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ABSTRACT

Forecasts are an inherent part of economic science and the quest for perfect foresight occupies economists and researchers in multiple fields. The release of economic forecasts (and its revisions) is a popular and often publicized event, with a multitude of institutions and think-tanks devoted almost exclusively to that task. The European Central Bank (ECB) also publishes its forecasts for the euro area, however ECB's forecast accuracy is not a deeply researched theme. The ECB forecasts' accuracy is the main point developed in this paper, which tries to contribute to understand the nature of the errors committed by the ECB forecasts and its main differences compared to other projections. What we try to infer is whether the ECB is accurate in its projections, making less errors than the others, maybe due to some informational advantage. We conclude that the ECB seems to consistently underestimate the HICP inflation rate and overestimate GDP growth. Comparing it with the others, the ECB shows a superior performance, committing almost always fewer errors. So, this signals a possible informational advantage from the ECB. Since the forecasting errors could jeopardize ECB's credibility public criticism could be avoided if the ECB simply let forecasts for the others. Naturally, this change should be weighted against the benefits of publishing forecasts.

Keywords: European Central Bank, Staff projections, Monetary Policy, Forecasting, Central Bank Communication

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1. Introduction

Forecasts are an inherent part of economic science and the quest for perfect foresight occupies economists and researchers in multiple fields. The release of economic forecasts (and its revisions) is a popular and often publicized event, with a multitude of institutions and think-tanks devoted almost exclusively to that task.

The European Central Bank (ECB) also publishes its forecasts for the euro area, namely in terms of inflation and GDP growth. However, ECB's forecast accuracy is not a deeply researched theme. The same happens for almost all the main central banks, maybe with the exceptions of the Federal Reserve and the Bank of England. The ECB forecasts' accuracy is the main point developed in this paper, which tries to contribute to understand the nature of the errors committed by the ECB forecasts and its main differences compared to other projections. What we try to infer is whether the ECB is accurate in its projections, making less errors than the others, maybe due to some informational advantage. To our knowledge, for the ECB this a question not previously researched in the literature.

2. Communication as a monetary policy strategy

The increased monetary policy openness observed throughout the world in recent years has been widely welcomed both by central bankers and by other economists. Central bank's progress in this field enhances their monetary policy credibility and helps market participants and the public to better understand the decisions that are taken. If the central bank possess an acute forecast performance then is able to take better decisions and deliver a more appropriate monetary policy. On the contrary, a central bank that consistently makes errors on its forecasts loses its credibility and is incapable to deliver an appropriate forward-looking policy.

The literature on central bank communication has broadly followed the central bank independence literature mainly developed in the last twenty years, culminating in a new appreciation of the value of good communication as a companion to adequate policy actions (see Ehrmann and Fratzscher, 2005). As stated by Blinder (2009, p. 5), central banks talk about at least four different aspects of monetary policy: their overall

objectives and strategy; the motives behind a particular policy decision; the economic outlook and future monetary policy decisions. The academic and policy literature on central bank communication stresses the seminal role of communication for the effectiveness of monetary policy [see, e.g., Canzoneri (1985), King (1997), Blinder (1998) and Buiters (1999)], highlighting the various possible channels to convey information.

As stated by Jansen and de Haan (2004, p. 5), the literature has identified, at least, three reasons why central banks can benefit from proper communication: i) communication may increase the effectiveness of monetary policy, shaping long run inflation expectations; ii) communication may be used to reduce noise and uncertainty in financial markets; finally, iii) communication is necessary for an adequate central bank accountability. So, communication can help inform the public's expectations of the future course of short term interest rates, providing the policymakers with increased influence over long term rates and hence a greater ability to achieve its macroeconomic objectives. That is, if the public can better comprehend and assess the central bank's monetary policy decisions, its trust in the bank's ability to keep inflation on target increases. This in turn helps the central bank to anchor inflation expectations and steer market interest rates with longer maturities. At the same time, greater openness due to the disclosure of interest rate forecast puts the central bank under increased pressure to improve the quality of its forecasting system. Nevertheless, as stated by Faust and Leeper (2005), one of the strongest central banking taboos is the prohibition against talking publicly about future interest rates¹. Also, private entities may become over-reliant on the central bank's projection, not paying sufficient attention to their own information and analyses and then considering themselves "deceived" if the announced rate path does not materialize. While there are cases in which statements could constrain future behavior, the mere conveyance of information – about the policy decision, the inflation target, the forecast, etc. – should not commit the central bank to any future action.

Related to communication we have transparency that, defined as the absence of asymmetric information between policy makers and the public, is an integral part of the required accountability for independent central banks [Ehrmann and Fratzscher (2004,

¹ As argued by Rudebusch and Williams (2006, p. 2), "*This taboo largely arises from the belief that financial markets would be prone to interpret any central bank indications about the likely future path of policy as commitments to future action, as opposed to projections based on existing information and subject to considerable change. Thus, many central banks will at best only give indirect hints or use coded language about policy inclinations in order to retain a plausible deniability in case markets are disappointed as the future unfolds.*"

p. 2)]. Even if a central bank publishes a lot of information, if that information is not understandable by the public it will not be perceived as a transparent central bank. According to those authors, there are limits to how much information can be digested effectively, since too much information could crowd out the formation of private beliefs which are a crucial source of information for a central bank and thus for the effectiveness of monetary policy making². As stated by Ehrmann *et al.* (2010, p. 6), the assumption of imperfect information is crucial for central bank communication and transparency. Imperfect information generates disagreements among forecasters, making the economy volatile. Via communication and transparency, central banks may anchor market expectations, reduce volatility in the economy, and thus achieve a better performance. So, the quality of the information is crucial for the success of the communication strategy. A poor quality of the information could give conflicting signals to financial markets, prompting possible inadequate responses. Finally, communication requires credibility and a robust historical record from monetary authorities.

