

# FRBSF ECONOMIC LETTER

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## Fiscal and Monetary Policy: Conference Summary

*This Economic Letter summarizes the papers presented at a conference on “Fiscal and Monetary Policy” held at the Federal Reserve Bank of San Francisco on March 4 and 5, 2005. The papers are listed at the end and are available at <http://www.frbsf.org/economics/conferences/0503/index.html>.*

This year’s conference brought together six research papers that explore issues related to fiscal and monetary policy and their interaction. The papers ranged from a theoretical analysis of the design of fiscal policy in a monetary union to the use of long-term bond rates to estimate monetary policy reaction functions.

Several of the papers examine the role of fiscal policy in macroeconomic stabilization, an area of renewed interest in both research and policy circles. Over the past few decades, many economists had come to the conclusion that activist fiscal policy, outside of so-called “automatic stabilizers,” such as unemployment insurance, was in general poorly suited as a tool for macroeconomic stabilization. According to this view, fiscal policy should instead primarily focus on longer-run issues, including the provision of public goods, correction of market failures, and the achievement of equity and efficiency goals.

Recent developments, including the active use of countercyclical fiscal policy in Japan and the United States and the formation of a monetary union in Europe, have provided an impetus for a wide range of research on fiscal policy and its interaction with monetary policy, as represented by four of the conference papers. Iwamura, Kudo, and Watanabe study the use of monetary and fiscal policy in Japan during its prolonged downturn. Galí and Monacelli argue that national fiscal policy in a monetary union should take over some of the short-run stabilization duties normally performed by monetary policy. Benhabib and Eusepi look at the interaction between fiscal and monetary policy and show that the design of monetary policy should be sensitive to how fiscal policy is conducted. And Perotti

examines the empirical evidence regarding the effects of changes in government spending and taxes on the economy.

The remaining two papers focus on issues related to monetary policy. Brock, Durlauf, and West analyze the design of monetary policy rules in an environment where the policymaker is uncertain about the true structure of the economy. Ang, Dong, and Piazzesi develop a new method of estimating monetary policy reaction functions using information in the entire interest rate term structure.

### **Fiscal and monetary policy in Japan**

For many years now, Japan has been suffering from slow or at times contracting economic activity and deflation. In response, policymakers in Japan have taken a number of steps to stimulate the economy through monetary and fiscal policies. Notably, in February 1999 the Bank of Japan lowered the overnight nominal interest rate to zero, as low as it can go. After a small policy tightening, in March 2001 the overnight cash rate was again lowered to zero and it has remained at zero since then. To understand why the Japanese economy has been slow to recover, Iwamura, Kudo, and Watanabe develop a model of the economy and use it to study the interaction between fiscal and monetary policy and the characteristics of optimal monetary policies. They find that the policy pursued by the Bank of Japan between 1999 and 2004 lacked important characteristics of optimal monetary policy, and, in particular, they suggest that the Bank of Japan may not have been fully committed to its zero-interest rate policy. They also show that the term structure of interest rates was not downward sloping after 1998, indicating that the Bank of Japan’s policy failed to have sufficient influence on market expectations about the future course of monetary policy. Finally, the authors argue that Japan should have run larger government deficits and that the combination of this fiscal policy and the Bank of Japan’s apparent lack of commitment to low interest rates has delayed economic recovery in Japan.

### **Optimal fiscal policy in a monetary union**

The creation of a monetary union in Europe, which is set to expand to include several more countries in coming years, offers new challenges for fiscal and monetary policymakers. Part and parcel of joining a monetary union is the loss of independent monetary policies in each of the member countries, which limits the ability to use monetary policy to stabilize economic disturbances that affect only a subset of the countries in the union. Nonetheless, member countries are still at liberty to formulate independent fiscal policies, and Galí and Monacelli tackle the question of how to design jointly optimal national fiscal policies and the collective monetary policy to maximize the welfare of the entire union. A key finding is that when prices are sticky, members of a monetary union will have a motive for fiscal stabilization that extends beyond the simple optimal provision of public goods. This motive for fiscal stabilization emerges because monetary policy, which would normally be used to stabilize the economy in response to country-specific shocks, can instead be used only to address union-wide disturbances. To stabilize a member economy, national fiscal policy should “lean against the wind,” with policy expansionary when output and inflation are below their equilibrium levels and contractionary when they are above their equilibrium levels.

