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## Political Effects on the Allocation of Public Expenditures: Empirical Evidence from OECD Countries

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**Discussion Papers**

**653**

**Niklas Potrafke**



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**Political Effects on the Allocation of Public Expenditures:  
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**Berlin, December 2006**





**Discussion Papers 653**

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**Political effects on the allocation of public expenditures:  
Empirical evidence from OECD countries**

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**Abstract:**

This paper examines the effects of political determinants on the allocation of public expenditures.

Analyzing an OECD panel from 1990 to 2004, a SURE model controls for the contemporaneous correlation between the different expenditure categories (COFOG). I find that left governments set other priorities than right governments: In particular, they increase spending for “Environment protection”, “Recreation; Culture and Religion” and “Education”. The number of coalition partners as well as minority governments affects the allocation of public expenditures, too. In contrast, there are no election and pre-election year effects.

**Keywords:** allocation of public expenditures, partisan politics

**JEL classification:** D72, E62, H50



## 1 Introduction

Analysing the determinants of financial policy is a well known issue in empirical research. Several studies examine the political effects that are responsible for the growing size of government and budget deficits in OECD economies. Roubini and Sachs (1989a, b) make the first contributions to this scientific debate. They claim that the size, composition, diversity and/or stability of governments are related to the budget deficits. In further empirical studies researchers ask if parties matter in the sense that left governments cause higher spending and debt than right governments.

Borelli and Royed (1995) find in a panel of 16 OECD countries from 1959 to 1990 that government spending is higher under right than left governments. Cusack (1997) gets evidence for the classical partisan approach by using different indices for government's and electorate's political centre of gravity. Blais, Blake and Dion (1993, 1996) get similar results. Alesina's et al. (1997) evidence analysing public debt is mixed, it depends on the observation period. Tavares (2004) analyses fiscal policy in an OECD panel with 16 countries from 1960 to 1995 and focuses on the mapping of the political variables. He estimates probit-models with the likelihood of success for fiscal adjustments as dependent variable and finds differences between policies of left and right governments with the left relying mostly on tax increases and the right on spending cuts. Franzese (2000) detects a pre-and-post electoral deficit cycle in a panel of 20 OECD countries from 1956 to 1990. Moreover, his results suggest that partisan cycles are of less importance in explaining government debt and often run in directions opposite to conventional wisdom. De Haan and Mink (2005) analyse a panel of 12 EU member states from 1999 to 2004. They find that in election years – but not in pre-election years – the budget deficit increases. Furthermore policy is somewhat more expansionary under left than right governments. Perotti and Kontopoulos (2002) examine how government size and ideology affect deficit, expenditure, transfers and revenues in a panel of 19 OECD countries from 1970 to 1995.

However, neither of the studies asks for the way the governments allocate their expenditures. Thereby the composition of the budget will be strongly affected by political determinants like the different attitudes and number of parties in the government, the timing of elections etc. Potrafke (2006) makes this point and examines the spending behaviour of the federal and state governments in Germany. He claims that the allocation of expenditures is an interesting

object of investigation in fiscal policy because it covers the politicians' real room of manoeuvre. Hence the current paper will make the contribution to transfer Potrafkes (2006) approach to a panel of OECD countries. I use the new data sets provided by the OECD and EUROSTAT which classify public expenditures by function (COFOG) to examine a yet unexplored facet of fiscal policy by the well known political determinants.

The paper is organized as follows: Section 2 formulates four testable hypotheses originating from the theory of political economics. Section 3 presents the data. In section 4 the empirical model applying seemingly unrelated regression systems (SUR) is set up and the political variables are described. Section 5 discusses the estimation results and section 6 concludes.

## 2 Theory and Hypotheses

The issue of this paper is to test for the effects of election and pre-election years, the ideological direction as well as the type of government on the allocation of public expenditures. The impacts of these variables on economic policy stem from a huge and model based literature of political economics. In this paper, my emphasis is not to find evidence for a single theoretical model. Instead I will briefly repeat the main ideas of respective (well known) theoretical work and formulate testable hypotheses for the following empirical analysis.

