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**Working Paper**

## Does Government Ideology Matter in Monetary Policy? – A Panel Data Analysis for OECD Countries

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Ansgar Belke and Niklas Potrafke

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#94

# Ruhr Economic Papers

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#94

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**Ansgar Belke and Niklas Potrafke\***

## **Does Government Ideology Matter in Monetary Policy? – A Panel Data Analysis for OECD Countries**

### **Abstract**

This paper examines the effect of government ideology on monetary policy in a quarterly data set of 15 OECD countries in the period 1980.1–2005.4. Our Taylor-rule specification focuses on the interactions of a new time-variant indicator for central bank independence and government ideology. The results suggest that leftist governments did not decrease short term nominal interest rates at all. In contrast, short term nominal interest rates were higher under leftist governments. A potential reason for this finding might be that leftist governments have sought to make a market-oriented policy shift by delegating monetary policy to conservative central bankers.

JEL Classification: E52, E58, D72, C23

Keywords: Monetary policy, Taylor rule, government ideology, partisan politics, central bank independence, panel data

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\* Ansgar Belke, University of Duisburg-Essen and IZA Bonn; Niklas Potrafke, University of Konstanz. – We are grateful for comments from Mario Mechtel, Matthew Holian and the participants of the Economic Workshop at the University of Tübingen in February 2009 and the Public Choice Society Meeting 2009 in Las Vegas. The usual disclaimer naturally applies.. – All correspondence to Ansgar Belke, University of Duisburg-Essen, Department of Economics, Chair for Macroeconomics, 45117 Essen, Germany, e-mail: [ansgar.belke@uni.due.de](mailto:ansgar.belke@uni.due.de).

## 1. Introduction

Partisan theories follow a rather simple logic. Voters have heterogeneous preferences over outcomes, either because of differing economic interests or differing ideologies. For this reason, electorally motivated political parties are expected to adhere to divergent ideologies, to deliver different policy programs, and to serve core constituencies which are differentially affected by macroeconomic outcomes. The partisan theories predict that leftwing governments will emphasize achieving low unemployment rates at the expense of higher inflation and suggest that rightwing governments will pursue low inflation rates at the expense of unemployment. Hence, the main character of partisan theory is often described as a “political-macroeconomic outcomes theory of monetary policy” which works via a Phillips curve tradeoff (Havrilesky 1990, p. 50, and Way 2000).

The old-fashioned Philips-curve models, however, imply that the inflation rate is almost exclusively driven by monetary policy, notably money growth. Several studies – mainly originating from the late 1980s and the early 1990s – have investigated whether government ideology has had an influence on monetary policy and employed money growth as the dependent variable. The derivation of an ideologically driven money growth cycle, however, is not at all trivial and unambiguous as assumed by the mainstream partisan theory literature (see, for example, Belke 1996, pp. 98-104). Moreover, there is no consensus how parties affect monetary policy, but monetary surprises appear as an unconvincing driving force for traditional partisan political cycles (Drazen 2000).

Scholars have recently investigated political and/or ideological impacts on unintermediate monetary policy instruments such as central bank interest rates instead of money growth, among them Alesina, Roubini and Cohen (1997), Boix (2000), Clark (2003) and Sakamoto (2008) for OECD countries. Politicians, however, do not directly have an influence on interest rates, but are obliged to institutional restrictions, most notably central bank independence. For this reason, government ideology is only likely to affect interest rate policies when central banks are less

independent and subject to directives of the government. Interestingly, taking into account the interaction between central bank independence and government ideology, the existing studies suggest that leftist governments did not pursue expansionary monetary policies at all. The existing studies, however, do not only cover the time period till the beginning of this millennium, but also contain econometric shortcomings.

In this paper, we therefore integrate government ideology, central bank (in)dependence and their interaction in monetary policy reaction functions (Taylor rule) in order to examine whether leftist governments have implemented expansionary monetary policies in OECD countries from 1980.1 to 2005.4. We employ quarterly instead of annual data because central bank interest rates are volatile and can change remarkably per year. We use the updated indicator of government ideology by Potrafke (2009) that explicitly refers to the left-right scale of the governing parties and the new time-variant indicator on central bank (in)dependence by Klomp and De Haan (2008). The results suggest that leftist governments did not decrease short term nominal interest rates at all. In contrast, short term nominal interest rates were higher under leftist governments. A potential reason for this finding might be that leftist governments have sought to make a market-oriented policy shift by delegating monetary policy to conservative central bankers. Overall, our results suggest doubt about the influence of government ideology on monetary policy.

The remainder of the paper is organized as follows. Section 2 discusses the impact of government ideology on monetary policy and reviews the theoretical and empirical literature. Section 3 presents the data and specifies the empirical model. Section 4 reports the regression results and investigates their robustness while section 5 discusses their implications.



## **2. Partisan monetary policy: theoretical background and empirical evidence**

### *Political business cycles and the partisan approach*

Various economic theories explain why different politicians will implement different policies – Downs' (1957) fundamental convergence result notwithstanding. If politicians are assumed to be motivated not only by self-interest but to also care about the political outcomes, probabilistic voting models exhibit equilibria in which leftwing and rightwing politicians offer different platforms.<sup>3</sup> The empirical political science literature provides interesting insights why we ought not to expect modern parties to be ideological in any pure sense of the word (e.g. Katz and Mair 1995, Blyth and Katz 2005). In spite of these developments, politicians' behavior is however still expected to affect economic policy. The political business cycle approaches and the partisan theory indicate how politicians influence macroeconomic outcomes. One implication of the political business cycle theories (of Nordhaus 1975, and Rogoff and Sibert 1988, among others) is that all politicians will implement the same expansionary economic policy before elections. In other words, political ideology retires to the background, and policies converge. In these approaches, informational asymmetries between politicians and voters take centre stage in explaining electoral cycles. The incumbent exploits his information advantage to signal his economic competence before elections.

The partisan approach, on the other hand, focuses on the role of party ideology and shows to what extent leftwing and rightwing politicians will provide policies that reflect the preferences of their partisans. The leftist party appeals more to the labor base and promotes expansionary policies, whereas the rightwing party appeals more to capital owners, and is therefore more concerned with reducing inflation. This holds for both branches of the partisan theory - the classical approach (Hibbs 1977) and the rational approach (Alesina 1987).<sup>4</sup> The traditional partisan theory (PT) is generally regarded as empirically valid if leftist governments

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<sup>3</sup> See e.g. Mueller (2003): Chapters 11-13 and Persson and Tabellini (2000): Chapters 3 and 5 for a survey of the respective fundamental literature on party competition.

<sup>4</sup> For a survey of the literature see, for example, Alesina, Roubini and Cohen (1997), Belke (1996) or Drazen (2000).

cause a significantly higher (trend in) inflation and a significantly lower (trend in) unemployment (Berlemann and Markwardt 2007, Drazen 2000, Gaertner 1994). The rational partisan theory (RPT), however, claims upward (downward) post-election blips in unemployment for rightwing (leftwing) regimes due to wage rigidities combined with electoral uncertainty. Following the more recent literature, we do not differentiate between PT and RPT any further.

Empirical tests based on the old-fashioned Philips-curve partisan monetary policy models typically assume that the inflation rate is almost exclusively driven by monetary policy, notably money growth. These traditional tests, however, suffer from technical deficiencies in different regards. First, the proponents of the traditional partisan theory such as Alesina (1988) and Havrilesky (1994), p. 117, for simplicity start from the assumption that the time pattern of the inflation rate and the money growth rate are identical at each point in time (Belke, 1996, p. 104). But referring to the well-known quantity equation, this must not necessarily be the case, especially if the growth rate of the income velocity of money is not equal to zero or if there is positive real growth. Second, the traditional studies focusing on money growth implicitly assume that money aggregates can be exactly steered by the monetary authority. Hence, as opposed to the view taken in the mainstream partisan theory literature, the adequate specification of an ideologically driven money growth cycle is still open to debate (Belke 1996, pp. 98-104, and García de Paso 1996).

