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Monetary policy rules, credibility and inflation: The Spanish experience*

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Abstract

Starting from inflation rates above the European average, Spain was able to conduct her monetary policy and control inflation in order to join the EMU from its start. In this paper we explore whether the credibility of the monetary policy performed by the Bank of Spain would have contributed to these developments.

Keywords: Monetary policy rules, inflation, credibility.
JEL Classification: E52, E58

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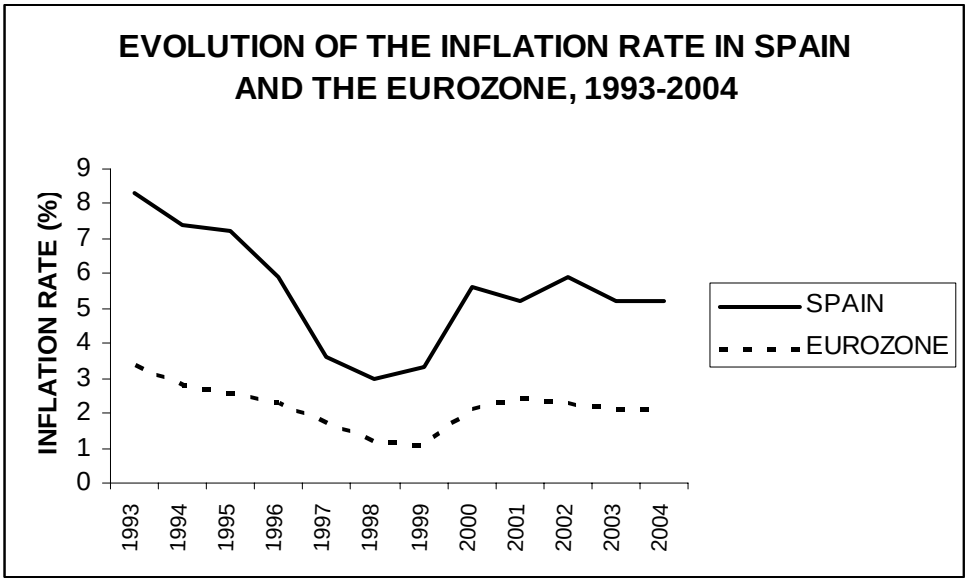
1 Introduction

The role of monetary policy rules to explain the behaviour of central banks has received an increasing attention during the last few years. In particular, Taylor's (1993) contribution has attracted a considerable interest of policymakers, central banks' governors and the academic community.

Taylor-type rules can be understood as rules of behaviour which respond to deviations of real output and inflation from their desired levels. For that reason, many contributions to the literature on monetary policy have tried to assess how Taylor rules can explain the behaviour of central banks (see Clarida, Galí and Gertler (1998, 2002), and Gerlach and Schnabel (2000), among others).

The Spanish case could be of particular interest given that, starting from inflation rates above the European average, she was able to control inflation in order to participate in the European Economic and Monetary Union (EMU) from its start. During the previous years, there were several changes in the instrumentation of monetary policy in Spain, which turned to be more concerned about controlling inflation. But after the adoption of a common monetary policy, a continuous increase in inflation can be observed. Figure 1 shows the evolution of the inflation rate in Spain and the eurozone. As can be seen, in the years before the adoption of the European Central Bank's monetary policy in January 1999, the Spanish inflation rate tended to approach the eurozone average; but after that date the differential with the eurozone turned to grow again.

FIGURE 1



The extent to which the change in the policy regime before 1999 was key in order to decrease inflation is a non trivial question. The literature on monetary policy has stressed the role played by credibility when dealing with inflation: if monetary policy is conducted through stable and announced rules, the credibility of monetary authorities will rise, which would contribute to decrease inflation (see Barro and Gordon,1983). In addition, as stressed by Giavazzi and Pagano (1988), the increase in Central Bank credibility would be an essential requirement to form a monetary union.

In this paper, we explore the implications of monetary policy rules on credibility and inflation in Spain, before and after EMU.

