



RESEARCH BULLETIN NO. 50

The macroeconomic impact of news about policy and news about the economy in ECB announcements

21 September 2018

By > [Marek Jarociński](#) and > [Peter Karadi](#)^[1]

Central bank announcements simultaneously convey information about monetary policy and the economic outlook. We use changes in interest rate expectations and stock prices around the time of policy announcements to disentangle the impact of news about monetary policy from that of news about the economic outlook. We find that both play a significant role in the dynamics of inflation and economic growth, and that controlling for news about the economy helps us to measure more accurately the transmission of monetary policy.

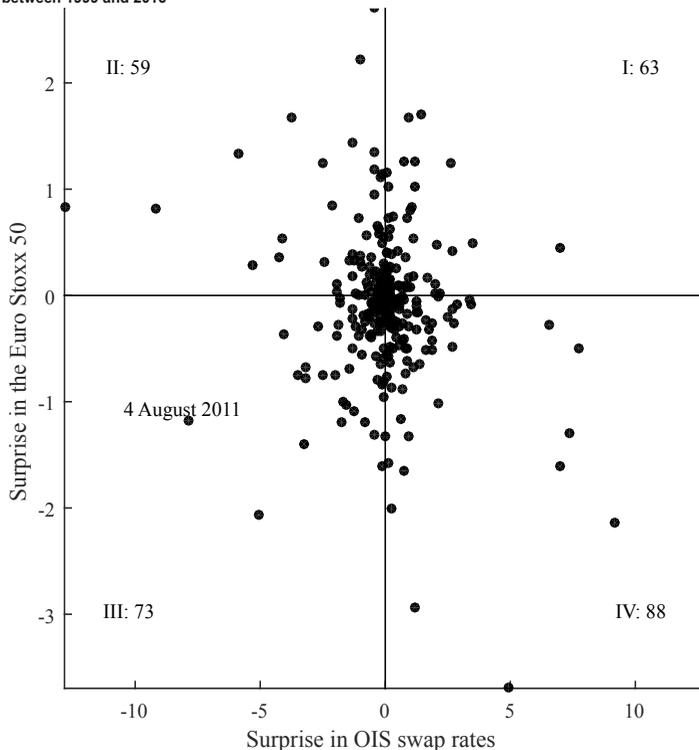
How would a change in monetary policy, like a cut in the policy interest rate, influence the euro area economy? To answer this question, macroeconomists must first distinguish between two kinds of policy changes: those that are systematic responses to changes in the economic outlook and those that are not. They then need to isolate the latter, which are not contaminated by the impact of underlying economic developments and are commonly referred to as monetary policy "shocks". To obtain a proxy for such monetary policy shocks, a growing body of literature uses changes in market-based interest rate expectations (interest rate "surprises") over a short time interval around regular central bank announcements.^[2] This approach has two advantages. First, the surprises are purged of the impact of the systematic policy response to the expected outlook, because financial markets incorporate these into their interest-rate expectations prior to the announcements. Second, the short interval guarantees that disturbances independent of the announcement do not systematically contaminate the proxy.

In a recent working paper^[3] we argue that this approach needs to be refined, because central bank announcements can convey information not just about monetary policy but also about the central bank's own assessment of the outlook. The central bank's outlook may differ from the outlook embodied in private sector expectations, and the communication can therefore drive private expectations independently of the monetary policy shock, making it harder to identify interest rate surprises around policy announcements. In other words, there are "pure" monetary policy shocks and there are "information" shocks (adjustments in the economic outlook). The trick is to disentangle the two. We propose to do that by using stock market surprises together with the interest rate surprises.

The idea is simple: if interest rate surprises around policy announcements only reflected monetary policy shocks, they would co-move negatively with stock price surprises: that is, stock prices would unambiguously increase after a negative interest rate surprise. The reason is that a policy easing raises the present value of future dividends, because it both lowers discount rates and increases future dividends by engineering an upswing. However, we find that this does not always happen in practice. We therefore argue that a positive co-movement of interest rate surprises and stock prices signals the presence of an "information" shock in the announcement.

A good example is the ECB policy announcement on 4 August 2011. The Governing Council announced that it was keeping interest rates unchanged, after having increased them twice earlier that year, in April and July. The markets had expected a further tightening, so this decision surprised them with a looser than expected monetary policy. This is reflected in what happened to overnight index swap (OIS) rates for maturities from one month to three years. These rates *declined* from 10 minutes before the announcement until 20 minutes after the end of the press conference. Had this been purely a policy easing, stock prices would have increased. However, during the same time window the Euro Stoxx 50 blue-chip stock market index *fell* by more than 1%. This reaction is understandable if we take into account the fact that the policy announcement included negative news on the economy: notably that uncertainty was "particularly high", especially in financial markets.

