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## Does government ideology matter in monetary policy? A panel data analysis for OECD countries

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## Discussion Papers

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A Panel Data Analysis for OECD Countries

Ansgar Belke and Niklas Potrafke

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# Does government ideology matter in monetary policy?

## A panel data analysis for OECD countries

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### **Abstract**

This paper examines whether government ideology has influenced monetary policy in OECD countries. We use quarterly data in the 1980.1-2005.4 period and exclude EMU countries. Our Taylor-rule specification focuses on the interactions of a new time-variant index of central bank independence with government ideology. The results show that leftist governments have somewhat lower short-term nominal interest rates than rightwing governments when central bank independence is low. In contrast, short-term nominal interest rates are higher under leftist governments when central bank independence is high. The effect is more pronounced when exchange rates are flexible. Our findings are compatible with the view that leftist governments, in an attempt to deflect blame of their traditional constituencies, have pushed market-oriented policies by delegating monetary policy to conservative central bankers.

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

**JEL Classification:** E52, E58, D72, C23

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## 1. Introduction

Many scholars have investigated how government ideology influences monetary policy instruments such as interest rates in OECD countries (e.g., Alesina, Roubini and Cohen 1997, Boix 2000, Clark 2003 and Sakamoto 2008). Politicians, however, do not have a direct influence on interest rates, but are subject to institutional restrictions, most notably central bank independence. Ideology-induced politicians can therefore manipulate interest rate policies only when central banks are not independent and subject to directives of the government. Some previous empirical research has dealt with this interaction between central bank independence and government ideology. In contrast to the predictions of the partisan theories, it transpires that leftist governments do not always conduct expansionary monetary policies: when central bank independence was high, interest rates have rather been higher under leftist governments. These previous studies have, however, several shortcomings such as: (1) employing annual data although interest rates are remarkably volatile, (2) choosing ad-hoc econometric frameworks, (3) not considering exchange rate regimes and (4) not considering that government ideology may also influence inflation and the output gap (Berger and Woitek 2005). This paper deals with these shortcomings to re-examine whether leftist governments have implemented more expansionary monetary policies than rightwing governments.

Our empirical strategy is to include government ideology, central bank (in)dependence and their interaction in a Taylor rule specification. We use a dataset containing quarterly data from 1980.1 to 2005.4 for 23 OECD countries excluding EMU countries, the government ideology index by Potrafke (2009), the new time-variant index on central bank (in)dependence by Arnone et al. (2007) and Klomp and de Haan (2009), and the exchange rate regime data proposed by Reinhart and Rogoff (2008). The results show that leftist governments have somewhat lower short-term nominal interest rates than rightwing governments when central bank independence is

low. In contrast, short-term nominal interest rates are higher under leftist governments when central bank independence is high. The effect is more pronounced when exchange rates were flexible. Our findings are compatible with the view that leftist governments, in an attempt to deflect blame of their traditional constituencies, have pushed market-oriented policies by delegating monetary policy to conservative central bankers.

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

## **2. Theoretical background and empirical evidence**

### **2.1 Partisan approach**

The partisan approach is based on the assumption that politicians provide policies that reflect the preferences of their clienteles (partisans).<sup>3</sup> Leftist parties appeal more to the labor base and promote expansionary policies, whereas rightwing parties appeal more to capital owners and are therefore more concerned with reducing inflation. This characterization holds for both branches of the partisan theory - the classical approach (Hibbs 1977) and the rational expectations approach (Alesina 1987).<sup>4</sup> The traditional partisan theory contains that leftist governments produce higher inflation and lower unemployment. The rational partisan theory, on the other hand, predicts upward (downward) post-election blips in unemployment for rightwing (leftwing) regimes due to wage rigidities in an environment of electoral uncertainty.

The implications of the partisan theories have been tested empirically by investigating various policy instruments. Several studies - mainly undertaken in the late 1980s and the early

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<sup>3</sup> By contrast, the political business cycle theories imply that politicians – independent of their respective party colour – will implement the same expansionary economic policies before elections. In other words, before elections political ideology retires to the background, and policies converge (see, for example, Alesina et al. 1997 on the different approaches). On monetary political business cycle in open economies see, for example, Dreher and Vaubel (2009).

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

1990s – have focused on money growth, fewer studies have analyzed political manipulations of interest rates. Central bank independence has been ignored in this literature. For encompassing surveys on empirical tests of the partisan theories till the mid 1990s see, for example, Belke (1996).

## **2.2 Central bank independence and channels of transmission**

Evaluating the influence of government ideology on monetary policy requires considering central bank independence, i.e., the central bank's ability to choose policy goals and to control the use of monetary policy instruments without government interference.<sup>5</sup> In other words, independent central banks control both the means and ends of monetary policy. Even very autonomous central banks do however not operate in a political vacuum (Hayo and Hefeker 2002, Lohmann 1998). To preserve their independence and to fend off legislation aimed at changing the central bank's organization, autonomous banks such as the German Bundesbank or the U.S. Federal Reserve Bank, had to accommodate to political pressure. For example, public support for the central bank needs to be sufficiently strong if it wants to successfully implement harsh monetary policy measures (Hayo and Hefeker 2002). Hence, although some central banks are clearly more independent than others, no bank is perfectly insulated from the demands of electoral or partisan politics.<sup>6</sup>

Government ideology influences central banks and thereby monetary policy via three main channels: (1) central bank appointments (Falaschetti 2002, Galbraith et al. 2007, Havrilesky and Gildea 1992, Lohmann 1998, Waller 1992, Chappell, Havrilesky and McGregor 1993); (2) direct signalling of the government's desired monetary policies (Havrilesky 1988, 1991, Sieg,

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<sup>5</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).