2 The usefulness of a monetary policy rule to deal with inflation

In a previous paper, Díaz-Roldán and Montero-Soler (2004) analyzed monetary policy in Spain in terms of Taylor-type rules, from 1978, when the Bank of Spain announces its monetary control target, to 1998, the year before joining EMU. The baseline reaction function estimated was:

$$(1) \qquad r_t = (1-\rho)\alpha + (1-\rho)\beta\pi_{t+i} + (1-\rho)\gamma\,\tilde{y}_{t+j} + \rho\, r_{t-1} + v_t$$

where r_t is the nominal interest rate, π_t is the inflation rate, $\tilde{y}_t$ is the output gap, and v_t is the error term. According to the Taylor rule, $\alpha \equiv (r^{ob} - \beta\pi^{ob})$, where r^{ob} and π^{ob} are the defined target for nominal interest rate and inflation, respectively; $\beta > 1$, $\gamma > 0$, and $0 \leq \rho \leq 1$ is an indicator of the degree of smoothing of nominal interest rate. This equation was estimated by the Generalized Method of Moments (GMM), using quarterly data for the interbank monetary market interest rates, the percent change in the Consumer Price Index, and the output gap computed from a linear trend.

Monetary policy proved to be properly described by a Taylor-type rule only for the period after joining the European Monetary System (EMS), i.e., from 1989:3 to 1998:4. The results from the estimation can be seen in Table 1 (t-statistics in parentheses). Several other additional variables were included in the baseline specification, but none of them proved to be significant. In particular, this was the case of the German interest rate, which would question the strong version of the German dominance hypothesis in the EMS (see, e.g., Bajo-Rubio *et al.*, 2001). Looking at the value obtained for the coefficient on inflation target, $\beta = 2.30$, could be concluded that the Spanish effort on controlling inflation would have been greater than in other countries; see the comparative results in Table 2.