Election and pre-election year effects go back to the political business cycle approaches by Nordhaus (1975) and Rogoff and Sibert (1988) and others. These models claim that all the politicians will do the same policy. Ideology does not matter. Policies will converge. In addition, they imply a particular pattern between elections on the one hand and the impacts of economic policy on the other hand. Nordhaus (1975)' opportunistic school asserts that politicians fool the public just to win elections. They will boost the economy right before elections. Thus applied to the purpose of this paper, I formulate as first hypothesis

**Hypothesis 1:** Election years affect the size and pattern of public expenditures.

The rational political business cycle theory by Rogoff and Sibert (1988) and others criticizes the modelling by adaptive expectations and introduced rational expectations instead. In this approach, information asymmetries play a role as a source of the electoral cycles. The political incumbent tries to exploit his information advantage by signalling his economic competence before the elections. Hence, a testable hypothesis will be

**Hypothesis 2:** Pre-Election years affect the size and pattern of public expenditures.<sup>1</sup>

In contrast, the partisan approach focuses on the strong impact of party ideology. As a result, platforms and policies will not converge. Instead, right and left politicians will provide different policies by concentrating on the preferences of their partisans. The left party appeals more to the labor base and promotes expansionary policies, whereas the right party appeals more to capital owners and is therefore more concerned with keeping inflation down. This holds for both sub-approaches of the partisan theory - for the classical one installed by Hibbs (1977) as for the rational one developed by Alesina (1987). The application of the partisan theory results in the following hypothesis.

**Hypothesis 3:** The party composition of the governments affects the allocation of public expenditures.

Another political determinant on fiscal policy arises from the “common pool problem” discussed e. g. by Weingast et al. (1981). It implies that decision costs increase with the number of decision makers. Hence the amount of government expenditures is expected to be higher the more parties form a government. As coalition partners also have to find agreements for what they will spend their revenues, the following hypothesis will be tested.

**Hypothesis 4:** The type of government affects the allocation of public expenditures.

Beyond this, all-embracing hypotheses regarding the detailed way of allocating the expenditures by different parties are not easy to formulate because of two reasons. First, there is no specific theoretical model for the allocation process in combination with the political determinants. Second, it is impossible to classify all the 10 expenditure categories regarding these variables. However, more concrete hypotheses might be necessary because of fundamental reasons in empirical work. Therefore, I will formulate hypotheses for these (core-) categories for which mappings seem to be clear-cut and leave open the others. Hence Table 1 already presents the different categories of public expenditure (COFOG). The signs “+” and “-“ indicate an expected increasing or decreasing effect of the political variables on the categories, respectively.

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<sup>1</sup> Note that there is no explicit assignment between the two business cycle theories and hypothesis 1 and 2. Nordhaus (1975) does not necessarily imply that only election years matter as well as the one by Rogoff and Sibert (1988) is also somehow related to the impact of election years.

Table 1:

**Expected effects of the political determinants on the expenditure categories**

Nr.	Expenditure Category	Election year	Pre-Election year	Left government	Type of government
1	General Public Services	–	–		+
2	Defence			–	
3	Public Safety and Order	+	+	–	
4	Economic Affairs				
5	Environment Protection			+	
6	Housing and Community Amenities	+	+	+	
7	Health	+	+	+	
8	Recreation, Culture and Religion				
9	Education	+	+	+	
10	Social Protection	+	+	+	

### 3 Data

The data set contains yearly data for the total expenditure structure of 15 OECD countries. The panel is unbalanced. There are yearly data available for Denmark, Finland, Greece, Italy, Norway, Portugal, United Kingdom and the USA for the period from 1990 to 2004.<sup>2</sup> Data for Belgium are available from 1990 to 2003, for Germany from 1991 to 2004 and for Luxembourg from 1990 to 2005. Lastly, Austria, France, the Netherlands and Sweden are included with data running from 1995 to 2004. Thus the sample includes 204 observations in each category. The examined data are public expenditures classified by so called COFOG (Classification of the Functions of Government) functions and types (see Table 1).<sup>3</sup> I will use them as dependent variables for the examination of the allocation of expenditures across the countries. The data sets are provided by the OECD as well as EUROSTAT and the classifications are compatible to each other.<sup>4</sup>