But, how can central bank communication serve as a monetary policy instrument? The traditional assumption when analyzing and predicting monetary policy decisions is based on the idea that economic agents form expectations on the basis of a full set of available economic data and that central bank rhetoric does not include any informational value added. In an inflation targeting regime, forecasts are a central tool of central bank communication. For instance, Hoerberichts *et al.* (2009), show that transparency about the central bank's forecasting procedures improves output stabilization and Geraats (2001 and 2005) shows that transparency helps to build reputation and so the publication of internal forecasts provides more accurate signals of central bank's intentions, enhancing the effectiveness of monetary policy by quickly exposing any bias towards inflationary policies and thus exerting a disciplinary influence on central banks. Albeit expectations are known to be a crucial determinant of

² Certain theoretical papers [e.g., Amato *et al.* (2002), Morris and Shin (2002) and Woodford (2005), which discusses the social value of public information] conclude that too much information provided by the central bank is detrimental to welfare. Specifically, the greater the precision of the agent's private information, the more likely it is that increased provision of public information lowers social welfare. The detrimental effect of public information arises from the fact that agents overreact to public information, placing too much weight on the public signal relative to weights that would be used by the social planner (the central bank). That is, the information provided by central banks might crowd out independent information acquisition by the private sector, which carries the risk of an inefficiently low level of information acquisition. Nevertheless, this possibility has been deemed implausible in the real world by Svensson (2006). According to this author, many conclusions about the value of transparency appear to hinge on the exact specification and parameterisation of the theoretical models. For instance, Svensson (2006) argues that Amato *et al.* (2002) findings have been misinterpreted as anti-transparency results, whereas they are actually pro transparency and several other authors show that transparency is welfare-increasing in more general models [e.g., Roca (2005) and Hellwig (2005)].

economic dynamics, there's a theoretical debate on the implications of releasing information, with some literature stating that communication of information doesn't seem to improve public agents' ability to forecast (e.g., Amador and Weill, 2008). As stated by Blinder (2009, p. 3), a central bank should perhaps be wary of talking about issues on which it receives noisy signals, such as the evolution of the economy. Nevertheless, there has been a growing consensus that better communication about central bank actions is essential in reducing the uncertainty facing economic agents. As argued by Woodford (2003), successful monetary policy is not so much a matter of effective control over overnight interest rates as it is of shaping market expectations of the future evolution of key economic and financial variables.

3. Central bank forecasts

The historical decline in macroeconomic volatility, documented first by Kim and Nelson (1999), McConnell and Perez-Quiros (2000), Blanchard and Simon (2001) and Cogley and Sargent (2005), was often referred to as the "Great Moderation" and appeared to hold across a wide number of sectors and countries (see Stock and Watson, 2003 and 2007). Specifically, inflation and GDP processes in G7 countries moderated in the late 1980s and their volatility has been falling further most of the time until recently. The explanations to that period differ widely, going from wiser policies to sheer good luck. Nevertheless, those days are surely gone because two years after the beginning of the financial and economic turmoil brought up by the 2007 *sub-prime* crisis, we definitely can't speak of "moderation"³.

As stated by Blinder *et al.* (2008), another important aspect of a central bank's communication strategy is the extent and content of any forward-looking information it provides. This information set includes the central bank's assessment (forecast) of future inflation and economic activity, and its own inclinations regarding future monetary policy decisions. Note that, central banks deal with the potential misreading of their interest forecasts as an unconditional commitment by revealing the assumptions, risks and uncertainties surrounding the forecast. In particular, and as we said in the last

³ Also, the idea that forecasts would be easier to make was rapidly abandoned and replaced by a continuous update of the numbers.

section, the information may be falsely understood by financial markets as implying explicit commitments on behalf of central banks, rather than conditional commitments that may have to be altered, sometimes even radically if underlying economic conditions change.

Central banks differ sharply in whether and how they communicate forward-looking information, including forecasts of future inflation, forecasts of future economic activity, and inclinations regarding future monetary policy⁴. But how explicit should a central bank be in this regard? Many central banks publish their staff projections about key economic variables (e.g., economic growth and inflation), and some also reveal explicit inflation projections. Others have even gone so far as to provide an explicit forecast of their likely path of future monetary policy rates⁵. While more explicit information may help guide financial markets, there are several risks behind such communication strategies (see Mishkin, 2007). Inflation-targeting central banks typically provide their assessment of expected future inflation in periodic reports⁶. One approach to presenting monetary analysis to the public is to subsume the information derived from it into a single presentational device, such as a published inflation forecast, projection or fan chart (ECB, 2001a). This approach can be justified on the grounds that emphasizing developments in individual indicators (possibly including monetary variables) only adds unnecessary complexity to the presentation of monetary policy and potentially distracts the public from the central bank's primary objective. While subsuming the information from monetary analysis into an inflation forecast may help to focus the public's attention on the maintenance of price stability, it inevitably makes the impact of various forms of analysis, including monetary analysis, on policy decisions difficult to see. Thus greater clarity about the objective of monetary policy is achieved only at the expense of reduced transparency about the role of individual

⁴ Jeanneau (2009) presents an extensive survey on central bank procedures on this topic, concluding that from the 32 surveyed central banks, 84% release an economic forecast, typically in one of their regular publications.

⁵ Some monetary economists, such as Svensson (2002), have argued that full transparency would require a projection of the policy rate path and a release of the so called "objective function" of the central bank. Nevertheless, it would be difficult to condense all the complexities of policymaking into a simple and easily communicable function. Others, such as Woodford (2008), see the projection of the path as a prerequisite for consistency once forecasts of the inflation rate and the output gap are published.

⁶ Several papers document the quantitative effects of inflation targeting. Kuttner and Posen (2001) document that inflation targeting reduces the persistence of inflation. Johnson (2002) finds that the level of expected inflation in targeting countries falls after the announcement of targets and Levin *et al.* (2004) find that inflation targeting is effective in anchoring inflation expectations. Taking the literature with a grain of salt, there is some evidence that since the early nineties the volatility of inflation has narrowed particularly for inflation-targeting countries, suggesting that inflation targeters may have become more successful at containing shocks hitting the economy, albeit there were differences in initial conditions of adopters and non-adopters (see Truman, 2003).

variables – including monetary aggregates – in monetary policy decisions. Two of the most advanced central banks in terms of publishing forecasts are the Bank of England and the Federal Reserve.