<sup>6</sup> Political monetary cycles are also less likely to occur in countries with independent central banks (Alpanda and Honig 2010).

1997)<sup>7</sup>, and (3) bashing and reorganization threats by the government (García de Paso 2000, Lohmann 1998, Waller 1991). We now elaborate on these channels.

The board of the central bank is usually appointed by the government or by parliament. A political party, be it in government or in opposition having the right to make a proposal, tends to nominate council members with political preferences similar to its own (Havrilesky and Gildea 1992; Havrilesky 1993, Vaubel 1993, 1997a and Berger and Woitek 1997).<sup>8</sup> The nominated council members, in turn, feel loyal to the party which has appointed them (Goehlmann and Vaubel 2007). It is therefore conceivable that council members follow a specific party line, and may even try to manipulate the economy to increase the election prospects of their favored party. Investigating the voting pattern of Fed board members, Chappell et al. (1993) conclude that the appointment process is the primary mechanism through which party ideologies are brought to bear in central bank councils.

Signaling policy preferences is another important channel of influencing central banks. The government sends monetary policy signals to the central bank using, for example, media appearances in which government officials express a desire for an easier or tighter monetary policy. This kind of signaling is expected to influence the money supply because the media coverage of government performance is typically strongly related to the state of the economy. Money growth usually does not provoke high-profile media attention, but does, nevertheless, respond to signals from the administration (McGregor, 1996). Oversight might influence monetary policy as well (Caporale and Grier 1998, Grier 1991, 1996, Falaschetti 2002).

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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. Out-of-power parties are also not able to exert some influence through confirmation hearings. Mixon and Gibson (2002) provide empirical evidence for the US, which corroborates theoretical foundations of Waller's bargaining model.

Ideology-induced politicians can, finally, put pressure on the members of the central bank council with the help of bashing and reorganization threats. Threatening the status, structure, or even the existence of the central bank may be used to force central bankers to comply with politically motivated demands with respect to monetary policy (Lohmann 1998).

## **2.3 Empirical evidence**

Empirical studies for OECD countries do not suggest that leftist governments have always pursued more expansionary monetary policies than under rightwing governments. Interest rates were even found to be higher under leftwing than rightwing governments when central bank independence was high. Only a few empirical studies do however use panel data (e.g Mukherjee and Singer 2008, Cusack 2001). Among the country studies, investigations for the U.S. and Germany dominate (e.g., Abrams and Iossifov 2006, Caporale and Grier 2000, Corder 2006, Faust and Irons 1999, Berger and Woitek 1997a, 2001, 2005).

Three empirical studies on partisan monetary policy in OECD countries are especially important. Clark (2003) examines the influence of left-labor power on interest rates in a panel of up to 14 OECD countries and finds that left-labor power was associated with higher, not lower, interest rates. Boix (2000) investigates the influence of socialist control of government and the power of organized labor on short-term real interest rates in developed countries in the 1961-1994 period. The evidence is mixed: the results depend on the sample and the specification. Some of his results do however suggest that central banks under leftist governments had higher short-term real interest rates than under rightwing governments. Sakamoto (2008) analyzes panel data for 18 OECD countries in the 1960-2001 period and distinguishes between leftwing, rightwing and center governments. His results (p. 154) suggest that under leftist governments central banks conducted a somewhat looser monetary policy<sup>9</sup>, whereas the difference of the

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<sup>9</sup> The dependent monetary policy variable is “discount rates minus Taylor-rule implied discount rates” (Sakamoto 2008: 90).

estimated coefficients of rightwing and center governments is not statistically significant. Interacting the leftwing government dummy with 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). Interacting the rightwing government dummy with central bank independence, suggests that the combination of rightwing governments and independent central banks is likely to give rise to a loose (expansionary) monetary policy (p. 240).

The studies by Clark (2003), Boix (2000) and Sakamoto (2008) employ annual data. This is a serious shortcoming because central bank interest rates are volatile and can change a great deal in a year. Different exchange rate regimes are also not considered. This is also a shortcoming because monetary policies are only expected to be effective when exchange rates are flexible. For this reason, more credible empirical models are required to examine whether in OECD countries leftist governments have been associated with lower interest rates than rightwing governments.

### **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 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 United States. The observation period runs from 1980.1 to 2005.4. Data for Germany are available since 1991.1 after the German Unification, for Ireland since 1984.1, for Iceland since 1988.1, and for Sweden since 1982.1. We

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do not include, however, data for Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain after 1998.4 because, beginning in 1999 in these countries the European Monetary Union was in charge of monetary policy. For the same reason, we do not include data for Greece after 2000.4 when it became a member of the European Monetary Union. Figure 1 illustrates the short-term nominal interest rates and Table 1 provides descriptive statistics. Short-term nominal interest rates have been high in countries such as Spain (12.54), Greece (17.01), Italy (12.80) and Portugal (14.81) and low in countries such as Switzerland (4.00), Germany (5.77) and Japan (3.59). On average, short-term nominal interest were high in the beginning of the 1980s (maximum in 1981.3 with 15.36 points), and decreased till the beginning of this millennium (minimum in 2004.1 with 2.79 points). At the end of our observation period in 2005.4, short-term nominal interest rates were 3.89 points on average.

