National vs. European mandate: a rational choice model of interest rate decisions by the European Central Bank

Diego Varela and José Manuel Sánchez-Santos

University of A Coruña

ABSTRACT

The aim of this paper is to investigate to what extent the members of the Governing Council of the European Central Bank (ECB) act as if they had a national mandate, instead of acting in the interests of price stability in the euro area as a whole. The paper develops a simple rational choice model of interest rate decisions inside the Governing Council of the ECB based on national mandates, and tests it against a model based on a European mandate, using monthly data from January 1999 to July 2003. The paper concludes that the model assuming national mandates explains the data better, and derives some implications for the reform of the ECB and other pseudo-independent institutions such as the European Commission, especially in the eve of the next enlargement.

Please send comments to dvarela@udc.es.

Paper prepared for the 33rd annual conference and 8th research conference of UACES, Newcastle, 2-4 September 2003.

Introduction

Interest rate decisions are taken by the Governing Council of the ECB, which consists of the members of the Executive Board and the governors of the National Central Banks. Like members of the European Commission, members of the Governing Council are forbidden to have a national mandate. They must not receive instructions from member states. Instead they must act independently in the pursuit of price stability in the euro area as a whole. In this line, the official broad lines of the ECB's strategy were announced by its Governing Council on 13 October 1998. This strategy would aim at ensuring price stability in accordance with the EU Treaty (article 105). The single monetary policy would have an area-wide objective (price stability), and would be concerned with national developments only to the extent that these are significant for the area as a whole.

However, each member state retains the power to appoint the governor of its National Central Bank. Member state governments also fight to ensure that appointments to the Executive Board, especially the job of President, go to nationals of their member state. Therefore, there are some reasons to suspect that members of the Governing Council of the ECB might act in the interests of their member states of origin *as if* they carried out a national mandate. To investigate to what extent this is true is the objective of this paper.

This is an interesting question from both a practical and a scientific perspective. From the practical point of view, it is interesting for us Europeans to know how decisions affecting the price of our mortgage are determined. If the members of the Governing Council act in their national interests and the Governing Council is not representative, because in it big and small member states have the same weight, then nothing guarantees that the resulting policy will be in the interest of a majority of Europeans. This problem turns all the more interesting in the eve

of the next enlargement, which will bring to the EU 10 new members states, most of them small fast-growing economies. From a scientific point of view, the question of national or European mandates is also interesting because it does not only affect the governing bodies of the ECB but also a number of bureaucratic agencies, prominently the European Commission. If such organisations are characterised by hidden national mandates, the principle of equality of members states turns out to be incompatible with the benefit of the majority. Therefore, this paper goes beyond the ECB and gets into the dilemma between bureaucracy and democracy, between independence and representativeness.

Unlike in the case of the Federal Reserve, voting inside the Governing Council of the ECB is secret, so it is not possible to know each member's position. However, the results of those decisions are public. So it is possible to make hypotheses on the motivations of the members and use the results of interest rate decisions to test alternative hypotheses, which is what this paper attempts to do. The paper presents a simple rational choice model of interest rate decision-making in the ECB under a national mandate hypothesis, and tests its predictions against those of another model under the null hypothesis of a European mandate. Interest rate decision-making is an ideal testing ground for such models because preferences for interest rates can be assumed to be unidimensional and single-peaked, i.e. each Governing Council member is likely to have an ideal interest rate which can be represented along a single line.

The rest of this paper will be divided in three sections. The first section will present the basic assumptions of the model. The second section will test the model's results against those of an equivalent model based on national mandates. Finally, the third section will present the paper's conclusions and their implications, with special regard to the issue of enlargement.