Nevertheless, several studies - mainly originating from the late 1980s and the early 1990s - test for ideological impacts on monetary policy and employ money growth as the dependent variable.<sup>5</sup> In these studies money growth is typically used as the dependent variable, while no importance is attached to the degree of central bank independence as a moderating variable. An encompassing survey of the empirical results for the partisan theory till the mid 1990s is

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<sup>5</sup>García de Paso (1996) shows in a game-theoretic framework that one should expect higher average money growth rates under leftwing governments. However, a lot more studies examine the validity of the opportunistic Nordhaus-type political business cycle theory instead of the partisan theory. As early examples, Meiselman (1986) and Grier (1989) find election-cycle patterns in money-growth data for the US.

provided, for example, by Belke (1996), p. 199, and pp. 214-216. These old-fashioned studies on partisan monetary policy, however, need to be criticized in several ways.

*Central Bank Independence and channels of transmission*

Evaluating whether government ideology has had an influence on monetary policy requires a robust operationalization of central bank independence.<sup>6</sup> Most important, the greater a central bank's ability to choose policy goals without government interference and the greater its control over policy instruments is, the more significant is its independence from politics. In other words, independent central banks control both the means and ends of monetary policy. Even the most autonomous central bank, however, does not make policy in a political vacuum (Hayo and Hefeker 2002, Lohmann 1998). To preserve their independent status and to fend off legislation aimed at changing bank organization, even the most autonomous banks, such as the former Bundesbank or the U.S. Federal Reserve Bank, had to accommodate political pressures in the past to some degree. For instance, public support for the central bank needs to be sufficiently strong to make the implementation of sometimes harsh monetary policy measures successful (Hayo and Hefeker 2002, p. 670). Hence, although some central banks are clearly more independent than others, no bank is perfectly insulated from the demands of electoral or partisan politics.

In order to make the concept of 'independence' operational we have to identify the channels through which partisan influence from a specific administration and/or government may be transmitted to the central bank and affect monetary policy. Scholars have concentrated on three main transmission channels: 1) central bank appointments (Falaschetti 2002, pp. 492f., Galbraith, Giovannoni and Russo 2007, p. 18, Gildea 1990, Havrilesky and Gildea, 1992, Havrilesky and Schweitzer 1990, Lohmann 1998, Waller 1989, 1992, Chappell, Havrilesky and

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<sup>6</sup> For an encompassing survey on the political economy of central bank independence see, for example, Eijffinger and De Haan (1996) and for recent contributions the survey by De Haan et al. (2008).

McGregor 1993); 2) direct signalling of desired monetary policies from the administration to the central bank<sup>7</sup> (Havrilesky 1988, 1991, Sieg, 1997), 3) bashing and coercion by the administration (García de Paso 2000, Lohmann 1998, Waller 1991).

First, government ideology has an influence on (presidential) appointments to the board of the monetary authority. Though a central bank might be independent, political parties do have a certain influence on the bank, in that they nominate the members of the central bank council. A political party may tend exclusively to nominate individuals with political preferences similar to its own ones (Havrilesky and Gildea 1992; Havrilesky 1993, Vaubel 1993, 1997a and Berger and Woitek 1997).<sup>8</sup> These individuals, in turn, may feel loyal to the party which has appointed them (Goehlmann and Vaubel 2007). Thus, council members are associated with the views of one party, and they therefore may try to manipulate the economy to increase the election probability of their party (Sieg 1997). Empirical analysis of Fed board members' voting patterns leads Chappell, Havrilesky and McGegor (1993) to conclude that partisanship in the appointments process is the *primary mechanism* by which partisan differences in desired monetary policies arise.

Second, signaling is an important channel. The government may send monetary policy signals to the central bank based on media appearances in which administration officials express a desire for easier or tighter monetary policy. This in turn might have a significant effect on the money supply. In reaction functions, the media coverage of the administration typically responds to variables which measure the state of the economy. Money growth, however, does not respond to the same state-of-the-economy measures but does respond to signals from the administration

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<sup>7</sup> This signaling is apparently opposed to the signals send from the central banks which are discussed extensively in the literature. For surveys of the literature on central bank communication and monetary policy see, for example, Blinder et al. (2008), De Haan (2008), De Haan et al. (2007).

<sup>8</sup> Waller (1992) develops a bargaining model to analyze the appointment of central bankers in a two-party political system. His model suggests that the party in power will appoint partisans early on but later appointments will be increasingly moderate in their views concerning monetary policy and that in equilibrium, nominations to the board are not rejected, thus confirmation hearings appear to be nothing more than a 'rubber stamp' process. The latter result implies that – at least theoretically - the out-of-power parties are not able to exert some influence through confirmation hearings. Mixon and Gibson (2002) deliver empirical evidence for the US which corroborates theoretical foundations of Waller's bargaining model.

(McGregor, 1996). Following the appointment process, oversight might influence monetary policy as well (Caporale and Grier 1998, p. 423, Falaschetti 2002, p. 492)

Third, the transmission could be the result of direct political pressure on the members of the monetary policy committee. The latter might undergo bashing and coercion by the government. Moreover, political threats to the status, structure, or even existence of the central bank may force central bankers to comply with politically motivated demands on monetary policy (Lohmann 1998).

Overall, to systematically influence the overall inflation rate, governments require control of monetary policy instruments. Since central banks are responsible for the conduct of monetary policy, it follows that differences in central bank organization imply variance in the ability of office holders to manipulate the inflation rate. As a result, the ability of governments to pursue distinctive partisan policies and to generate favorable outcomes of the inflation rate is *contingent on the organization of central banking institutions*, most notably central bank independence. Accordingly, the conventional logic and predictions of partisan theories of the macro economy should hold only in countries where the central bank is under political control, i.e. dependent.<sup>9</sup>

#### *Recent empirical evidence*

Recent empirical studies for OECD countries, however, do not suggest that leftist governments have pursued more expansionary monetary policies than rightwing governments. In contrast, interest rates were often found to be higher under leftwing than rightwing governments. Table 1 summarizes the results of the most recent studies on partisan monetary policy. During the last 13 years, only a few panel data studies were published. Among the single-country studies, investigations for the U.S. and Germany dominate. 19 out of 24 studies reported in Table 1 found supporting evidence of ideological impacts on monetary policy in one way or the other.

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<sup>9</sup> Other recent research has begun to rectify this oversight. Particularly notable are Alesina and Summers (1993), Clark and Reichert (1998) and Franzese (1999).

The total number of 24 studies in the field implies that quantitative analyses of the effects of partisanship on monetary instruments have been relatively scarce (Boix 2000, p. 44).

In the following, we briefly discuss the findings of three important studies on partisan monetary policy in OECD countries. Clark (2003) examines the impact of left-labor power on interest rates in a panel of (a maximum of) 14 OECD countries and finds that left-labor power was associated with higher, not lower, interest rates. Boix (2000) evaluates the impact of socialist control of government and organizational power of labor on short-term real interest rates in advanced nations in the period 1961-1994. The evidence he gains is mixed and depends on the sample and the specification chosen. Some of his results suggest that central banks under leftist governments increased short-term real interest rates compared to rightwing governments.

Sakamoto (2008) analyses panel data for 18 OECD countries in the period 1960-2001 and distinguishes between leftwing, rightwing and center governments respectively by different variables. His basic results (p. 154) suggest that leftist governments had a somewhat looser monetary policy<sup>10</sup>, whereas the coefficients of rightwing and center governments are statistically insignificant. Interacting the leftwing government dummy and central bank independence, however, suggests that leftist governments under independent central banks produced the tightest monetary policy. “This suggests that central banks may have tightened monetary policy to offset the left’s expansionary policy (remember that left governments’ fiscal policy was expansionary when they faced independent central banks in the 1960s and 1970s)” (Sakamoto 2008, p. 228). In addition, interacting the rightwing government dummy and central bank independence, suggests that rightwing governments under independent central banks implemented a loose (expansionary) monetary policy (p. 240).

These three studies, however, employ annual data. This is a serious shortcoming because central bank interest rates are volatile and can change remarkably per year. For this reason, more

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<sup>10</sup> His dependent monetary policy variable is calculated as “discount rates minus Taylor-rule implied discount rates” See Sakamoto (2008), p. 90.

credible empirical set-ups are required in order to examine whether leftist governments have implemented expansionary monetary policies in OECD countries.

### **3. Data and empirical strategy**

#### **3.1 Data**

We use data provided by the OECD Economic Indicators (2008). The data set contains quarterly data for short term nominal interest rates of potentially 23 OECD countries. The countries included are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom and the USA. The potential observation period runs from 1970.1 to 2007.4. The time dimension of our panel, however, is strongly diminished due to missing quarterly data on the output gap and on central bank independence. Hence, we end up with a panel containing 15 OECD countries in the period 1980.1 to 2005.4. The countries included in this sample are Australia, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Japan, the Netherlands, Norway, New Zealand, Sweden and the USA. Figure 1 illustrates the short term nominal interest rates and Table 2 provides the descriptive statistics of the variables and the respective data sources.