Insert Figure 1 and Table 1 here

### 3.2 Empirical strategy

Our baseline model is based on the traditional Taylor rule specification (Taylor 1993a, b). The variables usually included in the Taylor rule to explain the variance in the short-term nominal interest rate are the domestic inflation rate, the output gap and the lagged short-term nominal interest rate. We also include a government ideology variable, a central bank independence variable and the respective interaction term to investigate how government ideology is mediated by central bank independence. The baseline panel data model has the following form:

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

with  $i=1,\dots,23$ ;  $t=1,\dots,104$ ,

where the dependent variable Short-term nominal interest rate $_{it}$  denotes the short-term nominal interest rate in country  $i$  and quarter  $t$ . Ideology $_{it}$  describes the ideological orientation of the respective government and 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 dependent or independent central banks. We follow the related literature on Taylor rule specifications by including the inflation rate, the output gap, and the lagged dependent variable.<sup>10</sup> Finally,  $\eta_i$  represents a fixed country effect,  $\epsilon_t$  is a fixed period effect and  $u_{it}$  describes an error term.

We employ the government ideology index proposed by Potrafke (2009), which is derived from the index of governments' ideological positions by Budge, Keman and Woldendorp (1993) and updated by Woldendorp, Keman and Budge (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 center parties is 50%, or if the leftwing and rightwing parties form a coalition government that is not dominated by one side. The index is symmetric and takes the values 4 and 5 if the leftwing parties dominate. Potrafke's (2009) coding is consistent across time but does not attempt to capture differences between the party-families across countries. Quarters in which the government changed are labeled according to the government that was in office for more days in this quarter. The 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 be negative.

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<sup>10</sup>The OECD does not provide data on the output gap for all 23 OECD countries over the 1980.1-2005.4 period. We have therefore calculated an output gap variable based on real GDP using an Hodrick-Prescott filter ( $\Lambda = 1600$ ). Positive values of the output gap variable are associated with booms (actual output is higher than potential output); negative values of the output gap variable are associated with recessions (actual output is lower than potential output).

Although the short-term interest rate, the output gap and the inflation rate might in some cases be highly persistent, we make no claims that they are non-stationary (Rudebusch 1993).

Government ideology is expected to influence short-term nominal interest rates only when central banks are subject to government directives. We use the overall index on central bank independence (CBI) developed by Arnone et al. (2007) and computed for additional years by Klomp and De Haan (2009). The index distinguishes between political autonomy (i.e., the ability of the central bank to choose the objectives of monetary policy) and economic autonomy (i.e., the ability of the central bank to choose the appropriate instruments). Arnone et al. (2007) developed the CBI index and applied it to several countries. Klomp and De Haan (2009) used the information on central bank law reform by Acemoglu et al. (2008) and measured the value of the CBI index for all the years for which Arnone et al. (2007) provided no data. In order to be in line with the coding of our ideology index, our framework requires an index that increases with central bank dependence (CBD). Because the CBI index measures central bank independence rather than central bank dependence, we apply the inverse of the CBI index. This time-variant CBD index assumes values between 0 (maximum independence) and 1 (maximum dependence).<sup>11</sup> The expected sign of the estimated coefficient  $\beta$  of the CBD variable in eq. (1) is ambiguous. On the one hand, CBD could be expected to have a negative influence on the short term interest rate because independent, conservative central bankers will keep interest rates at a moderate level. On the other hand, CBD could have a positive influence on the short term interest rate because dependent central banks, being less credible, have higher interest rates.

We include the interaction term  $\text{Ideology}_{it} * \text{CBD}_{it}$  to examine the effect of government ideology conditional on different values of 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. In line with the predictions of the partisan approaches that leftwing governments implement more expansionary policies than rightwing governments, the estimated coefficient of the interaction term of government ideology (leftwing government) and central bank dependence is expected to be negative. Table 2 provides the descriptive statistics of the variables and the respective data sources.

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<sup>11</sup> For a discussion on the definition of central bank independence see also, for example, Siklos (2008).

Insert Table 2 here

We now, finally, turn to discussing our choice of the panel data estimation methods. In the context of dynamic estimation, the common fixed-effect estimator is biased. In accordance with large sample properties of the GMM methods, e.g., the estimator proposed by Arellano and Bond (1991) will also be biased in our econometric model with  $N=23$ . We therefore apply Bruno's (2005a, 2005b) bias corrected least squares dummy variable estimator for dynamic panel data models with small  $N$ .<sup>12</sup>

## 4. Results

### 4.1 Basic results

Table 3 reports the regression results for the baseline Taylor rule specification. The control variables display the expected sign and their influence is robust across the different specifications (columns 1-3). The coefficients of the inflation rate and the output gap are statistically significant at the 1% level in all three specifications. The positive influence of the inflation rate and the output gap are in line with the predictions of the Taylor rule. The Taylor rule theoretically predicts the long-run influence of the inflation rate on the short-term nominal interest rate to be 2.0 and the long-run influence of the output gap on the short-term nominal interest rate to be 0.5 (Taylor 1999, Clarida et al. 1998, Woodford 2001). The long-run effect of inflation can be calculated by dividing the coefficient of the inflation rate variable by one minus the coefficient of the lagged dependent variable. The results suggest that short-term nominal interest rate increases in the long-run by about 1.5 points when the inflation rate increases by one point and that the short-term nominal interest rate increases in the long-run by about 0.65 points when the output

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<sup>12</sup> We choose the Blundell-Bond (1998) estimator as the initial estimator in which the instruments are collapsed as suggested by Roodman (2006). This procedure makes sure to avoid using invalid and too many instruments (see Roodman 2006 and 2009 for further details). Following Bloom et al. (2007) we undertake 50 repetitions of the procedure to bootstrap the estimated standard errors. Bootstrapping the standard errors is common practice applying this estimator. The reason is that Monte Carlo simulations demonstrated that the analytical variance estimator performs poorly for large coefficients of the lagged dependent variable (see Bruno 2005b for further details).

gap increases by one point. The lagged dependent variable is statistically significant at the 1% level and its coefficient implies 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.