TABLE 1

Sample period: 1989:3-1998:4

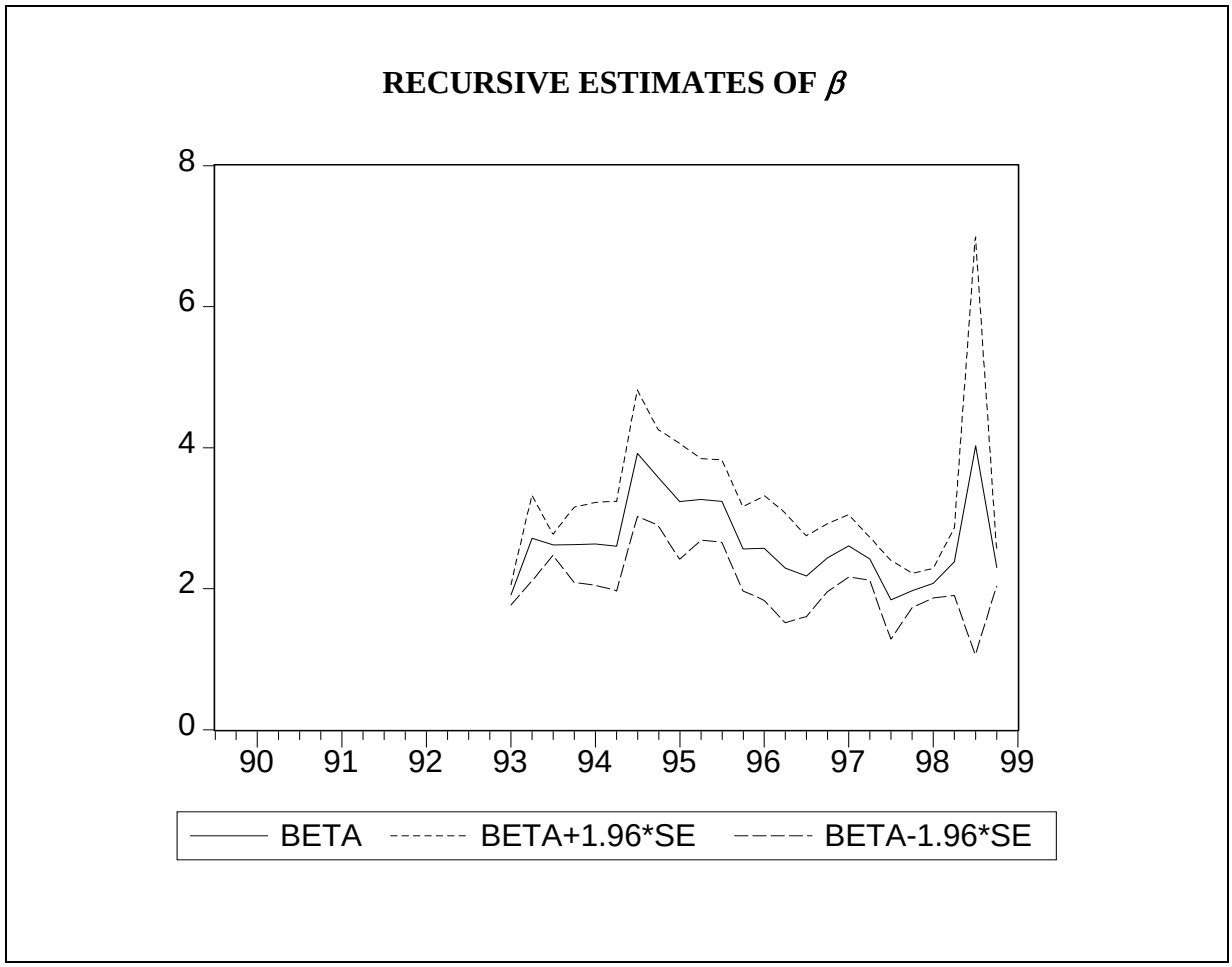
Restrictions	α	β	γ	ρ
(i = -1, j = 0) *Backward looking,* $\overline{R}^2$ = 0.95	-2.42 (-2.84)	2.30 (16.72)	0.39 (2.55)	0.63 (8.43)
(i = 1, j = 0) *Forward looking,* $\overline{R}^2$ = 0.91	0.05 (0.23)	2.13 (13.98)	0.06 (0.12)	0.65 (8.46)

TABLE 2

AUTHORS	DATA	SPECIFICATION	β	γ	ρ
Clarida, Galí and Gertler (1998)	Germany 1979-1993	*forward-looking*	1.31	0.25	0.91
	Japan 1979-1999	*forward-looking*	2.04	0.08	0.93
	USA 1979-1999	*forward-looking*	1.79	0.07	0.92
	United Kingdom 1979-1990	*forward-looking*	0.98	0.19	0.92
	France 1983-1989	*forward-looking*	1.13	0.88	0.95
	Italy 1981-1989	*forward-looking*	0.90	0.22	0.95
Gerlach and Schnabel (2000)	EMU-11 1990-1998	*contemporaneous*	1.58	0.45	–
Clarida, Galí and Gertler (2002)	USA 1979-1996	*backward-looking*	1.72	0.34	0.71
		forward-looking	2.15	0.93	0.79
Díaz-Roldán and Montero-Soler (2004)	Spain 1989-1998	*backward-looking*	2.30	0.39	0.63
		forward-looking	2.13	0.06	0.65

In order to check the stability of that coefficient, Figure 2 shows the recursive estimations of β in the preferred specification (i.e., the *backward looking* one). Its value would have been always above 2, reaching the highest values in the middle of 1994 and in 1998. After that date, the lower values of β could indicate a certain degree of "relax" of monetary policy, given the imminent formation of EMU.