The Bank of England's display of probability distributions through fan charts has many imitators⁷. An important aspect of the Bank of England approach is that the Monetary Policy Committee (MPC) best collective projections for inflation and GDP growth are not point forecasts but probability distributions, presented in the form of fan charts. The width of each chart represents a measure of the MPC's overall degree of uncertainty about the outlook. How far the bands stretch out on one side of the central band compared with the other – the skew of the distribution – is determined by an assessment of the balance of risks⁸. However, central banks that are not inflation targeters also often release (some aspects of) their inflation forecasts. The Federal Reserve keeps its staff projections secret, but it now publishes FOMC forecasts of inflation four times a year. The November 2007 changes in its communication practices increased both the frequency and length of its publicly-released forecasts (Bernanke, 2007). Although these changes did not include the adoption of an explicit inflation target, the new three-year-ahead forecast effectively reveals the inflation rate that policymakers believe is consistent with the Fed's mandate to achieve "stable prices". Notice that, Sellon (2008) presents evidence for the United States that more explicit guidance about the future path of the federal funds rate has led to an improvement in private sector forecasts of monetary policy. Until recently, the diversity across central banks was even wider when it came to forecasting real output. However, the Fed has recently joined the Bank of England and the ECB in providing more frequent official output forecasts.

⁷ Jeanneau (2009, p. 23), states that "*two fifths of central banks publish a range of numbers and another two fifths make public fan-charts. Ranges and fan-charts are more intensively used by inflation targeters in emerging market economies, perhaps reflecting the larger variance of output observed in such economies.*"

⁸ Goodhart (2001) and Mishkin (2007) have argued against announcing a projected path for the policy rate on the grounds that it may complicate the committee's decision-making process. It may also complicate communication with the public, which might fail to understand the conditional nature of the projection (Issing, 2005). To guard against these potential pitfalls, all central banks that provide forward guidance on interest rates emphasise that forward-looking assessments are always conditional on current information and therefore subject to change.

4. The Eurosystem and ECB staff projections

In December 2000, the Governing Council of the ECB has decided to publish Eurosystem staff macroeconomic projections for the euro area⁹. The Eurosystem staff macroeconomic projections are produced jointly by experts from the ECB and the euro area NCBs and serve as an input to the Governing Council's discussions, but need not be endorsed by it, which differs from inflation forecasts in an inflation targeting strategy. The ECB staff macroeconomic projections complement the projections from the Eurosystem so that, twice a year (ECB projections in March and September and Eurosystem projections in June and December), both publish macroeconomic projections for the euro area, which are a key element in sharpening the assessment of macroeconomic developments. Those projections are also an input into the Governing Council's assessment of economic developments and the risks to price stability. Since September 2004 the ECB staff projections, including a summary description, have also been published in the Monthly Bulletin¹⁰.

The published figures include projections for inflation in terms of the Harmonized Index of Consumer Prices (HICP), the growth of real GDP and its main expenditure components over a two-year horizon¹¹. The projections are accompanied by a description of their main features. In order to reflect the degree of uncertainty attached to such exercises, the Governing Council decided to publish the projections in the form of ranges. The method used is documented in ECB (2008), with the ranges for each variable and each horizon corresponding to a model-based 75% probability interval¹². Given the prevailing exceptional economic and financial circumstances, the ECB states that the uncertainty surrounding the projections is larger than usual.

According to the ECB (ECB, 2001b), within the second pillar of its monetary policy strategy, the Eurosystem staff macroeconomic projections play an important role as a

⁹ Jeanneau (2009, p. 20), in his survey of 32 central banks, reports that this type of forecasts, which are a mean of distancing the views of the policymakers from the assumptions and uncertainty embedded in the projected outlook, are less frequent. In most cases, central banks that publish an official view do not produce a separate staff forecast.

¹⁰ See Blinder (2009, p. 15), for a discussion around the question if should be released the monetary policy committee's own projection or the staff's forecast.

¹¹ Jeanneau (2009, p. 23) shows that around one fifth of central bank's forecasts are published with a horizon of up to one year, nearly two fifths are published with a one to two year range and another two fifths push out beyond two years, with inflation targeters more heavily represented in this last group.

¹² For more information on the procedures and techniques used please see ECB (2001b and 2008). Jeanneau (2009, p. 24), states that in addition to the output of forecasts, the majority of central banks surveyed also publish in depth information (e.g., on the underlying data, the equations and the parameters) on the forecasting models they use.

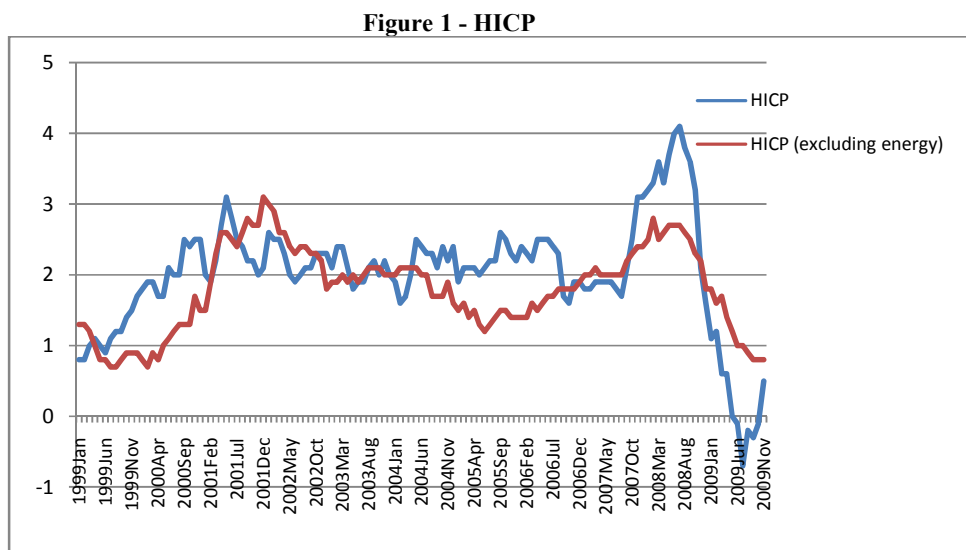
tool for aggregating and organizing existing information on current and future economic developments. Conditioned on a set of assumptions, they provide projections for a range of macroeconomic variables, combining the results of conventional models with economic experts' knowledge.

