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Monetary Policy and Asset Markets: Conference Summary

This Economic Letter *summarizes the papers presented at a conference on "Monetary Policy and Asset Markets" held at the Federal Reserve Bank of San Francisco on February 22, 2008. The papers are listed at the end and are available at http://www.frbsf.org/economics/conferences/0802/index.html.*

At this year's conference, academic researchers and policymakers gathered to discuss five research papers that address the role of asset markets in the economy and their importance for the conduct and implementation of monetary policy, a particularly pertinent topic, given the ongoing developments in U.S. financial markets. Among other things, asset markets provide a source for financing investment and consumption, they facilitate diversification of risk, and they represent an important source of information on expectations about future price movements and about future monetary policy actions.

One of the papers focused on extracting information on policy changes from the interest rate term structure and on whether investors value those policy changes or view them as an additional source of risk to be hedged. Another paper examined the extent to which subjective expectations may explain certain asset price puzzles. A third paper looked at the housing sector, quantifying the factors that drive residential investment and the extent to which housing sector developments can spill over to the broader economy. A fourth paper studied asset price bubbles, showing how investors' need to learn about an asset's risk and return characteristics can generate recurrent bubbles and crashes. A fifth paper analyzed whether shocks to expectations in currency markets create a role for a central bank stabilizing its exchange rate.

Monetary policy shifts and the term structure

Much empirical evidence suggests that monetary policy in the U.S. has changed in important ways over the postwar period. One prominent example of such a change is the tighter monetary policy that followed Paul Volcker's appointment to Chairman of the Federal Reserve, which is widely accepted to have lowered inflation during the early 1980s. Evidence also suggests that a change in monetary policy may have played an important role in the lower inflation and output volatility that the economy has experienced since the mid-1980s. Of course, in addition to affecting aggregates like output and inflation, changes in monetary policy affect asset prices and the term structure of interest rates. In fact, since short-term and long-term interest rates are connected by investor behavior, the interest rate term structure might usefully provide valuable information on the nature and importance of monetary policy changes.

To harness this information from the term structure, Ang, Boivin, and Dong estimate a monetary policy rule for the U.S. together with a model of the interest rate term structure. Their approach allows them to determine more accurately the policy changes that have taken place over the past 50 years and to quantify how these policy changes have affected the risk premium associated with holding long-term nominal bonds. Importantly, if investors dislike the risk associated with policy changes, then they will demand greater compensation to hold long-term bonds, implying a higher risk premium.

The authors find that monetary policy has indeed changed in important ways that are consistent with previous studies. For example, they find that the Federal Reserve responded to inflation shocks more aggressively during the 1980s and 1990s than it did during the 1970s. Interestingly, they also find that investors are generally willing to pay—rather than be paid—to be exposed to monetary policy changes, implying that investors value the policy changes that have occurred.

Learning about risk and return: bubbles and crashes

Many believe that prices for assets like stocks can depart in important ways from the fundamental factors, such as profits, that should determine their value. These departures from fundamentals can be

prolonged and lead to increases and falls in asset prices that are popularly referred to as bubbles and crashes. For example, the run-ups in stock prices that ended abruptly in 1987 and 2000 are each consistent with bubbles that drove prices above their fundamentals and that then crashed. Researchers studying asset price bubbles often associate them with periods when investors appear willing to accept lower compensation for holding risk, with the crash then occurring once investors become more cautious and demand greater compensation for risk.

Although theories of risk-neutral "rational" investors can generate asset price bubbles, they have difficulty explaining their subsequent crashes, often attributing them to forces that are external to the theory. In contrast, Branch and Evans analyze asset price behavior from the perspective of investors who must learn and who are risk-averse. Specifically, in their model, investors must use historical data on an asset's price to estimate the return and, critically, the risk associated with holding that asset. Using a theory of empirical learning that assumes investors favor recent over older data, these authors show that occasional shocks to fundamentals may cause investors to lower their estimate of risk and raise their estimate of return, causing stock prices to rise above fundamentals. They show that, as stock prices increase, so too do investor estimates of perceived riskiness, until demand for stocks collapses and the bubble crashes.

Expectations, real exchange rates, and monetary policy

The role that exchange rates play in the conduct of monetary policy is a key issue, especially for small open economies for which the tradable goods sector is often large. Policy-induced movements in interest rates, for instance, can change the external value of the currency, which, if prices of some goods are sticky, can alter how a country allocates its expenditure between domestically produced and imported goods. This mechanism provides an additional channel through which a central bank can stimulate or damp aggregate demand. Although the exchange rate's role as a channel through which monetary policy can operate is clear, it is less clear whether central banks should respond to exchange rate movements or actively seek to damp fluctuations in the currency.

