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The Political Economy of the German Länder Deficits

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The Political Economy of the German Länder Deficits

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The Political Economy of the German Länder Deficits*

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Abstract

We analyze the deficits of the German Länder for the period from 1960 to 2000 and test a number of hypotheses derived from the literature on the political economy of public expenditures and public deficits. Estimating a dynamic panel data model, we find evidence for political opportunism of the Rogoff/Sibert-type. German voters seem to favor fiscal discipline as debt issue is significantly lower in pre-election years. There is no evidence for partisan behavior. Party ideology thus plays a negligible role. As suggested by the theory, coalition governments issue more debt. This effect is, however, not statistically significant. If the probability of reelection is small, the incumbent government may find it beneficial to issue more debt. We consider four different approximations of the reelection probability but find evidence for none of them.

Keywords: Public Debt, Political Economy, German Länder, Dynamic Panel Data Model.

JEL classification numbers: D72, E60, H62.

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1 Introduction

Public deficits vary widely between jurisdictions. It is broadly accepted that economic variables such as economic growth or the interest rate alone cannot explain these differences. In fact, political variables and political institutions play an important role in the development of public debt (Persson and Tabellini (1997)). When comparing different countries, however, one can hardly disentangle the effect of political variables and the impact of political institutions. This identification problem disappears when the influence of political variables on public debt in the German Länder is analyzed as the jurisdictions have almost identical political institutions and electoral rules. Thus, our data set offers a unique opportunity to solely test for the influence of political variables on public deficits.

We test a number of hypotheses taken from the theoretical literature on the political economy of debt issue. Nordhaus (1975), for example, argues that a policy or a party platform is designed in order to win the next election (political opportunism). If that theory applies, expenditures - and consequently debt - should be expected to be higher in the election year in order to 'buy votes'. This theory was extended by Rogoff and Sibert (1988) who suggest that debt should be lower in pre-election years. The government thereby signals economic competence. Hibbs (1977) challenges the Nordhaus approach and claims that a government's policy is primarily driven by party ideology (partisan theory). For the question addressed here, this simply means that left-wing parties are expected to issue more debt than right-wing parties.

There is no consensus about whether opportunistic behavior plays a role. Nordhaus (1975) finds evidence of this for two out of four elections in the US. Evidence for the UK is completely lacking. Berger and Woitek (1997) find weak support for the opportunistic school. However, they conclude that "[...] the evidence in favor of the Nordhaus approach (is) not convincing" (Berger and Woitek (1997, p. 190)). Evidence for partisan politics is mixed, too. Alesina (1989), Boix (2000), Cusack (1997) and Hibbs (1977), for example, find support for the partisan theory, whereas Berger and Woitek (1997), Heckelman (2001) and Seitz (2000), for instance, find no evidence for it.[1]

[1]Evidence for partsian politics is also scarce in non public finance fields. Duso (2002), for example,

The theoretical models on both political opportunism and partisan politics typically consider a two party system to analyze electoral competition. As a result, parties will be in power during different time periods. With more than two parties, however, a coalition government may arise. For different reasons, e.g., the war of attrition (Alesina and Perotti (1994)) or the common pool problem (Persson and Tabellini (1997)), coalition governments are expected to issue more debt than single-party governments. Again, empirical evidence is not clear cut. Roubini and Sachs (1989) find support. Re-estimating the Roubini and Sachs model, Edin and Ohlsson (1991) challenge their view and argue that the coalition effect identified in Roubini and Sachs (1989) is a result of minority governments rather than political cohesion. Finally, political instability may lead to additional debt. In order to commit future government's expenditures to debt service, the incumbent may strategically increase debt issue (see, for instance, Alesina and Tabellini (1987)).

We estimate a dynamic panel data model and find evidence for opportunistic behavior of the Rogoff/Sibert type, i.e., debt issue is significantly lower in pre-election years. Thus, German voters seem to favor fiscal discipline. We find that single-party Christian Democratic governments were the most heavy users of this strategic tool. This is of particular interest since, overall, no partisan effects are detected. Our results for government coalitions obey the 'correct' sign but, with a significance level of fourteen per cent, the evidence is not overwhelming. A strategic deficit bias due to political instability may arise when the probability of being thrown out of office is high. We use four approximations of that probability and find no evidence for any of them.

