



RESEARCH BULLETIN NO. 37

What determines the impact of macroeconomic news on asset markets?

By [Georg Strasser](#)^[1]

The most important determinant of an announcement's impact on bond markets is its relationship to fundamentals, closely followed by its timing. Information which is imprecise but early can affect markets more than news which is precise but late.

Governments and private agencies make public announcements on how the economy as a whole is performing at various points over the year. Sometimes the substance of these announcements comes as a surprise,^[2] and can have quite an impact on asset prices.

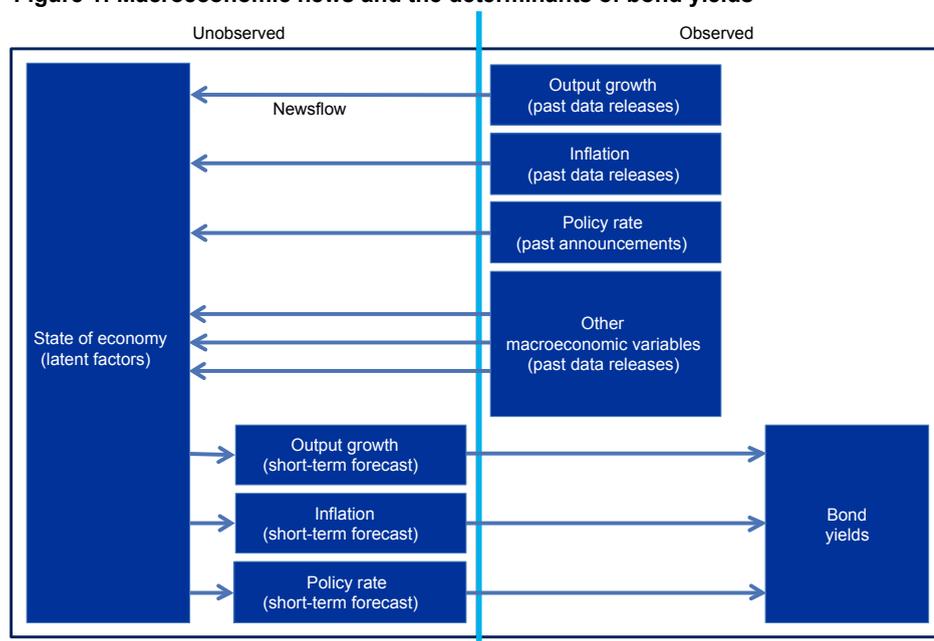
The value of the one-year US Treasury bond is closely linked to US announcements, but it does not respond equally strongly to all announcements. For example, surprising non-farm payroll figures explain more than 25% of the daily change in yield on the respective announcement days, whereas other announcements have barely any effect.

This bulletin examines the impact of US announcement surprises on the yield of one-year Treasury bonds and explains why some macroeconomic releases have a consistently larger impact on asset prices than others.

The intrinsic value of an announcement

Our approach is to measure the relevance of a surprise using three key determinants of bond yields. Bond prices respond to monetary policy. Monetary policy in turn, and bond prices themselves, respond to inflation and output. A forecast of bond yields therefore needs to take at least three variables into account: growth, inflation and the policy rate (the Fed Funds target rate). This is illustrated by the three arrows on the lower right of Figure 1. The *intrinsic value* of an announcement captures how strongly it changes the short-term forecast of these three determinants of bond yields.

Figure 1: Macroeconomic news and the determinants of bond yields



The intrinsic value of an announcement can be decomposed into three properties, namely robustness, timeliness and fundamentality. The less it is subsequently revised, the higher we may assume this intrinsic value to be (“robustness”). We expect an announcement to be particularly valuable if little information is available at the time of release, i.e. it is released ahead of other announcements (“timeliness”). Finally, controlling for timeliness, an announcement’s intrinsic value is likely to increase as the relevance of the final revised series for forecasting the three determinants of bond yields increases (“fundamentality”).

We measure these three components by comparing the actual intrinsic value with counterfactual intrinsic values.^[3] Actual intrinsic value is calculated in a standard linear forecasting model of the determinants of bond yields based on announcements sorted by their actual release time.

Normally we observe only one particular release sequence. But how important is timeliness relative to, for example, fundamentality? Both timeliness and robustness depend on the announcement’s relation to other information, in terms of release sequence and correlation. We isolate this effect by comparing the relevance of announcements under alternative sequencing. For this purpose we vary the release time and revision status of an announcement series and feed this counterfactual time series into the same forecasting model. For example, we counterfactually move all announcements of factory orders to the middle of the previous month. Running the forecasting model under this counterfactual ordering provides the intrinsic value the announcement would have had if it had been released before any other announcement referring to the same period. The difference between the actual and reordered intrinsic values of an announcement is its timeliness. We calculate robustness in the same manner, replacing actual announcement values with the final revised ones.

In the final step we examine how components of intrinsic value amplify the response of bond yields to announcement surprises. For this purpose we regress the daily change in bond yields on the surprise and its interactions with the components of intrinsic value, separately for each determinant of bond yields.