Devereux and Engel argue that a case can be made for a central bank responding to and stabilizing the exchange rate. They argue that the relative price of any two nondurable goods should ideally be unaffected by perceptions of future fundamentals. For instance, even though one might expect a technological innovation to make one good relatively cheaper to produce tomorrow, leading to the expectation that its relative price will be lower tomorrow, ideally this expectation should not change its relative price today. But since exchange rates move primarily in response to news that alters expectations about the future, when nominal prices are sticky, news shocks can create relative price changes that are undesirable. As a consequence, Devereux and Engel suggest that a monetary policy that can offset, or mitigate, the effects of news shocks emanating through the exchange rate can potentially raise welfare.

Housing market spillovers

Many of the central issues and concerns facing the economy today are related to the housing sector. Over the past seven or eight years, residential investment first surged at a faster rate than usual and then collapsed as demand for housing first faltered and then crashed. While some believe that the low interest rates that followed the collapse of the "dot-com" bubble may have helped spur the housing sector, implying that the housing sector responds passively to macroeconomic developments, it is also possible that the housing sector could be an increasingly important driver of the business cycle.

To help understand the role of the housing sector in the business cycle, Iacoviello and Neri develop a model that explicitly introduces a housing sector, which governs the production of new homes, and a market for loans, secured against house values, into an otherwise quite standard New Keynesian business cycle model. They examine the nature of the shocks hitting the housing sector and analyze whether any spillovers from housing sector developments to the wider economy are big. Estimating their model on U.S. data over the period 1965:Q1–2006:Q4, they find that shocks to housing supply and demand each explain roughly 25% of the cyclical volatility of residential investment while monetary factors explain about 20%. They also find that it was faster technological progress in the nonhousing sector that drove up house prices during the 1970s, but that the recent boom and bust in residential investment growth "was driven in non-negligible part by monetary factors." With respect to housing sector spillovers,

for the period following the reforms to the mortgage market that occurred in the 1980s, they find that fluctuations emanating from the housing sector have accounted for about 12% of the variation in consumption growth.

Bond positions, expectations, and the yield curve

Standard asset pricing models suggest that an asset's price should depend on its expected return and on how those returns are expected to covary with consumption. For a given expected return, an asset that is expected to provide a higher return in situations when consumption is low provides a form of insurance that households value and are prepared to pay a premium for. This consumption-based approach to valuing assets has given rise to a number of important asset pricing puzzles, including the famous equity premium puzzle that describes the apparent excess return to holding stocks. These asset price puzzles challenge our understanding of how assets, such as bonds, should be valued.

One key assumption in this literature is that expectations are formed rationally, which is to say that the people forming expectations about returns, etc., get things right on average and do not make systematic forecasting errors. It is possible, however, that expectations are not rational. In that case, what appear to be asset pricing puzzles may instead simply reflect the subjective beliefs of investors rather than a fundamental failure of asset pricing theory.

To investigate the importance of subjective expectations for asset prices, Piazzesi and Schneider study evidence on expected returns from the Blue Chip and Goldsmith-Nagan surveys. Analyzing these surveys, they find systematic differences between subjective and objective interest rate expectations, differences that have material implications for bond prices and the excess return to holding bonds. Moreover, they find survey-based expected excess returns to be smaller and less countercyclical than other measures of expected excess returns. Building a statistical model that explains jointly interest rates and inflation and investors' subjective beliefs about these variables, Piazzesi and Schneider are able to explain why subjective risk premia are significantly less volatile than objective risk premia.

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Conference papers

Ang, Andrew, Jean Boivin, and Sen Dong. 2008. "Monetary Policy Shifts and the Term Structure." University of Columbia, manuscript.

Branch, William, and George Evans. 2008. "Learning about Risk and Return: A Simple Model of Bubbles and Crashes." University of Oregon Working Paper 2008-1.

Devereux, Michael, and Charles Engel. 2008. "Expectation, Real Exchange Rates, and Monetary Policy." University of Wisconsin, manuscript.

Iacoviello, Matteo, and Stefano Neri. 2008. "Housing Market Spillovers: Evidence from an Estimated DSGE Model." Boston College Working Paper 659.

Piazzesi, Monika, and Martin Schneider. 2008. "Bond Positions, Expectations, and the Yield Curve." University of Chicago, manuscript.

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