

Politics and Monetary Policy

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Abstract

How and why do politicians' and central bankers' preferences about monetary policy differ? Using the European Central Bank (ECB) as a case study, the paper shows that politicians, on average, favor significantly lower interest rates than the central bank. There are mainly three factors that cause the different preferences. First, the ECB is conservative in Rogoff's (1985) sense, in that politicians put relatively less weight on inflation than output compared to the central bank. Second, much of the differences arise because politicians' preferences vary substantially over time due to political economy motives, such as attempts by politicians to improve their popularity and reelection chances. Third, different preferences are also, and largely, due to the fact that the central bank has a different constituency than politicians, as the latter primarily focus on national economic objectives rather than the euro area as a whole.

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1. Introduction

Over the last decades, a large number of central banks has been granted independence for the conduct of monetary policy. This development is founded on the seminal insights by Kydland and Prescott (1977) and Barro and Gordon (1983) that governments are subject to an inflationary bias and that monetary policy is subject to a time inconsistency problem if run by elected politicians. A possible solution to this problem has been suggested by Rogoff (1985), namely to delegate monetary policy to an independent and “conservative” central banker, where conservatism implies that the central banker places greater weight on price stability than elected politicians.

But also other reasons than a time inconsistency problem might be at play when delegating the conduct of monetary policy to independent central banks. Alesina and Tabellini (2007, 2008) show that the socially optimal delegation of tasks between politicians and bureaucrats does not necessarily coincide with the actual one. They show that the decision of incumbent politicians to delegate policy may stem from a motive to enhance their reelection chances. It entails that politicians tend to delegate tasks that expose them to risks, thus allowing them to shift blame in case of adverse outcomes, and to claim responsibility in the case of success (Kane 1980). This rationale may particularly apply to the conduct of monetary policy, which frequently has to be done in an environment of considerable uncertainty.

The existence of an inflationary bias as well as the blame-shifting motive both suggest that elected politicians might at times attempt to influence the monetary policy of an independent central bank, or openly criticize its actions. Accordingly, occasional conflicts between independent central banks and governments should be expected. The political pressure on the ECB and its monetary policy, independence and mandate, which has flared up regularly and in particular in recent years, is a point in case.

This paper attempts to quantify the importance of these issues with regard to monetary policy in the euro area. In particular, it analyses to what extent independent central banks are indeed more conservative than politicians in Rogoff’s sense, i.e. whether politicians attach different importance to price stability than central banks. The second intention of the paper is to measure to what extent politicians shift their preferences over time in order to improve reelection chances or for other political economy motives. The paper also investigates whether these issues become more imminent in the case of a monetary union, where the conduct of monetary policy is not only delegated to an independent central bank, but also to a central bank that has a different constituency than politicians, who may primarily target national constituencies and the performance of their domestic economies.

For that purpose, the paper collects an unprecedented database containing politicians’ statements about the ECB’s monetary policy over the first 9 years of EMU. These are statements that pressure the ECB to raise, lower or maintain interest rates, and contain a full list of all comments made by the main government officials (head of government and all ministers) for each of the 12 initial EMU members (including Greece). These public statements allow us to infer how politicians’ preferences differ from those revealed by the central bank through its monetary policy decisions.

The paper first shows that politicians tend to favor lower interest rates on average. The differences in preferred interest rates arise, on the one hand, because the ECB is indeed more conservative in Rogoff’s sense, i.e. euro area politicians place a greater weight on employment and growth and a lower weight on price stability than the central bank. On the other hand, the differences in the constituencies of the ECB and the national governments account for the bulk of the controversies over preferred interest rates, i.e. politicians’ pressure on the ECB is mostly motivated by national factors rather than euro area-wide factors. This

indicates a clear mismatch in perspectives, with the central bank being mandated to take a euro area perspective, while politicians pursue objectives which have an almost exclusively national focus.

Moreover, we find evidence that the motivation for politicians' pressure on the central bank stems from time-varying preferences of politicians. More specifically, we find that there is a preference away from price stability and towards growth in periods when the national economic performance is relatively weak, when the public has generally little trust in the ECB, and depending on the political orientation of governments, with left-wing politicians placing relatively more emphasis on growth. This evidence suggests that politicians' preferences are time-varying, and that politicians attempt to improve their popularity and electoral chances by shifting blame for a country's poor economic performance.

The final part of the paper derives euro area politicians' preferred interest rate paths since 1999 and contrasts these with actual euro area monetary policy rates. More precisely, we derive two paths for the politicians' preferred interest rates. The first one, or what we label the "fundamentals' implied" preferred rate, is the hypothetical interest rate preferred by politicians if their preferences were *solely* determined by a greater relative weight on output. There are periods, such as in 2001-03 and since 2006 when this hypothetical rate would have been lower than actual euro area interest rates. Yet there are also periods, such as in 2004-05, when this implied rate was lower than the actual policy rate. By contrast, through their public statements politicians in the euro area have almost always pushed for lower interest rates, even in the period 2004-05 when ECB interest rates were already quite low. Accordingly, we calculate a second measure, for the "true preferred" rate as revealed by politicians' political pressure through public statements. Overall, the difference between the two measures for politicians' preferred interest rates illustrates and underlines that a large part of euro area governments' political pressure for lower interest rates stems from political economy motives, rather than from different weights on output and inflation.

Conceptually, the paper is related to two strands of the literature. One takes a normative perspective and asks what the socially optimal allocation of policy tasks should be between bureaucrats and politicians, where the former tend to have superior technical skills and the latter are better in determining the optimal effort across a larger set of priorities. A sizeable principal-agent literature on public choice addresses this issue, with the citizen as the principal and the policy-maker as the agent. Dewatripont, Jewitt and Tirole (1999a,b), Maskin and Tirole (2001), Besley and Coate (2003) and Schultz (2008) stress the differences in the intrinsic motivation between politicians and bureaucrats, and the fact that independent bureaucrats are ultimately less accountable than politicians. Alesina and Tabellini (2007, 2008) show that it is socially optimal to delegate tasks to bureaucrats if those tasks entail a risk of time inconsistency and the bureaucrats can be trusted to be skilled and unbiased, while it is preferable to allocate the tasks to politicians if policy flexibility is crucial, e.g. as preferences may change, or the compensation of losers is important.

The second strand of the theoretical literature focuses on the positive aspect of policy delegation. It emphasizes that the actual allocation of policy tasks is often very different from the socially optimal one, in part because it is the politicians and not the citizens that take the decision on the allocation and because politicians have different objectives, focusing on reelection and rent seeking, from those of the voters. This literature, along the lines of Kane (1980), Epstein and O'Halloran (1999) and Blinder (1997), stresses the blame-shifting motive of politicians to delegate policy tasks to bureaucrats. The present paper is closely linked to this positive perspective, by trying to understand empirically why, on the one hand, while having delegated monetary policy to an independent central bank, on the other hand, politicians still try to put pressure and criticism on the central bank.

As to the empirical literature, several studies have attempted to measure and explain the pressure of politicians on monetary policy in different settings, although with a focus on whether or not political pressure has led central banks to change their behavior. Most of this empirical literature tests for a possible influence of the U.S. Congress on the Federal Reserve, and tests whether monetary factors have contributed to a possible political business cycle. Some studies find that the Fed's monetary policy between the 1970s and 1990s may indeed have been influenced in that sense by political pressure from Congress (e.g. Alesina and Sachs, 1988, Grier 1993, Abrams and Iossifov 2006, Hellerstein 2007), while others find little evidence (e.g. Wooley 1984, Faust and Irons 1999). A second strand of this literature attempts to provide direct measures for the political pressure on monetary policy, and estimates of its effects, with much of the work building on the measurement methodology for the US proposed by Havrilesky (1993). There is strong evidence in this literature that politicians indeed attempt to exert pressure on monetary authorities. While most of this work focuses on the United States (see e.g. Berger, de Haan and Eijffinger 2001, Posen 1993), some work has also tried to measure political pressure on the Bundesbank (Maier, Sturm and de Haan 2002), the Czech National Bank (Gersl 2006), or even the early ECB (Maier and Bezoen 2004).

The present paper is distinct from this empirical literature along several dimensions. In particular, it tests for the determinants rather than for the effects of political pressure, thereby building on the above-discussed theoretical work on the principal-agent problems in monetary policy. It tests whether there are differences in preferences between politicians and bureaucrats/central banks, and whether there is a significant time variation in politicians' preferences that is related to the political conditions in which they operate. Finally, the empirical analysis of the paper adds the dimension of monetary union, which entails a mismatch in constituencies between politicians' national focus and the central bank's union-wide perspective.

The paper proceeds in section 2 by developing a conceptual framework that derives empirically testable hypotheses about differences in preferences between central banks and politicians, and the time variation inherent in politicians' behavior. Section 3 discusses the database underlying our analysis, presenting both the measurement of political pressure and the various proxies for the political business cycle. Section 4 discusses the empirical results and implications, and Section 5 concludes.

2. Modeling politicians' preferences and time variations

In this section, we describe our basic model set-up for measuring the degree of conservatism of central banks and of possible time variations in politicians' preferences. We derive from these the hypotheses for our empirical analysis.

2.1 The basic model: testing for Rogoff's conservative central banker

We start from the premise that the central bank is given an institutional mandate for price stability for the monetary union as a whole, rather than for individual economies. Our model entails that politicians in individual euro area countries may to some extent also have a euro area-wide perspective and would like to see interest rates move in response to euro area inflation and growth.¹ However, their constituency not being the entire monetary union, but the national state, we allow for the possibility that politicians not only take a union-wide perspective, but that their motives at least partly also have a national perspective. Politicians' preferred interest rates can therefore be expressed as:

¹ Politicians may have a broader set of objectives in mind, such as concerning unemployment. The model could easily be expanded in that direction, and in our empirical application, we will extend the model accordingly. The qualitative results, however, are not affected by such an extension.

$$(1) \quad i_t^P = \alpha^P + \beta^{P,EA} \pi_t^{EA} + \beta^{P,C} (\pi_t^C - \pi_t^{EA}) + \gamma^{P,EA} y_t^{EA} + \gamma^{P,C} (y_t^C - y_t^{EA}) + \varepsilon_t^P,$$

where i denotes interest rates, π consumer price inflation, and y GDP growth. Euro area variables are denoted with the superscript EA , country-specific variables with the superscript C . Superscript P is chosen for all variables or parameters that relate to a politician; i_t^P , for instance, denotes the interest rate preferred by a politician at time t , depending on the observed macroeconomic conditions. According to standard reasoning, the politicians' preferred interest rate should rise in response to higher inflation or higher output, leading to the following hypotheses: $\beta^{P,EA} > 0$; $\beta^{P,C} > 0$; $\gamma^{P,EA} > 0$; $\gamma^{P,C} > 0$. The model encompasses a concern for euro area as well as for national economic conditions by splitting the inflation and growth series into a common euro area component, and the differential between national and euro area variables. This split implies that even a purely national concern of a politician can lead to a significant response of preferred interest rates to euro area developments. In particular, the more closely the business cycle of a country is aligned with the euro area cycle, the more important are euro area developments from a national perspective.

The model is derived based on the reading of a large number of comments by politicians about the ECB's monetary policy. The appendix provides a selection of such statements which are contained in the database underlying our empirical analysis.² Although only a small selection, these statements clearly show that politicians care about inflation (e.g. the statements by Solbes, 24 May 2006, or by Glos, 20 October 2006), but also about growth and employment (e.g. the statements by Lafontaine, 01 February 1999, or by Clement, 08 November 2002). A second insight to be drawn from these statements is a concern about *current* economic conditions, and the request that the central bank react to these (most explicit in the statement by Gusenbauer, 27 February 2007). Finally, there is evidence that while politicians care also about the economic performance of the euro area (e.g. the statements by Lafontaine, 01 February 1999, and by Katainen, 13 June 2007), the bulk of comments relates to the performance of their national economies (e.g. the statements by Rato, 28 October 1999, by Niinisto, 04 November 1999, by Solbes, 24 May 2006, or by Glos, 20 October 2006).

