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Monetary policy and long-term US interest rates

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Abstract

This paper assesses the effect of federal funds rate innovations on longer-term US nominal interest rates across different periods. The evidence suggests that these responses change with changes in the monetary policy regime. Time periods considered are pre- and post-1979 and different Federal Reserve Chairman's tenure. The response of longer-term interest rates to federal funds rate innovations are shown to be smaller and less persistent in the post-1979 period when the Federal Reserve placed more emphasis on inflation.

JEL classification: E43; E52; E58

Keywords: Monetary policy; Long-term interest rates; Time variation

1. Introduction

This paper examines the effects of monetary policy on long-term interest rates in the United States. Monetary policy impulses are measured by innovations in the federal funds rate which was the Federal Reserve's policy instrument over most of the period examined. Given that the Federal Reserve conducts monetary policy in this manner, the response of longer-term rates to the federal funds rate is a key question. The focus of this study is on the way in which this response depends on the monetary policy regime. How has the response of longer-term interest rates to innovations in the federal funds rate varied with what in the literature have been identified as regime changes?

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This focus leads us to proceed in the following manner. First, we consider a long period 1973–2002 and focus on time-variation in the response of longer-term rates to innovations in the federal funds rate. Second, we employ weekly data and consider several ways to break the time-span considered into subperiods corresponding to different monetary policy regimes. Besides providing sufficient observations to examine a number of subperiods, weekly data are more likely to pick out actual innovations to the federal funds rate than are monthly or quarterly observations. Finally, responses of long-term interest rates to innovations in the federal funds rate are examined within a VAR framework allowing for the interaction of interest rates with other macroeconomic variables.

There are a number of recent studies related to our research. Evans and Marshall (1998), Kozicki and Tinsley (2001a,b), and McMillin (2001) study the linkage of monetary policy and short- and long-term nominal interest rates within VAR frameworks. Kuttner (2001) estimates the impact of monetary policy actions on interest rates of various maturities. Mehra (1996), Roley and Sellon (1995) and Thornton (1998) study the response of longer-term interest rates to monetary policy actions measured by the federal funds rate (or target federal funds rate), as does an earlier paper by Cook and Hahn (1989). Additional empirical literature on the topic is surveyed in Akhtar (1995).

This literature suggests considerable uncertainty about the response of longer-term interest rates to changes in the federal funds rate. Even the direction of the effect is a subject of disagreement. Two recent macroeconomic textbooks, for example, present divergent views. Blanchard (2000, p. 295) expresses the "standard view" that "when short-term rates move, whether down (as in the 1990–1991 recession) or up, long-term interest rates are likely to move in the same direction, but by less." Cook and Hahn (1989) report results consistent with this view. Romer (2001, p. 477) considers Cook and Hahn's result an "anomaly." In his view, the "idea that a contractionary monetary policy [a rise in the federal funds rate] should immediately lower long-term nominal interest rates is intuitive: contractionary policy is likely to cause real interest rates to rise only briefly and is likely to lower inflation over the longer term." We return to these divergent views at a later point.

The paper is organized as follows. Section 2 discusses the data and sets out the VAR framework employed. Section 3 presents our results. Section 4 considers these results in the context of previous literature. Section 5 contains concluding comments.

2. Data, time periods and statistical procedures

As noted in Section 1, we examine the response of long-term interest rates to innovations in the federal funds rate within a VAR framework to allow for the interaction of interest rates with other macroeconomic variables. In this section, the details of the VAR specification are provided.

2.1. Data

The data we use are: the federal funds rate; a longer-term interest rate, either the 10 or 1-year government security rate; an economic activity measure; an unemployment indicator; a commodity price index and a money measure.[1] The federal funds rate (FF) is a weekly

[1] The 1-year rate is not very "long-term." Still it is an important market rate in that other interest rates including variable rate mortgages are linked to it.