

What is the minute-by-minute effect of central bank communication on asset prices?

New research by **Carlo Rosa** and **Giovanni Verga** finds that the *unexpected* component of announcements by the European Central Bank has a sizeable impact on interest rate futures.

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# Words

## market reactions when central banks talk

**D**o announcements by the European Central Bank (ECB) affect market expectations about the future direction of its monetary policy? And if so, how long does it take for these messages to be incorporated into asset prices?

Our findings suggest that when the tone of the press conference differs from what the market expects, there is a sizeable and immediate reaction in the price of three-month Euribor futures – widely traded futures contracts based on short-term interest rates in the eurozone – and the complete price adjustment usually takes no more than an hour. Therefore, central bank communication turns out to be a crucial and effective instrument for steering market interest rates.

The fact that market participants should react to central bank

announcements is quite surprising for academic economists, especially after the seminal work of Kydland and Prescott (1977). They were awarded the Nobel Prize in 2004 for showing, in a theoretical framework, that policy-makers face a severe problem of ‘time-inconsistency’ – they tend to renege systematically on their past promises – and so it is in the public interest to ignore their declarations.

Only 20 years ago, William Greider published his popular book *Secrets of the Temple* on the US Federal Reserve System. At that time, it was common practice for monetary policy to be surrounded by secrecy. But nowadays, it is clear that central banks increasingly emphasise verbal communication with the markets in an attempt to inform them of the likely direction of future monetary policy. This is very much the case with the ECB, which holds all-important news conferences at its

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# and deeds:

Governing Council meetings, and it is also increasingly true of the Bank of England and the Fed.

But even though central bankers put great emphasis on verbal communication, economists have not yet systematically studied the relationship between central bank words and central bank deeds, and especially not the information content of central bank words elicited by the reaction of financial markets. Our study is an attempt to begin to fill this obvious gap in the research literature.

We examine the minute-by-minute effect of central bank announcements on asset prices. Contrary to what is commonly found in the literature of monetary economics, we show that market participants respond to *two different pieces of news* rather than just one piece of news. So in order to correctly describe the conduct of monetary policy, we find

that two dimensions are needed: central bank actions and, most importantly, central bank words.

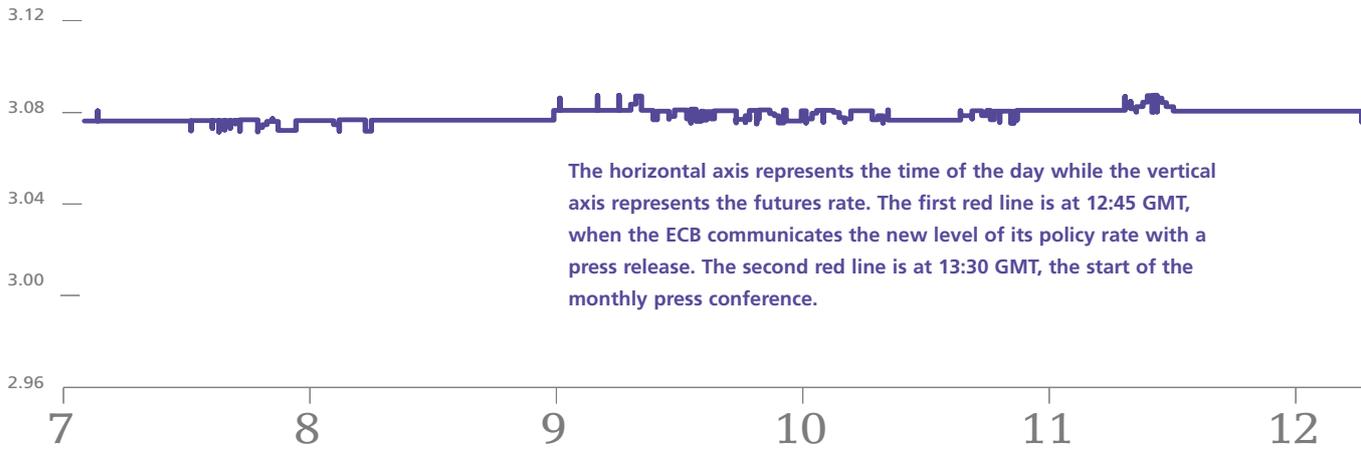
We apply our empirical analysis to the ECB's communication policy because of its unique institutional feature that on one day, at two different points in time, the Governing Council announces first its monetary policy decision, and then its likely future monetary policy stance. These events take place in sequence. At 12:45 GMT, the ECB communicates the new level of its policy rate with a press release. Then 45 minutes later, at 13:30 GMT, the monthly press conference starts and the ECB's president explains the monetary policy decision to the public, as well as the Governing Council's assessment of current economic developments. This speech is very important, especially for traders, because it conveys strong hints about the likely path of the ECB's future monetary policy.

The use of high-frequency intraday data rather than daily data to analyse central bank communication is crucially important because it allows us fully to exploit the unique institutional feature of ECB monetary policy conduct: we are able to disentangle the effects of one surprise – the monetary policy shock – from the other – the news shock.