Due to the independence of the ECB, the politician is not in a position to implement her preferred interest rate, though. Rather, she is confronted with the actual interest rate i^{act} , which is set by the ECB with a view to euro area variables only. We abstract from modeling the ECB's monetary policy rule, given that regardless of the precise specification of this rule, actual interest rates will in the end show some correlation with euro area inflation and growth, which can be described as:

$$(2) \quad i_t^{act} = \alpha^{act} + \beta^{act} \pi_t^{EA} + \gamma^{act} y_t^{EA} + \varepsilon_t^{act}$$

Although the actual implementation of monetary policy might follow a different process, e.g. by including forward-looking variables, we would nonetheless expect to find $\beta^{act} > 0$ and $\gamma^{act} > 0$.

Given that actual interest rates are set by a different institution, they might differ (at least at times) from politicians' preferred rates. The gap between the two rates is described by the difference of (1) and (2):

² We will return in the next section to a detailed explanation about the underlying methodology for the extraction of these statements; the point here being that the specification of equation (1) is indeed based on the content and intention of politicians' statements.

$$(3) \quad i_t^{act} - i_t^P = (\alpha^{act} - \alpha^P) + (\beta^{act} - \beta^{P,EA})\pi_t^{EA} - \beta^{P,C}(\pi_t^C - \pi_t^{EA}) \\ + (\gamma^{act} - \gamma^{P,EA})y_t^{EA} - \gamma^{P,C}(y_t^C - y_t^{EA}) + \mu_t$$

This simple manipulation allows formulating a number of hypotheses:

1. $H_0 : \beta^{act} - \beta^{P,EA} > 0$: Would politicians like to put less emphasis on euro area inflation than the central bank?
2. $H_0 : \gamma^{act} - \gamma^{P,EA} < 0$: Would politicians like to put more emphasis on euro area growth than the central bank?
3. $H_0 : \beta^{P,C} > 0$ and
4. $H_0 : \gamma^{P,C} > 0$: To what extent does a different desired interest rate level result from a different constituency of the ECB (euro area) and the politician (national economies)?

Hypotheses 1 and 2 combined provide a proxy for the conservativeness of the central bank: if *either 1 or 2* were found in the data and the alternative hypothesis for 2 or 1 cannot be accepted, this would suggest that the central bank is conservative in Rogoff's sense.³ Hypotheses 3 and 4 are specific for monetary unions, where the concern of the central bank relates to the entire union, while politicians need to be re-elected by their national constituencies.

Unfortunately, the politicians' preferred interest rate i_t^P is unobservable; at the same time, statements made by politicians provide an indication of where, in their views, interest rates should be heading at the current juncture. If the difference between the actual and the politicians' preferred interest rates, $i_t^{act} - i_t^P$ is positive (negative), statements by politicians will call for lower (higher) rates, such that political pressure pp_t for lower rates should map into the interest rate gap: $pp_t = f(i_t^{act} - i_t^P)$. Without knowing the precise functional form of this relationship, we can safely assume that for larger $i_t^{act} - i_t^P$, the pressure on the central bank to reduce rates should increase. This allows specifying a proxy regression: Rather than estimating equation (3), it is possible to use

$$(4) \quad pp_t = a + b^1 \pi_t^{EA} + b^2 (\pi_t^C - \pi_t^{EA}) + c^1 y_t^{EA} + c^2 (y_t^C - y_t^{EA}) + \mu_t .$$

For this model, our hypotheses translate to:

1. $H_0 : b^1 > 0$;
2. $H_0 : c^1 < 0$;

³ To be more precise, we should expect for a conservative central bank that $\gamma^{act} / \beta^{act} < \gamma^{P,EA} / \beta^{P,EA}$. This condition is satisfied if i) $\beta^{act} > \beta^{P,EA}$ and $\gamma^{act} < \gamma^{P,EA}$, ii) $\beta^{act} = \beta^{P,EA}$ and $\gamma^{act} < \gamma^{P,EA}$, or iii) $\beta^{act} > \beta^{P,EA}$ and $\gamma^{act} = \gamma^{P,EA}$. It would even hold if $\beta^{act} < \beta^{P,EA}$ and $\gamma^{act} \ll \gamma^{P,EA}$, although the latter condition cannot be tested for in our framework, as we only observe $\beta^{act} - \beta^{P,EA}$ and $\gamma^{act} - \gamma^{P,EA}$. As the stylized model presented in this paper obviously lacks any micro-foundations, its interpretation in terms of preference parameters is not immediate. However, the same result can be obtained in a reasonably general range of micro-founded models. The model derived in Woodford (2003), Chapter 7, for instance, leads to a family of contemporaneous Taylor rules where the ratio of the parameters on the output gap and inflation increases with increasing weights on output stabilization in the social loss function.

3. $H_0 : b^2 < 0$;
4. $H_0 : c^2 < 0$.

2.2 Time variations

While equation (4) allows us to identify whether the central bank is conservative in Rogoff's sense, i.e. whether preferences between the central bank and politicians are different on average, it could very well be that controversies between the central bank and politicians arise due to shifts in preferences over time.

To get at this issue, we are interested whether there are periods of time or specific circumstances, described by a variable x_t , during which the preferences of politicians change in a way that may appear favorable to them, e.g. towards a larger weight on growth and a lower weight on price stability. At the same time, these periods might equally imply that a national politician focuses more on national economic outcomes than otherwise. In that sense, equation (1) can be extended to

$$(5) \quad i_t^P = \alpha^P + \beta^{P,EA} \pi_t^{EA} + \beta^{P,C} (\pi_t^C - \pi_t^{EA}) + \beta^{P,EA,x} \pi_t^{EA} x_t + \beta^{P,C,x} (\pi_t^C - \pi_t^{EA}) x_t \\ + \gamma^{P,EA} y_t^{EA} + \gamma^{P,C} (y_t^C - y_t^{EA}) + \gamma^{P,EA,x} y_t^{EA} x_t + \gamma^{P,C,x} (y_t^C - y_t^{EA}) x_t + \delta x_t + \varepsilon_t^P$$

As before, we would expect that $\beta^{P,EA} > 0$, $\beta^{P,C} > 0$, $\gamma^{P,EA} > 0$, $\gamma^{P,C} > 0$. Less weight on euro area inflation in periods x_t would suggest that $\beta^{P,EA,x} < 0$, more weight on euro area growth that $\gamma^{P,EA,x} > 0$. Evidence for one of the two is sufficient to show a shift in preferences away from price stability, and towards growth. More weight on national growth translates into $\gamma^{P,C,x} > 0$. The prior about $\beta^{P,C,x}$ is less clear: it could be negative, as politicians want less emphasis on inflation during these time periods, or positive, because of the increased emphasis on the own country. To calculate the interest rate gap in this case, taking differences of (2) and (5) we get

$$(6) \quad i_t^{act} - i_t^P = (\alpha^{act} - \alpha^P) + (\beta^{act} - \beta^{P,EA}) \pi_t^{EA} - \beta^{P,C} (\pi_t^C - \pi_t^{EA}) \\ + (\gamma^{act} - \gamma^{P,EA}) y_t^{EA} - \gamma^{P,C} (y_t^C - y_t^{EA}) \\ - \beta^{P,EA,x} \pi_t^{EA} x_t - \beta^{P,C,x} (\pi_t^C - \pi_t^{EA}) x_t \\ - \gamma^{P,EA,x} y_t^{EA} x_t - \gamma^{P,C,x} (y_t^C - y_t^{EA}) x_t - \delta x_t + \mu_t$$

In analogy, the proxy regression can be formulated as

$$(7) \quad pp_t = a + b^1 \pi_t^{EA} + b^2 (\pi_t^C - \pi_t^{EA}) + b^3 \pi_t^{EA} x_t + b^4 (\pi_t^C - \pi_t^{EA}) x_t \\ + c^1 y_t^{EA} + c^2 (y_t^C - y_t^{EA}) + c^3 y_t^{EA} x_t + c^4 (y_t^C - y_t^{EA}) x_t + dx_t + \mu_t$$

The hypotheses expressed above can then be formulated as 1. $H_0 : b^1 > 0$; 2. $H_0 : c^1 < 0$; 3. $H_0 : b^2 < 0$; 4. $H_0 : c^2 < 0$ in normal times, and as 5. $H_0 : b^3 > 0$; 6. $H_0 : b^4 = ?$; 7. $H_0 : c^3 < 0$; 8. $H_0 : c^4 < 0$ in periods of preference shifts.

2.3 Extracting politicians' preferred interest rates

While models (4) and (7) can be estimated using the observed data on public commentaries by politicians, they do not allow for an estimate of politicians' preferred interest rates. However, such an extraction is feasible once we impose an additional assumption, namely that politicians who comment in a neutral or supportive manner on the ECB's monetary policy stance are on average content with the actual interest rate. More formally, this assumption implies that

$$(8) \quad i_t^P \approx i_t^{act} \text{ if } pp_t = 0$$

Under this assumption, the preferred interest rate becomes observable, allowing estimation of equations (1) or (5). Hence, using all observations where politicians express a neutral stance on the ECB's monetary policy, it is possible to estimate

$$(9) \quad i_t^{act} = \alpha^P + \beta^{P,EA} \pi_t^{EA} + \beta^{P,C} (\pi_t^C - \pi_t^{EA}) + \beta^{P,EA,x} \pi_t^{EA} x_t + \beta^{P,C,x} (\pi_t^C - \pi_t^{EA}) x_t \\ + \gamma^{P,EA} y_t^{EA} + \gamma^{P,C} (y_t^C - y_t^{EA}) + \gamma^{P,EA,x} y_t^{EA} x_t + \gamma^{P,C,x} (y_t^C - y_t^{EA}) x_t + \delta x_t + \varepsilon_t^P$$

As before, the expected signs of the coefficients are 1. $H_0 : \beta^{P,EA} > 0$; 2. $H_0 : \gamma^{P,EA} > 0$; 3. $H_0 : \beta^{P,C} > 0$; 4. $H_0 : \gamma^{P,C} > 0$ in normal times, and 5. $H_0 : \beta^{P,EA,x} < 0$; 6. $H_0 : \gamma^{P,EA,x} > 0$; 7. $H_0 : \beta^{P,C,x} = ?$; 8. $H_0 : \gamma^{P,C,x} > 0$ in periods of preference shifts.

The interpretation of the estimated coefficients is now straightforward, as they directly indicate, in basis points, for instance how much more weight politicians would like to put on growth. Finally, under the assumption that the fundamental relationships remain identical for politicians with a neutral stance and those calling for higher or lower rates, the estimated parameters from (9) can be used to estimate predicted values, \hat{i}_t^P , for the preferred rates for of those politicians who make non-neutral statements. The gap between the actual and the predicted preferred interest rates, $i_t^{act} - \hat{i}_t^P$, provides a meaningful metric to assess the magnitude of the different preferences. Before moving on to the estimation of these models, the subsequent Section details how the corresponding variables have been constructed.

3. Measuring Political Pressure and Time-Varying Preferences

In this section, we describe the database underlying our empirical analysis, which consists mainly of two building blocks: first, the public statements by politicians, and second, proxies for periods in time when politicians are likely to put more weight on growth and less weight on price stability than otherwise. We will discuss each in turn.

3.1 Measuring political pressure

If a central bank is independent, a politician can, by definition, not exert a direct influence on the conduct of monetary policy. Attempts of indirect influence can occur by means of consultations with the central bank in the context of various fora, or through public comments about the central bank or its monetary policy, ranging from criticism of past decisions to advice about future central bank actions, or comments of a more general nature about the mandate of the central bank. Given the unobservability of the former, our objective in this paper is to extract all relevant public statements by elected politicians containing some commentary about the ECB's monetary policy. An alternative motivation behind such statements could be that politicians intend to signal to their voters that they are abreast of the

debate, and do their best to convey to the ECB what would be in the interest of their voters. Hence, politicians need not necessarily expect that their pressure exerts effects on the ECB's monetary policy, it can be sufficient that they are deemed to have an effect on voting support.