The time series properties of the single series cannot be determined in a serious statistical way. Any unit root test is inapplicable because of too few observations. However, this does not change the properties of the series, of course. In other words, in case of instationarity of

<sup>2</sup> Data for Iceland and Ireland are generally also available for this period, but not with respect to all of the ten expenditure categories. That is why, I do not include Iceland and Ireland.

<sup>3</sup> The data refer to the general Government. Hence, I cannot distinguish between the different jurisdictions in the single countries and take the institutional background into account as I do in Potrafke (2006). However, it would be very difficult to consider the allocation of rights and duties in every single country and end up with a respective data set.

<sup>4</sup> To make the sample as large as possible, I took the data for Norway and the USA from the OECD database and the rest from EUROSTAT.

the series, they will remain instationary, although only 15 periods in time are considered. Hence, one would end up with a spurious regression in a model using levels instead of first differences. From other and above mentioned empirical research we know that expenditure series are usually I(1) processes. Thus, I will also use first differences in the current paper.

## 4 The empirical model

As all categories described sum up to total expenditure and the government has to choose for what it will spent its resources, it seems quite obvious that the expenditures for the single categories are correlated with each other. This correlation between disturbances from different equations at a given time is known as contemporaneous correlation (Judge et al. (1988: 443 ff.)). The method of seemingly unrelated regression estimation (SURE) controls for this contemporaneous correlation and provides efficient estimates (going back to Zellner (1962)). It is also applicable in the given (static) panel data framework.<sup>5</sup> Therefore, I consider the following structural SURE model with 10 equations to test for the impact of the political variables:

$$\begin{aligned} \Delta \log \text{Expenditure Category}_j(t) = & \beta_{0j} + \beta_{1j} \Delta \log \text{Gross Domestic Product}_j(t) \\ & + \beta_{2j} \Delta \log \text{Population}_j(t) + \beta_{3j} \Delta \log \text{Unemployment}_j(t) + \beta_{4j} \Delta \log \text{Debt}_j(t) \\ & + \beta_{5j} \Delta \log \sum_{i \neq j} \text{Expenditure Category}_i(t) + \delta_j \text{Political Dummy}_j(t) + u_j(t) \end{aligned} \quad (1)$$

$j = 1, \dots, 10$

Where the dependent variable  $\text{Expenditure Category}_j(t)$  denotes the change in expenditure category  $j$ . Two degrees of freedom are lost because of two reasons. First, I take first differences. Second, the data are transformed by a Prais-Whinston Transformation to correct for first-order serial correlation as well as heteroscedasticity (see, e. g. Greene (2003), p. 271 ff.). I follow the related studies to include as explanatory variables for control purposes: The first differences of the change in GDP ( $\text{Gross Domestic Product}_j(t)$ ), the change in the number of inhabitants ( $\text{Population}_j(t)$ ), the change in the unemployment rate ( $\text{Unemployment}_j(t)$ ) and the change in the public debt ( $\text{Debt}_j(t)$ ). For this reason, the general economic situation, the demographic development, the situation of the labour market and the general budgetary

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<sup>5</sup> See Baltagi (2001: 105 ff.)

position are taken into account. Furthermore, the change of the sum of the expenditures is included as explanatory variable ( $\sum_{i \neq j} \text{Expenditure Category}_i(t)$ ). The expenditures for category  $j$  must be excluded to avoid endogeneity problems. Hence, the model controls for the general spending behaviour and implied allocation effects in each equation.

Testing hypothesis 1 to 4, I will employ five different political variables listed in Table 2.