FIGURE 2



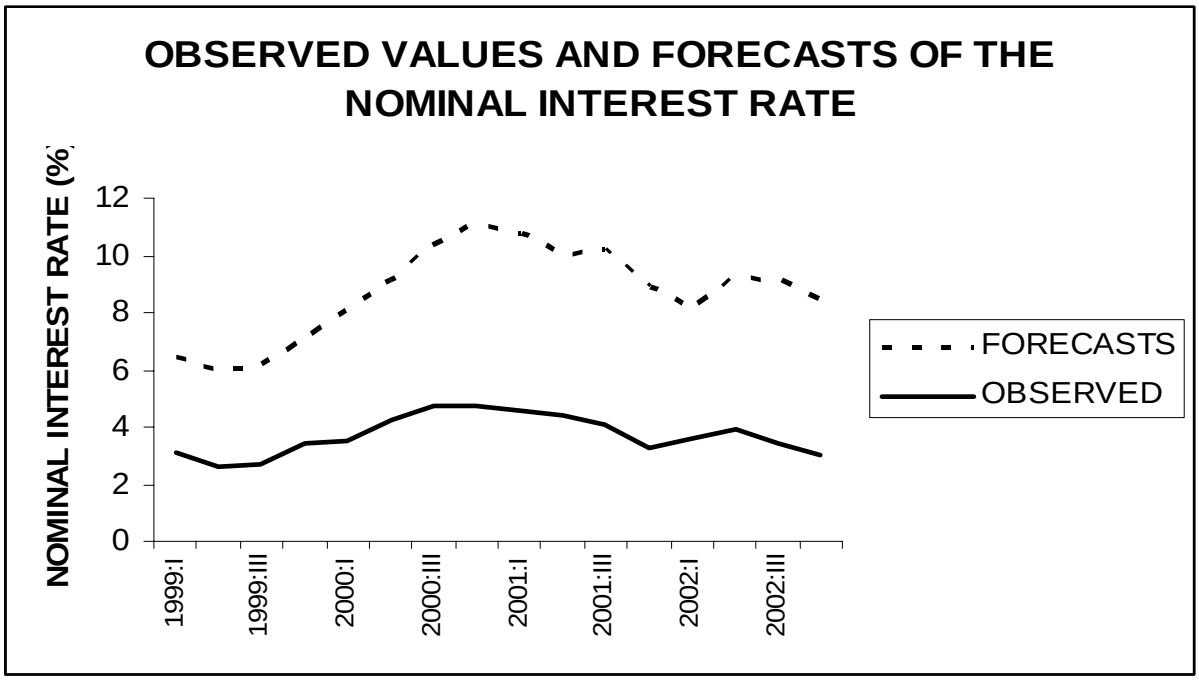
Overall, according to these results the Spanish monetary authorities would have followed a Taylor-type rule, and would have been relatively more concerned about inflation.

However, in the last years, and after the adoption of a common monetary policy, we can observe a continuous increase of inflation in Spain (see Figure 1). Could this fact be due to a (common) "more relaxed" monetary policy? What would have happened if the Bank of

Spain would have conducted an independent monetary policy after 1999? In order to answer these questions, we have computed the forecast for the nominal interest rate following the Taylor-type rule of the preferred baseline specification, four years ahead from 1999.

As can be seen in Figure 3, the rule followed by the Bank of Spain before joining EMU would parallel the actual evolution of the interest rate, but at a higher level. This evidence would reflect the more anti-inflationary stance of the Spanish monetary policy, and would be in line with Mihov's (2001) findings that the European Central Bank (ECB), in the first years of its operation, would have been closer to an aggregate of the central banks in Germany, France, and Italy than to the Bundesbank alone.

FIGURE 3



3. Conclusions

Before the formation of EMU, and particularly after joining the SME, Spanish monetary policy would have follow a Taylor-type rule with a high coefficient on the inflation target. This behaviour would have led to a significant fall in the inflation rate, which might have allowed Spain to be able to join EMU from its start. This result would reveal the importance of rules and credibility of monetary policy to control inflation.

In contrast, the increase in both inflation rates and the differential with the eurozone, observed in recent years, might be due in part to a more relaxed common monetary policy. From this we can conclude that, given the lack of monetary policy independence, some structural reforms should be performed.

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