As discussed above, the case of the ECB is of particular interest, given the recent political debate about its monetary policy, and given the fact that the ECB conducts monetary policy with a view to achieve price stability in the euro area, whereas politicians care about their national constituencies. This adds another layer of potential conflict. More precisely, the case of a monetary union implies that there are a number of different governments that can potentially comment on monetary policy, giving us substantially more variation in the macroeconomic and political conditions, thus facilitating the econometric identification problem.

To obtain politicians' statements, we used Factiva, a database that contains newspaper articles and newswire reports from 14,000 sources, and extracted all database entries containing a reference to the ECB and the word "minister" or the name of the head of government (or the name of the head of state of France, given that in the French presidential system the head of state engages actively in political discussions). From all hits obtained, we extracted those containing statements by euro area politicians about the ECB, carefully avoiding double counting.⁴ In total, we cover the 11 initial euro area members plus Greece. We did not include commentaries by the more recent euro area members Slovenia, Malta and Cyprus, as we cannot exclude the possibility that their entry into monetary union is so recent that their governments might still communicate in different terms with the ECB.

We distinguish between two types of statements, one referring directly to suggestions about future monetary policy decisions, and a second one of more indirect nature, containing calls for a change in the ECB's mandate (e.g. to give more weight to growth or the exchange rate), containing criticism of past interest rate decisions, or comments about the ECB's independence. Clearly, one can think of different and finer categorizations, or about separating the different statements contained in the second category. However, there are only relatively few such statements in the second category, such that we decided to keep the categorization as simple as possible, using the second type of statements only as robustness test.

The final step consists of classifying each statement, depending on whether it implies a call for lower interest rates, for higher interest rates, or is neutral:

$$C_t = \begin{cases} +1 & \text{call for lower rates} \\ 0 & \text{neutral statement} \\ -1 & \text{call for higher rates} \end{cases}$$

⁴ To be more precise, the search commands we employed were, for instance, "minister and ecb or minister and european central bank". Our data collection differs from the one proposed by Havrilesky (1993) in one important dimension: while Havrilesky was interested whether the Fed *responds* to political pressure, we are interested in the *determinants* of political pressure. For the former, it is useful to measure the amount of critical commentaries in the media (as in-depth and repeated reporting about the same statement by a politician can possibly increase the pressure on the central bank); for our purposes, however, it is important not to double-count statements (unless if politicians *engineer* extensive reporting in the media; however, we cannot distinguish this possibility from extensive coverage due to other reasons, e.g. because the media feel that such statements are likely to attract the attention of readers, or because the statement was made at a point in time with relatively few other newsworthy events).

A number of issues are worth noting about this data extraction exercise. First, the search was conducted only in English. We might therefore not have discovered all statements, if these were made and reported upon exclusively in other languages. However, due to the fact that Factiva contains also newswire reports, and due to the extensive coverage of this topic by newswires, this issue should not be very problematic. As a matter of fact, we extracted statements along the same lines in other languages for some years, with very few differences in results.

Second, we deliberately restricted our search to politicians that are in national government positions, thus excluding those in local governments or in the parliamentary opposition, as well as comments by lobby groups, trade unions or international institutions such as the IMF or the OECD. Including the latter would give a more comprehensive view of the political debate in a given country. For the purposes of this paper, we are however interested in the relationships between the central bank and the government, as the incumbent politicians can be made responsible for the economic performance of their constituency during their tenure, and thus face the time inconsistency problem in the most direct form. This links closely to the principal-agent literature and blame-shifting and rent-seeking motives discussed above.

Third, a key difficulty is clearly how to ensure that the classification of statements is done correctly. It is important to stress that this classification is based on our own judgment and reading of the reports and thus does not rule out a wrong classification in some cases. In line with the techniques of content analysis (e.g. Holsti 1969), we had different individuals classify the statements independently and discarded those that are not unanimous. However, given that in the vast majority of cases, the wording of statements was extremely clear, a unanimous classification was generally achieved. In particular the first category of statements with a direct call for a change in interest rates was uncontroversial. The appendix provides a number of statements contained in our database along with our classification, allowing the interested reader to cross-check our classification.

The sample for the extraction of statements starts in January 1999, i.e. with the ECB taking over responsibility for euro area monetary policy, and ends in December 2007. In total, our database includes 767 statements. Table 1 provides the overall figures, and breakdowns by country, time period, and political affiliation of speakers. As expected, there is a strong asymmetry in the statements, with around 60% calling for a reduction, and only 5% a plea for an increase in interest rates. Interestingly, these numbers vary only little with the political orientation of speakers. Calls for higher interest rates are more often made by centre and centre-right as well as by neutral politicians (with 6%, 6% and 8% of their statements suggesting that rates could be increased, as opposed to, e.g., 2% for centre-left politicians). However, the differences are relatively small.

Table 1

Table 1 furthermore shows interesting time variations. While the number of statements remained roughly unchanged for the first 4 years from 1999 to 2002 and the next 4 years until 2006 (with around 300 statements each), there has been a clear increase in 2007. For the last year of our sample alone, 135 statements have been recorded. The increase in statements coincides with the election campaign for the French presidency, during which both candidates commented extensively on the ECB. They issued a number of calls for a change in the ECB's mandate to put higher weight on growth, and their threats to renegotiate the ECB's independence also triggered comments by other governments, in defense of the ECB's position. This is reflected in the relatively larger number of "neutral" statements (56% of all statements in 2007, as opposed to 29% for the rest of our sample; according to our classification, such statements do not call for higher interest rates, and are thus considered as neutral). At the same time, the number of statements expressing directly a preference for future interest rate decisions has remained roughly unchanged.

Another interesting insight from Table 1 is that there is considerable cross-country variation. In countries like Spain, where inflation on average exceeded euro area inflation substantially, governments are much more likely to call for *higher* interest rates (for Spain, 20% of all statements fall into this category). Parts of the patterns do therefore seem to be driven by inflation differentials in EMU, suggesting that the analysis of a monetary union adds an interesting dimension to the determinants of public commentaries about central banks.

Figures 1-2 and Table 2

Figure 1 shows the evolution over time of political pressure, indicating some periods with heightened pressure, such as in the very beginning of EMU and in 2001-03, and other periods with less pressure. The interesting point of comparing Figures 1.A and 1.B is that the political pressure exerted in 2007, especially during the French election campaign, was less focused on future interest rate decisions, but more on the mandate, independence and exchange rate policy of the ECB. Moreover, political pressure on future interest rate decisions in periods of monetary policy turning points, such as in mid 2001, 2003 and in late 2005.

Figure 2 breaks down the political pressure exerted by country groups, distinguishing at any point in time between countries with high versus low inflation (Figure 2.A) and countries with high vs. low GDP growth (Figure 2.B). Overall, Figure 2 indicates that there is a significant relation between the degree of political pressure a country's politicians exert on the central bank and its economic performance in terms of inflation and growth, providing a first piece of evidence in support of the hypotheses formulated in section 2.

For the subsequent econometric analysis, we aggregate the number of comments. As will be evident from the discussion in the subsequent section, the most useful aggregation relates to the level of each political party rather than the country. In government coalitions, for instance, members of the various coalition parties might behave in very different ways, e.g. depending on their individual voting support, or their political orientation. Accordingly, we calculate the quarterly sum of comments C_t for each political party (which is part of government, and whose ministers have made at least one comment on the ECB in the given quarter). This aggregation yields nearly 300 quarter-political party observations, covering 36 quarters and 23 political parties plus a number of ministers without party affiliation. Given that the database does not contain an entry if no member of a given party has made any statement in a given quarter, and due to changes in government compositions, the dataset is not a balanced panel.

Summary statistics for the resulting political pressure variables are provided in Table 2, which again reveals the asymmetry of statements: the dominance of calls for lower interest rates leads to a positive mean value of 1 per quarter and political party for comments about future interest rate decisions; the minimum is a mere -1, whereas the maximum stands at 11. Taking all comments together, the mean increases to 1.3, with a minimum of -2 and a maximum of 13. These simple statistics clearly show that politicians favor lower interest rates on average; in what follows we will analyze in more depth why these different preferences arise.

3.2 Proxies for shifts in politicians' preferences

In parts of the subsequent analysis, we are interested whether government preferences on the weights attached to inflation and growth differ across time. The case of elections is probably the most evident, given the large literature on political business cycles (for an overview, see Drazen 2000); however, we are interested in the issue in a broader sense, and would therefore like to test further hypotheses. Accordingly, we have defined the following set of variables, for which Table 3 shows the cross-correlation:

Table 3

Pre-election period

As is well established in the literature on political business cycles, incumbent governments have an incentive to boost the macroeconomic performance in the uprun to elections. Drazen (2000) develops a model with fiscal policy being under control of the incumbent politician and an independent central bank running monetary policy. The model shows that the politician has an incentive to pressure the central bank to accommodate fiscal shocks in the period before elections. Accordingly, we are interested whether politicians use their remaining tool of calling for lower interest rates, or for more emphasis on growth in the conduct of monetary policy. We test for this hypothesis by designing a dummy variable that is equal to one in the quarter of the election.

Low voting support

Incumbent governments care about the re-election prospects. An important piece of information for that purpose is contained in voting intention polls. While political parties might conduct such polls on their own, these results are for obvious reasons not available to us. Accordingly, we reverted to the results of voting intention polls that are conducted externally, and often provided publicly.⁵ The variable used in our regression analysis is the rate at which voting support *declines* over time (i.e. we take the negative value of the quarterly growth rate to obtain a variable that is likely to increase with the propensity to put pressure on the ECB). For government ministers without a party affiliation, we set this dummy variable to zero. We lag this variable by one quarter to avoid reverse causality (whereby voting support may be responsive to public commentaries about the ECB).

Low public trust in ECB

Similar to the election and voting support variables, a politician may have a greater incentive to pressure the ECB if the country's public has relatively little trust in the ECB. We use micro data from the EU Commission's Eurobarometer survey, which is conducted twice a year for about 1000 households in each euro area country, to measure a country's mistrust of the ECB. These survey participants are asked "Please tell me if you tend to trust or tend not to trust the European Central Bank." The possible answers are "I tend to trust", "I tend not to trust", or "I do not know". We derive the measure of mistrust in the ECB as the share of respondents who state that they do not trust the ECB out of all respondents. We use a dummy that takes the value of one if the share of people mistrusting the ECB in a particular country and point in time is above the sample median, and zero otherwise. We lag this variable by one quarter to avoid reverse causality (whereby trust in the ECB is responsive to public commentaries about the ECB).

Excessive deficit procedure

Fiscal policy by euro area governments is constrained by the Stability and Growth Pact, which restricts the debts and deficits a government can incur. If the budget deficit breaches the threshold of 3% of GDP foreseen in Maastricht Treaty, the excessive deficit procedure (the so-called dissuasive arm of the Stability and Growth Pact) is triggered. If the deficit is indeed deemed excessive by the ECOFIN Council, recommendations are issued to the

⁵ The sources of these data are: Österreichisches Gallup-Institut (Austria), La Libre Belgique (Belgium), Centro de Investigaciones Sociológicas (Spain), Taloustutkimus (Finland), TNS Sofres (France), Infratest-Dimap (Germany), TNS mrbi (Ireland), sondaggipoliticoelettorali.it (Italy), TNS Iles/Tageblatt (Luxembourg), Politieke Barometer (the Netherlands) and Expresso/Euroexpansão (1999-2001); Expresso/Eurosondagem (2001-2008) (Portugal). We would like to thank Politieke Barometer, TNS mrbi, Österreichisches Gallup-Institut, Thomas Mathä, Linda Gonçalves Veiga and Francisco José Veiga for their invaluable help in retrieving these data. The Portuguese data are an update of those analysed in Veiga and Veiga (2004).

member states as to how the deficit can be contained, including a time frame for doing so. Non-compliance will trigger further steps in the procedures, including the possibility of sanctions.⁶ As this substantially reduces the room for maneuver in fiscal policy, we conjecture that this externally imposed constraint could lead to increased pressure on the central bank to take into account growth considerations more forcefully, given that stronger growth will have a dampening effect on budget deficits, thus making an abrogation of the excessive deficit procedure more likely. The corresponding variable in our regression is a dummy variable that is equal to one for all quarters where the government is subjected to such a procedure.