The current paper is most related to Seitz (2000) who also analyzes the German Länder deficits. We extend Seitz's (2000) work along two lines. First, Seitz (2000) only addresses the partisan approach whereas we test five hypotheses and thereby gain a number of new insights. Second, in addition to the ordinary least squares estimator and the least squares dummy variable estimator, we also provide the results of the Arellano-Bond estimator (Arellano and Bond (1991)), a dynamic panel data estimator. This instrumental variable

showed that the government's ideological position played only a minor role in explaining regulatory reform in the mobile telecommunications industry in the OECD.

estimator aims at correcting for the bias in the least squares dummy variable estimator stemming from the dynamic structure of the model. This allows for robustness checks.

The paper is organized as follows. In Section 2 the institutional background for Germany is provided. The hypotheses to be tested are derived in Section 3. We thereby review the theoretical literature on the political economy of debt issue. In Section 4 we describe the data set. The empirical model and the different estimators applied are introduced in Section 5. The results are presented in Section 6. Finally, Section 7 offers some concluding remarks.

2 Institutional background

2.1 Germany's federal political design

The name "Federal Republic of Germany" (FRG) already highlights the country's federal structure that is reflected by the levels of government: federal (Bund), state (Land) and local (Gemeinde). Since German unification in 1990 Germany has consisted of sixteen Länder, the ten Länder of the former West Germany, the five new Länder of the former East Germany (German Democratic Republic, GDR), and Berlin. From World War II to unification, Berlin was divided into West Berlin and East Berlin, where the latter was capital of the GDR. Additionally, there are about 14,000 cities and communities (Seitz (2000, p. 188)).

The Länder are not mere provinces but states endowed with their own powers. These powers and responsibilities are specified in the Basic Law (Grundgesetz), Germany's constitution. The Basic Law also guarantees the local authorities the right to independently administer their own affairs. As the local authorities rely heavily on grants from the states, their independence is rather limited. Three large German cities, namely, Berlin, Hamburg and Bremen, form their own states (Länder). These are the so-called "city-states" (Stadtstaaten) that do not have local administrative bodies. In contrast, the other German states are called "non-city-states" (Flächenländer). This distinction is important since the budgets of the city-states include expenditures and revenues that are part of the local budgets in non-city-states. Moreover, the expenditures of the non-city-states include

grants to the local authorities whereas there are no such grants to local authorities in the city-states. Consequently, public expenditures or public debt of the two types of state are not directly comparable.[2]

Our study examines the budget deficits of the Länder without taking the local authorities into account. As mentioned above, local authorities have their own budgets and their own parliaments. Election dates typically differ between local and state jurisdictions. As a consequence, the aggregated local political structure will hardly ever match the political structure of the Land. This is why we concentrate on the public deficits of the states and neglect those that may arise at the local level.

2.2 Fiscal federalism in Germany

Although the Länder are endowed with their own powers, an almost total lack of tax setting autonomy exists. Additionally, a large fiscal equalization system harmonizes revenues across states, calculated on the basis of several fiscal and economic indicators, and this strongly distorts incentives to increase the tax base. The situation in Germany, therefore, differs in one major aspect from the theoretical literature on the political economy of public expenditures: typically the government has two options for financing expenditures – taxes and debt. But, due to the lack of tax setting autonomy and the equalization scheme, total revenue of every Land is more or less fixed (for a more detailed overview see Seitz (2000, pp. 188-190)). To finance public expenditures, Länder governments only have one discretionary source of financing at their disposal, namely debt. Since other revenues can be considered exogenous, we concentrate on public deficits and their political determinants.

In addition to these peculiarities of German fiscal federalism, there are two more important aspects. First, in 1990, East Germany joined the FRG, enlarging the population from around 64 millions to roughly 80 millions, while GDP only increased by less than 10 per cent. The integration of East Germany into the West German social security system, the huge investments in infrastructure and various other costs of transformation

[2]In our empirical model, the state fixed effects account for that fundamental difference.

created a substantial fiscal shock. Although during the first five years after unification most of the direct financial burden was borne by the federal government via a so-called unification fund (Fonds Deutsche Einheit), we control for unification by introducing a unification dummy, UNIFIC, from 1991 onwards (unification was in the fourth quarter of 1990). Secondly, from 1995 onwards, the new German Länder, i.e. the former East Germany, were included in the fiscal equalization system. A large part of this equalization is between the Länder (horizontal equalization). As the new Länder were net recipients, this introduced a fiscal burden on the Western Länder. We account for that by introducing an equalization dummy, EQUAL, that assumes the value one from 1995 onwards.