Table 2:

**Political dummy variables**

Hypothesis	Dummy-Variable
1	Election
2	Pre-Election
3	Centre of Gravity
4	Size of Coalition
4	Minority Government

The variables Election and Pre-Election take the exact timing of the elections into account. Following Franzese (2000), they are calculated as

$$\text{Election}_j(t) = [(M-1) + d/D]/12$$

where  $M$  is the month of the election,  $d$  is the day of the election and  $D$  is the number of days in that month. In Pre-Election years the variable is calculated as

$$\text{Pre-Election}_j(t) = [12 - (M-1) - d/D]/12$$

In all other years, their values are set to zero. Therefore, I directly control for fluctuations and the fact, that the election dates differ between as well as in the single countries. The election dates are reported in Appendix A.1.

The most important challenge for the partisan test in an OECD panel is the heterogeneity of the parties and parliamentary systems in the single states. Hence the question comes up what kind of government could be labelled left or right – especially when there are more than two parties in the government with different ideological roots.

Normally, researchers use the index by Budge et al. (1993) and updated by Woldendorp et al. (1998) and (2000) as a measure of the governments' ideological positions. It locates the cabinet on a left-right scale with values between 1 and 5. It takes the value 1 if the share of right-wing parties in terms of seat in government and their supporting parties in parliament is larger than  $2/3$ , 2 if it is between  $1/3$  and  $2/3$ . The index is 3 in a balanced situation if the

share of centre parties is 50 per cent, or if the left- and right-wing parties form a government together not dominated by one or the other side. Corresponding to the first two cases it takes the values 4 and 5 by a dominance of the left-wing parties likewise defined.

Following this procedure, I construct an ideological index for the 15 examined countries in the period from 1990 to 2004. Appendix A.2 provides all the values of this index. Consequently, I get a uniform quantitative measure. Finally, I label years in which the government changed corresponding to the one that was in office for the longer period, e. g. when a right government followed a left one in August, I label this year as left.

At last, hypothesis 4 is tested by two variables whereas previous studies used just one variable. Roubini and Sachs (1989a) constructed an index of power dispersion which distinguishes between the number of coalition partners as well as if the government was a minority government. Unfortunately, this procedure mixes the quantitative feature of the number of parties in the coalition with a qualitative feature, namely if this government has a majority in parliament or not. Therefore, I first install a variable controlling for the number of parties in government. It ranges from 0 (no coalition) to 2 (huge coalition):

0 one-party majority parliamentary government;

1 coalition parliamentary government with two-to-three coalition partners;

2 coalition parliamentary government with four or more coalition partners;

Further I use a simple dummy variable to control for the impact of minority governments. It takes on the value “1” when the government does not have a majority in parliament and zero otherwise. Thus, both variables referring to the government type increase with higher decision costs of the governments.

In comparison to other studies testing for the impact of different political variables, I include all of them in one regression. Running separate regressions with each political variable would contradict the theory that they all have an impact and cause omitted variable bias.

## **5 Results**

The estimation results refer to a model with a common constant. In accordance with the estimation procedures for static panel data models, I first check a fixed effect versus a pooled regression. An F-Test that all the fixed effects are zero could not be rejected. Thus, I employ a pooled regression with a common constant which is efficient in this case. From this also

follows that I do not even need to test for random effects. Furthermore, I test for efficiency gains of applying SURE in comparison to OLS. Both estimators are equal, if there would be no contemporaneous correlation between the single equations (or completely the same regressors in every equation are used)<sup>6</sup>. The Breusch-Pagan-Tests for no contemporaneous correlation can be rejected at the 0 percent significance level. Hence, there are strong efficiency gains from using SURE in the considered model. Of the contents, the expenditures in one category are dependent of the expenditures in the other categories, as expected. Furthermore, I drop the unemployment rate as explanatory variable because it is strongly insignificant. Hence the estimates become more efficient.

Table 3 shows the regression results for the political variables. It reports the coefficients and t-ratios for every single equation. By interpreting the coefficients, one has to be a bit careful. At first, I take logs of the levels so that the coefficients would reflect elasticities. In addition, I have to take first differences because of stationarity reasons. Thus, the estimated coefficients report the relative changes of the growth rates for the respective expenditure category.

