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Market efficiency broadcasted live: ECB code words and euro exchange rates

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ABSTRACT

This paper examines the impact of the European Central Bank (ECB) monetary policy on euro exchange rate returns using an event study with intraday data for five currencies (the euro exchange rate versus the US dollar, the British pound, the Canadian dollar, the Swiss franc, and the Japanese yen). I construct two indicators of news about monetary policy stemming separately from policy decisions and the press conference. Estimation results show that the surprise component of communication has highly statistically significant effects on exchange rates, whereas the response of euro exchange rates to the unanticipated change in the policy rate is more muted. I also estimate the financial market impact on euro exchange rates of US, European and German macroeconomic news, and I show that the impact of the ECB press conference is economically important. The process of fully incorporating the ECB news shock takes about 1 h, and thus this result suggests that the whole press conference (both the Introductory Statement and the Q&A part) provides valuable information to market participants.

1. Introduction

During the monthly press conference held on June 5, 2008, the ECB President Trichet announced that “the Governing Council is in a state of heightened alertness.” Some minutes later, he reiterated that “We are in a state of heightened alertness. (...) we could decide to move our rates by a small amount in our next meeting in order to secure the solid anchoring of inflation expectations.” The euro exchange rate immediately increased its spot value. For instance, the euro exchange rate against the US dollar appreciated roughly 1%, going from 1.537 dollar (for one euro) to 1.55 in the 30-min around this event.[1] This study investigates to what extent this observation holds more generally, i.e. there exists a systematic relationship between ECB monetary policy announcements and high-frequency euro exchange rate returns. This relationship is an important topic for several reasons. From the perspective of monetary policy makers, the response of asset prices to ECB policy is a key component for analyzing the effects of monetary policy on the economy, and thus understanding the policy transmission mechanism.[2] From an asset pricing perspective, ECB announcements are often associated with large asset price movements. It is therefore essential for investors to quantify the link between monetary policy and exchange rates in formulating effective trading strategies and portfolio allocation decisions. Finally,

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[1] A sample video with the euro–US dollar exchange rate response to the ECB press conference on June 5, 2011 can be viewed at http://www.youtube.com/watch?feature=player_embedded&v=teDxNql-s6I.

[2] The level of the euro exchange rate may influence both European inflation and GDP. For instance, an appreciation of the euro reduces European inflation both directly (through the price of imported goods) and indirectly (by lowering external demand).

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from a market monitoring perspective, it is important to decompose changes in the value of the euro into its fundamental contributors, including ECB monetary policy, and US, euro-zone and German macroeconomic fundamentals.

The case study of the effectiveness of ECB communications is particularly interesting given its unique feature of announcing and explaining policy decisions at two different times within the same day. On a Governing Council meeting day, the ECB communicates its new policy rate via a press release at 13:45 Central European Time (CET). Then at 14:30 CET the ECB press conference takes place with the Introductory Statement (for about 10 min) and a Questions and Answers (Q&A) part (for about 30–45 min) broadcasted live on the ECB website and major business channels. As noted by Trichet (2008), the ECB has two monetary policy instruments, policy decisions and verbal forward-looking policy inclinations, "which are not substitutes, but rather complement each other." In this respect, the introductory statement at the monthly press conference not only "explains in depth the monetary policy decisions taken, but also conveys the collective view of the Governing Council on the monetary policy stance." By using an intraday dataset, it is possible to disentangle the effects of monetary policy decisions separately from those of the accompanying communication.

