



Editor's Introduction

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The Thirty-Fourth Annual Policy Conference of the Federal Reserve Bank of St. Louis was held October 15-16, 2009. This conference focused on theory and measurement in economies with financial frictions and the analysis of unconventional policies designed to end financial crises. This issue includes four articles that were presented at the conference.

The article by Cúrdia and Woodford directly addresses current policy issues being debated at Federal Open Market Committee (FOMC) meetings. It provides analysis of the “extended period” language in the FOMC policy statements, how to define an exit strategy and determine its timing, whether one should pay interest on excess reserves, and, given the size of the Federal Reserve balance sheet, whether or not asset sales should be made in a state-contingent fashion. Fernández-Villaverde, Guerrón-Quintana, and Rubio-Ramírez also use the New Keynesian framework. They estimate the size of the effects that monetary policy had on the “Great Inflation” and the “Great Moderation.” The other two articles focus on developments in monetary theory. Williamson and Wright argue that it is time for a New Monetarist framework to compete with the New Keynesians. Lagos provides an example of a model that might explain important aspects of the liquidity crisis that has dominated monetary policy discussion since September 2007.¹

In the first article, “Conventional and Unconventional Monetary Policy,” Vasco Cúrdia

and Michael Woodford extend the New Keynesian model to feature three aspects of monetary policy that have been important during the 2007 financial crisis and its aftermath. The three aspects are interest rate policy, reserve policy (quantitative easing), and credit policy (central bank lending to the nonfinancial sector). They introduce two types of households with different degrees of patience, thus creating a reason for a private bond market. Intermediation is done through banks, which also hold interest-bearing bank reserves.

The optimal reserve policy is achieved by satiating the banking system with reserves. For the Federal Reserve, this is achieved by setting the target interest rate to the rate paid on bank reserve deposits. There are no beneficial effects of further “quantitative easing” once this level is achieved unless it is associated with increased central bank lending to the private sector—that is, the credit policy.

The optimal interest rate policy is approximately the same as in the standard New Keynesian framework as long as the interest rate target remains above the zero lower bound. The optimal policy is to keep the inflation rate on target. The effect of financial frictions on the desired paths for the price level and output are small as long as the interest rate remains above zero. The analysis of policy at the zero lower bound relies heavily

¹ The conference included eight presentations: The agenda, with links to the other presentations, can be found at <http://research.stlouisfed.org/conferences/policyconf/34program.html>.

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on the work of Eggertsson and Woodford (2003). At the zero lower bound, the policy recommendation becomes more interesting and sheds some light on positions in the current policy debate concerning the “extended period” language and the question about whether central bank portfolio policy should be sensitive to changes in the state of the economy.

Cúrdia and Woodford explain the reason for the extended period language: The point is that the central bank must abandon the interest rate for targeting inflation at the zero lower bound. At this point, there is a path for the price level implied by the inflation target. The achievement of the target would lead to a path for the price level that defines a benchmark to anchor inflation expectations through the episode of zero nominal rates. Eventually, the shock that caused the economy to falter and the interest rate to go to zero will dissipate and the inflation rate will return to target. However, during the interim, the price level will have fallen below the path that was expected before the bad shock occurred. Using this price path to guide policy will cause the interest rate to be below the rate needed to stabilize inflation for an extended period. During this period, inflation will rise above the target. The extended period should last until the price level returns to the path that had been anticipated before the bad shock occurred.

The presence of financial frictions actually affects the output gap and the interest rate response relative to the standard model; but, again, the effects are small. This article justifies the use of the extended period language, but also implies that the policy needs to be clear about the price level path that would have been desired in the absence of the shock that led policy to the zero lower bound. In this model, inflation can continue to fall and the output gap can remain large for a long time if the policymakers do not specify the price path. The reason is simply that the public believes that the policy is to achieve an inflation target in a way that will let bygones be bygones.

It is difficult to say much about the optimal credit policy in this framework because the credit frictions are exogenous with respect to policy. It is assumed that the optimal credit policy comes

from microeconomic considerations that are not discussed. In this model, central bank intervention in credit markets does not affect risky lending or borrowing behavior and there is no accounting for the moral hazard caused by too-big-to-fail policies. But the optimal interest rate policy is independent of the optimal credit policy.

It is the credit policy that leads to large-scale excess reserves. These excess reserves will have no effect, and there is no reason to make the asset sales or purchases contingent on the factors that enter the interest rate rule. As long as the interest rate is at the zero bound, the asset sales should depend on two things: (i) the state of credit markets—the source of the need for the current credit policy—and (ii) whether the price level has returned to the desired path—which would mark the end of the “extended period” of excessively low interest rates.

In the second article, “New Monetarist Economics: Methods,” Stephen Williamson and Randall Wright argue that we need a camp to provide loyal opposition to the New Keynesian view. They begin with a summary of the Keynesian and Monetarist views and go on to present a brief critique of the New Keynesian framework. Of course, like the New Keynesians, they take for granted that general equilibrium methods with optimizing agents are important and necessary to give good policy advice. Williamson and Wright argue that recent advances in monetary theory suggest that the sticky price frictions are no longer the only, or necessarily the best, way to introduce real effects of monetary policy into our models.

Williamson and Wright work through a benchmark search money model, reviewing the history of developments in this literature and giving an example of the methods typically used by researchers. The authors report some key results that are familiar from an older macroeconomic literature and show how being more explicit about the microfoundations can, in some instances, lead to very different results. They discuss the sensitivity of the benchmark model to alternative matching and bargaining assumptions, to ex ante heterogeneity, and to other extensions. They use the framework to answer questions involving asset pricing, liquidity, and financial intermediation.

