

# Dot plots for the Eurosystem?

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*Check against delivery.*

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## 1 Introduction

Ladies and gentlemen,

it is a great pleasure to be at Harvard again, to meet long time companions like Hans-Helmut Kotz and to exchange ideas with top scientists such as Benjamin Friedman. When I was in this round two years ago, we were dealing with an unprecedented global inflation spike.<sup>[1]</sup> Fortunately, the worst is behind us, and inflation in the euro area is heading back to the Eurosystem's target. We have not brought the inflation ship safely back into the 2% harbour, but the port is in sight. Thus, I can focus on another question today.

Before I do that, let me share an analogy to set the stage for my discussion. Back in the 1970s and 1980s, the field of economics was split into two seemingly incompatible schools of thought: New Keynesian and New Classical. Their proponents were not too polite in their language, calling assumptions “foolishly restrictive” or comparing an opponent to someone attempting to pass himself off as Napoleon Bonaparte.[2] But, over time, ideas from both camps ultimately merged to form a consensus called the New Neoclassical Synthesis, the very foundation of modern macroeconomics.[3] Gregory Mankiw neatly described this story in his essay “The Macroeconomist as Scientist and Engineer”.[4]

The takeaway from this analogy is that complex issues are rarely black or white. With this in mind, I want to explore whether the conduct of monetary policy in the euro area could be enhanced by offering more detailed and nuanced information regarding its future outlook. More specifically, today I will address the following question: Should the Eurosystem introduce dot plots?

To explore this, I will first examine current experience with dot plots and other forms of forward guidance in both the United States and the euro area. I will then evaluate the advantages and disadvantages of incorporating dot plots into the Eurosystem’s communication strategy. In this analysis, I will concentrate on the implications for policymakers’ independence, the effectiveness of monetary policy and the management of uncertainty.

## 2 The dot plot and other forms of forward guidance

Let me begin with some basics. Most central banks in advanced economies have a clear mandate to keep prices stable. They do this mainly by setting the policy rate and communicating their decisions in order to manage the expectations of economic agents, including market participants, households and firms. When central banks provide explicit signals about the future path of the policy rate, we call it forward guidance.

We can classify forward guidance into two ideal types: “Odyssean” and “Delphic”. [5] Odyssean forward guidance means the central bank makes a firm commitment to a future course of action, like promising to keep interest rates at a certain level for a certain time. Like Odysseus, who famously tied himself to the mast of his ship to resist the call of the sirens, central banks are committing to staying on course – whatever the future brings.

In contrast, Delphic forward guidance is conditional and involves sharing information about the central bank's economic outlook and policy intentions without making firm commitments. This term comes from the Oracle of Delphi, famous for its prophecies and predictions, which were so ambiguous and open to interpretation that they always seemed to be borne out in hindsight. A prime example of Delphic forward guidance is the policy rate forecasts published by central banks such as Norges Bank and Sweden's Riksbank.

A more subtle way of monetary policy communication is through the central bank's reaction function. A reaction function indicates how the central bank adjusts its policy rate in response to key macroeconomic variables like the inflation rate or economic growth. When economic agents have a clear understanding of this reaction function, communication about the expected development of these macroeconomic variables can also help shape their expectations regarding the future trajectory of the policy rate.

## 2.1 The Fed's dot plot

To consider if the Eurosystem should introduce dot plots, let me briefly recall what the Fed (Federal Reserve System) dot plots are and how market observers view them. Twelve years ago, the Fed (Federal Reserve System) began publishing the federal funds rate projections of the Federal Open Market Committee (FOMC (Federal Open Market Committee)) participants. Its intention was to boost transparency and communication with financial markets and the general public. On the other side of the Atlantic, the Eurosystem has, from its inception, held public press conferences and published monetary policy statements, the minutes of its meetings, and the results of its quarterly macroeconomic projections.