Figure 1. "Surprises" in OIS rates and the Euro Stoxx 50 index for 283 ECB policy announcements between 1999 and 2016

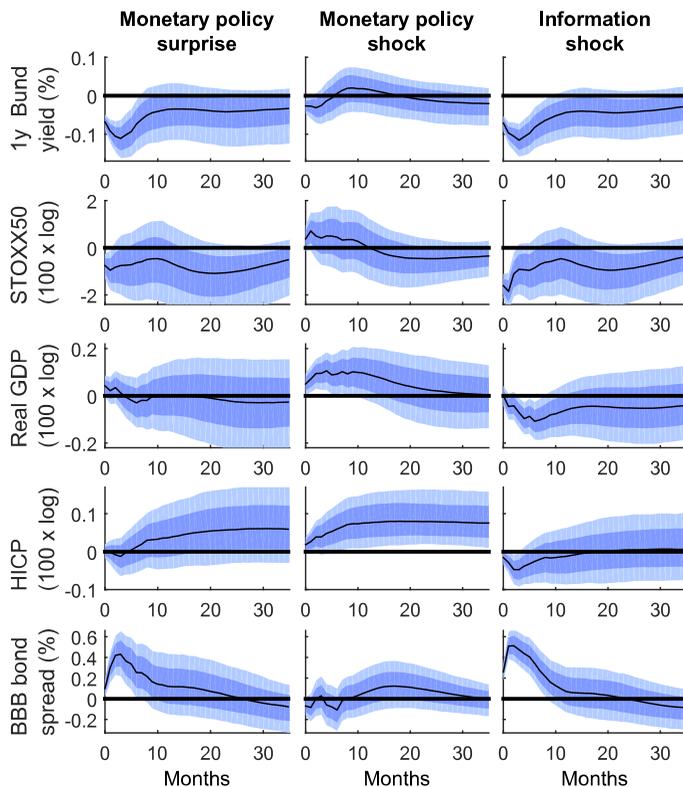


Notes: The "surprises" are calculated as the change in the respective instrument in a window starting 10 minutes before the press release and ending 20 minutes after the press release or after the end of the press conference (as applicable). The OIS rate surprises shown are the first principal component of the OIS rate surprises with maturities of one month to two years.

Figure 1 shows that it is not unusual to see stock prices fall while interest rate expectations also decline, as in the example given above. In the sample of 283 policy announcements between 1999 and 2016, there are 73 data points in quadrant III, where stock prices fall simultaneously with a surprise drop in interest rate expectations. Moreover, there are 63 data points in quadrant I, where, as a mirror image, stock prices increase together with a surprise rise in interest rate expectations. The fact that stock prices do not always move in the opposite direction to interest rates suggests that a policy announcement conveys not only news about interest rates, but also news about the state of and prospects for the economy itself.

To confirm this conclusion, we estimate the impact of monetary policy surprises on relevant financial market and macroeconomic variables – but first without controlling for the presence of central bank information shocks. To achieve this, we use interest-rate surprises during all events depicted in Figure 1, irrespective of the direction of the accompanying stock market reactions. We insert these proxies into a standard Bayesian vector autoregression (VAR) on monthly euro area data between 1999 and 2016. The first column of Figure 2 shows the results. The solid lines depict the point estimates and the shaded areas show 68% and 90% confidence bands. The shock causes a temporary decline in the one-year German government bond (Bund) yield. This decline fails to materially affect real activity (measured by real gross domestic product, GDP) and prices (measured by the Harmonised Index of Consumer Prices, HICP), contradicting standard (New Keynesian) theories.^[4] This coincides with a *decline* in the stock market (Euro Stoxx 50) and an *increase* in the spread between corporate bond yields and government bond yields (BBB bond spread). These financial market responses run counter to conventional theories that predict easier credit conditions after a monetary policy easing, usually referred to as the credit channel of monetary policy.^[5] However, they might also reflect the presence of shocks independent of monetary policy that contaminate interest rate surprises.

Figure 2. Responses of economic and financial variables to monetary policy surprises, monetary policy shocks and central bank information shocks



Note: Median (black line), 68% range (dark blue) and 90% range (light blue).