#### **3.2 The empirical model and variables**

##### *Empirical model*

We start from the usual baseline specification of the Taylor rule concept.<sup>11</sup> The variables included in this specification usually are the short-term interest rate, the domestic inflation rate

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<sup>11</sup> Taylor (1993a,b) has shown that the actual monetary policy stance of the U.S. Federal Reserve, as measured by the level of the federal funds rate (the overnight inter-bank lending rate), is well emulated by a simple rule, based on two macroeconomic variables: the deviations of the rate of inflation from its target (usually assumed to be 2 percent) and the output gap (the percentage deviation of real GDP from its potential value under the assumption of full-employment). This is consistent with the Fed's objectives "to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates" (BGFRS, 1994). Other things equal, a rise in the inflation rate calls for a tightening of the Fed's policy stance (i.e., an increase in the Federal Funds Rate). A rise in the

and the output gap. The parameters  $\varphi$  and  $\phi$  in equation (1) reflect the long-run weight of the variables output gap and the inflation rate, respectively, while the parameter  $\rho$  describes the extent of interest rate smoothing chosen by monetary policy. Following the related studies on Taylor Rule specifications, the money market rate is used to approximate the relevant policy rate. As usual, we base our output gap and inflation rate variables on time series which are measured ex post for period  $t$ .

In practice, it is usually observed that, especially since the early 1990s, central banks worldwide tend to move policy interest rates in small steps without reversing their direction quickly (Amato and Laubach 1999, Castelnuovo 2003, and Rudebusch 2002). To incorporate this pattern of interest rate smoothing, the Taylor rule itself is viewed as the mechanism by which the target interest rate is determined. The actual interest rate partially adjusts to this target according to  $i_t = (1 - \rho) \cdot i^* + \rho \cdot i_{t-1}$ , where  $\rho$  is the smoothing parameter. For this reason, our panel data model has the following appearance:

$$\begin{aligned} (1) \quad \text{Short term interest rate}_{it} = & \alpha \text{Ideology}_{it} + \beta \text{CBD}_{it} + \gamma \text{Ideology}_{it} * \text{CBD}_{it} \\ & + \phi \text{Inflation}_{it} + \varphi \text{Output gap}_{it} + \rho \text{Short term interest rate}_{it-1} \\ & + \eta_i + \epsilon_t + u_{it} \end{aligned}$$

with  $i=1, \dots, 15$ ;  $t=1, \dots, 104$ ,

where the dependent variable Short term interest rate<sub>it</sub> denotes the short term nominal interest rate. Ideology<sub>it</sub> describes the ideological orientation of the respective government and

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output gap also calls for a tightening in the Fed's policy stance (i.e., an increase in the Federal Funds Rate) as the positive output gap is unsustainable without incurring acceleration in the inflation rate.

Accumulated evidence that the Fed reacts to inflation and unemployment considerations is hardly surprising, but the consistency over time of the apparent implicit or explicit adherence to a Taylor rule over a wide range of targeting procedures (e.g., monetary aggregates or interest rates) is striking (Orphanides 2003). Orphanides (2003), p. 984, notes that this historical consistency makes the Taylor rule a "useful organizing device for interpreting past policy decisions and mistakes...".



$CBD_{it}$  captures the degree of central bank dependence. In the next paragraphs we describe these variables and their coding in detail. We include the interaction term of government ideology and central bank dependence in order to identify potential differences between leftwing and rightwing governments facing high central bank dependence. As mentioned above, we follow the related literature on Taylor rule specifications by including the inflation rate ( $Inflation_{it}$ ), the output gap ( $Output\ gap_{it}$ ), and the lagged dependent variable (Short term interest rate $_{it-1}$ ). Finally,  $\eta_i$  represents a (potential) fixed country effect,  $\epsilon_t$  is a fixed period effect and  $u_{it}$  describes an error term – all with the usual properties.

### *Variables*

#### *Ideology variable (“Ideology”)*

An important challenge for testing the impact of government ideology in an OECD panel is the heterogeneity of the parties and parliamentary systems in the individual nation states. Hence, the question is which governments should be labeled leftwing or rightwing – especially when there are more than two parties in the government with different ideological roots. We employ the government ideology index by Potrafke (2009). It is based on the index on governments’ ideological positions by Budge et al. (1993) which has been updated by Woldendorp et al. (1998, 2000). This index places the cabinet on a left-right scale with values between 1 and 5. It takes the value 1 if the share of governing rightwing parties in terms of seats in the cabinet and in parliament is larger than 2/3, and 2 if it is between 1/3 and 2/3. The index is 3 if the share of centre parties is 50 percent, or if the leftwing and rightwing parties form a coalition government not dominated by one side or the other. The index is symmetric and takes the values 4 and 5 if the leftwing parties dominate. Adopting this classification, Potrafke (2009) introduces an index for the examined countries in the period till the beginning of this millenium. Potrafke’s (2009) coding, however, explicitly refers to the left-right-scale of the parties. This indicator is consistent across time but does not attempt to capture differences between the party-families across countries. Quarters in which the government changed are labelled according to

the government that was in office for a longer period. It is important to note that our way of coding of the ideology variable gives rise to the expectation *that short term interest rates vary negatively with the ideology index*. Hence, we expect the estimated coefficient  $\alpha$  in eq. (1) to display a negative sign.

#### *Central bank dependence variable (CBD)*

Government ideology is only expected to influence short term interest rates when central banks are subject to directives. The common empirical indicators, however, measure central bank *independence* rather than central bank dependence. In order to be in line with the coding of our ideology index, our framework requires an empirical indicator that increases *with central bank dependence*. This interaction term of an increasing ideology (leftwing government) and central bank dependence is expected to have a *negative impact on short term interest rates*. For this reason, we apply the *inverse* of a central bank independence indicator. Here, we use the overall index developed by Klomp and De Haan (2008) that is time-variant and takes on values between 0 and 1 (total CBI turnover).<sup>12</sup> Klomp and De Haan (2008) use the scores of Arnone et al. (2007) and the assignment of the CBI values across the years by Acemoglu et al. (2008). Moreover, they calculate CBI turnover on the basis of the data delivered by Dreher, Sturm and De Haan (2008). In accordance with partisan theory, we expect a negative sign of the estimated coefficient  $\beta$  of the CBD variable in eq. (1).

#### *Interaction variable*

We finally include the interaction term  $\text{Ideology}_{it} * \text{CBD}_{it}$  in order to examine the effect of government ideology conditional on different values for central bank dependence (Friedrich 1982). We normalize both interacted variables (mean zero, variance one), so that we can directly interpret the coefficients and marginal effects across the specifications. The estimated coefficient

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<sup>12</sup> For a discussion on the definition of central bank independence see, for example, Hayo and Hefeker (2002) and Siklos (2008).

of the interaction term between ideology and central bank dependence is also expected to be negative.

#### *Estimation method*

We now turn to discussing our choice of the panel data estimation methods. First, we implement heteroskedastic and autocorrelation consistent (HAC) Newey-West type (Newey and West 1987) standard errors and variance-covariance estimates, because the Wooldridge test (Wooldridge 2002, pp. 176-177) for serial correlation in the idiosyncratic errors of a linear panel-data model implies the existence of arbitrary serial correlation. Moreover, in the context of dynamic estimation, the common fixed-effect estimator is generally biased. It is important to note that the Nickell-Bias with size  $1/T$  is ignorable in our case with  $T$  equal to about 100 and that the GMM-estimators are biased for small  $N$ , so that we do not apply them in the current framework with  $N=15$ .

## **4. Estimation Results**

Table 3 illustrates the regression results for the basic Taylor rule specification and reports the coefficients and t-statistics (in absolute terms) for every single equation. Compared to a regression with a common constant, we can reject the null hypothesis of the F-Test that all the fixed time and country effects are zero. Furthermore, we cannot reject the Hausman-Test in favour of the random effects model. Hence, in this case, the *random effects* estimator is efficient as well as consistent. Columns (3) and (4) refer to the model including a lagged dependent variable.