As you are well aware, before the FOMC (Federal Open Market Committee) meeting, FOMC (Federal Open Market Committee) participants share their individual assessment of the appropriate level of the fed funds rate for the end of the current year, the end of the coming two to three years and over the longer run. The longer run projection refers to "each participant's assessment of the value to which each variable would be expected to converge, over time, under appropriate monetary policy and in the absence of further shocks to the economy."<sup>[6]</sup>

Due to its visual representation in the Summary of Economic Projections (SEP (Summary of Economic Projections)), the combined projections of all FOMC (Federal Open Market Committee) members are known as the dot plot. These dots complement the FOMC (Federal Open Market Committee) participants' projections for GDP (gross domestic product) growth, unemployment and inflation. While each FOMC (Federal Open Market Committee) participant submits their funds rate projection together with corresponding projections for macroeconomic variables, these correspondences are not revealed by the SEP (Summary of Economic Projections). Accordingly, market observers cannot directly link the interest rate projections to the projections of the other macro variables.

The dot plot was meant to complement the Fed's communication, not to replace the forward guidance it provided in the monetary policy statement at that time during the press conference. For example, in January 2012, the FOMC (Federal Open Market Committee) statement provided explicit forward guidance on rates, saying that the Committee "[...] anticipates that economic conditions [...] are likely to warrant exceptionally low levels for the federal funds rate at least through late 2014."<sup>[7]</sup> During the accompanying press conference, Chairman Ben Bernanke introduced the dot plot, observing that "[...] eleven participants expect that the appropriate federal funds rate at the end of 2014 will be at or below 1 percent, while six participants anticipate higher rates at that time."<sup>[8]</sup>

Although the Federal Reserve did not introduce the dot plots as an explicit tool for forward guidance, many market analysts began to interpret them as such. When the forward guidance in the statement and the dot plot sent mixed signals, FOMC (Federal Open Market Committee) chairs often downplayed the dot plot's importance.

In 2014, Janet Yellen famously stated: "[...] one should not look to the dot plot, so to speak, as the primary way in which the Committee wants to or is speaking about policy [...]."<sup>[9]</sup> Similarly, in 2019, Jerome Powell noted that "[...] the dot plot has, on occasion, been a source of confusion. Until now, forward guidance in the statement has been a main tool for communicating committee intentions and minimizing that confusion."<sup>[10]</sup>

And this is also how Fed (Federal Reserve System) watchers now see the dot plot, ranking it as the Fed's fifth most important communication tool.<sup>[11]</sup> The top communication tools are the press conference, the Summary of Economic Projections (excluding the dots), the FOMC (Federal Open Market Committee) statement, and speeches by the chair.

Numerous studies show that the Fed (Federal Reserve System) has successfully used monetary policy communication to influence long-term interest rates and other asset prices.[12] And some research suggests that the dot plots significantly and independently influence market interest rates. [13] But there is a fundamental issue about these results: it is very challenging to determine how much each communication channel contributes to the overall effect.

To identify the causal effect of monetary policy, scholars often define a so-called event window around central banks' monetary policy meetings. Changes in market interest rates during this event window are then attributed to monetary policy.

But there is a problem: when the dot plot is released, it is published together with the monetary policy statement. That makes it hard to determine which one caused the interest rate changes observed during the event. And because of this, it is unclear whether those channels actually provide complementary information or are just substitutes.

## 2.2 Monetary policy communication at the Eurosystem

So, what does the Eurosystem's monetary policy communication look like? The Eurosystem began using explicit forward guidance in the introductory statement to its July 2013 meeting. At that time, inflation in the euro area was low, and the Eurosystem expected underlying price pressures to stay subdued in the medium term. Interest rates were already at the effective zero lower bound.

To provide further accommodation, the ECB (European Central Bank)'s Governing Council, which is the counterpart of the FOMC (Federal Open Market Committee), announced in its July 2013 meeting that it "expects the key ECB (European Central Bank) interest rates to remain at present or lower levels for an extended period of time." [14] The Governing Council continued to use variations of this statement for almost a decade. And there is now also ample evidence that the Eurosystem has been successful in implementing its forward guidance.[15]

With the resurgence of inflation in 2021 and high uncertainty caused by major shocks and structural changes, the Eurosystem shifted to a data-dependent, meeting-by-meeting approach, largely stepping away from explicit forward guidance.

More specifically, we now base our interest rate decisions on three elements: first, our assessment of the inflation outlook in light of the incoming economic and financial data, second, the dynamics of underlying inflation, and third, the strength of monetary policy transmission. These three elements can be seen as a further specification of our reaction function. However, the Governing Council does not pre-commit to any specific rate path.