To refine the estimates, we now disentangle monetary policy shocks from central bank information shocks. To achieve this, we treat the data points in quadrants II and IV of Figure 1 as proxies for monetary policy shocks. At these data points, interest rate expectations and stock prices move in opposite directions, as expected after a surprise change in monetary policy. In contrast, we treat the data points in quadrants I and III of Figure 1 as proxies for central bank information shocks. These events also originated from a central bank announcement, but the positive co-movement of interest rates and stock prices suggests that they are the joint result of the central bank communicating about the economic outlook and, in parallel, adjusting interest rates in response to it.

The second and third columns of Figure 2 show the results. It is immediately apparent that the two shocks have very different impacts on the economy. A monetary policy shock (second column) causes a sizable increase in the price level and a temporary improvement in economic activity.¹⁶ The point estimates show an increase in stock prices and a small decline in credit spreads, so these results are not inconsistent with the expected functioning of the credit channel. In contrast, a central bank information shock that reduces interest rates is accompanied by a decline in activity and in the price level, a depreciating stock market, and worsening corporate credit conditions. The latter is consistent with bad news about the economic outlook accompanied by an offsetting systematic policy easing.

Concluding remarks

Our conclusions are twofold. First, central bank announcements convey new information not just about policy, but also about the state of the economy. Second, controlling for information shocks – the central bank's pronouncements about the economic outlook – is important for the precise measurement of the transmission of monetary policy shocks. However, the results presented here do not imply that a central bank should restrict its communication about the state of the economy. A plausible interpretation of central

bank information shocks is that they are news about future economic conditions that the central bank reveals in advance; it then sets interest rates to offset their effects, mitigating the medium-term impact of the shocks. This raises the question of whether the central bank could avoid information shocks and the ensuing economic fluctuations by restricting its communication. If the above interpretation is right, the answer is no, because the central bank does not really generate these shocks itself; it merely reveals information that would have become apparent anyway.^[7]

References

Bernanke, B.S. and Gertler, M. (1995), "[Inside the Black Box: The Credit Channel of Monetary Policy Transmission](#)", *Journal of Economic Perspectives*, Vol. 9, No 4, pp. 27-48.

Gali, J. (2015), *Monetary Policy, Inflation, and the Business Cycle: [An Introduction to the New Keynesian Framework and its Applications](#)*, 2nd edition, Princeton University Press, Princeton.

Gertler, M. and Karadi, P. (2015), "[Monetary Policy Surprises, Credit Costs, and Economic Activity](#)", *American Economic Journal: Macroeconomics*, Vol. 7, No 1, pp. 44-76.

Jarociński, M. and Karadi, P. (2018), "[Deconstructing monetary policy surprises: the role of information shocks](#)", *Working Paper Series*, No 2133, ECB, Frankfurt am Main, June.

Nakamura, E., and Steinsson, J. (2018), "[High-Frequency Identification of Monetary Non-Neutrality: The Information Effect](#)", *The Quarterly Journal of Economics*, Vol. 133, No 3, pp. 1283–1330.

[1] Disclaimer: This article was written by Marek Jarociński and Peter Karadi (Principal Economists, Directorate General Research, Monetary Policy Research Division). It is based on a paper entitled "Deconstructing monetary policy surprises: the role of information shocks". The authors gratefully acknowledge the comments of Carlo Altavilla, Matteo Ciccarelli, Roberto De Santis, Paul Dudenhefer, Michael Ehrmann and Geoff Kenny. The views expressed here are those of the authors and do not necessarily represent the views of the European Central Bank or the Eurosystem.

[2] See, for example, Gertler and Karadi (2015).

[3] See Jarociński and Karadi (2018).

[4] See, for example, Gali (2015) for a textbook treatment.

[5] See, for example, Bernanke and Gertler (1995).

[6] If anything, the effects might be considered too strong. This might partly be the result of a simplifying assumption that each policy announcement in the sample can be classified as either a pure monetary policy shock or a pure central bank information shock. A more realistic view is that each policy announcement is a unique combination of a monetary policy shock and a central bank information shock. Jarociński and Karadi (2018) develop such a framework and find that the results are broadly consistent with the results shown above, but that the impact of monetary policy shocks is weaker.

[7] See also the related discussion in Nakamura and Steinsson (2018).

European Central Bank

Directorate General Communications
 Sonnemannstrasse 20, 60314 Frankfurt am Main, Germany
 Tel.: +49 69 1344 7455, Email: media@ecb.europa.eu
 Website: www.ecb.europa.eu

Reproduction is permitted provided that the source is acknowledged.

> Media contacts