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Monetary policy news and exchange rate responses: Do only surprises matter?

Rasmus Fatum, Barry Scholnick *

School of Business, University of Alberta, Edmonton, Alberta, Canada T6G 2R6

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Abstract

We use data from the Federal Funds Futures market to show that exchange rates respond to *only* the surprise component of an actual US monetary policy change and we illustrate that failure to disentangle the surprise component from the actual monetary policy change can lead to an underestimation of the impact of monetary policy, or even to a false rejection of the hypothesis that monetary policy impacts exchange rates. Unlike the recent contributions to the literature on exchange rates and monetary policy news, our testing method avoids the imposition of assumptions regarding exchange rate market efficiency. We also add to the debate on how quickly exchange rates respond to news by showing that the exchange rates under study absorb monetary policy surprises within the same day as the news are announced.

JEL classification: E52; F31; G14

Keywords: Expectations; Monetary policy; Federal Funds Futures; Exchange rates

1. Introduction

This paper uses Federal Funds Futures market data to investigate whether exchange rates respond to the surprise component of actual monetary policy changes and also whether exchange rates respond to the expected component of such policy changes. Our testing method allows us to avoid the imposition of assumptions regarding market efficiency and, therefore, we do not have to apriori disregard the expected component of monetary policy changes. We show that exchange rates respond to *only* the surprise component and we illustrate that failure to disentangle the surprise component from the monetary policy news announcement leads to an underestimation of the impact of the news, or even to a false rejection of the hypothesis that monetary policy impacts exchange rates. We also examine whether the exchange rate price adjustment associated with the monetary policy change is instantaneous or delayed.

Recent empirical contributions by Andersen et al. (2003), Chaboud et al. (2004), Evans and Lyons (2005), Faust et al. (2003), Simpson et al. (2005) find that exchange rates react to monetary policy surprises, i.e. to the unexpected component of a change in the monetary policy stance.[1] A common characteristic of these studies, however, is that they focus their analysis of news effects on only one type of variable, namely the surprise component of a

* Corresponding author. Tel.: +780 4925669; fax: +780 4923325.
E-mail addresses: rasmus.fatum@ualberta.ca (R. Fatum), barry.scholnick@ualberta.ca (B. Scholnick).

[1] These papers as well as ours are related to an older literature on the effectiveness of anticipated versus unanticipated monetary policy on output and unemployment. While the recent literature employs survey data or market-based measures of expectations for distinguishing between anticipated and unanticipated monetary policy innovations, the older literature relies on output from econometric models of these policy innovations. Important older contributions include Barro (1977), Barro and Hercowitz (1980) and Mishkin (1982).

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news announcement.[2] As such, these studies follow earlier work by, for example, Almeida et al. (1998). Almeida et al. (1998, p. 387) note that "market efficiency would dictate that the expected portion of an announcement should have no impact on the exchange rate" and, based on the assumption of market efficiency, apriori disregard the expected component of news in their analysis of exchange rate responses to macroeconomic announcements.[3]

In other words, the recent literature on exchange rates and monetary policy news does not consider what can be described as an unrestricted dual test of whether exchange rates respond to the unexpected component of news and whether exchange rates respond to the expected component of news. Instead, the existing contributions impose, implicitly or explicitly, an additional assumption of exchange rate market efficiency in order to justify disregarding the expected component of news and, as a result, consider only what can be described as a restricted single test of whether exchange rates respond to the unexpected component of news.