2.3 Political parties

In Germany, there are four major parties. The Christian Democratic Union (CDU), the Social Democratic Party (SPD), the Free Democratic Party (FDP) and the Green party (GREEN). While CDU, SPD and FDP ran for elections in the entire period under study here, the Greens did not. The Green party was founded in 1980 and first won parliamentary seats at the state level in Hamburg and Hesse in 1982 and at the federal level in 1983. Due to historical developments after World War II, the CDU has never run for elections in Bavaria. Instead their so-called sister party, the Christian Social Union (CSU), participates. However, the programmes of CDU and CSU are very similar and they always form one parliamentary group in the federal parliament (Bundestag). Therefore, we do not distinguish between them and label both CDU.

At the end of the 1980s a far right wing party, the Republicans, managed to gain some seats in several Länder parliaments but have never been part of a government. After unification, the Party of Democratic Socialism (PDS) was founded, a successor to the United Socialist Party (SED), the party that ruled East Germany for more than 40 years. Although the PDS has a significant influence in the new Länder, it has not succeeded in gaining any influence in the Western Länder.[3] As the democratic history of the East German Länder is rather short, we abstain from including them into our analysis. Due to

[3]To some extent, Berlin is an exception as the PDS currently forms a coalition with the SPD. Note, however, that today's Berlin is not a former Western Land.

its special status, Berlin is also eliminated from the data set (see below for more details).

Within the last forty years, the West German Länder were either governed by majority governments of the CDU or the SPD or by a coalition that mostly consisted of two parties. The SPD has formed coalitions with all three other parties, whereas the CDU has only formed coalitions with the SPD (a so-called 'grand coalition') or the FDP. Minority governments as well as other government constellations have played a negligible role. Table 2 in the Appendix provides, among other things, an overview of government formations in the West German states.[4]

3 The political economy of public deficits

There is a large number of conflicting theories explaining the formation and the evolution of public deficits. In this section we review the literature and derive the respective hypotheses to be tested in Section 6. Our focus is on four theories, namely, political opportunism, partisan theory, divided governments, and political instability.[5]

3.1 Political opportunism

Opportunistic governments are assumed to be primarily interested in being reelected. There are no ideological motives. Thus, parties "[...] do not care about the effects of their policies on the economy except insofar as they influence voters' electoral choices" (Alesina (1987, p. 651)). In a two-party system, both competing parties will adopt the same platform and implement the same policies once elected, thereby maximizing their chance of being (re-)elected.

The theory of political opportunism was introduced in the context of the 'Phillips curve' (see Nordhaus (1975) and MacRae (1977)). Among others, Alesina and Perotti (1994) and Persson and Tabellini (1997) demonstrated that this theory can also be applied to public deficits: to appear competent to voters, the incumbent government has

[4]For an explanation of the variables see Table 1 in the Appendix.

[5]In their paper on the political economy of state aid in the European Community, Neven and Röller (2000) also review the political theories of government.

an incentive to boost the economy prior to elections thereby improving the chances of being reelected, or, more generally, the incumbent government is prepared to introduce distorted policies in order to increase the chance of being reelected. Such policies mostly require raising transfers or increasing public investments, e.g., investments in public infrastructure, housing, or hospitals. As German Länder are hardly able to influence their returns, the augmented public expenditure will result in (further) debt, especially in election years.[6]

Hypothesis 1 *Public deficits are higher in election years.*

For such a policy to be successful, assumptions about expectations or information have to be made. Of course, irrational voters will not (fully) anticipate that the debt burden has to be borne after the election. However, opportunistic cycles also obtain with rational expectations when there is a fraction of uniformed voters who cannot correctly link economic performance to public debt. Rogoff and Sibert (1988) developed a model based on rational expectations where electoral cycles originate in (temporary) informational asymmetries. Prior to election, the incumbent government tries to exploit its information advantage. By issuing less debt it can signal that it is doing well. Low debt demonstrates that the government can efficiently provide a given level of public goods. Since deficits are visible to voters with a time lag, the incumbent runs a smaller deficit in the year prior to election. Electoral competition is, thus, asymmetric as the potential entrant has no such credible tool to signal fiscal competence.

Hypothesis 2 *Public deficits are lower in pre-election years.*

Consider that a government can be sure of being reelected. For the German case, Bavaria serves as an example, where the CSU has been in office since the 1950s. As there is basically no risk of being thrown out of office, there is no incentive to introduce distorted policies. Thus, finding no evidence for political opportunism may simply reflect political stability (see Hypothesis 5).