The advantages of using high-frequency data are best illustrated by means of the example in Figure 1, where we consider the minute-by-minute movements of the three-month Euribor futures price on a specific Governing Council meeting day, 6 April 2006.

On that occasion, the ECB did not change its policy rate and this was fully anticipated by financial market participants. In fact, there is basically no market reaction at 12:45 (indicated in Figure 1 by the first vertical red line). On the other hand, the

Figure 1:  
Futures price dynamics on 6 April 2006



**In Frankfurt, Mr Trichet says 'strong vigilance' – and traders in London react immediately**

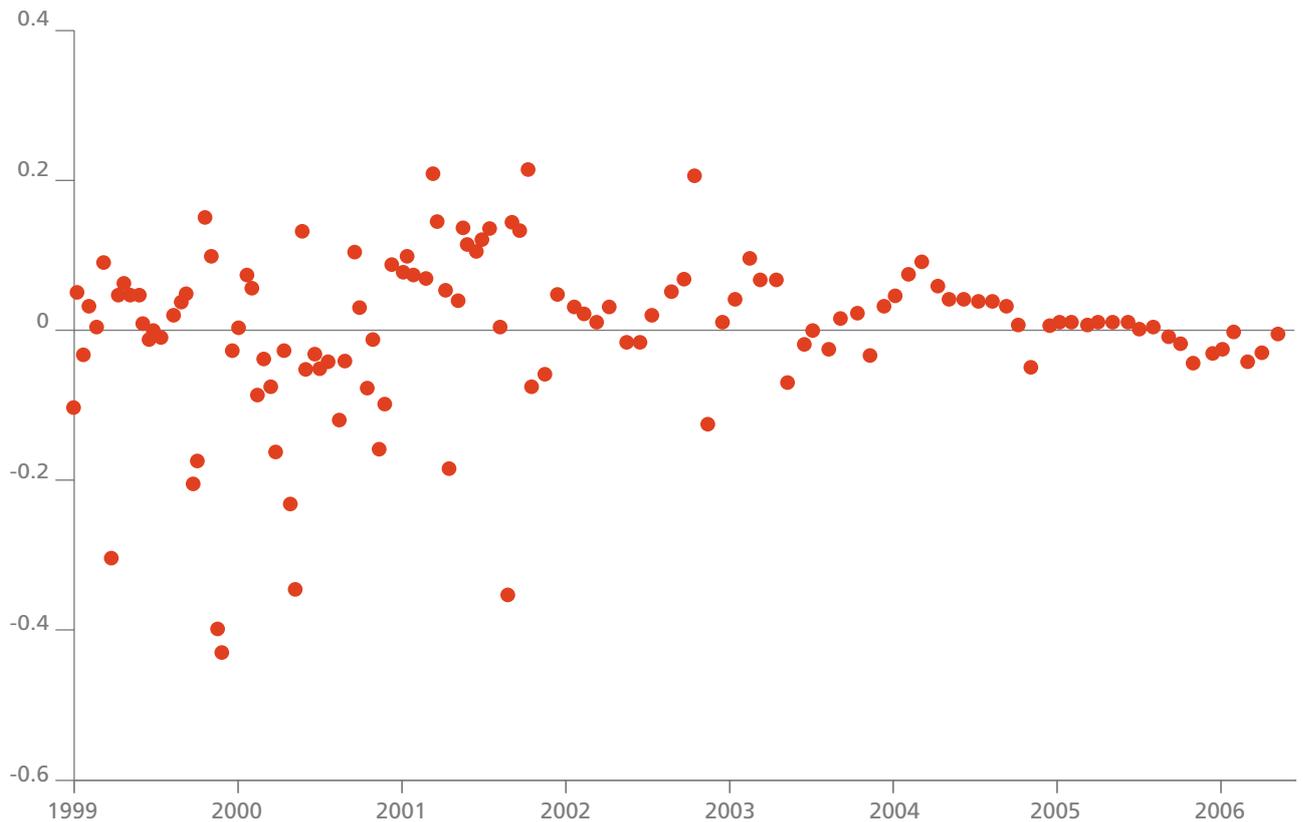
futures rate fell sharply at around 13:50. It took only twenty minutes: from 3.085 at 13:33, the futures rate fell to 2.98 at 13:56.