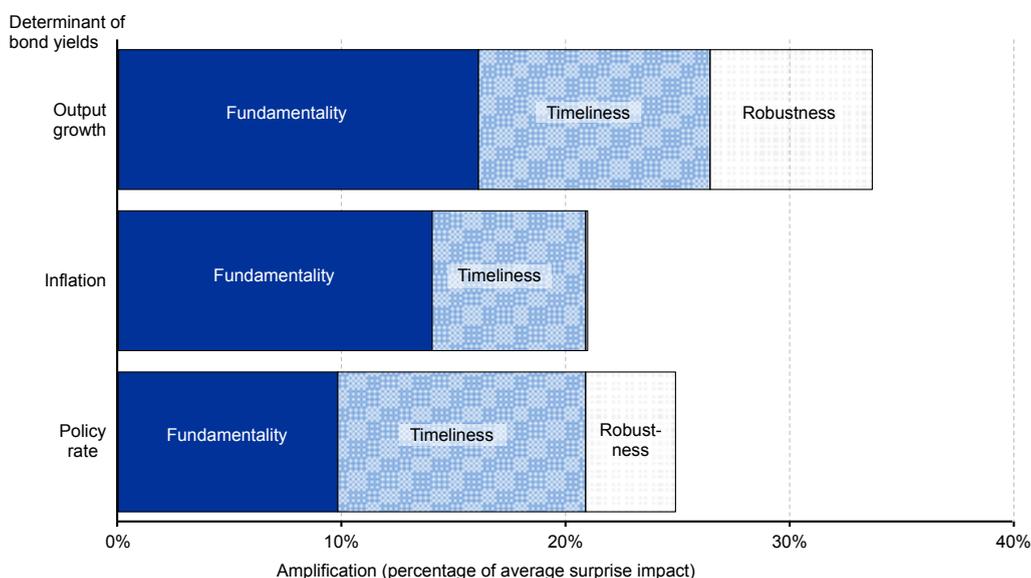
What aids an announcement’s impact on asset markets?

We first estimate the intrinsic value and the components thereof for the years 1997-2015 separately for each announcement and each of the three determinants of bond yields. We find that weak timeliness and robustness can render an announcement irrelevant, even when it has some fundamentality.

Announcements of business inventories, for example, have hardly any price impact, because their late release and large revisions render fundamentality largely irrelevant.

A comparison of the components of intrinsic value reveals that an announcement’s timeliness can be almost as important as its fundamentality. The effect of revisions is considerably smaller. Forward-looking announcements, for example, such as the University of Michigan Consumer Sentiment Index, have high timeliness and high overall intrinsic value. Similarly, preliminary releases often have a higher intrinsic value than their later revisions. This all indicates that information which is imprecise but early is more useful for short-term forecasting than news which is precise but late.

Figure 2: Effect of intrinsic value on the impact of announcement surprises on bond yields
(one-year Treasury bonds, one-standard-deviation increase in each component of intrinsic value)



Using estimated intrinsic value, we examine how much this amplifies the yield response to a surprise. Figure 2 illustrates for each of the three determinants of bond yields how strongly the price impact of an average surprise would increase if each component of intrinsic value was raised to one standard deviation above average. This shows that the surprise impact increases by up to one-third, mainly via the output growth forecast. While fundamentality dominates the inflation forecast, we see that for the output growth and policy rate forecasts timeliness and robustness together are at least as important.

By comparing the actual impact of announcements with the impact predicted by their intrinsic value, we can identify macroeconomic indicators with abnormal market impact. For example, financial markets pay a great deal of attention to the non-farm payroll announcement, which is released a few days after the end of the month and strongly related to fundamentals. However, several forward-looking announcements, among them the University of Michigan Consumer Sentiment Index, outperform non-farm payroll in terms of fundamentality and timeliness. This raises the possibility of an overreaction to certain announcements due to the strategic complementarity of trading on the same announcement.^[4]

Conclusion

The case of one-year US Treasury bonds shows that an announcement's impact on asset markets depends on its relationship to fundamentals, its timing and its robustness to revisions. The most important of these three is fundamentality, closely followed by timeliness. As we have demonstrated, information which is imprecise but early can affect markets more than news which is precise but late. This particularly applies to forward-looking announcements, which by their nature are released early. Policymakers need to be aware, however, that the announcement to which markets respond the most is not necessarily the most informative overall.

References

- Gilbert, T., Scotti, C., Strasser, G. and Vega, C. (2016), [Is the intrinsic value of macroeconomic news announcements related to their asset price impact?](#), *Working Paper Series*, No 1882, ECB, February.
- Gürkaynak, R. and Wright, J. (2013), [Identification and inference using event studies](#), *Manchester School*, Vol. 81, Suppl. S1, pp. 48-65.
- Morris, S. and Shin, H.S. (2002), [Social Value of Public Information](#), *American Economic Review*, Vol. 92, No 5, pp. 1521-1534, December.

^[1] Disclaimer: This article was written by Georg Strasser (Senior Economist, Directorate General Research, Monetary Policy Research Division). The author would like to thank Carlo Altavilla, Paul Dudenhefer, Michael Ehrmann, Philipp Hartmann, Geoff Kenny and Thomas Kostka for their comments. The views expressed here are those of the author and do not necessarily represent the views of the European Central Bank and the Eurosystem.

^[2] Surprise is measured as the difference between the value released and the value expected as recorded by surveys of market participants, divided by the standard deviation of the resulting series over time.

^[3] Gilbert, Scotti, Strasser and Vega (2016) describe the methodology in more detail and present results for a shorter sample period.

^[4] Morris and Shin (2002) describe such an overreaction to public information. Gürkaynak and Wright (2013) report that by stating in 2004 that non-farm payroll figures were more informative than unemployment figures the then Chairman of the Federal Reserve Board of Governors, Alan Greenspan, shifted the market's attention to this announcement.

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](#)