5. Data evolution and forecast performance

5.1 Data and ECB performance

In this section we analyze the Eurosystem and ECB staff macroeconomic projections, considering the data from December 2000 to December 2009. The considered period includes the last couple of years, with the turbulence in financial and economic markets that followed the “great moderation” period. So, that should have made the forecasters' task more difficult.

The following figures report the HICP and GDP evolution in euro area since the beginning of the monetary union¹³.

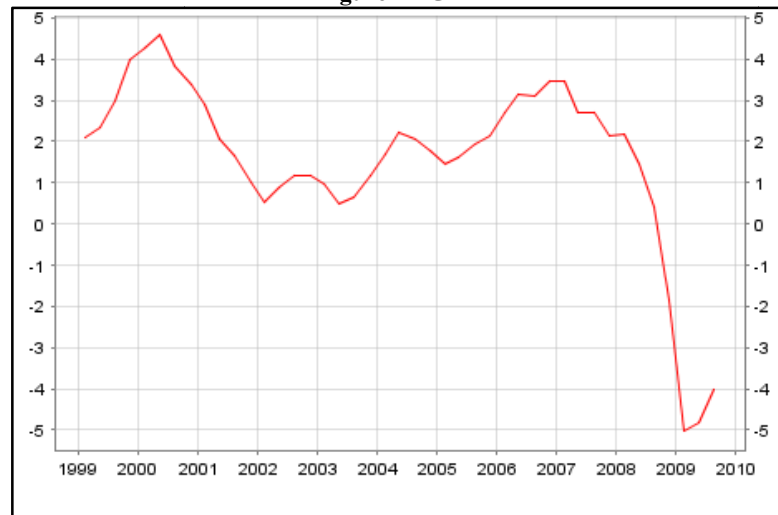


Source: ECB - Annualized monthly percentage changes

¹³ The percentage changes are based on a euro area composition and the data for real GDP refer to working-day-adjusted data.

Comparing the HICP with the HICP (excluding energy), we see the differences in the recent surge in consumer prices when we consider the broad index or the second one.

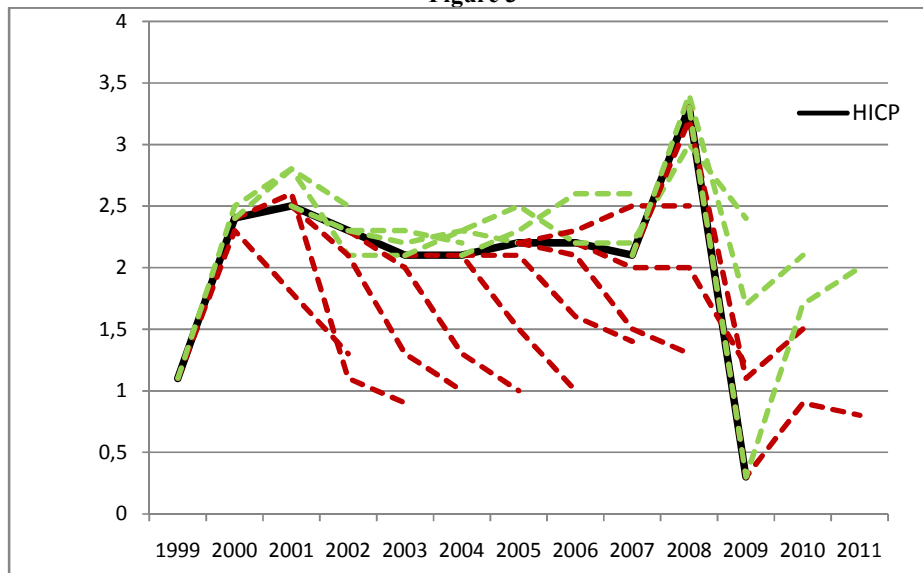
Figure 2 - GDP



Source: ECB – annualized quarterly percentage changes.

Now, we are going to analyze ECB's forecast performance in terms of HICP inflation and GDP growth and later we perform a comparison with forecasts from other institutions.

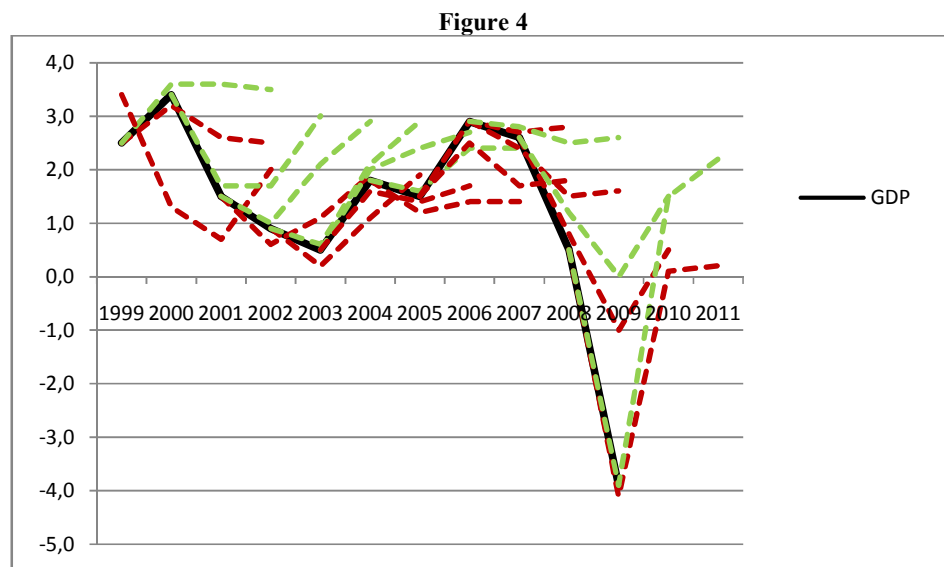
Figure 3



Source: ECB and own calculations.