1. The basic assumptions

The main objective of monetary policy in the EU is price stability, in other words, the ECB has an inflation target (e.g. 2% of inflation). In order to achieve its inflation target, one of the ECB's instruments is the interest rates it charges to commercial banks.[1] Lower ECB interest rates lead to increased lending by commercial banks, increased investment, increased aggregate demand and increased upward pressures on prices. Conversely, higher ECB interest rates lead to less lending by commercial banks, less investment, decreased aggregate demand and decreased upward pressure on prices.

The ECB can observe current inflation levels and react accordingly, i.e. increase its interest rates if inflation is above target and reduce them if inflation is below target. Such adjustment mechanism can be represented by a so-called monetary policy reaction function of the form:

$$i = \rho + \beta\left(\pi - \pi^*\right),\qquad\qquad\qquad\qquad (1)$$

where i stands for the ideal interest rate, π for the observed inflation rate and π^* for the target inflation rate, and ρ and β are positive parameters.

This reaction function can be simplified in order to obtain an econometric function:

$$i = \left(\rho - \beta\pi^*\right) + \beta\pi\qquad\qquad\qquad\qquad (2)$$

$$i = \alpha + \beta\pi\qquad\qquad\qquad\qquad (3)$$

which is a is a particular case of Taylor's rule, for a pure inflation-targeting policy.

---

[1] The implementation of monetary policy in the euro area is based on the control of a short term interest rate. In the case of Eurosystem the official interest rate that is the repo rate of the main refinancing operations (currently the minimum bid rate)

Let's assume that all the members of the Governing Council of the ECB share the same monetary policy reaction function, with common parameters α and β. Differences in preferences for monetary policy are still possible if members of the Governing Council carry a national mandate and there are differences in inflation rates (π) across member states. Such differences in inflation rates across member states are still possible in a common market with a single currency, because there are transaction costs (some goods are not tradable at all). Likely causes of such inflation differences are differences in growth rates, which can be due to differences in business cycles (e.g. due to asymmetric shocks) or to structural factors (e.g. member states with a lower GDP per capita tend to grow faster than those with a greater GDP per capita). Thus, each Governing Council member may have a different ideal interest rate, which maximises its utility, and its utility can be assumed to decrease as the actual interest rate moves away from his or her ideal interest rate (e.g. Meade and Sheets, 2002).

Decisions in the Governing Council of the ECB are taken by majority vote. Because preferences for interest rates can be represented along one single dimension and can be assumed to be single-peaked, the median voter theorem applies. This theorem, developed by Arrow (1951), states that the median voter will be pivotal and his or her views will prevail. According to our model of determination of interest rate preferences (monetary policy reaction function) specified above, the relationship between inflation rate and interest rate preferences is increasing, so the Governing Council member with the median inflation rate will have the median interest rate preference. Applying the median voter theorem, the Governing Council member with the median inflation rate will be pivotal. Therefore, under the median voter theorem the relevant inflation rate will not be the mean of the euro area, but the median inflation rate of the Governing Council members.

The figure of the President may also be relevant for a political model of decision-making inside the Governing Council of the ECB. For starters, the President has a casting vote in case of a tie. But, perhaps more importantly, the

President has a considerable degree of agenda-setting power which, as it is well known, can be even more important than voting power (see e.g. Riker, 1986). All in all, the President is likely to have some additional influence in determining ECB interest rates as compared to a rank-and-file member of the Governing Council.

In summary, we can assume that interest rate policy reacts to price developments. However, it is likely that there will be differences in inflation rates across euro-area member states. In a model based on a European mandate, the relevant inflation rate will be that of the euro area as a whole. Conversely, in a political model based on national mandates, the relevant inflation rate will be the median inflation rate among Governing Council members and possibly also the inflation rate in the President's member state. To find out which model explains reality better is the objective of the next section.

2. Testing the national mandate hypothesis

In the previous section we have presented the basic assumptions of our rational choice model of interest rate decisions by the ECB based on national mandates. In this section we will test our model against the benchmark model based on a European mandate.