Negative growth differential

Time variations in the preferences of politicians might furthermore arise due to the macroeconomic performance of the individual country relative to the euro area average. The model developed in Alesina and Cukierman (1990), for instance, suggests that voters infer from actual economic outcomes about the preferences of the incumbent politician. Under the assumption of persistent preferences, voters will predict future policies and outcomes by looking at current economic conditions. A similar result is obtained in Rogoff and Sibert (1988), where the ability of a politician is private information, such that vote decisions relate to past policies and economic outcomes. In such a setting, the incumbent politician has an incentive to lobby the central bank for a supportive monetary policy, or to shift the blame for a poor economic performance to the central bank. For instance, if growth is relatively low, this might twist politicians' incentives towards placing even more emphasis on growth. The variable "negative growth differential" attempts to measure this possibility by means of a dummy variable which is equal to one if national growth is lower than the euro area average.

Left-wing party

The importance attached by politicians to price stability and high growth tends to differ depending on their political orientation. In particular, more left-wing parties tend to receive their voting support from workers and less wealthy individuals, who have much to lose from low growth (or high unemployment). In contrast, more conservative parties are typically supported by a wealthier clientele, which places more emphasis on low inflation (Hibbs 1977, Powell and Whitten 1993, Swank 1993). We are therefore interested to see whether changes in government lead to corresponding changes in preferences. Our variable to test for this effect is based on the Chapel Hill Party Dataset 2002.⁷ This dataset contains a variable measuring the position of the party in 2002 in terms of its broad ideological stance. Based on the distribution of this variable for the political parties in our sample, we have constructed a dummy that takes the value of -1 for the one third of the parties at the right, 0 for the third in the middle, and 1 for the third of parties at the left of the political spectrum.

4. Politicians' Preferences and their Instability Over Time

We now turn to analyzing the various regression models as outlined in Section 2. We will first ask whether politicians place different weights on price stability and growth than the central bank, and whether we can detect a focus of politicians on their respective national economic conditions. From there, we will analyze whether there is any evidence for time-shifting preferences, before we will attempt to extract the politicians' preferred interest rates.

4.1 What weights on price stability and growth?

To answer this question, we need to put equation (4) to an empirical test. As we have defined the political pressure variables at the level of the political party, the estimated version of equation (4) is

⁶ See e.g. http://ec.europa.eu/economy_finance/sg_pact_fiscal_policy/index_en.htm?cs_mid=570.

⁷ See <http://www.unc.edu/~gwmarks/data.htm>.

$$(4^*) \quad pp_{z,t} = a_z + b^1 \pi_t^{EA} + b^2 (\pi_{z,t}^C - \pi_t^{EA}) + c^1 y_t^{EA} + c^2 (y_{z,t}^C - y_t^{EA}) + \mu_{z,t}.$$

Where z denotes a political party, and $\pi_{z,t}^C$ and $y_{z,t}^C$ denote inflation and output growth in the party's home country. Note that we include party fixed effects to allow for the possibility that parties differ in their inclination to make public statements about the ECB. As a benchmark model, we apply a standard OLS estimator, calculated with robust standard errors.⁸

Table 4

Column (1) in Table 4 provides the results for equation (4). A first clear indication for the presence of differences in preferences between the central bank and politicians is that while politicians do not attach different weights to *euro area* inflation, they do care significantly more about euro area growth (b^1 is not statistically different from zero while c^1 is negative and significant, although only at the 10% level). Moreover, these differences in preferences are also revealed with regard to the role of *national* conditions. Politicians clearly would like to see more emphasis on the national inflation as well as the national growth rates (b^2 and c^2 are statistically different from zero, with the expected direction).

These results are highly robust to alternative specifications and estimators: the findings do not change qualitatively when *all* statements are analyzed, i.e. not only the ones with a direct indication as to the preferred future interest rates, but also including the ones on past decisions, the ECB's mandate, its independence, or exchange rates (model in column 2). While the coefficient on euro area growth becomes insignificant, the one on national growth differentials becomes larger in magnitude, at a higher level of significance. One interpretation of this finding is that politicians' statements about elements that are not directly related to euro area monetary policy decisions, such as the ECB's mandate or independence, may in fact be an indirect or disguised means of exerting pressure on the ECB to alter its monetary policy.

Other robustness tests relate to alternative estimators and model specifications. Column 3 shows that the estimates are very similar to those of the benchmark model if the party fixed effects are excluded from the model. Estimating an ordered probit model (column 4), yields qualitatively the same results as the OLS specification. Column 5 provides estimates using a negative binomial maximum-likelihood regression, with a somewhat different definition of the left-hand side variable. Given that there are so few calls for higher rates in the sample, we cannot exclude that politicians would only issue such statements in very extreme cases. Accordingly, this robustness test is based exclusively on calls for lower rates.⁹ Given that the resulting variable pp_t is now a non-negative count model, it is possible to estimate a Poisson regression model. This model was rejected by the data due to extra-Poisson variation, such that column 6 provides results with the appropriate negative binomial model. All results are robust to this variation.

Table 5

⁸ The independent variables in this model are euro area inflation and GDP growth, as well as the difference between national and euro area variables. Inflation is taken from the OECD's Main Economic Indicators database, and defined as the year-on-year changes in consumer prices (all items). The source of the GDP data is the IMF's International Financial Statistics. GDP growth is defined as the year-on-year growth rate of GDP at constant prices. Other than party fixed effects, country fixed effects or even party leader fixed effects could be envisaged. We opted for the intermediate solution.

⁹ The number of observations does not change because each political party that has made a call for higher rates has, in the same quarter, also made neutral statements. Accordingly, these quarter-party observations get reclassified as neutral when dropping the calls for higher rates, and stay in the sample.

A final robustness is contained in Table 5, which also includes a possible concern for unemployment, in addition to inflation and GDP growth. Table 5 shows that the estimates for inflation and growth are basically unaffected by the additional inclusion of unemployment. Country-specific unemployment differentials are generally not significant, with the exception of the model that does not include party-fixed effects. These findings suggest that our benchmark specification with inflation and growth may do a sufficiently accurate and good job in reflecting the central bank's and politicians' concerns, and we proceed in the remainder of the paper by using this benchmark specification.

Overall, the empirical results indicate that there are marked differences in the preferences between the central bank and politicians in the euro area. Politicians attach a greater weight than the central bank both to the common euro area growth component as well as to the national idiosyncratic growth differential. Moreover, the highly significant negative coefficient on inflation differentials suggests that politicians' preferred interest rates include a higher weight on national inflation. This evidence suggests that the ECB is a conservative central bank in Rogoff's sense, putting more weight on price stability than politicians.

4.2 Are politicians' preferences stable over time?

We now turn to the question to what extent the preferences of politicians change over time and whether this change is related to political economy factors. We use the various political economy factors discussed in Section 3. We estimate the following version of equation (7):

$$(7') \quad PP_{z,t} = a_z + b^1 \pi_t^{EA} + b^2 (\pi_{z,t}^C - \pi_t^{EA}) + b^3 \pi_t^{EA} x_{z,t} + b^4 (\pi_{z,t}^C - \pi_t^{EA}) x_{z,t} \\ + c^1 y_t^{EA} + c^2 (y_{z,t}^C - y_t^{EA}) + c^3 y_t^{EA} x_{z,t} + c^4 (y_{z,t}^C - y_t^{EA}) x_{z,t} + dx_{z,t} + \mu_{z,t}$$

Table 6 shows the corresponding results, with each column testing whether politicians' pressure on the central bank is related to one specific political economy factor. In order to keep the results tractable, our preferred strategy is to include one political economy factor at a time, rather than several or all factors simultaneously. Recall from Table 3 that there is only a low degree of correlation across these different individual factors.

Table 6

Overall, there is considerable evidence for the presence of time-variation in politicians' preferences, as the weight attached by politicians to inflation and growth changes with many of the political economy variables. Looking at the weight on euro area inflation, this preference shift appears in the upturn to elections. In these cases, politicians would like to see less emphasis on inflation, implying a larger relative weight on growth considerations. Preferences are furthermore directly oriented more towards euro area growth when their country is under review by the EU for an excessive fiscal deficit.

Moreover, Table 6 also shows evidence that there is a shift towards national concerns in these periods: politicians would like the central bank to give greater importance to their national growth performance when their national constituency has a relatively low trust in the ECB, when a left-wing government is in power or in periods of low national growth. In this latter case, there is furthermore an effect on the weight politicians would like to see given to national inflation developments. The model presented in Section 3 does not lead to a clear prior as to the sign of this effect; there could be a desire for either more emphasis on national circumstances (which suggests a negative sign in the regression model), or for less emphasis on inflation (in which case a positive sign would result). Interestingly, in periods of low national growth politicians want the central bank to pay more attention to national inflation and e.g. lower interest rates if national inflation is relative low.

A final piece of evidence is the coefficient d on the political economy factor itself. The fact that $d=0$ in all 6 cases indicates that most of the time variation in politicians' preferences and their pressure on the central bank can be related to different preference about economic conditions, rather than other factors not captured by our model.

Tables 7 and 8

While a few of the results are estimated at rather high levels of statistical significance, others are somewhat weaker. For instance, the effects of a low growth performance, or of an excessive deficit procedure, are estimated only at the 10% significance level, and the election regression yields one significant, but wrongly sided parameter. To test for the robustness of our conclusions, we re-estimate equation (7) once using *all* comments, i.e. including not only politicians' statements on interest rates, but also on the central bank's mandate, independence and the exchange rate, and once using only the calls for lower rates, and correspondingly the negative binomial regression model. Tables 7 and 8 provide the results.

The findings with regard to low public trust in the ECB and the political orientation of speakers are confirmed throughout. With regard to the excessive deficit procedure, results cannot be confirmed, as they turn out to be insignificant in both robustness tests. While results for the pre-election period are mixed, the effect of a negative growth differential turns out to be stronger than expected from the benchmark regressions.

Overall, these results suggest that there are political economy factors that make politicians shift their preferences even more strongly towards growth, and away from price stability. This is in particular the case if the national economy performs poorly (when growth is low), when there is low public trust in the ECB, i.e. in times when a politician is less likely to face resistance by the electorate against pressure on the ECB, and in the case of left-wing politicians being in government. There is some evidence pointing to a role of elections, as well as if politicians are facing additional external constraints that limit their freedom in implementing policies (when the government is placed in an excessive deficit procedure). Interestingly, no effect is apparent in the case of low voting support. However, the absence of such an effect could be due to the low frequency of our data. If politicians were to respond to decreasing voting support by changing their attitude towards the ECB temporarily, this need not be picked up with quarterly data. However, it is clear that there is no long-lasting effect.

4.3 Modeling politicians' desired interest rates

Up to this point, all results referred to the proxy regression models (4) and (7). Unfortunately, these do not allow any inference on the level of politicians' desired interest rates. In this subsection, we will therefore use the assumption introduced in Section 2.3 that politicians who do *not* comment on the ECB are on average content with the actual interest rate, or $i_t^P \approx i_t^{act}$ if $pp_t = 0$. To estimate the resulting model (9), it is necessary to drop all observations where $pp_t \neq 0$, leaving us with 131 observations.¹⁰ Due to the aggregation of the political pressure variable at the level of the political party, the estimated version is

$$(9') \\ i_t^{act} = \alpha_z^P + \beta^{P,EA} \pi_t^{EA} + \beta^{P,C} (\pi_{z,t}^C - \pi_t^{EA}) + \beta^{P,EA,x} \pi_t^{EA} x_{z,t} + \beta^{P,C,x} (\pi_{z,t}^C - \pi_t^{EA}) x_{z,t} \\ + \gamma^{P,EA} y_t^{EA} + \gamma^{P,C} (y_{z,t}^C - y_t^{EA}) + \gamma^{P,EA,x} y_t^{EA} x_{z,t} + \gamma^{P,C,x} (y_{z,t}^C - y_t^{EA}) x_{z,t} + \delta x_{z,t} + \varepsilon_{z,t}^P$$

¹⁰ The dependent variable of this model is the actual interest rates, which is calculated as the quarterly average of daily ECB policy rates. Source: ECB.