For legibility reasons we consider only in Figure 3 all the December projections made for the following two years, beginning in 1999. The light dashed line represents the projection's upper limit and the bold dashed line the lower limit. The continuous line represents the actual values for the HICP growth. As we can see, the ECB seems to consistently underestimate the HICP inflation rate since the actual values are always closer to the upper limits.

Figure 4 presents the same analysis for GDP growth. Interestingly, we note that the ECB overestimates the figures, with its projections appearing closer to the lower limit. Exceptions are the projections made in December 2005 for the years 2006 and 2007, which were surprisingly positive years.



Source: ECB and own calculations.

Several systematic errors have been reported in the literature. For instance, Granger (1996), using data from an international survey of forecasters, presents evidence supporting the idea that output is generally underestimated in an upswing and overestimated during a contraction period and Loungani (2001) also reports that forecasters regularly miss recessions. Also, Döpke and Fritsche (2005) evidences that German forecasters tended to underestimate inflation.

To better highlight those differences we present in Table 1 the errors and mean square errors for ECB's HICP and GDP growth forecasts.

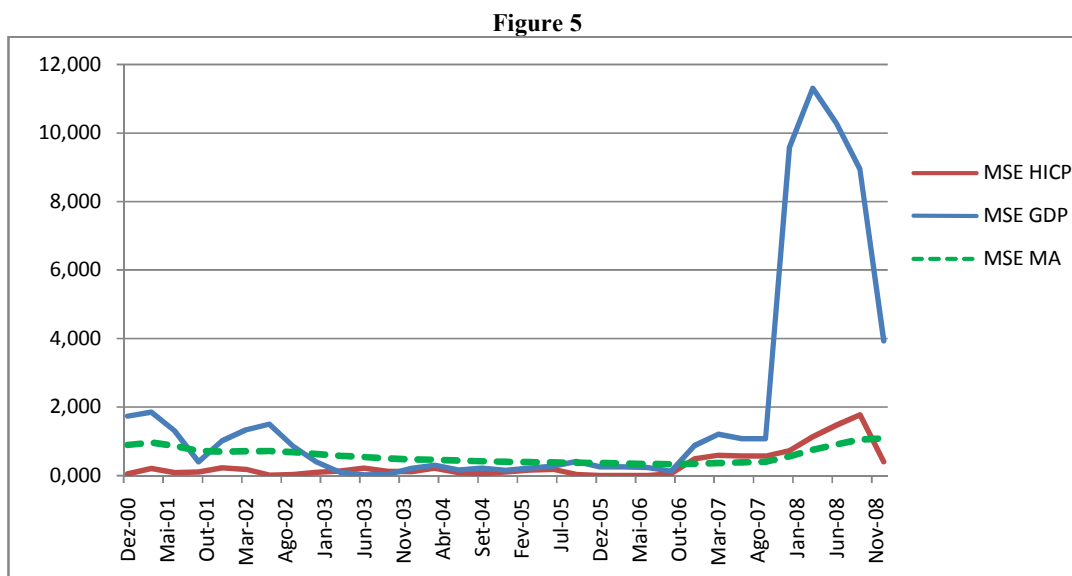
Table 1: Errors and Mean Square Errors for Eurosystem/ ECB staff forecasts for HICP and GDP

	n+1		n+2	
	HICP	GDP	HICP	GDP
Dez-00	0,20	-1,60	0,40	-2,10
Dez-01	0,70	-0,30	0,60	-2,00
Dez-02	0,30	-1,10	0,50	-0,60
Dez-03	0,30	0,20	0,60	-0,90
Dez-04	0,20	-0,40	0,60	0,70
Dez-05	0,10	1,00	0,10	0,70
Dez-06	0,10	0,40	1,40	-1,70
Dez-07	0,80	-1,5	-1,50	-6
Dez-08	-1,10	-3,4
MSE	0,29	2,11	0,71	6,18

Source: ECB and own calculations.

As we can see, the ECB has a better performance on HICP growth rate projections, overstating the GDP growth, which displays a much greater volatility.

The following figure presents the mean square errors committed each quarter by the ECB staff/ Eurosystem forecasts, comparing the annual forecasts with the final values for HICP inflation and GDP growth.



Source: ECB and own calculations.

Figure 5 presents also a simple moving average of the MSE committed. As we can see, in the low volatility period of 2002-2006, the errors were small, with the financial crisis serious effects over the economy being totally missed.

Also, we see if the ECB has somehow improved the accuracy of its projections over the years. As we can see from Figures 6 and 7, the ECB seemed to be improving the accuracy of the HICP and GDP growth rate projections, albeit made some great errors from 2006 onwards.