[6]One may argue that there is a time lag between expenditures and growth so that a higher deficit in pre-election years results. This argument will be tested in the context of Hypothesis 2

3.2 Partisan theory

In his seminal paper, Hibbs (1977) analyzed unemployment and inflation in twelve western economies. He found clear evidence for the negative correlation between unemployment and inflation as suggested by the 'Phillips curve'. More importantly, he demonstrated that countries with conservative (right) parties in executive face low inflation but high unemployment and countries with socialist or labor (left) parties in executive face high inflation and low unemployment. Hibbs concludes that policies of the executive are driven by the governing party's ideology.

To be more general, the partisan theory predicts a more expansionary policy for left governments than for right governments. For the German Länder deficits, this simply means that left governments are expected to issue more public debt than right governments. Left governments typically are more inclined to run redistributive policies. Public spending may therefore be directed towards mitigating income inequality by increasing transfers. Such programmes may require debt issue. Note, however, that debt in itself involves redistribution as income taxation is typically progressive. The debt burden mainly falls on high incomes. Considering the ideological differences to be time invariant we can state the next hypothesis.

Hypothesis 3 *Left governments issue more debt than right governments generating a partisan trend or cycle.*

It may be a bit naive to claim that parties only follow their ideological preferences and do not care about winning the next election. Therefore, consider a two party system where both the right and the left parties care about winning elections. In electoral competition both parties will adopt the same platform (the one that maximizes the probability of being elected) if they are equally well informed about the preferences of the electorate. Once elected, each party will implement its most favored policy if it is not committed to its platform. Irrational voters will not anticipate the parties' incentives to deviate from their announced policy. Whether the left policy or the right policy is implemented is thus, in this framework, simply a matter of chance.

Alesina (1987, 1988) introduced rational expectations into the partisan theory and

showed that there may be a rational partisan cycle: consider electoral competition to be a one shot game. Again, parties will announce converging platforms in order to maximize the probability of winning the election. Rational voters, though, anticipate the parties' incentives to deviate from their platform and they evaluate party programmes rather than party platforms. The policy implemented will, in general, be determined by party programmes (and the preferences of the electorate). Additionally, Alesina (1988) showed that policy convergence may obtain when electoral competition is modelled as an infinitely repeated game. Convergence breaks down if the discount factor of at least one party is sufficiently low, i.e., if reputation is of minor importance.

To summarize, following Alesina (1988) the assumption of time invariant ideological differences is equivalent to modelling electoral competition as a one shot game or as an infinitely repeated game with a sufficiently low discount factor. Thus, if no partisan trends are found, this may be (i) due to the non-existence of partisan behavior or (ii) due to strong reputational effects that lead to an adaptation of party policies.

3.3 Divided governments

The theories discussed so far modelled electoral competition between two parties that simultaneously aim at political power. With only two parties, there is no conflict once one party is elected. With more than two parties, coalition governments may arise, thus opening up another stage of conflict.

Persson and Tabellini (1997, pp. 68-71) provide a simple model of debt issue incentives in coalitions: consider a two party system with two respective interest groups, two periods and no elections. There is a budget constraint in each period and every partner of the coalition is willing to allocate as much as possible of the budget to its constituency. Each party proposes a spending level for their group. If proposals are feasible, i.e., if expenditure levels fulfill the budget constraint, the allocation follows the proposals. Otherwise each group receives a share proportional to the proposal of their party. In period 2 both parties will propose spending the entire budget (for their interest group) and a symmetric equilibrium with identical expenditures results. The situation in period 1 is different in the sense that debt issue reduces period 2 resources. But since the future budget is shared

equally, the costs of further debt are not fully internalized, leading to the well known common pool problem. Too high spending proposals result, leading to an inefficiently high issue of debt. Since the fraction of internalized costs decreases in coalition size, the severity of the problem is larger, the more parties forming the coalition.

Hypothesis 4 *Coalition governments (a) issue more debt and (b) debt increases in coalition size.*

An obvious criticism of the Persson/Tabellini argument is that both parties have control over some part of the budget and none of the parties is responsible for the entire budget. Centralization of financial responsibility would yield efficiency.

Another theory that explains higher deficits for coalition governments is offered by Alesina and Perotti (1994, pp. 22-29): consider a permanent fiscal shock. Coalition partners will then fight about the allocation of the fiscal burden to the respective constituencies. This situation is well modelled by the 'war of attrition'. In general, delayed adjustment to the fiscal shock will obtain, allowing debt to accumulate.