Table 9 contains the relevant findings, first for a model without any interactions with time inconsistency proxies, followed by the same sequence of models as employed in the previous subsections. As expected, politicians attach a positive weight both to growth and to inflation in their objective function, i.e. they would like to see interest rates rise when inflation and output pick up, and vice versa. The coefficients of this model are directly interpretable and the magnitudes are sizable: in response to an increase in euro area growth by one percentage point, politicians' preferred interest rates rise by 44 basis points, and in response to a 1 percentage increase in euro area inflation, the desired interest rate rises by 52 basis points. Additionally, in response to a 1 percentage increase in national inflation differential, politicians would like to see ECB policy rates increase by 33 basis points.

Table 9

With regard to time variations, results are as expected for the pre-election period and the excessive deficit procedure, whereas no effect can be detected for low voting support (as before) and for negative growth differentials. For low public trust in the ECB and left-wing parties, counterintuitive parameter estimates result. Again, this lack of results might relate to an insufficient number of observations in the relevant areas of the political economy variables.

Figure 3

Having estimated the models for all neutral political parties, it is now possible to predict the desired interest rates for those political parties that expressed their discontent with the current interest rates. We use the parameters obtained from column (1) in Table 4 for this exercise. We translate these estimates into the desired interest rates of all euro area politicians at any point in time. We do so by taking a simple, unweighted average, in essence giving every political party the same weight.

This analysis allows us to compare the euro area politicians' preferred interest rate path with the actual monetary policy of the ECB. More precisely, we derive two paths for the politicians' preferred interest rate path. The first one, or what we label the "fundamentals' implied" preferred rate, is the hypothetical interest rate preferred by politicians if their preferences were *solely* determined by a greater weight on output than inflation, using the estimates of model (1) in Table 9. Figure 3.A shows that for this implied rate there are periods, such as in 2001-03 and since 2006, i.e. mostly when growth in the euro area was weak, when this hypothetical rate would have been lower than actual euro area interest rates. Yet there also periods, such as in 2004-05, when governments – based on economic fundamentals alone – would have preferred tighter monetary policy, stemming from their stronger weight on growth than price stability in their objective function.

However, Figure 1 and the evidence discussed earlier on showed that since 1999 politicians in the euro area have almost always pushed publicly for lower interest rates, including in the period 2004-05 when actual interest rates were already quite low, and also lower than the politicians' implied preferred rate. To derive the politicians' preferred rate based on their public statements about the ECB's monetary policy, we need to find out by how many basis points a politician would like to lower interest rates for each statement. We do so by regressing the fundamentals' implied preferred rate obtained from equation (9') on the actual political pressure pp_t exerted by politicians, which yields that one statement by a politician pushing for lower interest rates reflects, on average, a desire to lower the ECB policy rate by 9 basis points. Figure 3.A plots this derived preferred rate, using the country with the largest political pressure on the ECB in every quarter.

The difference between the two measures for politicians' preferred interest rates – i.e. the rate implied by fundamentals and the preferred rate based on politicians' public statements – as shown in Figure 3, varies substantially over time. The difference is quite substantial in the early period 1999-2000, and then becomes quite small in 2002-03. The largest gap existed in 2003-05 when the gap is at times as high as 120 basis points. Overall, these differences illustrate and underline that a large part of euro area governments' political pressure for lower interest rates stems from a reelection or other political economy motive.

5. Conclusions

The existence of an inflationary bias has been understood by economists for around 30 years now, and has been reflected in a large number of central banks being granted independence gradually over time. At the same time, however, this move has allowed for blame-shifting by politicians. Given that politicians will not necessarily see their preferred interest rates being implemented by an independent central bank, they have an incentive to attempt to influence the monetary policy by means of public statements, or to openly criticize central bank actions. Accordingly, occasional conflicts between independent central banks and governments should be expected, and are indeed observed, with the recent political pressure on the ECB being a clear point in case.

This paper has provided an attempt to quantify this issue of political pressure with regard to monetary policy in the euro area. In particular, it has analyzed i) to what extent the ECB puts more emphasis on price stability than politicians, testing whether it is conservative in Rogoff's sense, ii) whether politicians' preferences shift over time, reflecting political economy motives, and iii) to what extent these issues become more imminent in the case of a monetary union, where the conduct of monetary policy is not only delegated to an independent central bank, but also to a central bank that has a different constituency than the politicians, who mainly have national objectives.

The evidence provided in this paper is based on an unprecedented database containing politicians' statements about the ECB's monetary policy over the first 9 years of EMU. It covers statements that pressure the ECB to take a particular monetary policy stance made by the main government officials (head of government and all ministers) for each of the 12 initial EMU members (including Greece).

The paper has shown that politicians tend to favor lower interest rates on average. The differences in preferred interest rates arise, on the one hand, because the ECB is indeed more conservative in Rogoff's sense. On the other hand, the differences in the constituencies of the ECB and the national governments account for the bulk of the controversies over preferred interest rates, i.e. politicians' pressure on the ECB is mostly motivated by national factors rather than euro area-wide factors. This indicates a clear mismatch in perspectives, with the central bank being mandated to take a euro area perspective, while politicians pursue objectives which have an almost exclusively national focus.

Moreover, we have found evidence that the motivation for politicians' pressure on the central bank stems from a time variation in their preferences as well as their attempt to shift blame to the central bank. More specifically, we have shown that there is a preference away from price stability and towards growth in periods when the national economic performance is relatively weak, when the public has generally little trust in the ECB, and depending on the political orientation of governments, with left-wing politicians placing relatively more emphasis on growth.

The evidence provided in this paper suggests that the independence of the ECB allows it to shield the conduct of monetary policy from time-varying demands by politicians. While all

central banks are likely faced with such demands, the case for independence is probably even stronger in a monetary union, where the constituencies of politicians and the central bank differ. Calls for changes in the monetary policy stance do therefore often reflect a national motive, and are as such not consistent with the mandate that was given to the central bank.

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Appendix: Selected statements and their coding

01 February 1999: “German Finance Minister Oskar Lafontaine again hinted Monday at the desirability of an ECB rate cut to stimulate growth and employment in the euro-zone.”

Source: Market News International

Coded: $C_t=1$, comment on future interest rate decisions

18 February 1999: “Finnish Prime Minister Paavo Lipponen on Thursday warned fellow Social Democrats in power across the European Union not to put pressure on the European Central Bank over interest rates.” No command relationship should be aimed for because that would drive the central bank into the corner and weaken its credibility," Lipponen said.”

Source: Reuters News

Coded: $C_t=0$, comment on future interest rate decisions

28 October 1999: “Spain's finance minister, Rodrigo Rato, said Thursday the European Central Bank's policy of low interest rates is less suited to Spain than to the core euro-zone economies.” Source: Dow Jones International News

Coded: $C_t=-1$, comment on past interest rate decisions

04 November 1999: “The European Central Bank's 50-basis-point rate raise on Thursday suits Finland, Finance Minister Sauli Niinisto told Reuters.” Source: Reuters News

Coded: $C_t=-1$, comment on past interest rate decisions

23 May 2000: “Portuguese Prime Minister Antonio Guterres said Tuesday the European Central Bank may hike interest rates at its regular meeting Thursday, though he stressed he thought such action "unnecessary".” Source: Dow Jones International News

Coded: $C_t=1$, comment on future interest rate decisions

08 November 2002: “German Economics and Labour Minister Wolfgang Clement said on Friday the European Central Bank and German trade unions should do their share to work towards growth and higher employment.” Source: Reuters News

Coded: $C_t=1$, comment on future interest rate decisions

13 January 2004: “Belgian Finance Minister Didier Reynders said on Tuesday it would be necessary for the European Central Bank to change interest rates if the euro exchange rate reaches about \$1.30.” Source: Reuters News

Coded: $C_t=1$, comment on future interest rate decisions

08 June 2004: “If the European Central Bank does not lower rates, a new political committee should be set up to help guide its decision making, Italian Prime Minister Silvio Berlusconi said on Tuesday.” Source: Reuters News

Coded: $C_t=1$, comment on future interest rate decisions

25 November 2005: “Dutch finance minister Gerrit Zalm said that he would see an interest rate hike by the European Central Bank as a 'positive sign', Dutch news agency ANP reported.” Source: AFX Asia

Coded: $C_t=-1$, comment on future interest rate decisions

30 November 2005: “Portuguese Finance Minister Fernando Teixeira dos Santos said Wednesday an interest rate hike by the European Central Bank, largely expected at the central bank's governing council meeting Thursday, was not justified.” Source: Agence France Presse

Coded: $C_t=1$, comment on future interest rate decisions

24 May 2006: “Spanish Economy Minister Pedro Solbes on Tuesday agreed with the assessment of the Organization for Economic Cooperation and Development (OECD) that interest rates in the euro area are too low for Spain where strong domestic demand is fuelling inflation and causing the current account deficit to balloon.” Source: El Pais - English Edition

Coded: $C_t=-1$, comment on past interest rate decisions

20 October 2006: “German Economics Minister Michael Glos said Friday that the European Central Bank is in no hurry to raise interest rates from a German perspective, pointing to the country's low inflation rates.” Source: Dow Jones International News

Coded: $C_t=1$, comment on future interest rate decisions

31 January 2007: “Finance Minister Brian Cowen has warned the French to stop interfering with the European Central Bank and let it get on with raising interest rates.” Source: Irish Independent

Coded: $C_t=-1$, comment on future interest rate decisions

27 February 2007: “Austrian Chancellor Alfred Gusenbauer said the European Central Bank (ECB) might have to adapt its interest rate policy to match the current economic situation.” Source: Reuters News

Coded: $C_t=1$, comment on future interest rate decisions

13 June 2007: “Rate hikes by the European Central Bank (ECB) in the last 18 months have been good for the euro zone, Finnish Finance Minister Jyrki Katainen said while expressing support for the ECB's continued independence.” Source: Reuters News

Coded: $C_t=-1$, comment on past interest rate decisions

21 August 2007: “The European Central Bank should take account of the eurozone's subdued inflation in its future monetary policy decisions, French Prime Minister Francois Fillon declared in a newspaper interview published Tuesday.” Source: Market News International

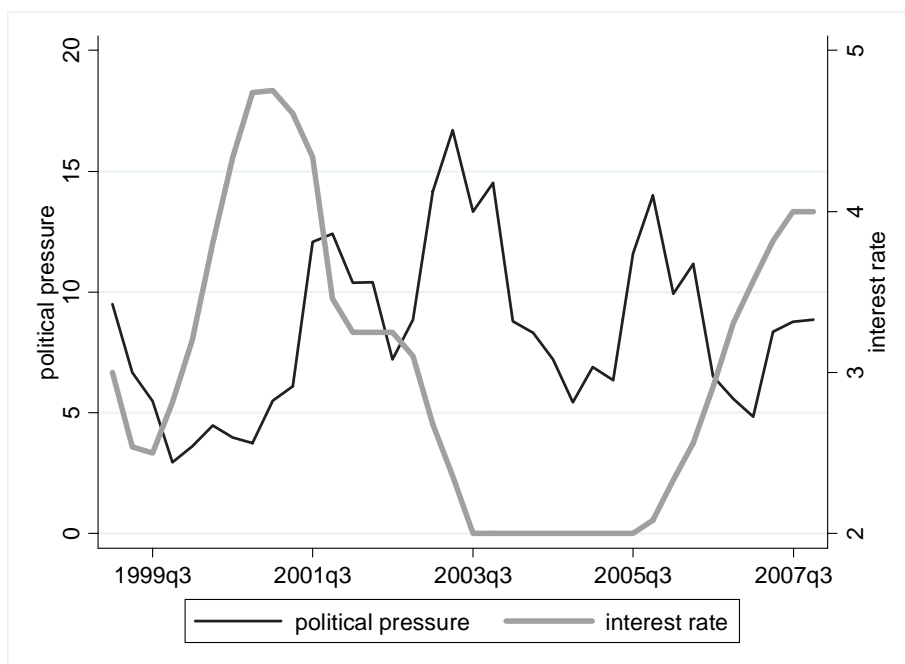
Coded: $C_t=1$, comment on future interest rate decisions