Rather than focusing on only the surprise component of news which, by construction, is a simple linear function of the actual announcement and the expected component, our analysis makes use of all three components (the surprise component, the expected component, and the actual announcement) separately.[4] In doing so, we are able to carry out the unrestricted dual test and, as a result, we are able to truly address whether exchange rates respond to *only* the surprise component of news – without imposing unnecessary apriori assumptions regarding market efficiency.[5] An additional advantage of our testing approach is that it makes it possible to compare the exchange rate response to news when news are measured properly (i.e. when separating the surprise component from the actual announcement) to the exchange rate response to news when news are measured improperly (i.e. when measuring news as simply the news announcement itself), thereby allowing us to illustrate the importance of focusing on the surprise component of news. This facilitates a comparison of our findings to the findings of studies that do not distinguish between announcement and surprise component.[6]

Both the predictions of standard asset-pricing theory and the survey responses from currency traders reported in Cheung and Chinn (2001) suggest that the effects from macro news announcements are quickly absorbed in prices. Nevertheless, there is no consensus in the empirical literature on exchange rates and macro news in regards to how fast the absorption process really is. For example, Andersen et al. (2003) find that exchange rates generally respond within 5 min of the news announcement (characterized by a jump immediately following the announcement and little movement thereafter) while Faust and Rogers (2003) and Faust et al. (2003) in the context of identified (recursively or not) VAR models show confidence intervals consistent with exchange rate responses occurring anywhere from instantaneously to 5 years after the news announcement. Similarly, Evans and Lyons (2005) find delayed exchange rate responses several days after the news occurred while Simpson et al. (2005) show that exchange rates respond to news within the same day as the news are announced. Our analysis also adds to the literature on how quickly exchange rates respond to monetary policy news.

We focus our investigation on the 42 US monetary policy changes that occurred during the 1989 to 2000 time-period, i.e. our sample of monetary policy change events consists of days when the Fed funds rate target was changed and it is identical to that of Kuttner (2001). We follow Kuttner (2001) and Faust et al. (2003) and use data on Fed funds futures for isolating the surprise component of each of these actual policy changes.[7, 8] In particular, we use the decomposition of the actual change into an expected and a surprise (unexpected) component, as displayed in Kuttner (2001, p. 532). Furthermore, we use an event study approach and incorporate several control variables that capture the surprise element of US macroeconomic news and policy developments. While Kuttner (2001) estimates the impact of monetary policy events on interest rates, we assess the impact of monetary policy events on exchange rates. By following closely the event study methodology and analyzing the exact same sample of events as Kuttner (2001), we are able to directly compare the impact of

[2] Contributions by Bernanke and Kuttner (2005), Craine and Martin (2003) and Flannery and Protopapadakis (2002) follow the same approach in regards to using only the surprise element (the difference between announcement and expectation) of news as the explanatory variable when measuring the response of the stock market to monetary policy changes and other macroeconomic news.

[3] While Almeida, Goodhart and Payne investigate exchange rate market responses to an array of monthly macroeconomic news, their analysis does not consider US monetary policy news.

[4] We are only investigating the impact of US monetary policy news and, therefore, we do not rescale our news variables by their respective standard deviations.

[5] Andersen et al. (2003, p. 48) note that "only *un*anticipated shocks to fundamentals affect exchange rates, in accordance with the predictions of rational expectations theory". Their analysis, however, focuses on the unexpected component of news (and, to a lesser extent, on announcement dummies), but does not take into account the expected component of news. Therefore, they show that surprises matter, but they do not show that *only* surprises matter.

[6] It should be noted that, in accordance with uncovered interest rate parity theory, the realized change in the exchange rate should reflect the interest rate differential plus a term incorporating new information arriving between periods. Therefore, not only surprises matter for exchange rate determination. We thank an anonymous referee for pointing this out.

[7] Since the market for Fed funds futures opened in 1988, empirical studies have found the Fed funds futures contract an extremely useful proxy for market expectations of future monetary policy (see Carlson et al., 1995; Krueger and Kuttner, 1996 for early contributions, as well as Sack, 2002; Sack et al., 2002 and others).

[8] The contributions by Andersen et al. (2003), Evans and Lyons (2005) and Simpson et al. (2005) use survey data instead of market-based measures for capturing expectations and, in turn, extracting the surprise component of news.