In accordance with the political business cycles, we expect politicians to increase expenditures for categories which allow short run effects and affecting the preferences of the median voter before elections. Table 3 reports just a single statistical significant effect of Election and Pre-Election years on the different expenditure categories. The finding that politicians disburse more for “General Public Services” contradicts my prospects. I have expected that politicians catch votes by decreasing money in this category and therefore signalling their pretended unselfishness. Moreover, the prospects that politicians might increase spending for “Public Safety and Order”, “Housing and Community Amenities”, “Education” and “Social Protection” before elections are not fulfilled.

Furthermore, we see that left governments significantly affect specific expenditure categories. As expected, they increase money for “Environment Protection” and “Education”. Thereby, left governments gratify their clientele. Further, they disburse more for “Recreation; Culture and Religion” for which I have not formulated a hypothesis. In addition, I have expected them

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<sup>6</sup> Note that in the current model all the structural variables differ in each equation because of the Prais-Winstone-Transformation.

Table 3:  
**Regression Results: Effects of the political variables on the allocation of public expenditures**

	General Public Servies	Defence	Public Safety and Order	Economic Affairs	Environment Protection	Housing and Community Amenities	Health	Recreation; Culture and Religion	Education	Social Protection
<b>Election</b>	0.040* (1.81)	-0.030 (-0.92)	-0.054 (-0.61)	0.047 (0.91)	-0.016 (-0.36)	-0.083 (-1.30)	0.009 (0.26)	-0.005 (-0.16)	0.002 (0.16)	-0.003 (-0.24)
<b>Pre-Election</b>	-0.003 (-0.12)	-0.029 (-0.88)	0.042 (0.45)	0.024 (0.45)	0.011 (0.23)	-0.043 (-0.65)	0.008 (0.24)	0.033 (0.91)	-0.013 (-1.14)	0.008 (0.73)
<b>Ideology</b>	-0.006 (-0.91)	0.007 (0.74)	0.041 (1.50)	-0.002 (-0.10)	0.027* (1.88)	0.019 (0.93)	0.016 (1.54)	0.026** (2.46)	0.007** (2.00)	-0.002 (-0.71)
<b>Number of Coalition Partners</b>	0.005 (0.67)	0.002 (0.20)	-0.025 (-0.85)	-0.019 (-1.07)	-0.003 (-0.22)	0.004 (0.19)	-0.014 (-1.21)	0.013 (1.10)	-0.006 (-1.54)	-0.002 (-0.44)
<b>Minority Government</b>	-0.025* (-1.80)	0.016 (0.78)	-0.048 (-0.87)	-0.050 (-1.54)	0.032 (1.15)	0.031 (0.78)	-0.015 (-0.73)	-0.026 (-1.21)	0.014** (2.07)	0.006 (0.89)
R <sup>2</sup>	0.1386	0.0260	0.0674	0.0544	0.1894	0.0841	0.1374	0.2834	0.6151	0.4001
F-Statistic	6.39 (0.0000)	3.57 (0.0002)	1.80 (0.0631)	5.07 (0.0000)	5.38 (0.0000)	1.74 (0.0746)	5.18 (0.0000)	10.36 (0.0000)	33.17 (0.0000)	17.31 (0.0000)
N × T	174	174	174	174	174	174	174	174	174	174

t-ratios in brackets; \*\*\*/\*\*/\*: significant at the 0.10/0.05/0.01 level.

to disburse less for “Defence” and “Public Safety and Order”, but these prospects are not confirmed by the results. The same holds for the prospects regarding higher spending for “Housing and Community Amenities”, “Health” and “Social Protection”.

The single effects of the Type of Government variables are only sparsely meaningful. In fact, there is no single significant effect of the number of coalition partners on an expenditure category. In contrast, minority governments increase spending for “Education” and decrease it for “General Public Services”. The latter impact is remarkable. As minority governments are dependent on the goodwill of the parliamentary opposition, they might try to keep money for “General Public Services” down. However, all the numerical effects are small. This implies that the political determinants affect the respective categories, but do not fundamentally change their allocation.