Table 1. Models of interest rate decisions by the ECB (OLS)

	1	2	3	4	5	6	7
Intercept	2.96***	2.71***	3.43***	2.74***	2.94***	2.61***	2.57***
Euro area	0.75***			0.35	0.51**		-0.28
Median		0.72***		0.42		0.51***	0.71*
President			0.31***		0.15	0.18**	0.22*
R^2	0.264	0.270	0.227	0.281	0.290	0.328	0.332
Adj. R^2	0.250	0.257	0.213	0.254	0.263	0.302	0.292

* $p < 10\%$ ** $p < 5\%$ *** $p < 1\%$

Table 1 presents different specifications of the regression equation (3) above. Model 1 is the null hypothesis, i.e. the benchmark model in which ECB interest rate policy reacts to inflation in the euro area. The estimated coefficient for the intercept (2.96) is very significant and has the correct sign. The estimated coefficient for the reaction to inflation (0.75) is significant, and has the correct sign. The model explains around one fourth of the variance in interest rates (R^2 = 0.26).

Model 2 is a political model based on voting power alone. The estimated coefficient for the intercept (2.71) is very significant and has the correct sign. The estimated coefficient for the reaction to inflation (0.72) is also very significant, and has the correct sign. The goodness of fit is somewhat greater than that of model 1 (R^2 = 0.27).

Model 3 is also a political model, but based on the power of the President alone. The estimated coefficient for the intercept (3.43) is very significant and has the correct sign. The estimated coefficient for the reaction to inflation (0.31) is also very significant, and has the correct sign. The goodness of fit is worse than in both models 1 and 2 (R^2 = 0.23).

Model 4 is a hybrid model combining euro-area targeting with voting power. The estimated coefficient for the intercept (2.74) is very significant and has the correct sign. However, both the estimated coefficient for the reaction to euro-area inflation (0.35) and to the Governing Council median inflation (0.42) are not at all significant, probably due to multicollinearity. The goodness of fit adjusted to take into account the number of variables is worse than in model 2 (adjusted R^2 of 0.25 as compared to 0.26 for model 2).

Model 5 is also a hybrid model combining euro-area inflation targeting with the power of the President. The estimated coefficient for the intercept (2.94) is very significant and has the correct sign. The estimated coefficient for euro-area inflation (0.51) is significant and has the correct sign, but the estimated coefficient for the President variable (0.15) is not significant. The goodness of fit is greater than in the previous models (adjusted R^2 of 0.26).

Model 6 is a full political model based on both voting power and the power of the President. The estimated coefficient for the intercept (2.61) is very significant and has the correct sign. The estimated coefficient for the median inflation variable (0.51) is very significant and has the correct sign. The estimated coefficient for the President inflation variable (0.18) is also significant and has the correct sign. The goodness of fit is also greater than in all the previous models (adjusted R^2 of 0.30).

Finally, model 7 is a hybrid model combining euro-area targeting with both voting power inside the Governing Council and the power of the President. The estimated coefficient for the intercept (2.57) is very significant and has the correct sign. The estimated coefficient for euro-area inflation is neither significant nor has the correct sign (-0.28). Conversely, the coefficients for the Governing Council median inflation (0.71) and the President variable (0.22) are fairly significant and have the correct sign. The goodness of fit adjusted to take into account of the number of explanatory variables decreased with respect to model 6 (adjusted R^2 of 0.29). All in all, the results show that, once political variables are taken into account, the euro-area inflation variable becomes redundant.

In summary, political models fare better than those based on euro-area targeting, and both voting power inside the Governing Council of the ECB and the power of the President are relevant variables. Once the latter variables are taken into account, euro-area inflation does not significantly add to the model. Of course, these results should be treated with caution, since, as the R^2 of .33 makes evident, the model is a rough approximation to the ECB's monetary policy, which may be influenced by other variables which have not been included in the model.