22 August 2007: “Jean-Claude Juncker, Luxembourg's Prime Minister and chairman of the Eurogroup of Finance Ministers, issued a stern warning late Wednesday to his fellow Eurozone finance ministers not to interfere with the European Central Bank ahead of the Bank's next policy meeting Sept. 6.” Source: Market News International

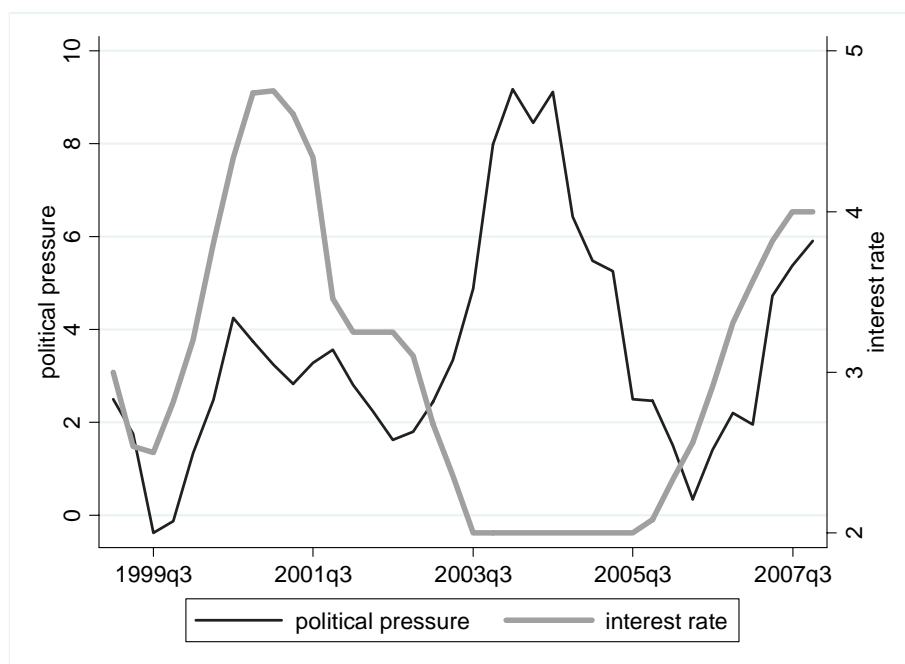
Coded: $C_t=0$, comment on future interest rate decisions

Figure 1: Political pressure on euro area monetary policy

A. Comments on future interest rate decisions



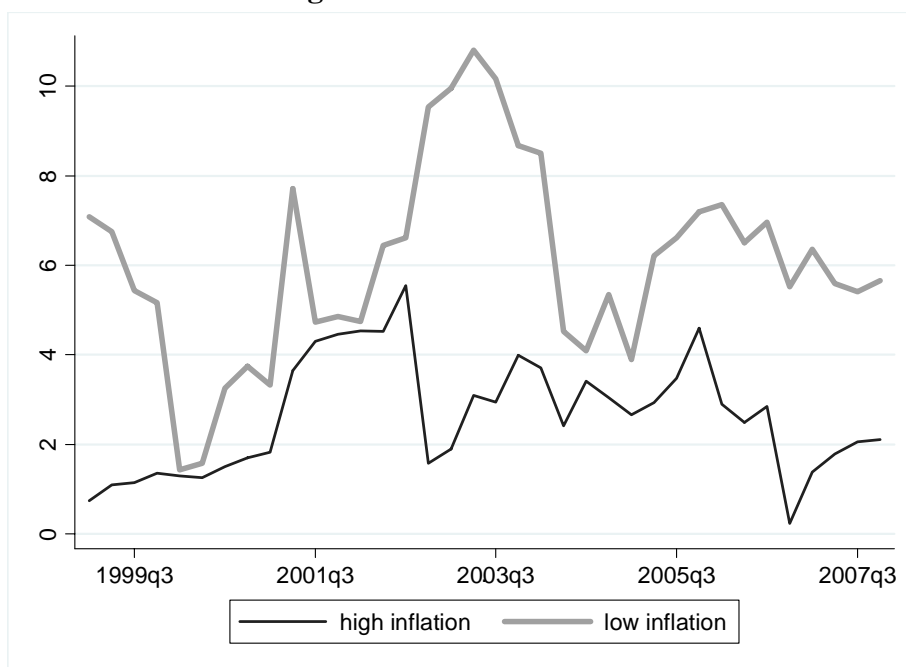
B. Comments on past decisions, mandate, independence and exchange rates



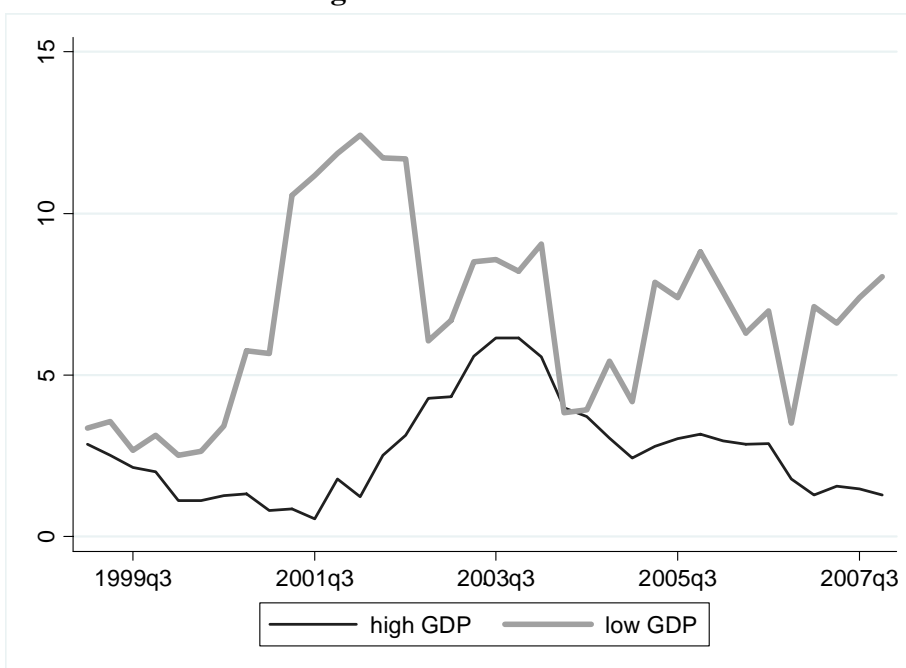
Notes: The figures show the aggregate political pressure (dark line, using the left-hand scale) by all political parties in the sample, relating to statements on future interest rate decisions (Panel A) and on past decisions, mandate, independence and exchange rates (Panel B). The light line (using the right-hand scale) provides the average actual monetary policy interest rate in each quarter. For presentational purpose, the political pressure series are smoothed using a 4-quarter moving average.

**Figure 2: Political pressure on euro area monetary policy
– by country groups**

A. High vs low inflation countries

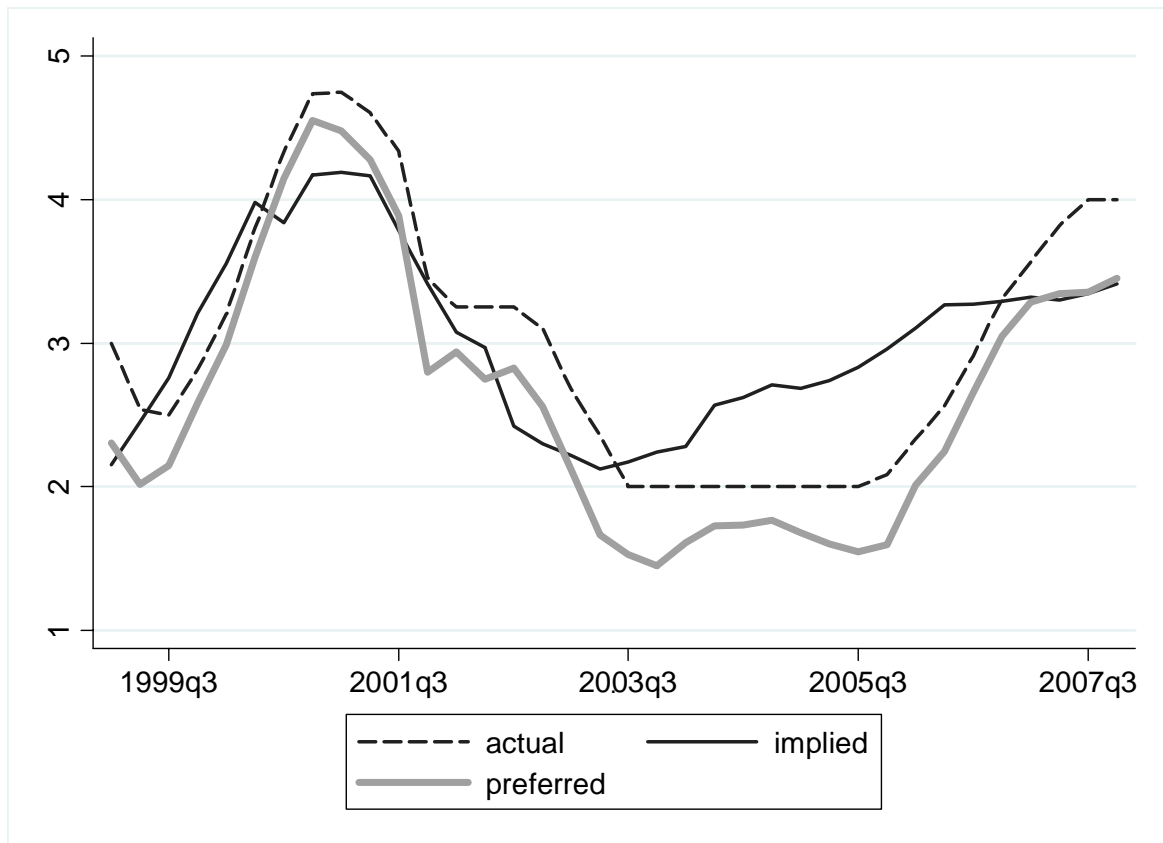


B. High vs low GDP countries



Notes: See Figure 1, only that this figure shows the aggregate political pressure related to future interest rate decisions, separately for different country groupings. The figure distinguishes political pressure at any point in time between countries with high versus low inflation (Figure 2.A) and countries with high vs. low GDP growth (Figure 2.B). Countries with positive inflation (GDP growth) differentials relative to the euro area have been classified into the “high” category, those with negative differentials into the “low” category. For presentational purpose, the series are smoothed using a 4-quarter moving average.

Figure 3: Euro area politicians' preferred interest rates



Notes: The figure is based on the estimation of politicians' preferred interest rates of equation (9). It shows the unweighted average of politicians' fundamentals implied interest rate – based on macroeconomic fundamentals alone, called “implied” – and the politicians' true preferred interest rate (referred to as “preferred”) compared to the actual ECB interest rate path since 1999.