Most important for rejecting or not rejecting the falsifiable hypotheses if electoral effects, parties and types of government matter are F-tests on the political dummy variables. Therefore, referring to hypotheses 1 to 4 I first check the joint significance of the political dummy, respectively. Table 4 reports the results of the F-Tests.

Table 4:  
**F-Tests of the political variables**

Variable	F-Statistic	P-Value
Election	1.21	0.2803
Pre-Election	0.55	0.8555
Ideology*	1.75	0.0651
Number of Coalition Partners*	1.76	0.0622
Minority Government*	1.76	0.0624
Number of Coalition Partners, Minority Government**	1.78	0.0179

\*/\*\*/\*\*\*: jointly significant at the 0.10/0.05/0.01 percent level.

The hypotheses that all the “Election” as well as the “Pre-Election” variables are jointly zero could not be rejected. Thus, election and pre-election years do not affect the allocation of expenditures (Hypothesis 1 and 2). By rejecting the null hypotheses that all the variables “Ideology” are jointly zero respectively, the partisan approach is supported. Parties do matter. Moreover, the F-tests show that the type of government affects the allocation of expenditures. The variables “Number of Coalition Partners”, “Minority Government” and both groups together are jointly significant, respectively. This finding is interesting because there were no

single significant effects of the “Number of Coalition Partners”. From an econometric point of view, this is due to the fact that the F-Test considers the correlation structure between the single parameters.<sup>7</sup> From the contents, it means that the “Number of coalition partners” definitely influence the general structure of the budget, while this effect is not strong enough to draw clear-cut conclusions on the exact way it does.

I estimate several other specifications to test the robustness of the results. As it is common in the literature, I check the sensitivity of the results to individual countries. Therefore, I rerun the regression in Table 3 excluding one country at a time. Some of the results are sensitive to the inclusion of a particular country. The variables “Ideology” and “The Number of coalition Partners” become insignificant when the United Kingdom and Belgium are excluded. Both variables referring to the type of government are jointly insignificant when Denmark and Sweden are not included – not surprisingly as they are countries with minority governments during the whole observation period. Excluding Italy will also result in jointly insignificant “Minority Government” variables. However, the impacts of the political variables become stronger when Portugal is excluded. In total, the exclusion of a single country does mostly not affect the result that left government increase the spending for “Environment Protection”, “Recreation; Culture and Religion” and “Education”.

Furthermore, examining the effects of the political variables on the single series – instead of taking them all together in a SURE model – strongly fortifies the findings of Table 3.

I also check specifications taking levels instead of first differences before applying the Prais-Whinston-Transformation. One could argue that transforming the data with correlation coefficients near to one would control for serial correlation and heteroskedasticity as well as eliminate stochastic trends in the single series like taking first differences does. In fact,  $R^2$ 's near to one in almost all the equations indicate spurious regression. Hence, from an econometric point of view, this finding confirms the chosen procedure of taking first differences and transforming the data in the next step.

Moreover, I estimate the model using an ideological index with the values by Woldendorp et al. (2000). I take their values up to 1998 and my own values for the period from 1999 to

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<sup>7</sup> Geometrically, the confidence intervals of the single parameters can be drawn as line segments, whereas the joint confidence intervals (confidence region) can look like an ellipse. (See e. g. Judge et al. (1988): 244 ff.).

2004. I can not find a jointly significant impact of this index, but also get the result that left governments increased spending for “Recreation; Culture and Religion”.

## **6 Conclusion**

This paper shows how political effects determine the allocation of public expenditures in OECD countries from 1990 to 2004. I use a new data set (COFOG) to analyse a yet unexplored object of investigation in financial policy. The results illustrate that left governments set other priorities disposing public expenditures than right governments. They disburse more for “Environment protection”, “Recreation; Culture and Religion” and “Education”. I can also show, that the number of coalition partners as well as the fact if the government has a majority in parliament have an impact on the allocation process. In contrast, election and pre-election years do not matter. However, more clear cut conclusions how governments allocate their expenditures with respect to particular categories cannot be drawn.