Insert Table 3 here

Column (2) reports the regression results when the ideology variable is included and shows that the ideology variable does not turn out to be statistically significant. This first result suggests that monetary policy is not expansive under leftist governments and contradicts at a first glance the partisan theory. The absence of any influence of government ideology on short-term nominal interest rates would have, however, to be corroborated by a negligible influence of the interaction of government ideology with central bank dependence. Column (3) shows the results of the model including government ideology, central bank dependence and the interaction of the two variables: the interaction term turns out to be sizable and statistically significant.

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. We follow Dreher and Gassebner (2011) and evaluate 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 influence of government ideology on short-term interest rates for high and low central bank dependence. Alternatively, one can choose to evaluate the marginal effects at the average level of central bank dependence. The marginal effects reported in Table 4 imply that the marginal effect of government ideology at the average level of central bank dependence perfectly corresponds with the value reported in Table 3 in column (3). At an average level of central bank dependence, government ideology did not influence short term nominal interest rates. In line with the partisan approach, however, government ideology (leftwing) had a negative influence on short-term nominal interest rates

when central bank dependence was high, i.e. when it was at its maximum. At maximum dependence, an increase of the ideology variable by one point – say from 3 (leftwing and rightwing parties in government) to 4 (leftwing government) – decreases the short-term nominal interest rate by about 0.11 points. This effect is statistically significant at the 10% level. By contrast, government ideology (leftwing) had a significant positive influence on short-term nominal interest rates when central bank dependence was low, i.e. when it is at its minimum. At a minimum of central bank dependence an increase of the ideology variable by one point raises the short-term nominal interest rate by 0.12 points (column 2). This effect is also statistically significant at the 10% level.

Insert Table 4 here

## 4.2 Exchange rate regimes

The exchange rate regime influences the effects of monetary policy and can therefore be expected to change the behavior of the political agents. The Mundell-Flemming model, for example, predicts that monetary policy affects the real economy only when exchange rates are flexible. Under a fixed exchange rate regime, open market policies result only in a change of the central bank's asset portfolio composition.<sup>13</sup> We employ the exchange rate regime data by Reinhart and Rogoff (2008) to investigate whether our findings are subject to the prevailing exchange rate regime. Reinhart and Rogoff (2008) distinguish between five different exchange rate regimes: (1) Peg, (2) Limited Flexibility, (3) Managed Floating, (4) Freely Floating and (5) Freely Falling. We estimate the empirical model for different exchange rate regimes; that is we estimate our model for country/quarter observations at times of "Limited Flexibility" (regime 2) or more flexible exchange rate regimes (regime 3, 4 and 5); then for country/quarter observations

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<sup>13</sup> On ideology-induced choices of exchange rate regimes see, for example, Carmignani, Colombo and Tirelli (2008) and Berdiev, Kim and Chang (2011).

at times of “Managed Floating” (regime 3) or more flexible exchange rate regimes (regime 4 and 5); and finally for country/quarter observations where the exchange rate system is described by “Freely Floating” (regime 4) or “Freely Falling” (regime 5). There are too few observations of pegged and freely falling exchange rate regimes to run regressions only with these observations. The results in Table 5 show that only under managed floating and freely floating exchange rates, short-term nominal interest rates are higher under leftwing governments when central banks were independent. The marginal effects (Table 6) are positive and statistically significant at the 1% and 5% level at the minimum and average level of central bank dependence for the regressions in columns (2) and (3). At a maximum of central bank dependence the marginal effect does not turn out to be statistically significant under freely floating exchange rates and is statistically significant at the 10% level with a negative sign under managed floating exchange rates.

Insert Tables 5 and 6 here

#### **4.3 Interacting government ideology with inflation and output gap**

Rightwing and leftwing monetary policymakers are expected to react differently to shocks that pose a tradeoff between stabilizing inflation and output (Svensson 1997, Woodford 2003). Berger and Woitek (2005) have shown that more conservative Bundesbank council members tend to react more strongly to changes in inflation and output. We have therefore included terms capturing the interaction between government ideology and inflation and between government ideology and the output gap. We have normalized all variables before interacting. Table 7 shows the regression results and Table 8 the marginal effects. We have evaluated the influence of government ideology on the short-term nominal interest rates at the average level of inflation and the average level of the output gap, and, as before, at the average, minimum and maximum of central bank dependence. The results in Table 8 show that our previous inferences regarding the political economic variables do not change: government ideology does not influence short-term

nominal interest rates at an average level of central bank dependence. Short-term nominal interest rates are lower under leftwing governments than under rightwing governments when central bank dependence is high. Short-term nominal interest rates are higher under leftwing governments than under rightwing governments when central bank dependence is low. Both effects are statistically significant at the 10% level.

