to attempt to correct these imbalances.

Implications of uncertainty for the conduct of monetary policy

During the second day of the symposium, participants addressed the implications of uncertainty for the theory and practice of monetary policy. In his paper, Carl Walsh reviewed much of the recent literature on the conduct of monetary policy under uncertainty, highlighting important contributions by academic economists and central bank economists. Presentations by central bank officials provided a more pragmatic and operational view that highlighted some of the difficulties in bridging the gap between the theory and practice of monetary policy. In the course of the discussion, two noteworthy issues emerged: the relative roles of formal policy rules and policymaker's judgment, and whether monetary policy should be more cautious or more aggressive in the presence of uncertainty.

The discussion of rules versus judgment echoed some of the issues raised in the old monetarist/Keynesian debates from years ago about the use of policy rules versus discretion. In those debates, there was typically very little middle ground, as participants in the debates tended to favor rules or to dismiss them entirely. In contrast, the discussion at this year's symposium showed how much these differences have narrowed. The recent literature on policy rules shows that rules have become more sophisticated and more flexible. At the same time, monetary policy actions have become more systematic and more constrained by explicit long-run goals. Even so, most symposium participants agreed that even the best policy rules were, at most, a supplement to and not a substitute for a policymaker's judgment.

Recent research has also cast new light on whether central banks should act more cautiously in the presence of uncertainty. For a number of years, policymakers were guided by research suggesting policy should be more cautious in the presence of uncertainty about the structural parameters of macroeconomic models. As discussed by Carl Walsh in his symposium paper, however, more recent research shows that this conclusion does not generalize across different specifications of economic models or across different types of uncertainty.

While there are situations in which uncertainty may lead to increased caution, there are other circumstances when it may be better for a central bank to act aggressively in responding to economic shocks.

One specific situation where a more aggressive policy may be appropriate is when a policymaker's assessment of risk is asymmetrical. For example, if the risks to the economy of a further weakening of economic activity are judged to be very large, it may be desirable to ease policy aggressively. This is true even if the probability of additional economic weakness is viewed to be very small and despite the concern this action could increase the risk of higher inflation in the future. In his opening remarks at the symposium, Alan Greenspan notes that this approach to monetary policy risk management has guided Federal Reserve policy at times in recent years, most notably at the time of the Russian debt default in 1998. In his paper, Carl Walsh notes that a precautionary or insurance policy of this type is supported by recent research that uses robust control methods to examine the design of policy in situations in which policymakers wish to avoid particularly bad economic outcomes.