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Do Federal Reserve communications help predict federal funds target rate decisions?

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ABSTRACT

We explain federal funds target rate decisions using macroeconomic variables and Federal Reserve communication indicators. Econometrically, we employ an ordered probit model of a Taylor rule to predict 75 target rate decisions between 1998 and 2006. We find, first, that our communication indicators significantly explain target rate decisions and improve explanatory power in and out of sample. Second, speeches by members of the Board of Governors and regional presidents have a statistically significant and equal-sized effect, whereas the less-frequent monetary policy reports and congressional hearings are insignificant. Third, our findings are robust to variations in the specification, including changes in the communication strategy. Finally, our communication indicator based on Federal Reserve speeches performs better in explaining target rate decisions than do newswire reports of Fed communications.

1. Introduction

Central bank communication is now widely accepted as an important aspect of monetary policy. Woodford (2005, 55) concludes that "*the increased willingness of the FOMC under the Chairmanship of Alan Greenspan to speak openly about both current policy decisions and the Committee's view of likely future policy has greatly increased the ability of markets to anticipate Fed policy*."

The US Federal Reserve System (Fed) engages in several methods of communication: post-meeting statements accompanying target rate decisions, the semi-annual monetary policy report (mandated by the Humphrey–Hawkins Full Employment Act of 1978), congressional hearings, and speeches by members of the Board of Governors and regional presidents. Usually, all these give a 12–18-month economic outlook for the United States. In recent years, it has become common practice to indicate the future course of US monetary policy, too. The more formalized channels, such as statements and monetary policy reports, are used infrequently (eight and two events per year, respectively). Other new information of relevance to financial market expectations is conveyed by speeches. Several studies show that US financial market returns and volatility are affected by these less formal types of communication (e.g., Ehrmann and Fratzscher, 2007; Hayo et al., 2008).

In this paper, we focus on the question of whether the Fed's informal communication actually contains useful information about future monetary policy that agents could not have acquired otherwise. Put differently, does Fed communication

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provide information additional to that already incorporated in a real-time forward-looking Taylor rule? Our prior is that communication—if used properly—can improve forecasts based on a benchmark Taylor rule. While monthly data about output and inflation expectations are adjusted on pre-scheduled dates, communication can be employed more timely, accurately, and can be based on a broader range of indicators.

The remainder of the paper is organized as follows. In the next section, we summarize previous work in this area and outline our contributions to the field. Section 3 describes the construction of our communication indicators and the other variables, as well as the econometric methodology. In Section 4, we investigate whether communication helps explain and predict target rate decisions. Section 5 presents further specifications and robustness checks. Section 6 concludes.

2. Related literature and our contribution

There is an ongoing theoretical debate about the usefulness of central bank communication. The vast majority of researchers highlight the positive effects of communication in terms of enhancing central bank transparency (see, e.g., Woodford, 2005; Sibert, 2006; Gosselin et al., 2007).[1] Well-executed communication aids private agents in recognizing the central bank's objectives and strategy. Furthermore, it also increases understanding of recent target rate changes and prepares the market for future target rate changes. If an interest rate decision is already expected by market participants, their adjustment costs will be minimized (see, e.g., Woodford, 2001), as they can take the expected interest rate decision into consideration in advance of it taking effect.

The extent to which central bank communication has been successful in practice is an empirical issue (for a broad overview of the literature, see Blinder et al. (2008)). Generally, the literature discussing communication as an instrument for explaining target rate decisions employs a Taylor-rule framework. There are only a few studies on the Fed, which we review first. Pakko (2005) finds that post-meeting statements convey useful information for forecasting changes in the federal funds rate target, even after controlling for policy responses to inflation and the output gap. Lapp and Pearce (2000) show that a bias in the statement accompanying Federal Reserve policy decisions significantly affects the probability that the target will be changed in the period between two meetings. Lapp et al. (2003) discover that Fed decisions are not highly predictable using publicly available data, and that adding private information contained in the *Greenbook* (available after a 5-year delay) does not significantly increase predictive accuracy. All three studies underestimate the explanative and predictive power of Fed communication, as they neglect the less formal channel of speeches, which can be used more timely and accurately than post-meeting statements. Thus, we expect our approach to be more successful as it explicitly addresses this problem.

Other papers assess the predictive power of European Central Bank (ECB) communication. Jansen and de Haan (2009) find that communication-based models do not outperform models based on macroeconomic data in predicting decisions. Heinemann and Ullrich (2007) show that a wording indicator measuring the "hawkishness" of the ECB's monthly press conferences can improve the model's fit when added to the standard explanatory variables. However, a model based solely on this indicator performs worse than the baseline Taylor rule. Gerlach (2007) estimates empirical reaction functions using the ECB's *Monthly Bulletin* as a guide in choosing variables. Overall, in regard to the ECB, there is no evidence for an improvement of a Taylor rule due to more timely and accurate information possibly spread by communication. Nonetheless, similar to the literature on the Fed, we suspect that these studies underestimate the total effect of communication, as they do not include all types of ECB communication.

In this paper, we explain federal funds target rate decisions using macroeconomic variables and Federal Reserve communication indicators. To our knowledge, which is backed up by Blinder et al.'s (2008) literature review, there are no other studies explaining US target rate decisions using all types of Federal Reserve communication (post-meeting statements, monetary policy reports, congressional hearings, and speeches). The communications are analyzed on the basis of their written contents. Econometrically, we use an ordered probit model to take into account the discrete nature of US target rate decisions. Our sample starts on February 4, 1998 and ends on December 12, 2006, a period that shows an increasing trend in the overall number of communication events.[2]

3. Data and econometric methodology

In this paper, we present the empirical results of estimating different variations of a Taylor rule (see Section 4), including: (i) a pure Taylor rule using only lagged target rate decisions and macroeconomic variables; (ii) target rate decisions modeled as depending on lagged decisions and communication variables; and (iii) an assessment of a model that includes both macroeconomic and communication variables.

Our analysis takes advantage of a new data set introduced by Hayo et al. (2008), which includes indicator variables for 1423 speeches and 148 congressional hearings, covering all governors and regional presidents of the Federal Reserve System,

[1] A noticeable exception is the work by Morris and Shin (2002) and Amato et al. (2002), who argue against frequent central bank communication. They show that a (small) increase in the precision of the information released by a public authority can be welfare-reducing as it decreases the importance of privately formed information. Svensson (2006) reverses this argument: he proves that this outcome emerges only under quite special circumstances as the central bank must have much less precise information than private agents.

[2] In 1998, 114 speeches were delivered by governors and presidents; in 2006 the central bankers spoke 190 times. The starting point of our sample is the first year for which the Federal Reserve Bank and its regional branches systematically began publishing all speeches by its governors and presidents.