Hallerberg and von Hagen (1996) find that countries with majoritarian electoral systems are more likely to have single-party governments and countries with proportional electoral systems are more likely to have coalition governments. Thus, the question of whether coalition governments have different incentives to issue debt than single-party governments is of some importance for the design of the electoral system. So, if we find evidence for Hypothesis 4, a switch to a majoritarian electoral system may contribute to fiscal stabilization.

3.4 Political instability

The stock of debt links past policies to future policies (Alesina and Perotti, (1994, p. 16)). So, if the incumbent cannot directly commit the succeeding government to certain policies, it can do so indirectly by strategic issue of debt. It thereby obliges future expenditures to debt service. This strategic deficit bias is more important, the more often governments turnover (Alesina and Tabellini (1987); Tabellini and Alesina (1990)).

But, even without this particular bias, political instability may have an impact on debt: the incumbent government fully internalizes the benefits of additional borrowing but, as the costs of further debt issue only accrue when it is reelected, the incumbent government does not take full account of the negative impact of future increases in debt service. This inefficiency increases the more unlikely the government's reelection (Persson and Tabellini (1997, pp. 61-68)). Both arguments can well be summarized as our final hypothesis.

Hypothesis 5 *The larger the probability of being thrown out of office, the higher the public deficit in election years.*

4 Data

The data set comprises yearly data for 10 West German Länder from 1960 to 2000. In the early years of the FRG, i.e. before 1960, the party structure was relatively unstable. Several small regional parties joined state governments for short periods and disappeared afterwards. Additionally, different coalitions governed within one election period. As this was clearly just a post-war phenomenon, we do not include these years into our analysis. Data for the Saarland is only available from 1960 onwards because its economic reintegration into the Federal Republic of Germany was in July 1959. As this prevents us from calculating growth rates for 1960, we arrive at an unbalanced panel with 409 observations. As already mentioned above, Berlin and the five new German Länder have not been selected into our sample. Berlin is excluded for two reasons. First, Berlin was divided before 1990. While East Berlin was the capital of the GDR, West Berlin was part of the FRG. Second, West Berlin received generous grants from the federal government, making debt issue more or less unnecessary. From 1990 onwards, data for the East German Länder are available. We nevertheless do not select them, as the period is simply too short to obtain sufficient (political) variation.

Deficit data are taken from Statistisches Bundesamt (Federal Statistical Office, 2001). Data for the gross domestic product (GDP) and GDP per capita have been provided by

the Statistical Office of Baden Württemberg and the Federal Statistical Office.[7] Nominal numbers were deflated by the consumer price index for all households obtained from Statistisches Bundesamt (2003).[8] The election dates as well as the election results in both percentage of votes and numbers of seats were taken from the Forschungsgruppe Wahlen (2000, Election Research Team).

5 The empirical model

In recent studies of public deficits or public expenditures the variable of interest has typically been transformed before running regressions. Cusack (1997) and Seitz (2000), for example, take its first difference as a share of GDP. This is basically done in order to obtain stationary time series. We consider growth rates for the same purpose. The major advantage of our approach is that GDP is not used in the construction of the dependent variable which could otherwise be a source of endogeneity. We consider the following dynamic panel data model

$$d_{it} = \gamma d_{i,t-1} + \beta y_{it} + \alpha_1' x_{it} + \alpha_2' z_{it} + \mu_i + \epsilon_{it}, \tag{1}$$

where d_{it} denotes the growth rate of public debt in state $i = 1, ..., N$ at time $t = 1, ..., T$ and $d_{i,t-1}$ its first lag, $t = 2, ..., T$. GDP growth rate is denoted y_{it} and the political variables are summarized in the vector x_{it}. This vector changes according to the hypothesis under study. In contrast, the control variables, z_{it}, are independent of the hypothesis. We control for the first and second oil crisis (OIL1, OIL2) as well as for German unification (UNIFIC) and for the inclusion of the East German Länder into the fiscal equalization scheme (EQUAL).[9] Finally, debt issue may respond to the financial costs of borrowing, namely, the interest rate (INTRATE). Note that the interest rate varies over time but not over states. The variable can therefore only explain within state variation and not between state variation.

[7] We thank Alexandra Günther and Walter Becker from the respective institutes.

[8] Average real GDP growth is around 3 per cent and average real debt growth is around 6 per cent.

[9] Definition of all variables can be found in the Appendix in Table 1.