Table 1: Summary statistics for statements by euro area government officials

		Comments on future interest rate decisions				Comments on past decisions, mandate, independence, exchange rates				Total	
		Lower rates	Neutral	Higher rates	Total	Lower rates	Neutral	Higher rates	Total		
Political Party	AN	Italy	10	0	0	10	8	0	0	8	18
	CDU/CSU	Germany	5	1	1	7	1	18	1	20	27
	CSV	Luxembourg	11	8	0	19	3	15	1	19	38
	DS	Italy	4	0	1	5	1	8	1	10	15
	Fianna Fáil	Ireland	2	1	2	5	0	2	2	4	9
	Forza Italia	Italy	8	0	0	8	16	2	0	18	26
	FPÖ	Austria	9	2	0	11	2	4	0	6	17
	KOK	Finland	0	0	0	0	0	5	3	8	8
	MR	Belgium	40	4	0	44	13	11	0	24	68
	ND	Greece	3	4	0	7	0	4	0	4	11
	ÖVP	Austria	19	0	0	19	4	11	0	15	34
	PASOK	Greece	1	1	0	2	1	2	0	3	5
	PP	Spain	3	1	4	8	0	4	3	7	15
	PS	France	24	3	0	27	12	16	0	28	55
	PS	Portugal	5	0	0	5	2	1	0	3	8
	PvdA	Netherlands	0	1	0	1	0	2	0	2	3
	SDP	Finland	1	3	0	4	2	7	0	9	13
	SPD	Germany	85	6	1	92	28	42	3	73	165
	SPÖ	Austria	0	0	0	0	1	0	0	1	1
	UDF	France	0	0	0	0	2	0	0	2	2
UMP	France	39	2	0	41	41	15	0	56	97	
VLD	Belgium	2	0	0	2	0	0	0	0	2	
VVD	Netherlands	1	3	3	7	0	10	3	13	20	
	No party affiliation	45	11	4	60	15	30	5	50	110	
Country		Austria	28	2	0	30	7	15	0	22	52
		Belgium	42	4	0	46	13	11	0	24	70
		Spain	22	7	8	37	5	18	5	28	65
		Finland	1	3	0	4	2	12	3	17	21
		France	83	7	0	90	60	39	0	99	189
		Germany	92	8	2	102	30	60	4	94	196
		Greece	4	5	0	9	1	6	0	7	16
		Ireland	2	1	2	5	0	2	2	4	9
		Italy	24	2	1	27	29	17	4	50	77
		Luxembourg	11	8	0	19	3	15	1	19	38
		Netherlands	1	4	3	8	0	12	3	15	23
	Portugal	7	0	0	7	2	2	0	4	11	
Time period		1999 - 2002	122	19	7	148	49	88	12	149	297
		2003 - 2006	162	21	7	190	81	56	8	145	335
		2007	33	11	2	46	22	65	2	89	135
Political orientation		None	45	11	4	60	15	30	5	50	110
		Centre Left	120	14	2	136	47	78	4	129	265
		Centre	106	21	9	136	70	88	10	168	304
		Centre Right	37	3	1	41	18	9	3	30	71
		Right	9	2	0	11	2	4	0	6	17
Total			317	51	16	384	152	209	22	383	767

Note: The table shows the number of statements by euro area government officials containing some comment on the ECB's future interest rate decisions, or on past decisions, the ECB's mandate, its independence, or the euro exchange rate. Data refer to the entire sample period 1999 to 2007. The split of political parties in political orientation is based on their affiliation to one of the parties in the European parliament.

Table 2: Summary statistics for regression variables

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
<i>Political pressure relating to:</i>					
Future interest rate decisions	299	1.007	1.683	-1	11
Past decisions, mandate, independence, exchange rates	299	0.435	1.107	-2	9
All comments	299	1.334	2.116	-2	13
<i>Macroeconomic performance</i>					
Euro area inflation	299	2.109	0.406	0.866	2.944
Euro area GDP growth	299	2.446	1.159	0.449	4.921
Euro area unemployment	299	8.321	0.545	7.266	9.534
Inflation differential	299	0.089	0.806	-2.424	3.228
GDP growth differential	299	0.378	2.799	-11.662	17.625
Unemployment differential	299	-0.581	2.339	-6.400	3.066
<i>Proxies for time inconsistency</i>					
Per-election period	299	0.070	0.256	0	1
Low voting support	299	0.086	6.611	-33.17	21.13
Low public trust in ECB	299	0.649	0.478	0	1
Excessive deficit procedure	299	0.224	0.418	0	1
Negative growth differential	299	0.492	0.501	0	1
Left-wing party	299	-0.067	0.796	-1	1

Note: The table shows summary statistics for all variables used in the regression analysis. For a detailed description, see Section 3.

Table 3: Correlation across political economy variables

	Pre-election period	Low voting support	Low trust in ECB	Excessive deficit procedure	Negative growth differential	Left-wing party
Pre-election period	1					
Low voting support	0.026	1				
Low trust in ECB	0.010	-0.058	1			
Excessive deficit procedur	-0.116	0.039	0.059	1		
Negative growth differenti	-0.087	-0.009	-0.089	0.145	1	
Left-wing party	0.066	-0.009	-0.012	-0.173	-0.026	1

Note: The table shows the correlation coefficients across the political economy variables used as possible shifters of politicians' preferences. For a detailed description, see Section 3.

Table 4: Testing for central bank conservatism

		Benchmark	All comments	No fixed effects	Ordered probit	Negative binomial
Hypothesis		(1)	(2)	(3)	(4)	(5)
Euro area macro variables:						
π_t^{EA}	$b^1 > 0$	-0.526 <i>0.341</i>	-0.507 <i>0.380</i>	-0.373 <i>0.328</i>	-0.309 <i>0.201</i>	-0.460* <i>0.240</i>
y_t^{EA}	$c^1 < 0$	-0.143* <i>0.083</i>	-0.099 <i>0.100</i>	-0.173** <i>0.069</i>	-0.151** <i>0.064</i>	-0.186*** <i>0.064</i>
Country-specific macro differences:						
$\pi_t^C - \pi_t^{EA}$	$b^2 < 0$	-0.444*** <i>0.164</i>	-0.512*** <i>0.194</i>	-0.482*** <i>0.108</i>	-0.386*** <i>0.149</i>	-0.476*** <i>0.173</i>
$y_t^C - y_t^{EA}$	$c^2 < 0$	-0.073* <i>0.039</i>	-0.105** <i>0.049</i>	-0.091*** <i>0.030</i>	-0.043* <i>0.026</i>	-0.161** <i>0.078</i>
Party fixed effects		Yes	Yes	No	Yes	Yes
Observations		299	299	299	299	299
R-squared		0.27	0.28	0.12	0.14	

Notes: The table shows the estimates for the determinants of political pressure based on equation (4'):

$$(4') \quad pp_{z,t} = a_z + b^1 \pi_t^{EA} + b^2 (\pi_{z,t}^C - \pi_t^{EA}) + c^1 y_t^{EA} + c^2 (y_{z,t}^C - y_t^{EA}) + \mu_{z,t},$$

where $pp_{z,t}$ denotes political pressure exerted by political party z , π consumer price inflation, and y GDP growth. Euro area variables are denoted with the superscript EA , country-specific variables with the superscript C . ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Numbers in italics denote standard errors.

Table 5: Testing for central bank conservatism – addition of unemployment

		Benchmark	All comments	No fixed effects	Ordered probit	Negative binomial
Hypothesis		(1)	(2)	(3)	(4)	(5)
Euro area macro variables:						
π_t^{EA}	$b^1 > 0$	-0.520 <i>0.357</i>	-0.562 <i>0.414</i>	-0.380 <i>0.333</i>	-0.247 <i>0.218</i>	-0.384 <i>0.253</i>
y_t^{EA}	$c^1 < 0$	-0.141* <i>0.084</i>	-0.123 <i>0.100</i>	-0.179** <i>0.076</i>	-0.123* <i>0.072</i>	-0.145** <i>0.070</i>
u_t^{EA}	$d^1 > 0$	0.010 <i>0.237</i>	-0.115 <i>0.296</i>	-0.032 <i>0.227</i>	0.129 <i>0.168</i>	0.194 <i>0.196</i>
Country-specific macro differences:						
$\pi_t^C - \pi_t^{EA}$	$b^2 < 0$	-0.445*** <i>0.163</i>	-0.508*** <i>0.192</i>	-0.483*** <i>0.109</i>	-0.393*** <i>0.148</i>	-0.502*** <i>0.170</i>
$y_t^C - y_t^{EA}$	$c^2 < 0$	-0.072* <i>0.039</i>	-0.103** <i>0.048</i>	-0.086*** <i>0.030</i>	-0.044* <i>0.027</i>	-0.177** <i>0.079</i>
$u_t^C - u_t^{EA}$	$d^2 > 0$	-0.018 <i>0.114</i>	-0.040 <i>0.127</i>	0.053* <i>0.030</i>	-0.012 <i>0.086</i>	-0.012 <i>0.098</i>
Party fixed effects		Yes	Yes	No	Yes	Yes
Observations		299	299	299	299	299
R-squared		0.27	0.32	0.12	0.14	

Notes: The table shows the estimates for the determinants of political pressure based on an extended version of equation (4’):

$$(4'') \quad pp_{z,t} = a_z + b^1 \pi_t^{EA} + b^2 (\pi_{z,t}^C - \pi_t^{EA}) + c^1 y_t^{EA} + c^2 (y_{z,t}^C - y_t^{EA}) + d^1 u_t^{EA} + d^2 (u_{z,t}^C - u_t^{EA}) + \mu_{z,t},$$

where $pp_{z,t}$ denotes political pressure exerted by political party z , π consumer price inflation, y GDP growth and u the unemployment rate. Euro area variables are denoted with the superscript EA , country-specific variables with the superscript C . ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Numbers in italics denote standard errors.

Table 6: Time variations in politicians' preferences – benchmark model

		Pre-election period	Low voting support	Low public trust in ECB	Excessive deficit procedure	Negative growth differential	Left-wing party
Hypothesis		(1)	(2)	(3)	(4)	(5)	(6)
Euro area macro variables:							
π_t^{EA}	$b^1 > 0$	-0.609 0.386	-0.534 0.333	-0.372 0.231	-0.525 0.368	-0.284 0.347	-0.775* 0.466
y_t^{EA}	$c^1 < 0$	-0.132 0.090	-0.151* 0.080	-0.171* 0.103	-0.086 0.079	-0.169* 0.091	-0.067 0.155
Country-specific macro differences:							
$\pi_t^C - \pi_t^{EA}$	$b^2 < 0$	-0.468*** 0.173	-0.435*** 0.164	-0.424** 0.214	-0.495*** 0.177	-0.258* 0.154	-0.602* 0.320
$y_t^C - y_t^{EA}$	$c^2 < 0$	-0.087* 0.052	-0.109** 0.052	-0.016 0.021	-0.069* 0.038	0.062* 0.037	-0.034 0.026
Political economy variables & interaction terms:							
$\pi_t^{EA} * x_t$	$b^3 > 0$	1.132** 0.534	-0.016 0.076	-0.550 0.620	-0.094 0.825	-0.350 0.633	0.018 0.786
$y_t^{EA} * x_t$	$c^3 < 0$	-0.332 0.249	0.001 0.012	-0.080 0.170	-0.518* 0.310	-0.062 0.159	-0.148 0.220
$(\pi_t^C - \pi_t^{EA}) * x_t$	$b^4 = ?$	0.290 0.207	-0.005 0.016	0.038 0.301	0.016 0.537	-0.507* 0.269	0.216 0.437
$(y_t^C - y_t^{EA}) * x_t$	$c^4 < 0$	0.139** 0.065	0.005 0.004	-0.344** 0.159	-0.175 0.268	-0.235* 0.125	-0.432** 0.183
x_t	$d = 0$	-1.874 1.143	0.035 0.174	1.203 1.595	1.061 2.172	1.553 1.487	-0.095 1.991
Party fixed effects		Yes	Yes	Yes	Yes	Yes	Yes
Observations		299	299	299	299	299	299
R-squared		0.27	0.27	0.30	0.28	0.31	0.35

Notes: The table shows the estimates for the time variations of politicians' preferences based on equation (7¹):

$$(7) \quad pp_{z,t} = a_z + b^1 \pi_t^{EA} + b^2 (\pi_{z,t}^C - \pi_t^{EA}) + b^3 \pi_t^{EA} x_{z,t} + b^4 (\pi_{z,t}^C - \pi_t^{EA}) x_{z,t} + c^1 y_t^{EA} + c^2 (y_{z,t}^C - y_t^{EA}) + c^3 y_t^{EA} x_{z,t} + c^4 (y_{z,t}^C - y_t^{EA}) x_{z,t} + dx_{z,t} + \mu_{z,t}$$

where $pp_{z,t}$ denotes political pressure exerted by political party z , π consumer price inflation, y GDP growth and x the political economy proxy for preference shifts. Euro area variables are denoted with the superscript EA , country-specific variables with the superscript C . ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Numbers in italics denote standard errors.