There might follow two aspects for further research. First, similar empirical studies might be interesting. In single country studies the institutional background and other expenditure categories could be considered in more detail (see Potrafke (2006) for the case of Germany). Second, it might be attractive to illustrate the impacts on the allocation process theoretically. The model could explain how governments spend their revenues for particular projects corresponding to the preferences of their voters or institutional constraints.

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## Appendix

### A. Party composition of the governments

#### A.1 Election dates

Table 7:

#### Election dates in the single countries from 1990 to 2005

<b>Austria</b>	<b>Belgium</b>	<b>Denmark</b>	<b>Finland</b>	<b>France<sup>8</sup></b>
07-Oct-1990 09-Oct-1994 17-Dec-1995 03-Oct-1999 24-Nov-2002	24-Nov-1991 21-May-1995 13-June-1999 18-May-2003	12-Dec-1990 21-Dec-1994 11-March-1998 20-Nov-2001 08-Feb-2005	17-March-1991 19-March-1995 21-March-1999 16-March-2003	21-and-28-March-1998 25-May-and-01-June-1997 09-and-16-June-2002
<b>Greece</b>	<b>Germany</b>	<b>Italy</b>	<b>Luxembourg</b>	<b>Netherlands</b>
08-April-1990 10-Oct-1993 22-Sep-1996 09-April-2000 07-March-2004	02-Dec-1990 16-Oct-1994 27-Sep-1998 22-Sep-2002 18-Sep-2005	05-April-1992 27-March-1994 21-April-1996 13-May-2001	12-June-1994 13-June-1999 13-June-2004	03-May-1994 06-May-1998 15-May-2002 22-Jan-2003
<b>Norway</b>	<b>Portugal</b>	<b>Sweden</b>	<b>United Kingdom</b>	<b>USA</b>
12-and-13-Sep-1993 15-Sep-1997 10-Sep-2001 12-Sep-2005	06-Oct-1991 01-Oct-1995 10-Oct-1999 17-March-2002 20-Feb-2005	15-Sep-1991 18-Sep-1994 20-Sep-1998 15-Sep-2002	09-April-1992 01-May-1997 07-May-2001 05-May-2005	03-Nov-1992 05-Nov-1996 07-Nov-2000 02-Nov-2004

Source: Statistical States Offices

<sup>8</sup> I took the averages of the two dates, respectively.

## A.2 Party composition and ideological position of the governments

In **Austria**, there was a grand coalition in power from 1990 to 1999. After that, a coalition of the Christian Democrats and the right FPÖ took over. **Belgium** was reigned by coalition governments consisting of right as well left parties till 1999. Since 2000, the governments were formed by left parties. In **Denmark**, there was a right-wing government till 1992. Then a coalition consisting of left- and right-wing parties ruled. From 1997 to 2001 there was a left government. Then the right coalition consisting of the Liberal Party and the Conservative People Party came in office up to 2005. In **Finland**, parties of the left and the right were in government in 1990. From 1991 to 1994 there was a right wing coalition, whereas till 1995 left and right parties formed the government again. The socialists led the left coalition government up to 1992 in **France**. Then the right RPR (in coalition with the UDF) was in office for four years. From 1997 to 2001 there was again a left government, followed by a right one in 2002 (in Sep 2002 the RPR and DL joined to the UMP). There were only single party governments in **Greece**. The right (ND) was in power up to 1993, then the left (PASOK) took over up to 2003, and the right (ND) reigned again. The conservatives reigned in **Germany** from 1990 to 1998. Then, for the first time on the federal level, a coalition of the social democrats and greens was in office till 2005. In **Italy**, the governments consisted of several parties. In 1994, there was a coalition of only right parties. I label Dini's cabinet in 1995 as centre. Further, the coalitions up to 2000 also consisted of parties with different ideological roots – left and right. Finally, from 2001 to 2005 Berlusconi's governments were definitely right. In **Luxembourg** a coalition of the Christian Social People's Party (CSV) and the Socialists (LSAP) ruled up to 1998. Then there was a conservative government of the CSV and the DP till 2004. Since 2005, again a grand coalition of CSV and LSAP was in office. A grand coalition consisting of the Christian Democratic Appeal (CDA) and the Labour Party (PvdA) ruled in the **Netherlands** till 1993. From 1994 o 2002 the PvdA led a left government coalition. A right government was in office from 2002 to 2005. In 1990, **Norway** was reigned by a right coalition government. From 1991 to 1997, the Labour Party (DNA) was in power. During the next two years, a right coalition government was in office again. In 2000 and 2001 the DNA ruled. A further right government ruled from 2002 to 2005. **Portugal** was reigned by a right single party government (PSD) up to 1995. From 1996 to 2001 the socialists (PS) took over. From 2002 to 2004 there was a coalition of the PSD and the Social Democratic Center-Popular Party (CDS-PP). Since 2005 the socialists have been in