The control variables display the expected sign and their impact is robust across the different econometric specifications in columns (1) and (2), and (3) and (4), respectively. The positive impact of the inflation rate and the output gap are *in line with the theoretical predictions of the Taylor rule*. Our results in columns (1) and (2) suggest that the short term interest rate increases by about two points when the inflation rate increases by one point and the short term interest rate

increases by about 0.05 points when the output gap increases by about one point. It is important to note that the general Taylor rule theoretically predicts the impact of the inflation rate on the short term nominal interest as 1.5 and the impact of output gap on the short term nominal interest rate as 0.5.<sup>13</sup> The numerical impact of the inflation rate suggested by our empirical model, however, dramatically drops down (as is well-known from other studies of the Taylor rule) when the lagged dependent variable is included, although the coefficient of the inflation rate remains statistically highly significant. The lagged dependent variable is highly statistically significant itself and its coefficients imply that short term nominal interest rates are strongly persistent. Overall, our specification of the Taylor reaction function provides a *suitable benchmark* for our further investigations.

Table 4 reports the regression results when the *ideology variable* is included. The impact of the ideology variable dramatically differs depending on the inclusion of the lagged dependent variable. The regression in column (1) without a lagged dependent variable suggests that central banks if opposed to a leftist government strongly raised short term interest rates. The coefficient implies that an increase of the ideology variable by one point – say from 3 (leftwing and rightwing parties in government) to 4 (leftwing government) – increases the short term nominal interest rate by about 0.37 points. This effect vanishes when the lagged dependent variable is included. In any case, the basic result that central banks which are accompanied by leftist governments implemented a restrictive monetary policy directly contradicts the implications of the partisan theory at first glance.

This potential impact of government ideology on monetary policy, however, has to be validated by the *interaction* with central bank dependence. Table 5 illustrates the results of the

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<sup>13</sup> Since it is the real interest rate which actually drives private decisions, the size of  $\phi$  needs to assure that – as a response to a rise in inflation – the nominal interest rate is raised sufficiently to actually increase the real interest rate. This so-called Taylor principle implies that the coefficient  $\phi$  has to be larger than one (Taylor 1999, and Clarida, Gali and Gertler 1998). If not, self-fulfilling bursts of inflation may be possible (see e.g., Bernanke and Woodford 1997, Clarida, Gali and Gertler 1998, 2000, Woodford 2001). For monetary policy to have a stabilising impact on output, a less restrictive condition has to be fulfilled, i.e.  $\phi$  is expected to be positive.

model including government ideology, central bank dependence and its interaction. Column (1) refers to the model without a lagged dependent variable whereas the lagged dependent variable is included in the specification (2).

The marginal effects of the ideology variable have to be interpreted conditionally on the interaction with central bank dependence. In principle, there are two sensible ways to evaluate the marginal effects (Jaccard and Turrisi 2003). We follow Dreher and Gassebner (2007), evaluating the marginal effects at the minimum as well as the maximum of the interacted variable, i.e. central bank dependence. Using this method we are able to distinguish between the impacts of government ideology on short term interest rates when central bank dependence was high and low. Alternatively, one can choose to evaluate the marginal effects at the average level of central bank dependence. Table 6 implies that interpreting the marginal effect of government ideology at the *average* level of central bank dependence perfectly corresponds with the simple models reported in Table 4. Central banks if joined by leftist governments are suggested to *increase* short term nominal interest rates (column 1, model without lagged dependent variable). This finding is in line with previous results by Boix (2000), Clark (2003) and Sakamoto (2008). The marginal effects presented in Table 6 can be interpreted as follows: At the average level of central bank dependence an increase of the ideology variable by one point – say from 3 (leftwing and rightwing parties in government) to 4 (leftwing government) – increases the short term nominal interest rate by about 0.23 points (column 1). In contrast, the results suggest that government ideology had *no effect* on short term nominal interest rates when central bank dependence was high, i.e. at its *maximum*. Government ideology (leftwing) has had a statistically strongly significant positive impact on short term nominal interest rates when central bank dependence was low, i.e. at its minimum.

We have examined the robustness of our results in several ways. For example, the reported effects could be driven or mitigated by idiosyncratic circumstances in the individual countries. We have therefore tested whether the results are sensitive to the inclusion/exclusion of

particular countries. The marginal effect of government ideology at a maximum level of central bank dependence turns to be negative but still statistically insignificant when Iceland, New Zealand and Sweden are excluded. Hence leftist governments did not appear to have pursued expansionary monetary policies in these countries. In contrast, the marginal effect appears to be positive but still statically insignificant in specification (2) when Ireland and Japan are excluded. Furthermore, the overall positive impact of leftist governments on the short-term nominal interest rate in the model without lagged dependent variable is not sensitive to the inclusion/exclusion of particular countries.

As a further robustness test, we have estimated sub samples to address sovereignty losses in monetary policy of the Eurozone countries after 1999 due to the European monetary Union (EMU). Our inferences do not change at all compared to Table 6, when we estimate, for example, our models for the period 1980.1. to 1998.4.

## **5. Discussion**

The result that short term nominal interest rates were higher under leftist governments is highly compatible with the findings by Sakamoto (2008: 215). He comes to the following conclusion: Leftist governments “had to move their economic policies farther away from their traditional positions toward the right to make their policy more market-conforming. This potential for policy conflict led them to seek to make a market-conforming policy shift by delegating monetary policy to central banks (Bernhard, 2002). They used independent central banks to make a neoliberal policy shift and fiscal austerity palatable to their pro-intervention and pro-welfare constituencies.”

In a similar vein, (Crowe 2008, p. 749) concludes that: “The motive for delegating the monetary policy decision to a fully (goal-)independent central bank is that it removes the intracoalition conflict over monetary policy from the political arena”. This interpretation of our results is also corresponds with Hughes Hallett (2008) who finds that, despite the rhetoric, central

banks do not attempt to punish or discipline fiscally expansionary governments. Moreover, leftwing parties themselves might have an interest in maintaining central bank independence because a central bank that is believed to be neutral is a better 'scapegoat' for the stabilization recession after their expansions (Kane 1980 and Vaubel 1997a, pp. 222f.).

The two characteristics of the traditional partisan monetary policy hypothesis - activist monetary policy (i.e., monetary surprises) as the driving force, and control of monetary policy by politicians – do not fit with central-bank behavior. Countries, for which ideological cycles have been corroborated, as e.g. Germany, are quite often countries with highly independent central banks. Hence, the traditional partisan theory view of monetary policy as being dictated by politicians does not appear to be convincing (Drazen 2000, pp. 95f.) and it is not validated by our estimation.

According to the more traditional partisan view, a further potential explanation for our results might be that conservative central bankers have counteracted any attempts of expansionary policies under leftist governments. Empirical studies on partisan effects in fiscal policy, however, show that rightwing governments did not pursue more restrictive fiscal policies than leftwing governments. It is important to note that we cannot address this issue empirically directly by estimating, for example, a simultaneous equation model that also includes an equation on fiscal policy issues. That is why we criticize the existing literature for employing annual data and use quarterly data instead to address the volatility of the short term nominal interest rates. Quarterly data on fiscal policy indicators such as government debt are not available.

Our findings also appear to be in line with current research by Eijffinger and Hoeberichts (2008) who analyze the trade-off between central bank independence and conservatism within the New Keynesian framework following Woodford (2003) and others. They conclude that the trade-off between central bank independence and conservatism still holds within the New Keynesian framework. Politicians should therefore realize that their attempts to downgrade a central bank's independence legally and verbally will only increase its conservatism in order to

maintain the same inflationary bias and limit the central bank's degrees of freedom with respect to its interest rate policy. Eijffinger and Hoeberichts (2008) argue *that a Thomas Becket effect is likely to occur after a reduction of central bank independence*. According to this effect new members of the central bank council alter their behaviour after their appointment and, thus, become as averse to inflation as older members (Berger and Woitek 1997, p. 809, Goehlmann and Vaubel 2007, p. 938).

In conclusion, our results suggest doubt about the influence of government ideology on monetary policy. In fact, central banks appear to be most important policy makers in monetary policy. For this reason, central bankers may well play a crucial part in future policy debates.