What explanation could there be for this quick market response? In his monthly introductory statement, the ECB's president Jean-Claude Trichet did not use the key

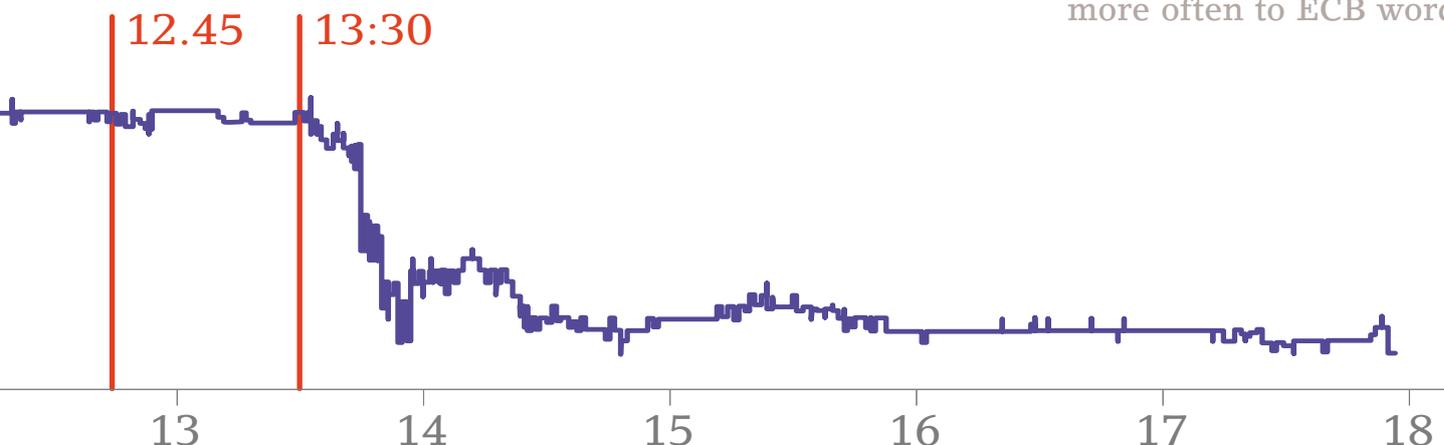
word 'strong vigilance', which seems to indicate a strong risk of policy rate spikes in the near future. This was a great *news shock* for traders in London, because they had expected a strong hawkish announcement such as the appearance of the signalling word 'vigilance' on their screens.

Figure 2:  
**Monetary policy shocks: market reactions to ECB deeds**

This chart plots the difference between the new policy rate communicated at 12:45, and the one-month Euribor rate quoted at 10:00. This quantity is normalised by adding the mean equilibrium (liquidity and risk) spread between the policy rate and the one-month Euribor rate, in the specific case 0.11.



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Everything became clear when a journalist drew the president's attention to the matter by asking:

'Mr Trichet, the markets were expecting you to say vigilance in order to prepare them or prepare for an interest rate rise in May. *You did not say vigilance, was that deliberate?*'

To which Mr Trichet deftly replied:

'It is our responsibility to be as clear and transparent as possible with market participants, investors and savers. *I would say that the current suggestions regarding the high probability of an increase of rates in our next meeting do not correspond to the present sentiment of the Governing Council. I would also add that the sentiment that I see from time to time in some remarks or market literature concerning the perception that we do not increase rates when we are out of Frankfurt is equally not at all the sentiment of the Governing Council. (...) And it is true, vigilance is not mentioned in the introductory remarks, as you very wisely remarked.*' [Emphasis added]

Although the example in the figure is an exceptionally strong case, it serves to illustrate an important and more general point: the ECB is able to move asset prices using words alone, without any need for deeds. Obviously to maintain its credibility, the ECB ultimately has to

deliver what it says it will, that is, to match words with policy deeds.

In fact, to complete the story, in May 2006, there was no policy rate change by the ECB. But at the Governing Council meeting of June 2006, which was actually held outside Frankfurt (in Madrid), there was a policy rate increase of 25 basis points, as Mr Trichet fully signalled to the public in the April press conference.

The second main finding of our research is that central bank communication can affect asset prices permanently as well as transitorily. But it took around three years for traders to learn not only how to interpret ECB announcements but also to believe in them fully.

In this regard, it is revealing to see the changing pattern over time as displayed in Figure 2, which plots the difference between what the ECB does and what the market expects the ECB to do.

Nowadays, market interest rates respond only very marginally to ECB deeds because the current decision is completely expected most of the time and thus already priced in. Indeed, the true reaction takes place when the president himself makes statements, especially when their content differs from what the market expects, as shown in Figure 1. Nevertheless, changes in the ECB policy rate had a significant effect in the first years of the bank's life when the public was still in a learning phase.

We conclude by reiterating that central bankers' announcements are a very powerful tool in driving market expectations and even possibly in driving the evolution of the real economy.

This article summarises 'The Impact of Central Bank Announcements on Asset Prices in Real Time: Testing the Efficiency of the Euribor Futures Market' by Carlo Rosa and Giovanni Verga, CEP Discussion Paper No. 764 (<http://cep.lse.ac.uk/pubs/download/dp0764.pdf>).

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## Further reading

Finn Kydland and Edward Prescott (1977), 'Rules rather than Discretion: The Inconsistency of Optimal Plans', *Journal of Political Economy* 85(3): 473-91.

Carlo Rosa (2006), 'Central Bank Communication: The Case of the European Central Bank', PhD thesis at the London School of Economics.

Carlo Rosa and Giovanni Verga (2007), 'On the Consistency and Effectiveness of Central Bank Communication: Evidence from the ECB', *European Journal of Political Economy* 23(1): 146-75.