### **The interaction of monetary and fiscal policy**

Monetary policy rules are often expressed such that the choice variable for the central bank, usually a short-term nominal interest rate, is determined by a number of economic variables according to a mathematical equation. However, a well-known problem with such rules is that certain specifications of the rule can lead to indeterminacy, that is, an economy for which many different outcomes are possible given the same fundamental economic situation. Clearly, a good monetary policy should avoid such non-uniqueness. One widely discussed solution that works in many models is to have the interest rate rule be “active,” in the sense that the nominal interest rate responds more than one-for-one to movements in the inflation rate. But, this solution may not be sufficient to avoid indeterminacy in all models. Benhabib and Eusepi examine the interaction of monetary and fiscal policy and the conditions for indeterminacy. They show that when households are able to save by buying bonds, then the conduct of fiscal policy and the resulting interaction between fiscal and monetary policy can be critical to whether indeterminacy occurs. Interestingly, they also show that active

monetary policy rules that also respond to an output gap, as in the well-known Taylor rule, facilitate the avoidance of indeterminacy.

### **The effects of fiscal policy**

While many economists agree that expansionary monetary policy eventually manifests itself in higher output and prices, they generally do not agree about the effects of expansionary fiscal policy. Some theories suggest that a fiscal expansion will cause private consumption to decline through “crowding out,” while others predict that private consumption will rise. Weighing in on this issue, Perotti studies the effects of government spending shocks and tax shocks in Australia, Canada, West Germany, the United Kingdom, and the United States, employing the same statistical methods that are commonly used to identify and quantify the effects of monetary policy shocks to separate innovations to government spending and taxes from the systematic responses of these variables to the state of the economy. Some key results from this study are that the effects of fiscal policy shocks on GDP tend to be small overall but that the effects of shocks prior to 1980 tend to be much larger than those after 1980. He also finds no evidence that tax cut shocks work any faster or have larger effects than government spending shocks and that, for the post-1980 period, positive shocks to government spending and negative shocks to taxes tend to elicit negative responses in GDP, private consumption, and private investment.

### **Model uncertainty and policy evaluation**

Monetary policymakers recognize that they face a great deal of uncertainty about the outlook for the economy and the effects of policy on that outlook. Brock, Durlauf, and West develop a general framework for how policymakers should formulate, assess, and evaluate different policy options in an uncertain world. Their approach incorporates model uncertainty into standard statistical calculations, thereby integrating model uncertainty into policy evaluation. They illustrate their methods using two classes of macroeconomic models that differ in the treatment of expectations. In the “backward” class of models, expected inflation is treated as a distributed lag over past inflation; in their “hybrid” class, expected inflation is partly forward-looking and partly backward-looking. When model uncertainty is present, they show that a Taylor rule, in which the nominal interest rate responds to current inflation and the current output gap, is very robust in the sense that risk estimates show relatively little variation across mod-

els. However, they also show that a three-parameter rule that responds to the lagged interest rate in addition to current inflation and the contemporaneous output gap, where the parameters in the rule are optimized for model uncertainty, generally does better than the Taylor rule in the backward-looking model and uniformly does better than the Taylor rule in the hybrid model.

#### **No-arbitrage Taylor rules**

According to standard asset pricing theory, long-term interest rates should reflect risk-adjusted future short-term interest rates, and, as a result, the entire term structure can in principle be very informative about market participants' views of the conduct of monetary policy today and in the future. Ang, Dong, and Piazzesi exploit the relationship between long-term bond rates and expected short-term interest rates to estimate monetary policy reaction functions rules for the United States. They embed various specifications of Taylor monetary policy rules in a model of the Treasury security term structure that assumes that investors have fully exploited all arbitrage opportunities. They allow for time-varying bond risk premiums that may depend of the state of the economy. In principle, employing information from the entire term structure for estimation can produce more efficient estimates of how monetary policy shocks affect the economy. The authors find that over 60% of the time variation in yields can be attributed to shocks to either GDP growth or inflation and that movements in yield spreads are largely due to shocks to

inflation. Furthermore, they find that monetary policy shocks estimated under the no-arbitrage assumption are much less volatile than those found by standard methods.

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#### **Conference Papers**

Iwamura, Mitsuru, Takeshi Kudo, and Tsutomu Watanabe. "Monetary and Fiscal Policy in a Liquidity Trap: The Japanese Experience 1999-2004." National Bureau of Economic Research Working Paper #11151.

Gali, Jordi, and Tommaso Monacelli. "Optimal Fiscal Policy in a Monetary Union." Mimeo.

Benhabib, Jess, and Stefano Eusepi. "The Design of Monetary and Fiscal Policy: A Global Perspective." Mimeo.

Perotti, Roberto. "Estimating the Effects of Fiscal Policy in OECD Countries." European Central Bank Working Paper #168.

Brock, William, Steven Durlauf, and Kenneth West. "Model Uncertainty and Policy Evaluation: Some Theory and Empirics." Social Systems Research Institute Working Paper #2004-19.

Ang, Andrew, Sen Dong, and Monika Piazzesi. "No-Arbitrage Taylor Rules." Mimeo.

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