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Table 1. Empirical tests of partisan monetary policy from 1995 to 2009 - a survey

| Author(s)<br>Policy instrument<br>Country/estimation<br>period/periodicity  | Specification<br>Econometric method  | Supporting evidence  |
|---|--|--|
| <b>Panel data studies</b>   |  |  |
| <ul style="list-style-type: none"> <li><i>Alesina, Roubini and Cohen (1997)</i></li> <li>Yearly rate change of M1, short- and long-term interest rates and real interest rates</li> <li>OECD countries, democracies/1960-1993 and without Bretton Woods: 1973-1993/quarterly</li> </ul> | <ul style="list-style-type: none"> <li>OLS panel estimation</li> <li>Search for permanent partisan effects (all instruments) and temporary partisan effects (real interest rate)</li> <li>Growth rate of the money supply and the level of short- and long-term interest rates should be higher (lower) during a leftwing administration.</li> </ul>   | <ul style="list-style-type: none"> <li>Money growth rates (short- and long-run interest rates) are higher (lower) during a leftwing administration.</li> <li>Steady state: yearly difference in the money supply growth rate (short-run interest rate ,long-run interest rate) between a left- and a rightwing administration is around 2.4 (2.5, 3.0) percent.</li> <li>But no temporary rational partisan impact on real interest rates<br/>+</li> </ul> |
| <ul style="list-style-type: none"> <li><i>Bearce (2003)</i></li> <li>Indicator of monetary policy autonomy measured in terms of an interest rate differential vis-à-vis the rest of the world</li> <li>22 OECD countries/1975-1992/annual</li> </ul>                                    | <ul style="list-style-type: none"> <li>Panel estimation</li> <li>Beck/Katz (1996) estimation technique correcting for both panel heteroskedasticity and spatial (contemporaneous) autocorrelation.</li> <li>Prais-Winsten coefficients with panel-corrected standard errors (PCSE)</li> <li>Leftist (rightist) governments, representing the domestically oriented (internationally oriented) groups in society, should be associated with more (less) monetary autonomy.</li> </ul>   | <ul style="list-style-type: none"> <li>Leftist-led governments opt for greater monetary autonomy, as demanded by their domestically oriented societal principals, than would be expected given current business cycle conditions.</li> <li>Sectoral and factorial monetary policy preferences<sup>'''</sup> do matter for monetary and exchange-rate policy outcomes<br/>+</li> </ul>  |
| <ul style="list-style-type: none"> <li><i>Baix (2000)</i></li> <li>Short-term real interest rate (government bond yields)</li> <li>19 OECD countries/1960-1993/annual</li> </ul>  | <ul style="list-style-type: none"> <li>Pooled cross-sectional time-series model through the Beck-Katz (1996) method of ordinary least squares, adjusting the standard errors for unequal variation within panels</li> <li>Introducing a lagged endogenous variable and correcting for autocorrelation.</li> <li>Socialist control of government is calculated as <math>SC*(1-CBI)</math></li> <li>The interactive term <math>SOC*LABORG</math> measures the presence of social democratic corporatist regimes, that is, socialist governments</li> </ul> | <ul style="list-style-type: none"> <li>Monetary policy did not vary as a result of partisanship alone but it required the presence of some kind of coordination with trade unions<br/>+</li> </ul>   |
| <ul style="list-style-type: none"> <li><i>Clark (2003)</i></li> <li>Interest rate</li> <li>14 OECD countries if conditioning is on degree of trade openness or capital market openness, 12</li> </ul>   | <ul style="list-style-type: none"> <li>OLS panel estimation according to Beck and Katz (1996) without Prais-Winsten correction, since no evidence of serial correlation</li> <li>Regression equation includes additional control variables expected to influence monetary</li> </ul>   | <ul style="list-style-type: none"> <li>Left-labor power coefficients conditional on degree of trade and on capital market openness significant with the expected negative sign.<br/>+</li> <li>Other conditional left-labor</li> </ul>   |

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| OECD countries<br>else/1966-1990/annual  | <ul style="list-style-type: none"> <li>policy.</li> <li>Effect of left-labor power on macroeconomic policy conditioned upon the degree of trade, capital market openness, the degree of capital-market liberalization and the exchange rate regime</li> </ul>   | <ul style="list-style-type: none"> <li>power coefficients insignificant</li> <li>Pure left-labor power, however, significant with a positive sign.</li> <li>-</li> </ul>  |
| <ul style="list-style-type: none"> <li><i>Cusack (2001)</i></li> <li>Discount rate</li> <li>14 OECD countries/1961-1994/annual</li> </ul>  | <ul style="list-style-type: none"> <li>Taylor rule specification</li> <li>OLS with panel-corrected standard errors</li> <li>Checking for the role of partisanship as contingent on the independence of the central bank and of political non-neutrality of central bank decision makers</li> <li>Pooled cross-section time-series design</li> </ul>   | <ul style="list-style-type: none"> <li>Little support for the view that central bank independence inhibits partisan influences</li> <li>Support for the thesis that central banks are “politically non-neutral”</li> <li>-</li> </ul>   |
| <ul style="list-style-type: none"> <li><i>Mukherjee and Singer (2008)</i></li> <li>Inflation target: dichotomous measure that takes the value of 1 if a country has formally adopted a numerical target for inflation, and 0 otherwise</li> <li>78 countries/1987-2003/annual</li> </ul> | <ul style="list-style-type: none"> <li>Spatial AR probit model on entire sample of countries</li> <li>Divide global sample into OECD and non-OECD subsamples and test hypotheses within each group</li> <li>Drop all twelve Eurozone countries from sample from 1999 onward</li> <li>Likelihood that an inflation targeting regime is adopted will increase under a right-leaning government if the central bank does not have bank regulatory responsibilities</li> </ul>  | <ul style="list-style-type: none"> <li>Combined effect of a right-wing incumbent and a nonregulatory central bank increases the likelihood of adopting and maintaining an inflation target.</li> <li>+</li> </ul>   |
| <ul style="list-style-type: none"> <li><i>Sakamoto (2008)</i></li> <li>Cyclically adjusted monetary policy stance by central banks (discount rates minus Taylor-rule implied discount rates)</li> <li>18 industrial democracies/1961-2001/annual</li> </ul>                              | <ul style="list-style-type: none"> <li>Dynamic panel regressions of (the level of) monetary policy stance on (the level of) political-economic variables and economic controls</li> <li>OLS estimates with panel-corrected standard errors and country and period dummies</li> <li>Separate regressions for 1961-1981/1982-2001/1961-2001</li> <li>Check for significance of three separate government partisanship variables which measure cabinet portfolios and, additionally, of ...</li> <li>the same variables interacted with an indicator of central bank independence</li> </ul> | <ul style="list-style-type: none"> <li>Monetary policy under left governments is loose</li> <li>Monetary policy under right governments might be tight</li> <li>Combination of left governments with independent central bank produces tight monetary policy</li> <li>Combination of right governments with independent central bank produces loose monetary policy</li> <li>+</li> </ul> |
| <b>U.S.</b>  |   |   |
| <ul style="list-style-type: none"> <li><i>Abrams and Iossifov (2006)</i></li> <li>Quarterly average of the Federal Funds Rate</li> <li>U.S./ 1957-2004/quarterly</li> </ul>  | <ul style="list-style-type: none"> <li>Taylor reaction function with interest rate smooting</li> <li>OLS and White correction for heteroskedasticity</li> <li>Plus unreported GMM</li> <li>Check whether the Fed establishes an abnormally expansionary monetary policy in the run-up to the presidential election, but only if the incumbent president or party is from the party that initially appointed the Fed chair.</li> </ul>   | <ul style="list-style-type: none"> <li>Party affiliation of Federal Reserve chairmen matters for the monetary policy stance</li> <li>Finding of a partisan-based opportunistic political monetary cycle</li> <li>+</li> </ul>   |