The time invariant state effect is given by μ_i. We will consider these effects as fixed rather than random. It can be argued that there is no room for random effects as the entire population, i.e., all ten West German Länder, are included in the study. In fact, the Hausman test rejects the random effects specification, the random effects estimator would be biased due to the endogeneity of μ_i. This may not be too surprising as Bavaria, for example, was ruled by the CSU during the entire period considered here. North-Rhine Westfalia is an example of a long lasting SPD government. Obviously we will have $E(x_{it}\mu_i) \neq 0$, i.e. Länder fixed effects. Random disturbance is $\epsilon_{it} \sim N(0, \sigma_\epsilon^2)$. Let $w'_{it} = (x'_{it}|z'_{it})$, then the assumptions of the model can be summarized as follows

$$
\begin{aligned}
E(\epsilon_{it}\epsilon_{js}) &= 0 && \text{for } i \neq j \text{ or } t \neq s \\
E(\mu_i\epsilon_{jt}) &= 0 && \text{for all } i, j, t \\
E(w_{it}\epsilon_{js}) &= 0 && \text{for all } i, j, s, t.
\end{aligned} \tag{2}
$$

As is well known, the ordinary least squares (OLS) estimator is inconsistent when a dynamic panel data model, like the one in equation (1), is to be estimated. The explanatory variable $d_{i,t-1}$ is positively correlated with the time invariant state effect μ_i and this correlation does not vanish with either increasing N or with increasing T (see, e.g., Bond (2000, p. 4)). The estimates of γ will be biased upwards and the coefficients of the exogenous variables will be biased towards zero (see Hsiao (1986, pp. 76-78)). The fixed effects estimator (or Least-Squares Dummy Variable estimator, LSDV estimator) eliminates this source of inconsistency by wiping out the Länder fixed effects μ_i. There nevertheless remains a bias, as the lagged endogeneous variable is correlated with the transformed error term. Nickell (1981) showed that the fixed effects estimator for γ may be seriously biased downwards in short panels. However, he also showed that the bias approaches zero as T tends to infinity. Since T is relatively large in our study ($T = 41$), the bias is likely to be moderate. As simulation studies have shown, the bias in the estimates for the coefficients of the exogenous variables, here α_1 and α_2, tend to be positive but are much smaller relative to those of γ (see, for example, Judson and Owen (1997, Tables 2 and 3)). As we are primarily interested in an estimate of α_1, applying the LSDV estimator is appropriate. This is well in line with the recommendations given in Judson and Owen

(1999).[10]

Arellano and Bond (1991) consider the first difference version of the model described in equation (1),

$$\Delta d_{it} = \gamma \Delta d_{i,t-1} + \beta \Delta y_{it} + \alpha_1' \Delta x_{it} + \alpha_2' \Delta z_{it} + \Delta \epsilon_{it}, \tag{3}$$

where Δ is the first difference operator, e.g., $\Delta d_{it} = d_{it} - d_{i,t-1}$. Note that this transformation eliminates the (time invariant) fixed effects. OLS still yields biased estimates as the error term is, as before, correlated with the lagged difference of the dependent variable. The generalized method of moments estimator of Arellano and Bond (1991), henceforth GMM estimator, uses all valid lagged dependent variables (in levels) as instruments for Δd_{it}. The GMM estimator is consistent and asymptotically efficient (when N tends to infinity). We consider the regressors summarized in w_{it} as strictly exogenous so that variables themselves and all their lags are valid instruments.[11]

We consider the homoscedastic (one-step) version of the GMM estimator. The two-step version, that allows for heteroscedasticity, may improve efficiency. Simulation studies have shown, however, that the two-step GMM is - in most cases - less efficient than the one-step GMM, i.e. the two-step GMM yields higher standard errors (see, e.g., Arellano and Bond (1991), Kiviet (1995), and Judson and Owen (1997)). We therefore concentrate on the one-step version. Additionally, Judson and Owen (1997) have shown that there is a tradeoff when increasing the number of lags used as instruments in the GMM estimator (see their Tables 2, 3 and 4): increasing the number of instruments improves efficiency but also increases the bias. To account for that tradeoff, we set the maximum number of lags to be used as instruments to 5.

In principle, efficiency gains may be achievable when applying the systems estimator

[10] Actually Judson and Owen (1999) recommend using the biased corrected LSDV estimator developed by Kiviet (1995). Apart from the fact that this procedure requires a balanced panel, the approximation formula is derived considering a random effects specification. Our unbalanced panel with state fixed effects thus for two reasons prevents us from using this procedure.