Although the authors do not say it this way, the fundamental difference between the New Keynesian literature and the New Monetarist literature they describe is that the New Keynesians write for the policymaker who needs answers today and the New Monetarists include almost everyone doing basic research on monetary theory. Therefore, the New Keynesians start with a basic general equilibrium business cycle model and impose frictions that make monetary policy matter, and they directly answer questions about how to operate monetary policy from day to day and quarter to quarter. For the policymaker, an important aspect of the New Keynesian model is that it recommends price stability, in perfect confluence with three centuries of central banking wisdom. New Keynesians continue to develop more complex models that can be used to answer a broader array of questions. These models have changed and developed, not by questioning the fundamental assumptions about frictions and the monetary transmission mechanism, but by adding more and more detail about the economy. So, for example, Edge, Kiley, and Laforge (2007) have developed a fairly large New Keynesian model that includes two sectors—consumption goods and capital goods. Some of the frictions include sticky prices, sticky wages, habit formation, and capital adjustment costs for each type of capital (including housing, durable consumption goods, and business investment). There are many sources of shocks to preferences and technology. The point of the New Keynesian agenda is not to test the basic assumptions about frictions and shocks, but to use them to evaluate past and proposed policies.

As noted by Cúrdia and Woodford in the first article, the recent financial crisis has revealed weaknesses in the standard New Keynesian framework—not necessarily the assumption of sticky prices but, rather, the lack of a market for risky debt and the mechanisms relating it to interest rate policy.

To compete with the New Keynesian framework as the benchmark for policymakers, the New Monetarists must develop quantitative theoretic versions of their models that can be used to answer policy questions. The New Monetarists, however, have never shown much interest in giving policy advice. They have revealed an interest in develop-

ing better theories to deal with questions involving money and financial markets. Their success as a research program is most obvious in the way it connects with frontier research in other areas of economics, including search theory, game theory, labor theory, the microstructure of financial markets, models of the payments system, models of private information and incomplete communication, and quite recently models of bilateral trading in over-the-counter markets. What the New Monetarists have not developed is a following of empirically oriented economists who would take these models to the data to compete with the New Keynesian policy advisors.

In the third article, “Asset Prices, Liquidity, and Monetary Policy in the Search Theory of Money,” Ricardo Lagos develops a model in which money coexists with equity shares that can be used as money. The model includes uncertainty about aggregate liquidity needs. In this model, agents’ purchases are constrained by the amount of assets (money and equity) they hold. Shocks to the asset price act as shocks to aggregate liquidity.

This stripped-down macroeconomic model can be used to understand theoretical aspects of the current liquidity crisis. Gorton and Metrick (2009) blame the financial crisis on bank runs—although not runs on traditional banks, but on shadow banks that suddenly found that the price of mortgage derivatives had fallen and depositors would no longer accept subprime mortgage paper as collateral. Even the highest rated mortgage paper received a large haircut after September 2008. Although the Lagos model does not include mechanisms to explain why there should have been such a large shock, it does derive the optimal monetary policy in an environment where other assets provide monetary services and it includes a mechanism to explain how targeting the nominal interest rate off the optimal path can affect real asset prices.

The fourth article, “Reading the Recent Monetary History of the United States, 1959-2007,” by Jesús Fernández-Villaverde, Pablo Guerrón-Quintana, and Juan F. Rubio-Ramírez is an excellent example of how to use the New Keynesian model to analyze monetary policy actions taken in the past. It illustrates both the strengths and weaknesses of the New Keynesian framework. If

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one is willing to accept the assumptions used to identify the model—assumptions about the assumed frictions and the priors used to identify parameters—this model can be used to estimate the effects of policy on the cyclical behavior of output and its components. It can also be used to estimate the effect of policy on the cyclical behavior of inflation—where the cycle is not the same as the business cycle. The article addresses two questions: (i) What explains the gradual run-up of inflation that peaked in 1980 and its subsequent rapid decline? and (ii) What explains the moderation in the volatility of the real economy after 1984? They use sophisticated econometric procedures to estimate a model with time-varying policy parameters and shocks with time-varying volatility.

The strength of the New Keynesian framework is that one can give quantitative answers to many interesting questions if policy actions are taken and the assumed frictions are reasonable. If the identifying assumptions of the model are not useful, then the fluctuations in the output and inflation will be attributed to stochastic shocks. Section 6 of the article is a sophisticated sort of regression accounting in which the authors use their model to analyze the Federal Reserve under the regimes of various Fed Chairmen: Martin, Burns, Volcker, and Greenspan. They spice their econometric accounting with interesting stories from the historical record.

In contrast to the analysis by John Taylor (1998) and Ben Bernanke (2004), these authors find that the moderation in output volatility following the end of the Great Inflation had little to do with better monetary policy, but instead was caused by a reduction in the volatility of the shocks. This premise suggests that a richer model of the economy is needed to understand what is being left as a residual shock. The authors also conclude that this change in the volatility of shocks was an important reason for the secular rise of inflation. It is interesting that in Section 7, where they discuss what assumptions might be investigated, they include assumptions that (i) the public knows the policy parameters, (ii) policy changes are exogenous with respect to the state of the economy, (iii) the drifts in technologies are constant, and (iv) important sectors have been omitted (fiscal and international). They never suggest that the assumption of time-dependent price frictions might be flawed. Also, they do not mention a need for including financial intermediation and risky debt markets. Evidently, these elements were not needed to explain history before 2007.

Here, in 2010, these four articles are important additions to the economic literature and the policy discussion. We thank the authors for their contributions and hope our readers find them useful and engaging.

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