3. Conclusions

This paper has shown that a model assuming that members of the Governing Council of the ECB act in the interests of their member states of origin explains better the ECB's interest rate policy decisions than a model based on the interests of the euro area as a whole. In other words, the paper has shown evidence in favour of the hypothesis that the Governing Council of the ECB acts *as if* its members carried a national mandate.

The implications of the paper are wide-ranging. If we accept the hypothesis that members of the Governing Council follow a national mandate, and the Governing Council is not representative because large and small member states have the same political weight in it, then nothing guarantees that the ECB's decisions will be in the interests of the euro area or of a majority of Europeans. If the Governing Council were representative, the inflation rate considered by its median member would tend to be similar to the mean inflation rate in the euro-area as a whole. But if the Governing Council is not representative, there is a great risk that on occasions the inflation rate in the median Governing Council member's country will be much different from the euro-area inflation rate.

The are two different approaches to solve this problem. The first option would be to try to increase the *independence* of the members of the Governing Council, e.g. by not allowing the reappointment of the governors of national central banks nor their appointment for any public office in their member states of origin after having served at the ECB. The second option would be to increase the *representativeness* of the Governing Council, so that its decisions coincide with the interests of the majority in the euro area. In terms of our model, this would entail to ensure that the median Governing Council member and the President of the ECB come from member states with price developments as close as possible to the euro-area average. This could be done by weighting the votes of the Governing Council members, which has been ruled out by the ECB, or by introducing a rotation system by which members of the Governing Council have a right to vote with different

frequencies, which has been the option adopted by the Council of the EU in March 2003, on a recommendation from the ECB (European Central Bank, 2003). Another option would be to appoint the Executive Board by qualified majority in the Council (now this requires unanimity) , so that larger member states can be better represented.

Any increase in the representativeness of the ECB's governing bodies should be linked to an increase in the transparency of their proceedings. A model based on representation requires that the principals are well informed of the behaviour of their agents. After all, the current system, where voting inside the Governing Council is secret, far from guarantees the independence of the Council members from national pressures because, in Willem H. Buiter's words,

> The information required to bring effective pressure to bear will be available, de facto, to the national political insiders. That information will not however, be formally available to the bodies charged with supervising the ECB (the European Parliament in the case of the ECB Board, and the national parliaments in the case of the national central bank governors of the Euro area). Council members will be able to hide behind the cloak of confidentiality, and to avoid having to justify or defend their yielding to local political pressures. The exercise of undue influence is not deterred by secrecy and confidentiality, but only by openness. Smoke-filled rooms and confidentiality are more likely to allow the ECB mandate an independence to be perverted by national political pressures than openness and the occasional short-term embarrassment that this entails (Buiter, 1998).

The implications of this paper go beyond the ECB. For instance, the European Commissioners could also be subject to similar influence of national interests. An as in the case of the Governing Council of the ECB, the College of Commissioners is far from representative, and will be less so if large member states relinquish their second commissioner. Enlargement may aggravate the representativeness problem (Berger, 2002). However, this problem is already present, as our evidence has shown. Therefore, enlargement should not be seen as a risky enterprise posing problems for the institutional design of the EU. Rather, it should be seen in a more positive light, as a spur for the EU to undertake the institutional reforms that it currently needs.

References

Arrow, Kenneth (1951) *Social Choice and Individual Values*. New York: John Wiley and Sons.

Berger, Helge (2002) 'The ECB and Euro-Area Enlargement', IMF Working Paper.

Buiter, Willem H. (1998) Letter to the Editor of the Financial Times, 22 September.

European Central Bank (2003) Monthly Bulletin (May). Frankfurt: European Central Bank.

Meade, Ellen E. and D. Nathan Sheets (2002) 'Regional influences on U.S. monetary policy: some implications for Europe', *Board of Governors of the Federal Reserve System International Finance Discussion Papers*.

Riker, Wlliam (1986) *The Art of Political Manipulation*. New Haven, CT: Yale University Press.