Figure 6

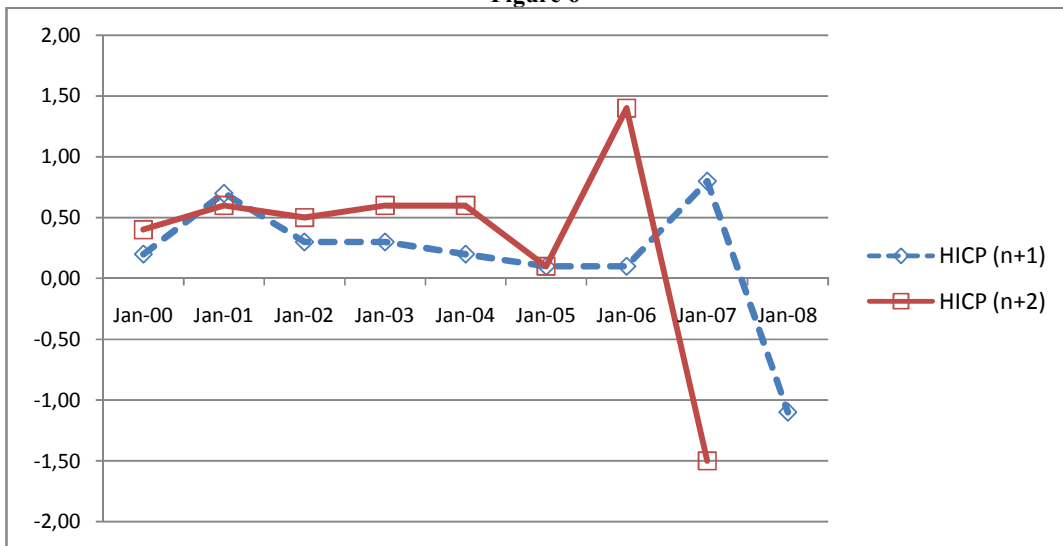
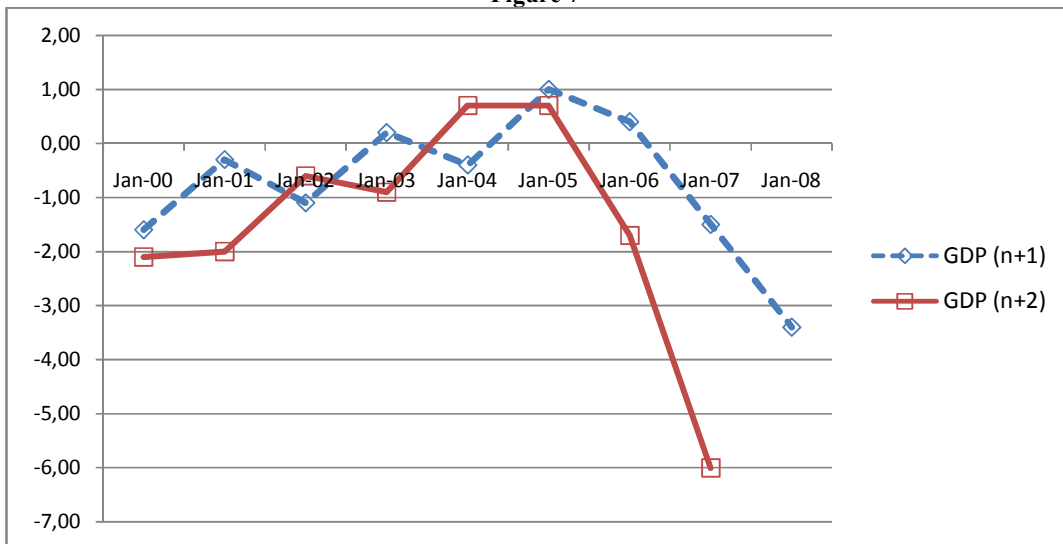


Figure 7



Source: ECB and own calculations.

ECB's forecasting errors are understandable given the many short term drivers of growth and inflation that are outside the central bank's control, particularly, in periods of macroeconomic and financial instability. In the next section we investigate if the other forecasters committed the same errors.

5.2 Comparison with other forecasters

A number of forecasts for the euro area are available from both international organizations and private sector institutions. However, these forecasts are not strictly comparable with one another or with the Eurosystem staff macroeconomic projections, as they were finalized at different points in time. Additionally, they use different (partly unspecified) methods to derive assumptions for fiscal, financial and external variables, including oil and other commodity prices. Finally, there are differences in working-day adjustment methods across different forecasts.

In a simple comparison between the Eurosystem and ECB projections with other forecasts we try to infer if the ECB has a greater accuracy and if so, a possible informational advantage over private forecasters¹⁴.

We compare the forecasts for euro area HICP inflation and real GDP growth from the ECB or the Eurosystem with forecasts made by the European Commission (EC), the International Monetary Fund (IMF), the Organization for Economic Cooperation and Development (OECD), the Consensus Economics Forecasts (CEF) and the Survey of Professional Forecasters (SPF).

¹⁴ Romer and Romer (2000) is a seminal paper on this theme and Baghestani (2008) and Boero *et al.* (2008) are some recent examples.

Table 2: Mean Square Errors for forecasts for HICP and GDP from other institutions

	n+1		n+2	
	HICP	GDP	HICP	GDP
EC	1,03	4,08	1,30	9,91
IMF	0,92	3,24	n.a.	n.a.
OECD	0,39	2,76	1,41	9,59
CEF	0,82	3,61	n.a.	n.a.
SPF	0,94	8,36	1,26	10,08
ECB	0,29	2,11	0,71	6,18

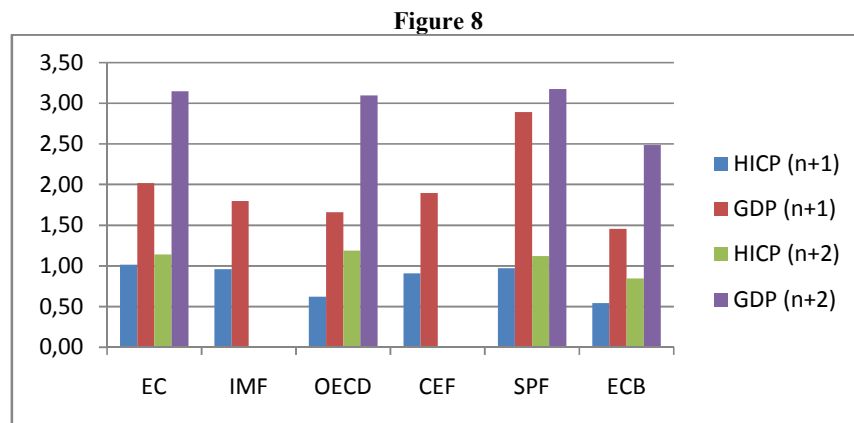
Table 3: Root Mean Square Errors of other forecasters

	n+1		n+2	
	HICP	GDP	HICP	GDP
EC	1,01	2,02	1,14	3,15
IMF	0,96	1,80	n.a.	n.a.
OECD	0,62	1,66	1,19	3,10
CEF	0,91	1,90	n.a.	n.a.
SPF	0,97	2,89	1,12	3,17
ECB	0,54	1,45	0,84	2,49

Source: ECB and own calculations.

Tables 2 and 3 present the MSE and Root Mean Square Errors (RMSE) for ECB and other institutions. As we can see, the ECB shows a performance clearly different from its five peers. Either in short-term projections (one year) or medium-term (two years), the ECB always commits fewer errors. Only the OECD approaches the ECB performance in short-term projections. In the two year projections, the ECB presents an even better performance in terms of HICP inflation rate but, as the others, very poor in terms of GDP growth.