Table 7: Time variations in politicians' preferences – robustness: all comments

		Pre-election period	Low voting support	Low public trust in ECB	Excessive deficit procedure	Negative growth differential	Left-wing party
Hypothesis		(1)	(2)	(3)	(4)	(5)	(6)
Euro area macro variables:							
π_t^{EA}	$b^1 > 0$	-0.518 <i>0.433</i>	-0.527 <i>0.383</i>	-0.775* <i>0.466</i>	-0.432 <i>0.397</i>	-0.140 <i>0.441</i>	-0.709* <i>0.386</i>
y_t^{EA}	$c^1 < 0$	-0.085 <i>0.111</i>	-0.111 <i>0.092</i>	-0.067 <i>0.155</i>	-0.056 <i>0.098</i>	-0.190* <i>0.105</i>	-0.172 <i>0.108</i>
Country-specific macro differences:							
$\pi_t^C - \pi_t^{EA}$	$b^2 < 0$	-0.528** <i>0.207</i>	-0.495*** <i>0.188</i>	-0.602* <i>0.320</i>	-0.501** <i>0.211</i>	-0.149 <i>0.180</i>	-0.454** <i>0.207</i>
$y_t^C - y_t^{EA}$	$c^2 < 0$	-0.129* <i>0.068</i>	-0.160** <i>0.065</i>	-0.034 <i>0.026</i>	-0.093** <i>0.046</i>	0.058* <i>0.035</i>	-0.260** <i>0.102</i>
Political economy variables & interaction terms:							
$\pi_t^{EA} * x_t$	$b^3 > 0$	0.610 <i>0.546</i>	0.002 <i>0.122</i>	0.018 <i>0.786</i>	-0.966 <i>1.633</i>	-0.597 <i>0.726</i>	-0.752 <i>0.477</i>
$y_t^{EA} * x_t$	$c^3 < 0$	-0.376 <i>0.240</i>	-0.004 <i>0.017</i>	-0.148 <i>0.220</i>	-0.427 <i>0.333</i>	0.052 <i>0.179</i>	-0.140 <i>0.115</i>
$(\pi_t^C - \pi_t^{EA}) * x_t$	$b^4 = ?$	0.258 <i>0.201</i>	-0.014 <i>0.022</i>	0.216 <i>0.437</i>	-0.345 <i>0.642</i>	-0.924*** <i>0.326</i>	-0.383* <i>0.202</i>
$(y_t^C - y_t^{EA}) * x_t$	$c^4 < 0$	0.179** <i>0.082</i>	0.008 <i>0.006</i>	-0.432** <i>0.183</i>	-0.525 <i>0.358</i>	-0.268* <i>0.141</i>	-0.241** <i>0.099</i>
x_t	$d = 0$	-0.746 <i>1.219</i>	0.012 <i>0.281</i>	-0.095 <i>1.991</i>	2.453 <i>3.818</i>	1.997 <i>1.673</i>	1.284 <i>0.924</i>
Party fixed effects		Yes	Yes	Yes	Yes	Yes	Yes
Observations		299	299	299	299	299	299
R-squared		0.32	0.32	0.35	0.33	0.37	0.35

Notes: The table shows the estimates for the time variations of politicians' preferences based on equation (7')

$$(7') \quad pp_{z,t} = a_z + b^1 \pi_t^{EA} + b^2 (\pi_{z,t}^C - \pi_t^{EA}) + b^3 \pi_t^{EA} x_{z,t} + b^4 (\pi_{z,t}^C - \pi_t^{EA}) x_{z,t} + c^1 y_t^{EA} + c^2 (y_{z,t}^C - y_t^{EA}) + c^3 y_t^{EA} x_{z,t} + c^4 (y_{z,t}^C - y_t^{EA}) x_{z,t} + dx_{z,t} + \mu_{z,t}$$

where $pp_{z,t}$ denotes political pressure exerted by political party z – which in this case includes also statements on the mandate and independence of the central bank – π consumer price inflation, y GDP growth and x the political economy proxy for preference shifts. Euro area variables are denoted with the superscript EA , country-specific variables with the superscript C . ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Numbers in italics denote standard errors.

Table 8: Time variations in politicians' preferences – robustness: negative binomial regression using only calls for lower rates

		Pre-election period	Low voting support	Low public trust in ECB	Excessive deficit procedure	Negative growth differential	Left-wing party
Hypothesis		(1)	(2)	(3)	(4)	(5)	(6)
Euro area macro variables:							
π_t^{EA}	$b^1 > 0$	-0.507 <i>0.347</i>	-0.487 <i>0.339</i>	-0.188 <i>0.367</i>	-0.473 <i>0.273</i>	-0.200 <i>0.390</i>	-0.405 <i>0.390</i>
y_t^{EA}	$c^1 < 0$	-0.170** <i>0.067</i>	-0.187*** <i>0.064</i>	-0.256* <i>0.137</i>	-0.153** <i>0.069</i>	-0.277*** <i>0.107</i>	-0.094 <i>0.128</i>
Country-specific macro differences:							
$\pi_t^C - \pi_t^{EA}$	$b^2 < 0$	-0.509*** <i>0.176</i>	-0.467*** <i>0.176</i>	-0.520** <i>0.248</i>	-0.513*** <i>0.176</i>	-0.418* <i>0.220</i>	-0.545** <i>0.216</i>
$y_t^C - y_t^{EA}$	$c^2 < 0$	-0.169** <i>0.081</i>	-0.164** <i>0.074</i>	0.010 <i>0.078</i>	-0.156* <i>0.083</i>	0.135 <i>0.109</i>	-0.003 <i>0.066</i>
Political economy variables & interaction terms:							
$\pi_t^{EA} * x_t$	$b^3 > 0$	1.927** <i>0.961</i>	0.007 <i>0.038</i>	-0.410 <i>0.442</i>	0.310 <i>0.625</i>	-0.326 <i>0.483</i>	0.016 <i>0.455</i>
$y_t^{EA} * x_t$	$c^3 < 0$	-0.461* <i>0.265</i>	0.002 <i>0.008</i>	0.047 <i>0.162</i>	-0.225 <i>0.164</i>	0.081 <i>0.135</i>	-0.020 <i>0.148</i>
$(\pi_t^C - \pi_t^{EA}) * x_t$	$b^4 = ?$	0.190 <i>0.359</i>	0.005 <i>0.014</i>	0.048 <i>0.286</i>	0.044 <i>0.338</i>	-0.235 <i>0.267</i>	0.182 <i>0.266</i>
$(y_t^C - y_t^{EA}) * x_t$	$c^4 < 0$	0.268* <i>0.156</i>	0.007 <i>0.007</i>	-0.307*** <i>0.117</i>	0.025 <i>0.207</i>	-0.370* <i>0.191</i>	-0.267** <i>0.105</i>
x_t	$d = 0$	-3.562* <i>1.994</i>	-0.013 <i>0.085</i>	0.706 <i>0.939</i>	-0.301 <i>1.352</i>	1.021 <i>1.102</i>	-0.170 <i>0.953</i>
Party fixed effects		Yes	Yes	Yes	Yes	Yes	Yes
Observations		299	299	299	299	299	299

Notes: The table shows the estimates for the time variations of politicians' preferences based on equation (7')

$$(7') \quad pp_{z,t} = a_z + b^1 \pi_t^{EA} + b^2 (\pi_{z,t}^C - \pi_t^{EA}) + b^3 \pi_t^{EA} x_{z,t} + b^4 (\pi_{z,t}^C - \pi_t^{EA}) x_{z,t} + c^1 y_t^{EA} + c^2 (y_{z,t}^C - y_t^{EA}) + c^3 y_t^{EA} x_{z,t} + c^4 (y_{z,t}^C - y_t^{EA}) x_{z,t} + dx_{z,t} + \mu_{z,t}$$

where $pp_{z,t}$ denotes political pressure exerted by political party z , this time only counting calls for lower interest rates, π consumer price inflation, y GDP growth and x the political economy proxy for preference shifts. Euro area variables are denoted with the superscript EA , country-specific variables with the superscript C . ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Numbers in italics denote standard errors. Estimated using a negative binomial maximum-likelihood regression, given that $pp_{z,t}$ now is a nonnegative count variable. A standard Poisson regression was rejected, given that the data has extra-Poisson variation.

Table 9: Modeling Desired Interest Rates

		Benchmark	Pre-election period	Low voting support	Low public trust in ECB	Excessive deficit procedure	Negative growth differential	Left-wing party
Hypothesis		(1)	(2)	(3)	(4)	(5)	(6)	
Euro area macro variables:								
π_t^{EA}	$\beta^{P,EA}>0$	0.518*** 0.132	0.613*** 0.146	0.515*** 0.158	0.662*** 0.201	0.612*** 0.130	0.450** 0.211	0.451*** 0.137
y_t^{EA}	$\gamma^{P,EA}>0$	0.437*** 0.062	0.433*** 0.064	0.447*** 0.066	0.392*** 0.105	0.394*** 0.059	0.430*** 0.088	0.424*** 0.061
Country-specific macro differences:								
$\pi_t^C - \pi_t^{EA}$	$\beta^{P,C}>0$	0.327*** 0.119	0.350*** 0.118	0.314** 0.129	0.391** 0.153	0.306** 0.120	0.222 0.144	0.304** 0.128
$y_t^C - y_t^{EA}$	$\gamma^{P,C}>0$	-0.007 0.020	-0.016 0.026	-0.019 0.031	0.002 0.019	-0.007 0.019	0.004 0.022	-0.084** 0.032
Political economy variables & interaction terms:								
$\pi_t^{EA} * x_t$	$\beta^{P,EA,x}<0$		-0.598** 0.294	0.005 0.033	-0.310 0.267	-0.430 0.656	0.089 0.265	-0.139 0.162
$y_t^{EA} * x_t$	$\gamma^{P,EA,x}>0$		0.274 0.244	0.004 0.008	0.013 0.127	0.573*** 0.172	-0.029 0.144	-0.029 0.074
$(\pi_t^C - \pi_t^{EA}) * x_t$	$\beta^{P,C,x}=?$		-0.065 0.155	-0.009 0.010	-0.062 0.187	-0.514** 0.232	0.291 0.213	-0.034 0.124
$(y_t^C - y_t^{EA}) * x_t$	$\gamma^{P,C,x}>0$		-0.009 0.032	0.002 0.002	-0.095* 0.055	-0.177 0.134	0.029 0.057	-0.088*** 0.033
x_t	$\delta = 0$		0.860 0.564	-0.031 0.075	0.748 0.615	-1.268 1.556	0.202 0.693	2.440*** 0.632
Const.		0.759* 0.394	0.730* 0.420	0.659 0.496	0.737* 0.428	0.556** 0.257	1.117*** 0.392	0.740* 0.420
Party fixed effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations		131	131	131	131	131	131	131
R-squared		0.610	0.630	0.610	0.620	0.690	0.620	0.630

Notes: The table shows results of estimating equation (1') $i_t^{act} = \alpha_z^P + \beta^{P,EA} \pi_t^{EA} + \beta^{P,C} (\pi_{z,t}^C - \pi_t^{EA}) + \gamma^{P,EA} y_t^{EA} + \gamma^{P,C} (y_{z,t}^C - y_t^{EA}) + \varepsilon_{z,t}^P$ in the first column, and of equation (9') $i_t^{act} = \alpha_z^P + \beta^{P,EA} \pi_t^{EA} + \beta^{P,C} (\pi_{z,t}^C - \pi_t^{EA}) + \beta^{P,EA,x} \pi_t^{EA} x_{z,t} + \beta^{P,C,x} (\pi_{z,t}^C - \pi_t^{EA}) x_{z,t} + \gamma^{P,EA} y_t^{EA} + \gamma^{P,C} (y_{z,t}^C - y_t^{EA}) + \gamma^{P,EA,x} y_t^{EA} x_{z,t} + \gamma^{P,C,x} (y_{z,t}^C - y_t^{EA}) x_{z,t} + \delta x_{z,t} + \varepsilon_{z,t}^P$ in columns (1) to (6). For a definition of variables, see Section 3. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Numbers in italics denote standard errors.