Insert Tables 7 and 8 here

#### **4.4 Further robustness checks**

We have conducted further robustness checks of our results. It is conceivable that fiscal policy also influences interest rates either directly or via government ideology and central bank (in)dependence. Very few fiscal policy variables are available at a quarterly basis. Data on government deficits are, for example, available at a quarterly basis only for some of the countries and some sub periods of our sample. We therefore had to settle for government final consumption expenditure (real, in local currencies) because this variable is available for all countries in our sample.<sup>14</sup> We have estimated two models: first, we have included government final consumption expenditure as an additional explanatory variable; second we have also interacted government final consumption expenditure with government ideology and evaluated the marginal effect at the average level of government final consumption expenditure. The marginal effects show for both models that government ideology does not influence short-term nominal interest rates. The marginal effect evaluated at the minimum of central bank dependence slightly fails statistical significance at conventional levels.

We have replaced the ideology and CBD indicators by simple binary versions of these variables: 1) a time variant dummy variable that is 1 for readings of CBI and ideology that are above the overall sample mean at period  $t$  and 0 otherwise; (2) a dummy variable that is 1 for

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<sup>14</sup>The data for Greece are available from 1995.1 to 2000.4.

readings of CBI and ideology that are above the sample mean for the particular country at time  $t$  and 0 otherwise. We have also interacted the binary ideology variables with the CBD indicators to evaluate the ideology-induced effects at different levels of central bank dependence. Inferences do not change.

It is also conceivable that the reported effects are driven or mitigated by idiosyncratic circumstances in some few countries. We have therefore tested whether the results are sensitive to the inclusion/exclusion of particular countries. The positive influence of leftist governments at a maximum level of central bank independence decreases when Greece, Norway, Sweden and the United States are excluded. In contrast, the effects become stronger when Iceland and New Zealand is excluded.

## **5. Conclusion**

We have included government ideology, central bank (in)dependence and their interaction in a Taylor rule specification to re-examine whether leftist governments have implemented expansionary monetary policies than rightwing governments. Our dataset contains quarterly data from 1980.1 to 2005.4 for 23 OECD countries excluding EMU countries. The results show that, as predicted by the partisan theories, short-term nominal interest rates are somewhat lower under leftwing governments than under rightwing governments, but this only applies when central bank dependence is high. Ideology-induced politicians thus appear to implement their preferred policies when central bankers are obliged to follow their directives. This effect is however not robust across different empirical specifications. Short-term nominal interest rates are higher under leftwing governments than under rightwing governments when central banks are independent. This empirical finding has been already derived by Sakamoto (2008). We have re-examined the influence of government ideology and central bank independence on interest rates because the previous studies have shortcomings. We have used quarterly instead of annual data because interest rates are remarkably volatile, and we have controlled for different exchange rate

regimes because monetary policy is not effective under a fixed exchange regime. Moreover, we have also considered the interaction of government ideology with inflation and the output gap (Berger and Woitek 2005). The methodological improvements notwithstanding, we confirm the inferences of the previous research.

The result that short-term nominal interest rates are higher under leftwing governments than under rightwing governments when central banks are independent deserves further discussion. In the course of declining electoral cohesion, leftwing OECD-country governments appear to have delegated responsibility for more market-oriented policies to independent central bankers (Sakamoto 2008, Bernhard 2002). 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 intra-coalition conflict over monetary policy from the political arena”. Leftwing parties themselves might also 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 that follows expansionary policy experiments (Kane 1980 and Vaubel 1997a.). We acknowledge that our government ideology index does not consider party changes over time. Hardly any government ideology index that is available for OECD countries explicitly considers party changes over time. Previous research on ideology-induced economic policy-making in OECD countries has also shown that the choice of existing government ideology indices does not influence the inferences (i.e., Pickering and Rockey 2011). Future research may however deal with government ideology coding which considers party movements such as the shift of the political left in the 1990s.

It is also conceivable that politicians and central bankers have different views on the efficacy of policy instruments and they probably care about different economic indicators. Ehrmann and Fratzscher (2011) show, for example, that politicians express a preference for lower interest rates than central bankers. Conservative central bankers may also have counteracted any attempts of expansionary policies under leftist governments. An empirical test

of this conjecture requires a measure on political preferences of the central bankers which also remains to be developed in future research.

Some studies have used real-time data for inflation and output growth to estimate Taylor rules (i.e., Sturm and De Haan 2011, Orphanides 2001). We have not used real-time data because of lack of data availability for our sample. In a similar vein, we have employed a contemporaneous Taylor rule specification, while scholars also have employed forward-looking Taylor-rule specifications (i.e., Sauer and Sturm 2007). Future research on political economic determinants of monetary policy may therefore use forward-looking Taylor rule specifications and real-time data for inflation and output growth.

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Table 1. Descriptive Statistics. Short term nominal interest rates. Country List.

| Country   | Mean | St. Dev. | N   |
|-----------|------|----------|-----|
| Australia | 9.58 | 4.64     | 104 |
| Austria   | 6.60 | 2.52     | 76  |

|                |       |      |      |
|----------------|-------|------|------|
| Belgium        | 8.56  | 3.56 | 76   |
| Canada         | 7.71  | 4.20 | 104  |
| Switzerland    | 4.00  | 2.64 | 104  |
| Germany        | 5.77  | 2.49 | 32   |
| Denmark        | 8.10  | 4.63 | 104  |
| Spain          | 12.54 | 4.20 | 76   |
| Finland        | 10.27 | 4.18 | 76   |
| France         | 9.04  | 3.44 | 76   |
| United Kingdom | 8.76  | 3.75 | 104  |
| Greece         | 17.01 | 4.96 | 84   |
| Ireland        | 9.39  | 3.60 | 60   |
| Iceland        | 11.31 | 7.64 | 72   |
| Italy          | 12.80 | 4.19 | 76   |
| Japan          | 3.59  | 3.24 | 104  |
| Luxembourg     | 8.56  | 3.56 | 76   |
| Netherlands    | 6.60  | 2.51 | 76   |
| Norway         | 9.09  | 4.18 | 104  |
| New Zealand    | 10.98 | 5.38 | 104  |
| Portugal       | 14.81 | 5.55 | 76   |
| Sweden         | 7.93  | 4.10 | 96   |
| United States  | 6.76  | 3.88 | 104  |
| Total          | 9.01  | 5.21 | 1964 |