Taken together, apart from the publication of the dot plot, the approaches to monetary policy communication taken by the Federal Reserve System and the Eurosystem are largely comparable. Both institutions regard the monetary policy statement and the press conference as their primary communication tools. And both central banks have recently shifted from explicit forward guidance towards a data-dependent meeting-by-meeting approach.

But the Eurosystem also continues to provide signals about future policy rates. It simply does it more implicitly. For example, the wording of the monetary policy statement and the answers of the [ECB \(European Central Bank\)](#) President during press conferences provide insights into future policy rates. As do speeches and interviews given by Governing Council members. Additionally, the Eurosystem influences market expectations through its quarterly staff projections.[16]

Unlike some other central banks, the Eurosystem uses the interest rate implied by financial market prices on a specific cut-off day as a conditioning assumption for its macroeconomic projections. Specifically, this means that our medium-term inflation forecast aligns with market expectations for a particular policy rate path. Market participants can subsequently compare the exogenous path for the policy rate, as embedded in our macroeconomic projections, with our actual monetary policy decisions, in order to gain insights into our reaction function.

You could say that the Eurosystem provides Athenian communication. Athena was known as the Goddess of wisdom and as a protector and guide to many Greek heroes. Rather than communicating directly with those she protected, Athena often used indirect guidance. And through her subtle guidance, Athena empowered the heroes she protected to take decisive action and make wise choices.

### 3 A dot plot for the Eurosystem?

Now, let us get to the heart of the matter. Should the Eurosystem introduce dot plots? Although this question can only be answered “yes” or “no”, complex issues are rarely black and white, as mentioned earlier.

In the following, rather than simply listing the pros and cons of introducing dot plots in the Eurosystem, I will structure my discussion around three themes: First, the impact dot plots could have on the independence of the Eurosystem. Second, the potential for dot plots to improve the effectiveness of our monetary policy communication. And third, the role dot plots could play in capturing projection uncertainty around our baseline forecasts.

Throughout, I will only consider adding projections for the policy rates to the existing macroeconomic projections by Eurosystem staff. For simplicity, I will not consider whether to also complement our current consensus projections for macroeconomic variables with individual macroeconomic projections.

### 3.1 Independence

Let me begin with the theme of independence. The ECB (European Central Bank)'s Governing Council consists of the six ECB (European Central Bank) Executive Board members and the 20 governors of the euro area's national central banks. Although this setting may resemble that of the Federal Open Market Committee, which includes Federal Reserve Bank Presidents, there is a significant difference.

The euro area is not composed of regions within a single country but of individual countries within a larger union, each with its own fiscal authority and national laws, as well as considerable differences in economic size and performance. Therefore, within the Governing Council we have a strong interest in finding and communicating a consensus perspective. This is, for example, enshrined in our statute, which states that the proceedings of the meetings of the Governing Council are confidential.

When we discussed introducing ECB (European Central Bank) accounts from our Governing Council meetings – comparable to the published minutes of FOMC (Federal Open Market Committee) meetings – about a decade ago, we aimed to balance two things: On the one hand, to clearly articulate the consensus perspective. Yet on the other hand to represent the full spectrum of views in order to help market participants better understand the ECB (European Central Bank) Governing Council's decision-making process.[17]

In the end, the Eurosystem decided to represent the full spectrum of the discussion without naming individuals. Nevertheless, despite the anonymity of the arguments presented, markets and the media alike continue to attempt to discern the identities of the individuals behind them. Given that numerous members of the Governing Council express their views on monetary policy through speeches and interviews, identifying their positions is not a particular challenge.

If there were anonymous dot plots of Governing Council members, media and the markets alike would probably attempt to match individual members to each dot as well. The primary distinction between speeches and dot plots is that Governing Council members deliver speeches voluntarily. In contrast, dot plots would force all Governing Council members to regularly articulate their perspectives on the future trajectory of interest rates. And this could potentially influence the Governing Council's independence.

Once national stakeholders become aware of "their" representative's views on future interest rates, they may exert pressure on the representative to align with national interests. I am confident that, even if we were to publish dot plots, every member of the Governing Council would continue to act independently and in the best interests of the entire euro area. However, I believe we are well advised not to put ourselves in a situation that might increase pressure on us to act in ways others want us to.