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| <ul style="list-style-type: none"> <li>• <i>Caporale and Grier (1998)</i></li> <li>• Real Federal Funds rate</li> <li>• U.S./1961-1996/quarterly</li> </ul>   | <ul style="list-style-type: none"> <li>• Are changes in the real Fed Funds rate associated with changes in overseer preferences (e.g., those of the President and leaders of relevant committees)?</li> <li>• OLS</li> <li>• Heteroskedasticity and autocorrelation consistent t-statistics</li> </ul>  | <ul style="list-style-type: none"> <li>• Oversight by Republican presidents and relatively conservative Senate Banking Committee leadership is associated with tighter monetary policy +</li> </ul>   |
| <ul style="list-style-type: none"> <li>• <i>Corder (2006)</i></li> <li>• Federal funds rate</li> <li>• Real-time or “vintage” data for output and inflation measures</li> <li>• U.S./1965-2005/quarterly</li> </ul>   | <ul style="list-style-type: none"> <li>• Taylor reaction function</li> <li>• If adjustment parameters do not vary as the identity of elected officials changes, then the assumption of incumbent control is, at best, suspect.</li> <li>• Investigates whether the Fed responds more aggressively to inflation under a Republican President or if a Republican majority controls Congress and to a recession sooner and with lower interest rates if the President is a Democrat</li> </ul>   | <ul style="list-style-type: none"> <li>• Changes in the pivotal legislator (Morris, 2000) rather than the President alone, appointment to the Board, or the Board chairman influence monetary policy choices</li> <li>• Congress and the President jointly influence the policy choices of the Fed in ways that benefit the core constituencies of the major parties</li> <li>• Fed is systematically more responsive to inflation when a Republican controls the White House and the Congress +</li> </ul> |
| <ul style="list-style-type: none"> <li>• <i>Falaszchetti (2002)</i></li> <li>• Continuous dependent variable Voting score: the percentage of times an FOMC member dissented for tighter or looser policy in a given year and a polychotomous dependent variable Group</li> <li>• U.S./Panel of FOMC votes 1973-1997/intra-year</li> </ul> | <ul style="list-style-type: none"> <li>• Conventional least-squares dummy variable model if dependent variable is Voting score</li> <li>• Multinomial logit model if dependent variable is Group</li> <li>• Hypothesis 1: FRB governors who were nominated and confirmed by the same party prefer significantly looser monetary policy</li> <li>• Hypothesis 2: monetary policy is significantly looser when either party controls the oversight mechanism (i.e., the President and the Senate) than when control is fixed</li> </ul>       | <ul style="list-style-type: none"> <li>• Political agents from both parties prefer loose money</li> <li>• They face lower costs to act on this common preference when their parties are aligned +</li> </ul>  |
| <ul style="list-style-type: none"> <li>• <i>Faust and Irons (1999)</i></li> <li>• Three-month Treasury bill rate, M2(M1)</li> <li>• U.S./ 1953-1995/quarterly</li> </ul>  | <ul style="list-style-type: none"> <li>• Assessment of the importance of political variables in traditional macro models and to assess the role of the monetary policy channel in accounting for any political effects</li> <li>• Identified 4-variable VAR in order to avoid simultaneity bias and omitted variable bias</li> <li>• Check whether partisan variables (intercept and slope dummies) need to be included in the VAR, i.e. in monetary policy equation</li> <li>• Controlling for credit control and Bretton Woods</li> </ul> | <ul style="list-style-type: none"> <li>• Strong associations between party and aggregate measures of economic activity, but ...</li> <li>• Little evidence that the causal explanation of any political effects on the economy operates through changes in monetary policy</li> <li>• Little support for the view that empirical monetary models should include political variables -</li> </ul>  |
| <ul style="list-style-type: none"> <li>• <i>Galbraith, Giovannoni and Russo (2007)</i></li> <li>• Yield curve (difference between 10-year constant maturity rate</li> </ul>   | <ul style="list-style-type: none"> <li>• Four different versions of a Taylor reaction function</li> <li>• Newey and West (1987) procedure using the HAC modification of the covariance matrix which corrects</li> </ul>   | <ul style="list-style-type: none"> <li>• Presence of a serious partisan bias, at the heart of the Federal Reserve's policymaking process.</li> <li>• When a Republican</li> </ul>   |



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| <p>and three-month Treasury bill rate); movements in the term structure coincide exactly with movements in the discount rate</p> <ul style="list-style-type: none"> <li>• U.S./1984-2003/quarterly</li> </ul> | <p>for heteroscedasticity and autocorrelation of unknown form.</p> <ul style="list-style-type: none"> <li>• Examine whether the Federal Reserve's monetary policy has exhibited a pattern of partisan bias in presidential election years</li> <li>• Term structure is steeper and monetary policy more permissive in years when a Republican administration is seeking renewal than when it is not.</li> <li>• Term structure will be flatter and monetary policy more restrictive in years when a Democratic administration is seeking renewal</li> </ul>  | <p>administration is in office, the term structure in the pre-election year tends to be steeper, by values estimated at up to 150 basis points, and monetary policy is accordingly more permissive.</p> <ul style="list-style-type: none"> <li>• When a Democratic administration is in office, the term structure tends to be flatter, by values also estimated at up to 150 basis points, and monetary policy is more restrictive.</li> <li>• Federal Reserve systematically alters the term structure of interest rates, in advance of presidential elections, so as to assist Republicans and to harm Democrats, after controlling for the relevant economic variables.</li> </ul> <p>+</p> |
| <ul style="list-style-type: none"> <li>• <i>Gamber and Hakes (1997)</i></li> <li>• Change in the Federal Funds rate</li> <li>• U.S./1955.10-1992.12/monthly</li> </ul>  | <ul style="list-style-type: none"> <li>• Reaction function of Fed Funds rate including aggregate supply and demand shocks</li> <li>• Intercept and slope partisan dummies</li> </ul>   | <ul style="list-style-type: none"> <li>• During Democratic presidential regimes The Fed responds to aggregate shocks more vigorously in pre-election periods than in post-election ones</li> <li>• During Republican administrations monetary policy is more responsive to aggregate shocks in post-election periods</li> <li>• Monetary policy is more counter-cyclically activist under a Democrat administration than under a Republican one during pre-election periods</li> </ul> <p>+</p>   |
| <ul style="list-style-type: none"> <li>• <i>McGregor (1996)</i></li> <li>• Federal funds rate</li> <li>• U.S./1960-1987/349 regular meetings of the FOMC</li> </ul>   | <ul style="list-style-type: none"> <li>• Interest rate reaction function</li> <li>• Model explains the votes of 11 members and the interest rate selected at each FOMC meeting</li> <li>• Structural parameters of the model are estimated by maximum likelihood</li> <li>• Hypotheses tested using conventional statistics based on the likelihood function</li> <li>• Impact of Democratic Governors voting under Democratic Presidents, Republican Governors voting under Republican Presidents, Democratic Governors voting under Republican Presidents and Republican Governors voting under Democratic Presidents</li> </ul> | <ul style="list-style-type: none"> <li>• Democratic Governors prefer lower interest rates than traditional Republican Governors and supply-side (i.e., Reagan-appointed) Governors prefer even lower interest rates than democratic Governors.</li> <li>• Politically appointed Governors, taken as a group, prefer lower interest rates than the non-politically appointed Reserve Bank presidents</li> <li>• Controlling for the state of the economy and for the prevailing stance of monetary policy, both partisan ideologies and partisan</li> </ul>  |