Table 2. Descriptive statistics and data sources

| Variable                         | Obs  | Mean    | Std. Dev | Min   | Max      | Source                               |
|----------------------------------|------|---------|----------|-------|----------|--------------------------------------|
| Short-term nominal interest rate | 1964 | 9.01    | 5.21     | 0.03  | 37.67    | OECD Main Economic Indicators (2008) |
| Ideology                         | 2064 | 2.86    | 0.87     | 1     | 4        | Potrafke (2009)                      |
| Central bank dependence          | 1984 | 0.51    | 0.21     | 0.06  | 0.81     | Klomp and de Haan (2009)             |
| Inflation (CPI growth)           | 2064 | 1.32    | 1.76     | -1.66 | 23.32    | OECD Main Economic Indicators (2011) |
| Output gap                       | 2020 | -0.11   | 1.52     | -7.13 | 6.76     | OECD Main Economic Indicators (2008) |
| Exchange rate regime             | 2064 | 2.37    | 1.07     | 1     | 5        | Reinhart and Rogoff (2008)           |
| Final Consumption expenditures   | 1980 | 3592.19 | 15141.41 | 0.7   | 91786.81 | Feri Finance AG (2011)               |

Table 3. Regression results. Ideology and central bank dependence interacted (normalized).

Dependent variable: short-term nominal interest rate.

Dynamic bias corrected estimator.

|  | (1) | (2) | (3) |
|--|-----|-----|-----|
|--|-----|-----|-----|

|   |           |           |           |
|---|-----------|-----------|-----------|
| Ideology (leftwing government)                          | 0.0100    | -0.0167   |           |
|   | [0.0347]  | [0.0370]  |           |
| Central bank dependence                                 |           | 0.1793*** |           |
|   |           | [0.0642]  |           |
| Ideology (leftwing government)* Central bank dependence |           | -0.0636** |           |
|   |           | [0.0284]  |           |
| Inflation   | 0.2592*** | 0.2590*** | 0.2448*** |
|   | [0.0353]  | [0.0352]  | [0.0270]  |
| Output gap  | 0.1125*** | 0.1123*** | 0.1070*** |
|   | [0.0208]  | [0.0209]  | [0.0218]  |
| Lagged dependent variable                               | 0.8312*** | 0.8306*** | 0.8324*** |
|   | [0.0151]  | [0.0151]  | [0.0146]  |
| Fixed Country Effects                                   | Yes       | Yes       | Yes       |
| Fixed Period Effects                                    | Yes       | Yes       | Yes       |
| Observations  | 1941      | 1941      | 1884      |
| Number of N   | 23        | 23        | 23        |

Notes: Standard errors in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 4. Marginal effects of government ideology (leftwing government) at a minimum, average and maximum level of central bank dependence (normalized)

|                             |                      |
|-----------------------------|----------------------|
| <b>Minimum</b><br>CBD(0.06) | 0.1194*<br>[0.0631]  |
| <b>Average</b><br>CBD(0.51) | -0.0167<br>[0.0370]  |
| <b>Maximum</b><br>CBD(0.81) | -0.1077*<br>[0.0613] |

Notes: Standard errors in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\*

Table 5. Regression results. Different exchange rate regimes.  
Dependent Variable: short-term nominal interest rate.  
Dynamic bias corrected estimator.

|  |     |     |     |
|--|-----|-----|-----|
|  | (1) | (2) | (3) |
|--|-----|-----|-----|

|   | Regime<br>≥2          | Regime<br>≥3           | Regime<br>≥4          |
|---|-----------------------|------------------------|-----------------------|
| Ideology (leftwing government)                          | 0.0104<br>[0.0411]    | 0.1107***<br>[0.0408]  | 0.1266*<br>[0.0674]   |
| Central bank dependence                                 | 0.1865**<br>[0.0735]  | 0.2676***<br>[0.0807]  | -0.0355<br>[0.3862]   |
| Ideology (leftwing government)* Central bank dependence | -0.0409<br>[0.0471]   | -0.1318***<br>[0.0459] | -0.1305<br>[0.0796]   |
| Inflation   | 0.2785***<br>[0.0472] | 0.1916***<br>[0.0482]  | 0.1855**<br>[0.0731]  |
| Output gap  | 0.1154***<br>[0.0295] | 0.0763***<br>[0.0283]  | 0.1465***<br>[0.0503] |
| Lagged dependent variable                               | 0.8029***<br>[0.0160] | 0.8588***<br>[0.0247]  | 0.8822***<br>[0.0330] |
| Fixed Country Effects                                   | Yes                   | Yes                    | Yes                   |
| Fixed Period Effects                                    | Yes                   | Yes                    | Yes                   |
| Observations  | 1395                  | 745                    | 312                   |
| Number of N   | 21                    | 15                     | 6                     |

Notes: Standard errors in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%  
Exchange rate regime: Regime=2: Limited Flexibility; Regime=3: Managed Floating; Regime=4: Freely Floating.