The main findings of the paper can be summarized as follows. First, I construct two indicators of news about monetary policy stemming separately from policy decisions and the press conference. Estimation results show that the surprise component of communication has highly significant effects on exchange rates, whereas the response of the euro to unanticipated changes in the policy rate is more muted. For instance, a hypothetical positive news shock of 100-basis-points is associated with an appreciation of the euro against the US dollar of roughly 3.6%. To investigate the economic importance of the ECB monetary news, I consider the financial market impact on euro exchange rates of a broader set of data surprises such as US, European and German macroeconomic news announcements. I find that the impact of the ECB press conference is substantial, similar to that of the US ISM index and the German IFO announcement, but smaller than the response to US nonfarm payrolls. Second, intraday data allow to better assess the microstructure details of how new information is impounded into exchange rates. I document that the process of fully incorporating the ECB news shock takes about 1 h, and thus this result suggests that the whole press conference (both the Introductory Statement and the Q&A part) provides valuable information to market participants. Finally, I examine the robustness of the above estimation results along several dimensions. For instance, I consider different identification strategies of the ECB monetary news. I also assess the extent of time-variation of the effectiveness of ECB communication during the recent period of heightened financial stress. This sensitivity analysis corroborates the core finding that the euro exchange rates respond to the surprise component of ECB monetary announcements.

In terms of the literature, I view this paper as contributing towards understanding the extent to which the unanticipated component of ECB policy announcements steers euro exchange rates. A number of studies have documented the influence of the Federal Reserve unanticipated policy actions on the US dollar exchange rates using an event-study approach (see, *inter alia*, Faust et al., 2007; Fatum and Scholnick, 2006, 2008; Rosa, 2011a; and the references therein).[3] This strand of research has reached a consensus that the US dollar exchange rate strongly responds to target shocks, i.e. the difference between what the central bank does and what the market expects the central bank to do. Far fewer studies have documented the reaction of euro exchange rates to ECB monetary decisions. An exception is Evans and Speight (2011) who look at the response of 5-min exchange rate data to the surprise component of ECB monetary decisions, and find no significant reaction for the sample January 2002–July 2003.

Another strand of the literature highlights the effectiveness of policy communication.[4] Early studies get around the difficulties of quantifying the tone of central bank communication by assessing the impact of the ECB press conference on the volatility of asset prices. Sager and Taylor (2004) use 5-min euro–dollar exchange rate data and apply a Markov-switching model where the data generating process of exchange rate returns switches between a high-volatility and a low-volatility state. They find strong evidence that the ECB Governing Council policy announcements during 2002 and 2003 contain significant news content. Jansen and de Haan (2005) use daily data to investigate the reaction of the euro–dollar exchange rate to statements by ECB and national central bank officials. They find that for the sample period January 1999–May 2002 ECB statements have influenced conditional volatility, while efforts to talk up the euro have generally not been successful. A recent contribution by Conrad and Lamla (2010) studies the 5-min response of the euro–US dollar exchange rate to the information content of the ECB press conference as I do in this work. Similar to my findings, they document that during the period January 1999–October 2006 the euro appreciates in response to statements about increasing risks to price stability. However, my contribution differs in several respects. First, consistent with the efficient market hypothesis that asset prices only react to new information, I consider the surprise component of ECB communication rather than the mere presence of an ECB statement.[5] Second, the data employed in this paper are considerably more extensive than those used in previous works, and are novel in several respects, such as the large number of currency pairs considered and the long calendar span of the intraday euro exchange rate returns. In particular, the sample includes the recent period of heightened financial stress, and thus allows to document the effectiveness of ECB communications during the financial crisis compared to tranquil times. Third, I assess the economic importance of ECB announcements by comparing them to the impact of US, European and German macroeconomic news.

[3] Kearns and Manners (2006) investigate the impact of monetary policy on the exchange rate using an event study with intraday data for four countries (UK, Canada, Australia and New Zealand). Melvin et al. (2010) show that the Bank of England interest rate announcements have a statistically and economically significant effect on the dollar-sterling exchange rate.

[4] The impact of the ECB press conference on European interest rates is analysed in Brand et al. (2010), Ehrmann and Fratzscher (2009), Lamla and Lein (2011), Musard-Gies (2006), and Rosa and Verga (2007, 2008).

[5] Conrad and Lamla (2010, page 1404) note that "our communication indicators do not distinguish between the expected and unexpected content of communication."