Figure 8 presents the data from the previous table in a graphical form.



Source: ECB and own calculations.

In short, the ECB has a somehow good performance in HICP growth projections and a poor performance in GDP growth projections. Nevertheless, the ECB's performance is undoubtedly superior to the other forecasters. So, this signals a possible informational advantage from the ECB, possible due to the advanced knowledge of the future policy path or the availability of data that confers him a specific expertness on that field.

Making a final reference to the question of disagreement among forecasters, a recent paper by Dovern *et al.* (2009), which investigates determinants of disagreement about six key economic indicators in G7 countries roughly over the past twenty years, finds that disagreement about variables such as GDP intensifies strongly during recessions, whereas disagreement about variables such as the inflation rate rises with its level and is considerably lower under independent central banks¹⁵. Also, the finding in that paper that cross-sectional dispersion increases with the uncertainty about the underlying actual indicators seems well suited with our finding that in uncertain times the committed errors and the disagreement between forecasters increases.

We think that our results show two clear areas of development: on one hand, increase accuracy in measuring the differences between forecasters and, on the other hand, understand the determinants of disagreement between economic agents¹⁶.

6. Conclusion

It is worth to emphasize that our findings should not be interpreted as suggestive that forecasting by central banks and, in particular, other institutions, can be regarded as unimportant in modern policy making. If central banks are relatively systematic in their policymaking, exhibit rule-like behavior over time, and provide values for potential output and the inflation target, along with forecasts of output and inflation, they may indeed offer sufficient information for financial markets to construct likely paths for their policy rates. Notice that the publication of projected paths for the central bank's policy rates is a new practice that appears to be the "new frontier" in central bank communication albeit its effects must be more deeply researched. Nevertheless, the

¹⁵ Ehrmann *et al.* (2010) also find evidence for a significant and sizeable effect of central bank transparency on forecast dispersion. Specifically, that paper finds empirical evidence that the announcement of a quantified inflation objective and enhanced transparency about economic dimensions of the conduct of monetary policy, such as the release of the central bank's internal forecasts of inflation and output, reduce forecast disagreement.

¹⁶ On these topics, see e.g. Fujiwara (2005), D'Amico and Orphanides (2008) and Dovern *et al.* (2009). For instance, Fujiwara (2005) examines how a central bank's economic forecasts affect forecasts by professional forecasters and vice-versa, looking at the case of the Bank of Japan.

problem is when these forecasts commit systematic errors. In that case, we should question the added value of such forecasts. We are aware that the small set of data inhibits a full fledged research on the ECB forecasts' accuracy. This paper is a work in progress since we intend to further develop it extending the range of data analyzed and improving the methodology to assess forecast performance. Further, the comparison between forecasters and the study of the determinants of disagreement between them also deserve more research.

Notice that, in the last ten years, the ECB has been successful in attaining its price stability objective. So, the occurrence of errors with its forecasts doesn't seem to impact that success. This question is important because, albeit not visible, the forecasting errors jeopardize ECB's credibility. The kind of public criticism faced by the central bank should the forecast turn out to be widely off the mark, which is a rather likely result given the many short term drivers of growth inflation that are outside the central bank's control, could be avoided if the ECB simply let forecasts for the others. This change should naturally be weighted against the benefits of publishing forecasts and we think the ECB should undertake this internal reflection, particularly with respect to GDP growth projections.

REFERENCES

- Amador, M. and P. Weill (2008), "Learning from Prices: public communication and welfare", *Working Paper*, Stanford University.
- Amato, J.; S. Morris and H. Shin (2002), "Communication and Monetary Policy", *Oxford Review of Economic Policy*, 18 (4), 495-503.
- Baghestani, H. (2008), "Federal Reserve versus private information: Who is the best unemployment rate predictor?", *Journal of Policy Modeling*, 30 (1), 101-110.
- Bernanke, B. (2007), "Federal Reserve Communications", remarks at the Cato Institute 25th Annual Monetary Conference, Washington, D.C., 14 November 2007, available at <http://www.federalreserve.gov/newsevents/speech/bernanke20071114a.htm>.
- Blanchard, O. and J. Simon (2001), "The Long and Large Decline in U.S. Output Volatility", *Brookings Papers on Economic Activity*, 1, 135-164.
- Blinder, A. (1998), *Central Banking in Theory and Practice*, MIT Press, Cambridge – Massachusetts.
- Blinder, A. (2009), "Talking about Monetary Policy: the virtues (and vices?) of central bank communication", *BIS Working Papers*, n. 274, Bank for International Settlements.
- Blinder, A.; M. Ehrmann; M. Fratzscher; J. de Haan and David-Jan Jansen (2008), "Central bank communication and monetary policy: a survey of theory and evidence", *Working Paper*, 898, Maio, European Central Bank.
- Boero, G.; J. Smith and K.F. Wallis (2008), "Evaluating a three-dimensional panel of point forecasts: the Bank of England Survey of External Forecasters", *International Journal of Forecasting*, 24, 254-367.
- Buiter, W. (1999), "Alice in Euroland", *Journal of Common Market Studies*, 37 (2), 191-209.
- Canzoneri, M. (1985), "Monetary Policy Games and the Role of Private Information", *American Economic Review*, 75 (5), 1056-1070.
- Cogley, T. and T. Sargent (2005), "Drifts and Volatilities: monetary policies outcomes in the post world war II U.S.", *Review of Economic Dynamics*, 8, 262-302.
- D'Amico, S. and A. Orphanides (2008), "Uncertainty and Disagreement in Economic Forecasting", *Finance and Economics Discussion Series*, n. 2008-56, Board of Governors of the Federal Reserve System.
- Döpke J. and U. Fritsche (2005), "Forecast errors and the macroeconomy – a non-linear relationship?", *Discussion Paper*, n. 498, German Institute for Economic Research (DIW).
- Dovern, J.; U. Fritsche and J. Slacalek (2009), "Disagreement Among Forecasters in G7 Countries", *Working Paper*, 1082, August, European Central Bank.
- ECB (2001a), *Monetary Analysis: Tools and Applications*, Hans-Joachim Klöckers and C. Willeke (eds.), European Central Bank.
- ECB (2001b), "A guide to Eurosystem staff macroeconomic projection exercises", June, European Central Bank.
- ECB (2008), "New procedure for constructing ECB staff projection ranges", September, European Central Bank.
- Ehrmann, M. and M. Fratzscher (2004), "Central Bank Communication: different strategies, same effectiveness?", *Working Paper*, mimeo.