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|   |  | loyalties appear to play an important role in the Governors' voting calculus +  |
| <ul style="list-style-type: none"> <li>• <i>Tempelman (2007)</i></li> <li>• Actual changes in the fed funds rate along with the FOMC's economic assessment</li> <li>• U.S./Volcker–Greenspan era (1979–2004)</li> </ul>                       | <ul style="list-style-type: none"> <li>• Narrative with permanent reference to Abrams and Iossifov (2006)</li> </ul>   | <ul style="list-style-type: none"> <li>• Long sample period used by Abrams and Iossifov (2006) obscures changes in trends during the period stemming from advances in macroeconomic theory and the implementation of monetary policy.</li> <li>• When one considers only the Volcker–Greenspan era (1979–2004), there is insufficient evidence to accept the notion of a political business cycle effect.</li> <li>-</li> </ul> |
| <b>Germany</b>  |  |   |
| <ul style="list-style-type: none"> <li>• <i>Berger and Woitek (1997a)</i></li> <li>• M1 and the Bundesbank discount rate</li> <li>• Germany/1950-1989/monthly</li> </ul>  | <ul style="list-style-type: none"> <li>• Multi-equation VAR models with and without an additional trend component to cope with non-stationarity</li> <li>• Dummy for exogenous changes in government ideology</li> <li>• Separate estimation for right-wing and leftwing periods</li> </ul>  | <ul style="list-style-type: none"> <li>• Almost no support for the predictions of the partisan school, neither in its non-rational (Hibbs) nor rational expectations versions (Alesina).</li> <li>• It appears that to reproduce the evidence reported by literature, in some cases the implications of non-stationarity have to be ignored.</li> <li>-</li> </ul>  |
| <ul style="list-style-type: none"> <li>• <i>Vaubel (1997a, 1997b)</i></li> <li>• At least partially seasonally adjusted monthly data for M1</li> <li>• Germany/federal election dates 1949-1994/monthly/seasonally unadjusted data</li> </ul> | <ul style="list-style-type: none"> <li>• Non-parametric tests as a way out of the dilemma that using moving averages of monetary aggregate does not distinguish between successive central bank regimes in a clear-cut way but the regime effects might have been swamped by control errors and noise in the data if month-to-month changes are used</li> <li>• 'Party preference hypothesis': Bundesbank tries to improve the electoral prospects of the government if the government commands a partisan majority in the central bank council, and it tries to prevent the government from being re-elected if the opposition parties have a partisan majority in the central bank council.</li> </ul> | <ul style="list-style-type: none"> <li>• Monetary expansion (M1) accelerates when the government has a political majority in the central bank council at the beginning of the pre-election period</li> <li>• Monetary expansion decelerates if the reverse is true</li> <li>+</li> </ul>  |
| <ul style="list-style-type: none"> <li>• <i>Berger and Woitek (1997)</i></li> <li>• Annualized M1 growth rate/ Bundesbank discount rate</li> <li>• Germany/1950-1989/monthly, seasonally adjusted</li> </ul>                                  | <ul style="list-style-type: none"> <li>• Policy instrument regressed on its own lagged value and a dummy variable active in certain periods before federal elections multiplied by the partisan position of the majority of 'political' members of the Bundesbank council towards the government</li> </ul>  | <ul style="list-style-type: none"> <li>• Time series analysis: results run counter to the Vaubel (2007) hypothesis.</li> <li>• Central bank council minutes: results point in the same direction.</li> <li>• Opportunistic government is better off facing an</li> </ul>  |

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|   | <ul style="list-style-type: none"> <li>• OLS</li> <li>• Robustness checks using M2, M3 changes</li> </ul>  | <p>ideologically opposing Bundesbank council majority than a supportive one before elections.</p> <p>+</p>   |
| <ul style="list-style-type: none"> <li>• <i>Berger and Woitek (2001)</i></li> <li>• Short-term (day-to-day) interest rate</li> <li>• Germany/1950–1996/daily</li> </ul>   | <ul style="list-style-type: none"> <li>• Test for PBC in Bundesbank monetary policy reaction function plus controls for the effects of fixed exchange rate regimes</li> <li>• Indirect test: changes in money demand prior to elections occurred because, when political parties have different inflation preferences and election results are uncertain, rational investors avoid entering long-term financial contracts before elections</li> </ul>  | <ul style="list-style-type: none"> <li>• Vaubel's (1997a) observation of central bank independence and political business cycles in German monetary aggregates</li> <li>• But no sign of a systematic decline of short-term interest rates before the election</li> <li>• Cycles originated from partisan and electoral uncertainty induced shifts in money demand that were tolerated by the Bundesbank, because the bank followed an interest rate policy rule.<sup>14</sup></li> </ul> <p>+</p>   |
| <ul style="list-style-type: none"> <li>• <i>Berger and Woitek (2005)</i></li> <li>• First part: change in the discount rate; second and third part: short-term (day-to-day) interest rate</li> <li>• First part: Germany/1948–1961/regular Bundesbank Council meetings, second and third part: Germany/1951:01–1998:12/monthly</li> </ul> | <p>First part</p> <ul style="list-style-type: none"> <li>• OLS regressions of the percentages of “no votes” by Council members nominated by conservative, social democratic and neutral Laender and federal governments on discount rate changes in percentage points</li> </ul> <p>Second part</p> <ul style="list-style-type: none"> <li>• Standard reaction function (TSLs estimation) for short-term interest rates, including monetary targets and dummy variables to capture the effect of different council regimes or majorities. Among them:</li> <li>• CONS = 1 whenever the number of conservative political votes in the Bundesbank Council exceeds 50%. Otherwise CONS=0.</li> <li>• Controls for periods of Bretton Woods and German unification.</li> </ul> <p>Third part</p> <ul style="list-style-type: none"> <li>• Structural VAR in annualized differences: is monetary policy conducted under conservative and non-conservative Bundesbank regimes different when interaction between interest rates and the determinants of monetary policy is taken into account?</li> <li>• Compares the impulses based on just identifying restrictions and generalized impulse responses to sudden inflationary pressure.</li> </ul> | <p>First part</p> <ul style="list-style-type: none"> <li>• Social democratic appointees especially seem to be more likely to resist upward than downward changes of the discount rate.</li> <li>• Conservatives in the Council cast their votes independently of the direction of the policy change.</li> <li>• Neutral members lean in the direction of the social democrats, but results are less clear.</li> </ul> <p>+</p> <p>Second part</p> <ul style="list-style-type: none"> <li>• Only in the case of CPI inflation is the conservative long-run coefficient significantly (at least at the 10% level) larger than the long-run coefficient under non-conservative regimes.</li> </ul> <p>+</p> <p>Third part</p> <ul style="list-style-type: none"> <li>• Conservatism mattered for the way the Bundesbank conducted monetary policy.</li> <li>• More conservative Council majorities reacted more aggressively to inflationary pressure than non-conservative majorities.</li> </ul> <p>+</p> |

<sup>14</sup> Interest-rate forecasts ranging far into post-election periods imply a weighted average of the inflation rates over all possible election results. Hence, financial investors cope with this uncertainty by trading longer-term assets for shorter-term assets and, thus, enlarging monetary aggregate just before election dates which looks like a political business cycle à la Nordhaus (1975).

| Other   |   |  |
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| <ul style="list-style-type: none"> <li>• <i>Efthyvoulou (2008)</i></li> <li>• Growth rates of M1 and M2, and two short-term interest rates (retail bank marginal lending rate) and 3-month treasury bill rate)</li> <li>• Cyprus/1978-2006/quarterly</li> </ul>       | <ul style="list-style-type: none"> <li>• Taylor rule specification</li> <li>• Maximum Likelihood - ARCH (errors normally distributed)</li> <li>• Test for significance of temporary and permanent partisan dummies</li> </ul>   | <ul style="list-style-type: none"> <li>• Left wing governments follow more expansionary monetary policies than right wing governments</li> <li>• Monetary growth aggregates and, to a lesser extent nominal interest rates, are systematically higher during left administrations<br/>+</li> </ul> |
| <ul style="list-style-type: none"> <li>• <i>Serletis and Afxentou (1998)</i></li> <li>• Monetary base</li> <li>• Canada/1926-1994/annual</li> </ul>   | <ul style="list-style-type: none"> <li>• Pre-testing with integration and cointegration tests</li> <li>• Examination of dynamic co-movements of the cyclical components of key target and instrument variables</li> <li>• Regressing the cyclical components of instrument variables against a list of partisan dummies</li> <li>• Check of robustness to alternative stationarity-inducing transformations of variables</li> </ul> | <ul style="list-style-type: none"> <li>• Party political dummies do not affect monetary policy variables<br/>-</li> </ul>  |
| <ul style="list-style-type: none"> <li>• <i>Ferris (2008)</i></li> <li>• Logarithm of the BoC bank rate/difference between the logarithm of the bank rate and the logarithm of the five-year yield on government bonds</li> <li>• Canada/ 1935–2006/annual</li> </ul> | <ul style="list-style-type: none"> <li>• Error correction model</li> <li>• Taylor reaction function with interest rate smoothing</li> <li>• Set of political variables to test for the partisan distinctiveness of electoral outcomes, PT and RPT dummies</li> </ul>  | <ul style="list-style-type: none"> <li>• Election of a Liberal party government positively influences the expansiveness of Canadian monetary policy<br/>+</li> </ul>   |

Note: Pluses (“+”) indicate that the cited studies found supporting evidence of ideological impacts on monetary policy while minuses (“-”) imply the opposite. Ambiguous results are marked by “+/-”.