Table 6. Marginal effects of government ideology (leftwing government) at a minimum, average and maximum level of central bank dependence (normalized)  
Different exchange rate regimes.

|                       | (1)                 | (2)                   | (3)                   |
|-----------------------|---------------------|-----------------------|-----------------------|
|                       | Regime ≥2           | Regime ≥3             | Regime ≥4             |
| <b>Minimum</b><br>CBD | 0.1016<br>[0.0960]  | 0.3721***<br>[0.1071] | 0.3518***<br>[0.1422] |
| <b>Average</b><br>CBD | 0.0104<br>[0.0411]  | 0.1107***<br>[0.0408] | 0.1266*<br>[0.0674]   |
| <b>Maximum</b><br>CBD | -0.0468<br>[0.0907] | -0.1004<br>[0.0764]   | -0.1616<br>[0.1988]   |

Notes: Standard errors in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\*  
Exchange rate regime: Regime=2: Limited Flexibility; Regime=3: Managed Floating; Regime=4: Freely Floating.

Table 7. Regression results. Ideology and central bank dependence interacted (normalized).  
Dependent variable: short-term nominal interest rate.  
Dynamic bias corrected estimator.

|   | (1)                   |
|---|-----------------------|
| Ideology (leftwing government)                          | -0.0241<br>[0.0374]   |
| Central bank dependence                                 | 0.1786***<br>[0.0646] |
| Ideology (leftwing government)* Central bank dependence | -0.0608**<br>[0.0306] |
| Inflation   | 0.3232***<br>[0.0359] |
| Ideology (leftwing government)*Inflation                | -0.0053<br>[0.0269]   |
| Output gap  | 0.1482***<br>[0.0327] |
| Ideology (leftwing government)*Output gap               | -0.0424<br>[0.0324]   |
| Lagged dependent variable                               | 0.8327***<br>[0.0147] |
| Fixed Country Effects                                   | Yes                   |
| Fixed Period Effects                                    | Yes                   |
| Observations  | 1884                  |
| Number of N   | 23                    |

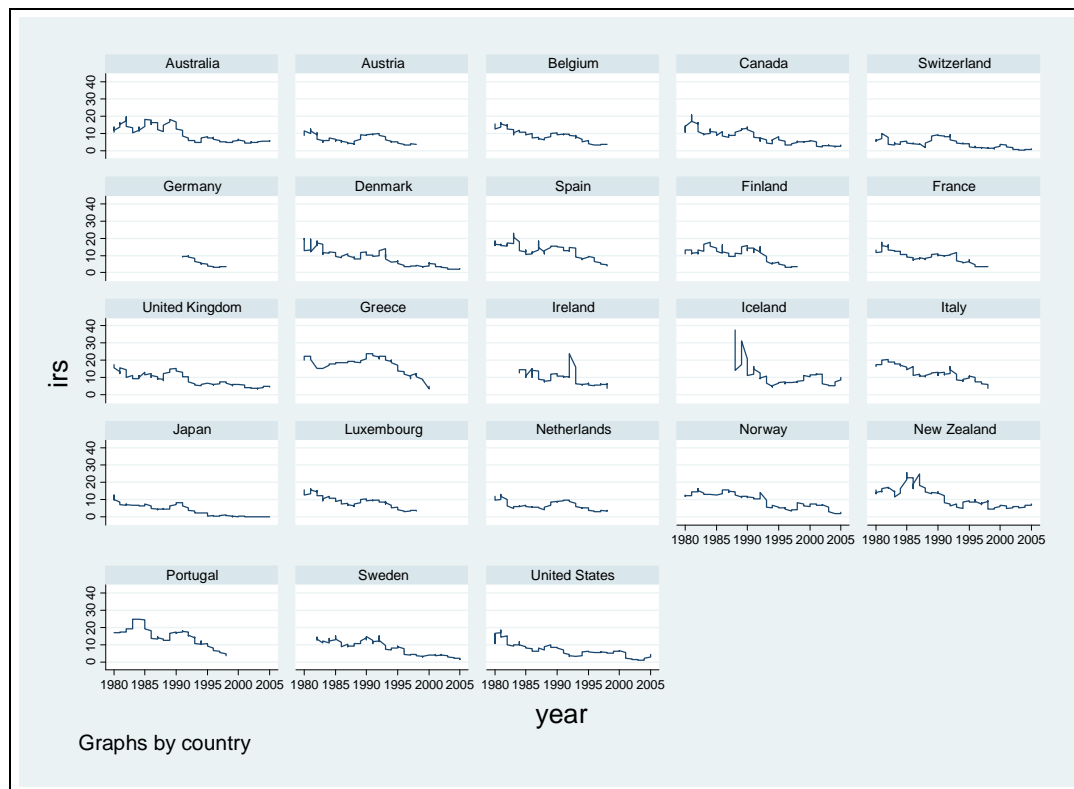
Notes: Standard errors in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 8. Marginal effects of government ideology (leftwing government) at a minimum, average and maximum level of central bank dependence (normalized)

|                             |                      |
|-----------------------------|----------------------|
| <b>Minimum</b><br>CBD(0.06) | 0.1060*<br>[0.0626]  |
| <b>Average</b><br>CBD(0.51) | -0.0241<br>[0.0374]  |
| <b>Maximum</b><br>CBD(0.81) | -0.1112*<br>[0.0670] |

Notes: Standard errors in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\*

Figure 1. Short-term nominal interest rates. 23 OECD countries. 1980.1.-2005.4.  
EMU countries after 1998.4 excluded.