### **3.2 Effectiveness of monetary policy communication**

My second theme is whether a dot plot could significantly enhance the Eurosystem's effectiveness of monetary policy communication. And here I am sceptical. To begin with, there is the previously discussed issue: the dot plot may conflict with the consensus message conveyed in the monetary policy statement. But the main reason for my scepticism is that comparative studies on different methods of monetary policy communication are inconclusive.

A BIS (Bank for International Settlements) working paper shows that interest rate projections provide additional information to macroeconomic projections, meaning that they are not redundant.[18] That could be seen as an argument for introducing dot plots. However, while market participants in countries that publish both interest rate projections and macroeconomic projections prefer the former, they might still be able to obtain sufficient information from macroeconomic projections alone.

Furthermore, research on central bank communication in Norway and Sweden shows that publishing interest rate projections has not improved market understanding of what new macroeconomic information implies for future interest rate.[19] In other words, the publication of interest rate paths did not help market participants better understand the central banks' reaction functions.

This finding aligns with research published by the Reserve Bank of New Zealand that shows that announcements with interest rate forecasts and those with only written statements lead to similar market reactions across the yield curve.[20] The authors pointedly conclude that, while central bank communication is important, the exact form it takes is less relevant.

This result echoes a seminal study by Blinder and co-authors, who concluded back in 2008 that there was no consensus on what constitutes an optimal communication strategy.[21]

All things considered, I see no compelling evidence that the Eurosystem's monetary policy communication would be significantly enhanced by the introduction of a dot plot.

### 3.3 Projection uncertainty

Now to the third and final theme – uncertainty. I am quite sure that the Eurosystem has room to improve how we handle projection uncertainty. Currently, the ECB (European Central Bank)'s Governing Council summarises its view on the uncertainty surrounding economic growth and inflation in the risk assessment section of its monetary policy statement. More specifically, the Eurosystem addresses the uncertainty around its baseline inflation forecast in two ways.[22]

First, it produces fan charts with symmetric ranges around the point forecast, based on past projection errors. In this setup, past projection errors act as a catch-all proxy for uncertainty. Second, it occasionally publishes risk scenarios, conditional on assumptions different from those in the baseline projection. For instance, during the pandemic, the Eurosystem began using alternative assumptions about the future path of infections and contact restrictions to illustrate macroeconomic uncertainty.

Could the use of dot plots enhance the communication of inflation forecast uncertainty within the Eurosystem? Given that dot plots offer only an indirect method for conveying uncertainty about the inflation outlook, there may be more effective alternatives.

One might be to enhance the communication of our existing measures of uncertainty. Another might be to develop new measures, such as scenario and sensitivity analyses, as well as improved fan charts. We must carefully evaluate the pros and cons of each approach.

Hence, it is quite fitting that the Eurosystem is currently performing an interim strategic review, which includes an analysis of how risk and uncertainty should inform both policy decisions and policy communication. I'm already looking forward to the results.

## 4 Conclusion

Ladies and gentlemen, let me conclude. I began my talk by discussing different schools of thought – New Keynesian and New Classical – and argued that complex issues are rarely black or white. When it comes to central bank communication about the future, there are certainly many promising approaches. And, undoubtedly, dot plots are an intriguing instrument for central bank communication.

However, given the prevailing evidence, I do not see a compelling case for introducing dot plots for the Eurosystem.

On the other hand, I firmly believe that we can and should enhance how we account for uncertainty in our macroeconomic projections. I have outlined a few options which the Eurosystem will address in the ongoing strategy review.

### Footnotes:

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4. Mankiw, G. (2006), op. cit.
5. Campbell, J. et al. (2012), Macroeconomic Effects of Federal Reserve Forward Guidance, *Brookings Papers on Economic Activity*, Vol. 43(1), pp. 1-80. Another distinction is between time-dependent (or calendar-dependent) and state-dependent forward guidance. The former ties monetary policy to a specific time frame, whereas the latter ties future policy actions to specific economic conditions or thresholds. The concepts can overlap and be used in combination.
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22. See ECB (European Central Bank) (2024), ECB (European Central Bank) staff macroeconomic projections for the euro area, March 2023, box 6 for a rundown.