Table 2. Descriptive statistics and data sources

| Variable                         | Obs  | Mean  | Std. Dev | Min    | Max   | Source                               |
|----------------------------------|------|-------|----------|--------|-------|--------------------------------------|
| Short term nominal interest rate | 1399 | 7.69  | 4.84     | 0.03   | 37.67 | OECD Main Economic Indicators (2008) |
| Ideology                         | 1399 | 2.85  | 0.93     | 1      | 4     | Potrafke (2009)                      |
| Central bank dependence          | 1399 | 0.45  | 0.23     | 0.06   | 0.81  | Klomp and de Haan (2008)             |
| Inflation (CPI growth)           | 1399 | 0.92  | 0.98     | -1.93  | 8.54  | OECD Main Economic Indicators (2008) |
| Output gap                       | 1399 | -0.65 | 2.61     | -12.31 | 7.97  | OECD Main Economic Indicators (2008) |

Table 3. Regression results. Basic Taylor Rule.

Dependent Variable: Short-term nominal interest rate.

Heteroskedastic and autocorrelation consistent (HAC) Newey-West type standard errors.

|                           | (1)                  | (2)                  | (3)                  | (4)                  |
|---------------------------|----------------------|----------------------|----------------------|----------------------|
|                           | FGLS                 | FGLS                 | FGLS                 | FGLS                 |
| Inflation                 | 1.8275***<br>[8.94]  | 1.9707***<br>[8.89]  | 0.5535***<br>[4.08]  | 0.5841***<br>[4.13]  |
| Output gap                | 0.0536**<br>[2.09]   | 0.0376<br>[1.39]     | 0.0618***<br>[3.77]  | 0.0447***<br>[2.75]  |
| Lagged dependent variable |                      |                      | 0.7604***<br>[14.36] | 0.8231***<br>[18.92] |
| Constant                  | 9.6155***<br>[11.08] | 9.2393***<br>[10.80] | 2.0834***<br>[3.28]  | 1.4797**<br>[2.16]   |
| Fixed Country Effects     | Yes                  | No                   | Yes                  | No                   |
| Fixed Period Effects      | Yes                  | Yes                  | Yes                  | Yes                  |
| Observations              | 1459                 | 1459                 | 1459                 | 1459                 |
| Number of N               | 15                   | 15                   | 15                   | 15                   |
| R-Squared (overall)       | 0.81                 |                      | 0.94                 |                      |

Notes: Absolute value of t statistics in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 4. Regression Results. Taylor Rule. Ideology included.

Dependent variable: short-term nominal interest rate.

Heteroskedastic and autocorrelation consistent (HAC) Newey-West type standard errors.

|                           | (1)                 | (2)                  |
|---------------------------|---------------------|----------------------|
|                           | FGLS                | FGLS                 |
| Ideology                  | 0.3696***<br>[5.86] | 0.0423<br>[1.29]     |
| Inflation                 | 1.8721***<br>[8.33] | 0.5786***<br>[4.10]  |
| Output gap                | 0.0460*<br>[1.70]   | 0.0456***<br>[2.79]  |
| Lagged dependent variable |                     | 0.8213***<br>[18.68] |
| Constant                  | 9.9678***<br>[9.10] | 1.3992**<br>[2.09]   |
| Fixed Country Effects     | No                  | No                   |
| Fixed Period Effects      | Yes                 | Yes                  |
| Observations              | 1459                | 1459                 |
| Number of N               | 15                  | 15                   |

Notes: Absolute value of t statistics in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 5. Regression results. Ideology and central bank dependence interacted (normalized)  
Dependent variable: short-term nominal interest rate.  
Heteroskedastic and autocorrelation consistent (HAC) Newey-West type standard errors.

|                                   | (1)                 | (2)                  |
|-----------------------------------|---------------------|----------------------|
|                                   | FGLS                | FGLS                 |
| Ideology                          | 0.2324***<br>[3.88] | 0.0233<br>[0.77]     |
| Central bank dependence           | 0.7259***<br>[9.47] | 0.1784***<br>[3.94]  |
| Ideology* Central bank dependence | -0.0872<br>[1.41]   | -0.0509*<br>[1.68]   |
| Inflation                         | 1.8657***<br>[7.94] | 0.5611***<br>[3.73]  |
| Output gap                        | 0.0959***<br>[3.60] | 0.0569***<br>[3.56]  |
| Lagged dependent variable         |                     | 0.8171***<br>[16.59] |
| Constant                          | 9.0713***<br>[8.65] | 0.7633<br>[1.52]     |
| Fixed Country Effects             | No                  | No                   |
| Fixed Period Effects              | Yes                 | Yes                  |
| Observations                      | 1399                | 1396                 |
| Number of N                       | 15                  | 15                   |

Notes: Absolute value of t statistics in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 6. Marginal Effects of government ideology (leftwing) at a minimum, average and maximum level of central bank dependence (normalized)

|                             | (1)                | (2)                |
|-----------------------------|--------------------|--------------------|
| <b>Minimum</b><br>CBD(0.06) | 0.382***<br>[4.11] | 0.111***<br>[2.85] |
| <b>Average</b><br>CBD(0)    | 0.232***<br>[3.88] | 0.023<br>[0.77]    |
| <b>Maximum</b><br>CBD(0.81) | 0.096<br>[0.70]    | -0.057<br>[0.79]   |

Notes: Absolute value of t statistics in brackets (absolute values); \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Descriptive country statistics: short-term nominal interest rate

| Country     | Mean  | Std. Dev | # Obs |
|-------------|-------|----------|-------|
| Australia   | 9.58  | 4.64     | 104   |
| Canada      | 6.37  | 3.15     | 84    |
| Germany     | 4.43  | 2.29     | 59    |
| Denmark     | 6.50  | 3.30     | 84    |
| Finland     | 8.33  | 4.82     | 104   |
| France      | 7.44  | 3.99     | 104   |
| Ireland     | 7.38  | 4.22     | 88    |
| Iceland     | 11.31 | 7.64     | 72    |
| Italy       | 10.18 | 5.64     | 104   |
| Japan       | 3.59  | 3.24     | 104   |
| Netherlands | 5.66  | 2.70     | 104   |
| Norway      | 9.09  | 4.18     | 104   |
| New Zealand | 10.98 | 5.38     | 104   |
| Sweden      | 7.93  | 4.10     | 96    |
| USA         | 5.31  | 2.30     | 84    |
| Total       | 7.69  | 4.84     | 1399  |

Descriptive country statistics: ideology (leftwing)

| Country     | Mean | Std. Dev | # Obs |
|-------------|------|----------|-------|
| Australia   | 2.97 | 1.05     | 104   |
| Canada      | 2.98 | 1.26     | 84    |
| Germany     | 2.98 | 1.01     | 59    |
| Denmark     | 2.67 | 0.84     | 84    |
| Finland     | 2.85 | 0.36     | 104   |
| France      | 3.12 | 1.00     | 104   |
| Ireland     | 2.35 | 0.48     | 88    |
| Iceland     | 2.40 | 0.49     | 72    |
| Italy       | 2.98 | 0.64     | 104   |
| Japan       | 2.13 | 0.33     | 104   |
| Netherlands | 2.83 | 0.86     | 104   |
| Norway      | 3.08 | 1.00     | 104   |
| New Zealand | 2.82 | 1.16     | 104   |
| Sweden      | 3.69 | 0.73     | 96    |
| USA         | 2.76 | 0.98     | 84    |
| Total       | 2.85 | 0.93     | 1399  |

Descriptive country Statistics: Central bank dependence

| Country     | Mean | Std. Dev | # Obs |
|-------------|------|----------|-------|
| Australia   | 0.41 | 0.03     | 104   |
| Canada      | 0.34 | 0.03     | 84    |
| Germany     | 0.14 | 0.03     | 59    |
| Denmark     | 0.37 | 0.13     | 84    |
| Finland     | 0.56 | 0.33     | 104   |
| France      | 0.31 | 0.25     | 104   |
| Ireland     | 0.43 | 0.18     | 88    |
| Iceland     | 0.53 | 0.18     | 72    |
| Italy       | 0.54 | 0.23     | 104   |
| Japan       | 0.60 | 0.03     | 104   |
| Netherlands | 0.29 | 0.12     | 104   |
| Norway      | 0.67 | 0.15     | 104   |
| New Zealand | 0.65 | 0.12     | 104   |
| Sweden      | 0.50 | 0.28     | 96    |
| USA         | 0.25 | 0.00     | 84    |
| Total       | 0.45 | 0.23     | 1399  |

Figure 1. Short term nominal interest rates. 15 OECD countries. 1980.1.-2005.4.