Source: OECD Main Economic Indicators (2008)

## Additional Tables

Table A1. Regression results. Ideology and central bank dependence interacted (normalized).  
**Government consumption included.**  
Dependent variable: short-term nominal interest rate.

Dynamic bias corrected estimator.

|   | (1)                             | (2)                   |
|---|---------------------------------|-----------------------|
| Ideology (leftwing government)                          | 0.0065<br>[0.0326]              | 0.0072<br>[0.0327]    |
| Central bank dependence                                 | 0.1561***<br>[0.0578]           | 0.1562***<br>[0.0578] |
| Ideology (leftwing government)* Central bank dependence | -0.0471<br>[0.0288]             | -0.0472<br>[0.0289]   |
| Inflation   | 0.3096***<br>[0.0387]           | 0.3096***<br>[0.0387] |
| Output gap  | 0.1298***<br>[0.0167]           | 0.1299***<br>[0.0167] |
| Government consumption                                  | -9×10 <sup>-7</sup><br>[0.0000] | -0.0112<br>[0.1073]   |
| Ideology (leftwing government)* Government consumption  |                                 | 0.0035<br>[0.0668]    |
| Lagged dependent variable                               | 0.8108***<br>[0.0155]           | 0.8108***<br>[0.0156] |
| Fixed Country Effects                                   | Yes                             | Yes                   |
| Fixed Period Effects                                    | Yes                             | Yes                   |
| Observations  | 1825                            | 1825                  |
| Number of N   | 23                              | 23                    |

Notes: Standard errors in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table A2. Marginal effects of government ideology (leftwing government) at a minimum, average and maximum level of central bank dependence (normalized)

|                             | (1)                 | (2)                 |
|-----------------------------|---------------------|---------------------|
| <b>Minimum</b><br>CBD(0.06) | 0.1057<br>[0.0687]  | 0.1065<br>[0.0693]  |
| <b>Average</b><br>CBD(0.50) | 0.0065<br>[0.0326]  | 0.0072<br>[0.0327]  |
| <b>Maximum</b><br>CBD(0.81) | -0.0632<br>[0.0536] | -0.0627<br>[0.0534] |

Notes: Standard errors in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\*

Table A3. Regression results. Ideology and central bank dependence interacted.

**Binary variables.**

Dependent variable: short-term nominal interest rate.

Dynamic bias corrected estimator.

|   | (1)                   | (2)                   | (3)                   | (4)                   |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| Leftwing government (binary time)   | 0.0673<br>[0.0752]    |                       |                       |                       |
| Central bank dependence (binary time)   | 0.2860**<br>[0.1120]  |                       |                       |                       |
| Leftwing government (binary time)*<br>Central bank dependence (binary time)       | -0.2256*<br>[0.1151]  |                       |                       |                       |
| Leftwing government (binary country)  |                       | 0.0844<br>[0.1423]    |                       |                       |
| Central bank dependence (binary country)  |                       | 0.3616***<br>[0.1246] |                       |                       |
| Leftwing government (binary country)*<br>Central bank dependence (binary country) |                       | -0.2365<br>[0.1643]   |                       |                       |
| Leftwing government (binary time)   |                       |                       | -0.0551<br>[0.0666]   |                       |
| Central bank dependence   |                       |                       | 0.2101***<br>[0.0670] |                       |
| Leftwing government (binary time)*<br>Central bank dependence                     |                       |                       | -0.0948*<br>[0.0525]  |                       |
| Leftwing government (binary country)  |                       |                       |                       | -0.0496<br>[0.0753]   |
| Central bank dependence   |                       |                       |                       | 0.2488***<br>[0.0677] |
| Leftwing government (binary country)*<br>Central bank dependence                  |                       |                       |                       | -0.1430**<br>[0.0604] |
| Inflation   | 0.2452***<br>[0.0261] | 0.2490***<br>[0.0266] | 0.2451***<br>[0.0270] | 0.2463***<br>[0.0267] |
| Output gap  | 0.1081***<br>[0.0221] | 0.1051***<br>[0.0219] | 0.1080***<br>[0.0220] | 0.1063***<br>[0.0217] |
| Lagged dependent variable   | 0.8377***<br>[0.0148] | 0.8368***<br>[0.0145] | 0.8337***<br>[0.0148] | 0.8330***<br>[0.0146] |
| Fixed Country Effects   | Yes                   | Yes                   | Yes                   | Yes                   |
| Fixed Period Effects  | Yes                   | Yes                   | Yes                   | Yes                   |
| Observations  | 1884                  | 1884                  | 1884                  | 1884                  |
| Number of N   | 23                    | 23                    | 23                    | 23                    |

Notes: Standard errors in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table A4. Marginal effects of government ideology (leftwing government) at a minimum, average and maximum level of central bank dependence (normalized).

|                       | (1)               | (2)                | (3)                  | (4)                   |
|-----------------------|-------------------|--------------------|----------------------|-----------------------|
| <b>Minimum</b><br>CBD |                   |                    | 0.1466<br>[0.1153]   | 0.2547*<br>[0.1406]   |
| <b>Average</b><br>CBD |                   |                    | -0.0551<br>[0.0666]  | -0.0496<br>[0.0753]   |
| <b>Maximum</b><br>CBD | -0.158<br>[0.098] | -0.152*<br>[0.089] | -0.1911*<br>[0.1121] | -0.2546**<br>[0.1217] |

Notes: Standard errors in brackets; \* significant at 10%; \*\* significant at 5%; \*\*\*