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Monetary policy and financial stability: What role for the futures market?

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Abstract

This paper examines interactions between monetary policy and financial stability. There is a general view that central banks smooth interest rate changes to enhance the stability of financial markets. But might this induce a moral hazard problem, and induce financial institutions to maintain riskier portfolios, the presence of which would further inhibit active monetary policy? Hedging activities of financial institutions, such as the use of interest rate futures and swap markets to reduce risk, should further protect markets against consequences of unforeseen interest rate changes. Thus, smoothing may be both unnecessary and undesirable. The paper shows by a theoretical argument that smoothing interest rates may lead to indeterminacy of the economy's rational expectations equilibrium. Nevertheless, our empirical analysis supports the view that the Federal Reserve smoothes interest rates and reacts to interest rate futures. We add new evidence on the importance for policy of alternative indicators of financial markets stress.

JEL classification: E44; E52; E58; G12; G13

Keywords: Central bank; Interest rate rule; Monetary policy; Financial stability; Macroeconomic stability; Asset prices; Stock market; Credit spread; Futures market; Hedging; Basis risk; Federal Reserve

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1. Introduction

Central banks in the developed world have, in the last 10 or 15 years, overwhelmingly switched to a policy of setting short-term interest rates with the primary aim of targeting inflation. Other objectives allegedly remain, but occupy a lower place on the agenda. Among them is the objective of maintaining financial stability, the responsibility for which has long been a role of central banks. The survival of this role has been cited in support of the empirical finding that interest rates seem to move gradually in response to changes in macroeconomic conditions (notably the output gap and inflation). It is argued that by making interest rate changes smaller and more predictable, central banks reduce the volatility of the profits of commercial banks and reduce the risk of bank insolvencies and insolvencies among the businesses who borrow from them.[1]

With the passage of time, and the growth in the sophistication of financial markets and in the range of financial instruments available for trading risks, banks like other players in these markets have become increasingly well able to hedge against the risks that variable short-term interest rates pose for their profits and balance sheets. They have turned to markets in interest rate futures and more recently to interest rate swaps in order to hedge their positions. These activities should in principle have reduced banks' exposure to such risks. Nevertheless, the possibilities for hedging are less than perfect. Unanticipated changes in interest rates have residual effects on bank profits, and central banks may continue to moderate their interest rate changes for reasons of stability of financial markets.

The purpose of this paper is to explore the interaction of monetary policy and financial stability, and in particular to examine the role played by financial institutions' use of futures and other derivatives markets to hedge risks. Research on the subject of monetary policy and financial stability has mostly focused its attention on central banks' alleged practice of smoothing interest rate movements (see Goodfriend, 1987, and more recently Smith and van Egteren, 2004). It is argued that lower volatility should reduce bank insolvencies caused by unanticipated sharp increases in short-term interest rates. Widespread use of hedging by banks should further reduce their vulnerability to interest rate fluctuations, and enable central banks to change interest rates with less caution. Nevertheless, the residual risk – basis risk and other risks that remain after imperfect hedging opportunities have been exploited – may act as a moderate restraint on monetary policy.

It is possible that the macroeconomic stability obtained as a result of aggressive use of monetary policy brings its own dangers. It may induce a form of moral hazard. Commercial banks and other financial institutions may respond to a stable macroeconomic climate by taking on riskier portfolios of loans and deposits than are consistent with financial stability. Markets may act on what they believe to be an implicit guarantee of public policy that will maintain stability and possibly bail them out of difficulties. The Federal Reserve (see, for instance, Poole, 2004) is alive to these dangers and keen to avert them by making markets aware that risks of instability exist, and that the Federal Reserve would not be able to bail out large players.

Our study makes two contributions. First, from a theoretical standpoint, we analyze the inclusion of futures prices, and the associated basis risk, in the central bank's reaction function,

[1] The relation between monetary policy and financial stability has been long debated and, as argued convincingly by Padoa-Schioppa (2002) and Schinasi (2003), central banks' monetary policy has a natural role in ensuring financial stability.