- Ehrmann, M., and M. Fratzscher (2005), "How central banks communicate?", *Working Paper*, 557, November, European Central Bank.
- Ehrmann, M.; S. Eijffinger S. and M. Fratzscher (2010), "The Role of Central Bank Transparency for Guiding Private Sector Forecasts", *Working Paper*, n. 1146, January, European Central Bank.
- Faust, J. and E. Leeper (2005), "Forecasts and Inflation Reports: an evaluation", prepared for the Sveriges Riksbank conference "Inflation Targeting: implementation, communication and effectiveness", June 11-12.
- Fujiwara, I. (2005), "Is the Central Bank's Publication of Economic Forecasts Influential?", *Economics Letters*, 89 (3), 255-261.
- Geraats, P. (2001), "Why adopt transparency? The publication of central bank forecasts", *Working Paper*, 41, January, European Central Bank.
- Geraats, P. (2005), "Transparency and Reputation: the publication of central bank forecasts", *Topics on Macroeconomics*, 5 (11), 1-26.
- Goodhart, C. (2001), "Monetary Policy Transmission Lags and the Formulation of the Policy Decision on Interest Rates", *Federal Reserve Bank of St. Louis Review*, 83 (4), 165-191.
- Granger, C. (1996), "Can we Improve the Perceived Quality of Economic Forecasts?", *Journal of Applied Econometrics*, 11, 455-473.
- Hellwig, C. (2005), "Heterogeneous Information and the Welfare Effects of Public Information Disclosures", *Working Paper*, mimeo, University of California – Los Angeles.
- Hoeberichts, M.; M. Tesfaselassie and S. Eijffinger (2009), "Central bank communication and output stabilization", *Oxford Economic Papers*, Oxford University Press, 61 (2), 395-411, April.
- Issing, O. (2005), "Communication, Transparency, Accountability – monetary policy in the twenty-first century", *Federal Reserve Bank of St. Louis Review*, 87 (2), 65-83.
- Jansen, D.-J. and J. de Haan (2004), "Look Who's Talking: ECB communication during the first years of EMU", *Working Paper*, mimeo, December.
- Jeanneau, S. (2009), "Communication of Monetary Policy Decisions by Central Banks: what is revealed and why", *BIS Papers*, n. 47, Bank for International Settlements.
- Johnson, D. (2002), "The Effect of Inflation Targeting on the Behavior of Expected Inflation: evidence from an 11 country panel", *Journal of Monetary Economics*, 49(8), 1521-1538.
- Kim, C. and C. Nelson (1999), "Has the U.S. Economy Become More Stable? A Bayesian approach based on a markov-switching model of the business cycle", *The Review of Economics and Statistics*, 81, 608-616.
- King, M. (1997), "Changes in UK Monetary Policy: rules and discretion in practice", *Journal of Monetary Economics*, 39, 81-97.
- Kuttner, K. and A. Posen (2001), "Beyond Bipolar: a three-dimensional assessment of monetary frameworks", *International Journal of Finance and Economics*, 6(4), 369-387.
- Levin, A., F. Natalucci and J. Piger (2004), "The Macroeconomic Effects of Inflation Targeting" *Federal Reserve Bank of Saint Louis Review*, 86, 5180.
- Loungani, P. (2001), "How accurate are private sector forecasts? Cross-country evidence from consensus forecasts of output growth", *International Journal of Forecasting*, 17 (3), 419-432.

- Mishkin, F. (2007), “Can Central Bank Transparency go too Far”, *in* Monetary Policy Strategy, MIT Press.
- McConnell, M. and G. Perez-Quiros (2000), “Output Fluctuations in the United States: what has changes since the early 1980’s”, *American Economic Review*, 90(5), 1464-1476.
- Morris, S. and H. Shin (2002), “Social Value of Public Information”, *American Economic Review*, 92 (5), 1521-1534.
- Roca, M. (2005), “Transparency and Monetary Policy with Imperfect Common Knowledge”, *working paper*, mimeo, Columbia University.
- Romer, C.D. and D.H. Romer (2000), “Federal Reserve Information and the Behavior of Interest Rates”, *American Economic Review*, 90 (3), 429–57.
- Rudebusch, G. and J. Williams (2006), “Revealing the Secrets of the Temple: the value of publishing interest rate projections”, *Working Paper*, mimeo, Federal Reserve Bank of San Francisco.
- Sellon, G. (2008), “Monetary Policy Transparency and Private Sector Forecasts: evidence from survey data”, *Federal Reserve Bank of Kansas City Economic Review*, 3rd quarter, 7-34.
- Stock, J. and M. Watson (2003), “Has the Business Cycle Changed? Evidence and explanations”, prepared for Federal Reserve Bank of Kansas City 2003 Jackson Hole Symposium.
- Stock, J. and M. Watson (2005), “Understanding Changes in International Business Cycle Dynamics”, *Journal of the European Economic Association*, 3, 968-1006.
- Svensson, L. (2006), “Social Value of Public Information: comment: Morris and Shin (2002) is actually pro transparency, not con”, *American Economic Review*, 96 (1), 448-452.
- Truman, E. (2003), *Inflation Targeting in the World Economy*, Institute for World Economics, Washington, DC.
- Woodford, M. (2003), *Interest and Prices: foundations of a theory of monetary policy*, Princeton University Press.
- Woodford, M. (2005), “Central Bank Communication and Policy Effectiveness”, *Working Paper*, 11898, National Bureau of Economic Research.
- Woodford, M. (2008), “Forward Guidance for Monetary Policy: is it still possible?”, *Vox*, 17 January.

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