office again. The Social Democratic Labor Party (SAP) reigned **Sweden** till 1991. Then, there was a right collation till 1994. Since 1995, the SAP was in power again. There is a two party system in the **United Kingdom** in which the conservatives ruled from 1990 to 1997 and then the labour party took the power. In the **USA**, the Republicans reigned up to 1993. Then the Democrats were leading up to 2001, and the Republicans took over again.

Table 5:  
**Ideology**<sup>9</sup>

	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04
Austria						3	3	3	3	3	2	2	2	2	2
Belgium	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4
Denmark	2	2	2	3	3	3	3	4	4	4	4	4	2	2	2
Finland	3	2	2	2	2	3	3	3	3	3	3	3	3	3	3
France						2	2	4	4	4	4	4	2	2	2
Germany	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4
Greece	2	2	2	2	4	4	4	4	4	4	4	4	4	4	2
Italy	3	3	3	3	2	3	4	4	4	4	4	2	2	2	2
Luxembourg	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2
Netherlands						4	4	4	4	4	4	4	4	2	2
Norway	2	4	4	4	4	4	4	4	2	2	4	4	2	2	2
Portugal	2	2	2	2	2	2	4	4	4	4	4	4	2	2	2
Sweden						4	4	4	4	4	4	4	4	4	4
UK	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4
USA	2	2	2	4	4	4	4	4	4	4	4	2	2	2	2

Source: Statistical States Offices

(with 2 = right-wing government; 3 = left as well as right parties in government; 4 = left-wing government)

<sup>9</sup> In comparison to Woldendorp et al. (2000), my values up to 1998 differ with respect to Austria, Belgium, Denmark, Finland, Germany, Italy and Norway.

### A. 3 Types of governments

Table 6:  
**Index Number of coalition partners**

	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04
Austria						1	1	1	1	1	1	1	1	1	1
Belgium	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Denmark	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1
Finland	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1
France						1	1	2	2	2	2	2	1	1	1
Germany	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Greece	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Italy	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2
Luxembourg	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Netherlands						1	1	1	1	1	1	1	1	1	1
Norway	1	0	0	0	0	0	0	0	1	1	0	0	1	1	1
Portugal	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Sweden						0	0	0	0	0	0	0	0	0	0
UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Statistical States Offices

(with 0 = one-party majority parliamentary government; 1 = coalition parliamentary government with two-to-three coalition partners; 2 = coalition parliamentary government with four or more coalition partners)

Table 7:  
**Dummy Minority Governments**

	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04
Austria						0	0	0	0	0	0	0	0	0	0
Belgium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Denmark	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Finland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
France						0	0	0	0	0	0	0	0	0	0
Germany	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Greece	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Italy	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0
Luxembourg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands						0	0	0	0	0	0	0	0	0	0
Norway	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Portugal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sweden						1	1	1	1	1	1	1	1	1	1
UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Statistical States Offices

(with 1 = government does not have a majority in parliament and 0 otherwise)