[11] Note that the GMM estimator takes first order autocorrelation of $\Delta\epsilon$ into account. Thus, neither consistency nor efficiency is affected by first order autocorrelation. However, second order correlation implies inconsistency (Arellano and Bond (1991, pp. 281-282)).

of Blundell and Bond (1998). But, as both the Arellano-Bond estimator and the Blundell-Bond estimator are micro panel data estimators, they have poor finite sample properties when N is small. As N is small in our study ($N = 10$), results of both estimators should mainly be seen as a robustness checks for the results of the more reliable (and more efficient) LSDV estimator. To check for robustness, we only provide the estimates of the Arellano-Bond estimator, labelled as GMM. As already mentioned above, OLS produces a positive bias for γ and a negative for α_1 and α_2. This is the other way round for the LSDV estimator. Thus, if GMM is more efficient, then we should expect the estimates to lie between the OLS and LSDV estimates for all parameters to be estimated.

6 Results

Before testing the political economy of debt issue, we briefly discuss results with economic indicators and some controls only. The regression results are shown in Table 3 in the Appendix. With a coefficient of around .3, debt dynamics are relatively moderate. The impact of GDP growth is significantly negative as expected. A downturn in the economy drives up public deficits. This may be due to expenditure programmes, reduced tax revenues, or both. Neither the effect of the lagged debt growth, DEFICIT(-1), nor the effect of economic growth, GDP, is of particular interest for this study. To save space we therefore do not report the coefficients of these variables when testing for the political variables. For the same reason, we refrain from reporting the coefficient estimates of the control variables for these regressions.

Both the first and second oil crises, OIL1 and OIL2, respectively, increased debt growth, though, the effect of the latter is statistically insignificant. German unification in 1990 had a significant negative impact on debt growth. This is somewhat surprising as unification introduced a substantial fiscal burden on former West Germany. Most of the financial burden of unification was borne by the social security systems and the German unification fund. Moreover, the economy boomed right after unification and this increased tax revenues. This may explain why no further state debt was needed. We find no significant effect of the inclusion of the East German Länder into the fiscal equalization

system (EQUAL) on public debt growth. The results reported here are more or less the same for all estimates discussed below.

Comparing the OLS and LSDV estimates gives valuable insights. As already mentioned in the previous section, OLS overestimates γ and underestimates α_1 and α_2. For LSDV it is the other way round. The true value can thus be expected to lie between the OLS and LSDV estimates. Since the estimates of coefficients do not differ very much, we get a fairly good prediction about the true coefficients. The bias in the LSDV estimator seems to be negligible - especially for the exogenous variables. In contrast, GMM produces rather unreliable results. There may be two reasons: first, the GMM estimator is a micro-panel data estimator and therefore has poor finite sample properties when N is small. Second, consistency of GMM breaks down if second order autocorrelation in residuals is detected. As N is small in our study and since the hypothesis of no autocorrelation can never be rejected at the 5 per cent level, we concentrate on the LSDV estimator throughout.

6.1 Political opportunism (Hypothesis 1 and 2)

In Subsection 3.1 we presented two versions of political opportunism. The standard version of Nordhaus (1975) and MacRae (1977) predicted higher deficits for election years as the incumbent government tries to buy votes, e.g., by increasing transfers to targeted voters or by boosting the economy in general (Hypothesis 1). This theory, however, breaks down when rational expectations are considered. Introducing rational expectations, Rogoff and Sibert (1988) demonstrated that political opportunism implies lower deficits in pre-election years (Hypothesis 2). The incumbent thereby demonstrates its fiscal competence.

Before we test the hypothesis let us first take a brief look at the descriptive statistics. The average debt growth rate calculated over all years and all states is 6.5 per cent. For election years, we find a growth rate of as much as 7.3 per cent and for pre-election years 4.6 per cent. These numbers suggest that both hypotheses may hold. To test for these hypotheses, we include two dummy variables in our regression: ELECTION and PREELEC. The first variable equals 1 in election years and zero otherwise, the second

accordingly for pre-election years. Table 3 reveals that debt growth is, indeed, significantly lower in pre-election years whereas no significant effect is detected for election years. But note that the coefficient for election years nevertheless has the correct sign.[12] We thus reject Hypothesis 1 and confirm Hypothesis 2. Although results do not allow us to discriminate between rational and non-rational expectations, we conclude that German voters seem to be in favor of fiscal discipline.

One might ask whether the strategic lower debt issue in pre-election years is used equally across parties or whether there are some government constellations that make more use of this tool than others. The descriptive statistics, shown in Table 2, demonstrate that Social Democratic governments tend to issue less debt. Single-party SPD governments with 4.1 per cent debt growth in pre-election years, SPD/FDP coalitions with 3.5 per cent, and SPD/GREEN coalitions with 3.0 per cent are clearly below the average of 4.6 per cent. SPD/CDU coalitions, though, are an exception to this pattern. At this stage, one should be cautious in interpreting the results. First, it is not perfectly clear what we are actually measuring when we interact different types of governments with the pre-election year. Partisan effects, to be tested in the next subsection, may well come into play and so too may coalition effects that will also be tested below. Second, there are very few observations for pre-election years for some government constellations. Taking a closer look at the data reveals that 2 out of 6 observations for SPD/CDU coalitions are clearly outliers. Debt growth in Lower Saxony was 17 per cent in 1966 and 24 per cent in 1967 for Baden-Württemberg.

We investigate the strategic use of lower government debt in pre-election years by making the pre-election dummy interact with all possible party constellations. The regression results reveal that CDU single-party governments seem to use this tool most heavily. This contrasts strongly with the descriptive statistics discussed above and demonstrates that it may be misleading to analyze descriptive statistics only. The means presented in Table 2 are calculated over time and states. As political majorities are highly correlated with the states, the means measure to a considerable extent Länder (fixed) effects. As the LSDV

[12] We ran two separate regressions. Results do not change by much when including both dummies in a single regression.

estimator is calculated on within-state variation only, the coefficients do not suffer from this endogeneity bias. We conclude that there is strategic lower debt issue by parties in pre-election years and that the CDU tends to use this tool more aggressively than other parties do.

6.2 Partisan theory (Hypothesis 3)

Left governments are usually more inclined to redistribute income. As additional debt issue enables the government to, for instance, increase transfers to the poor, the partisan theory predicts higher debt issue for left governments. To check whether fiscal policy is driven by party ideology, we have to assign every government constellation to either left or right. We categorize SPD governments, SPD/FDP coalitions and SPD/GREEN coalitions as left. CDU governments and CDU/FDP coalitions are labelled right. It is difficult to ascribe a political orientation to SPD/CDU governments. There are basically two alternatives. First, do not label such coalitions and use them as a reference category in the estimation. Second, use the party affiliation of the prime minister to allocate a label. We opted for the second alternative as only 20 years of SPD/CDU government out of 410 years are simply too few observations for a sensible reference category.[13] A similar reasoning applies to all other government constellations summarized in ELSE (10 of 410 years). These government constellations are considered left when the Social Democrats were involved and right when the Christian Democrats were.

Before we interpret estimation results let us again first take a look at the descriptive statistics. Table 2 identifies right governments as the ones issuing more debt. As the difference in debt growth rates between right governments (6.7 per cent) and left governments (6.3 per cent) is rather low, a significant partisan effect in the data would be a surprise. And, indeed, a significance level of 44 per cent is far beyond any conventional level. Note, however, that the coefficient obeys the correct sign, i.e., left governments tend to issue more debt (right governments are reference category).

One may argue that this simple right-left scale is imprecise and does not map the

[13]Results are independent of the alternative adopted.

differences in government constellations properly. We therefore also analyze debt issue by different governments. The descriptive statistics offer one, at a first sight, surprising result: SPD/GREEN coalitions issue the least debt of all possible government constellations. This may, in fact, be true but it may also be a simple time effect. While all other government constellations occurred in more or less every period, this was not the case for coalitions of the Social Democrats with the Greens. 31 of 32 years of red/green government occurred after 1990, a period with clearly lower debt growth rates than before. Our dynamic empirical model accounts for this as the constant induces a linear time trend in growth rates.

For the estimation of government effects (see Table 3) we consider CDU single-party governments as the reference category. For the OLS and LSDV estimates, we find that all other governments tend to issue more debt than CDU governments though none of the effects is statistically significant.

To summarize, Hypothesis 3 cannot be confirmed.[14] Nevertheless, interpretation of this result remains difficult (see also Subsection 3.2). It may well be that there are no partisan trends in German Länder politics – that ideology plays a negligible role. This is, however, not necessarily true. Once the parties care not only about ideology but also about winning the next election, platform convergence will occur. Since elections can well be considered a repeated game, parties will stick to their platforms. Otherwise they risk their reputation: identifying the opponent as a liar is a powerful weapon in electoral competition. If reputation is decisive, then platform convergence implies policy convergence and with it adaptation of fiscal policies. Differences can hardly be detected. And indeed, for Germany, it is usually argued that both major parties, SPD and CDU, are close to the center.

Although no partisan effects are found, conventional wisdom in Germany is that the CDU is more concerned about fiscal discipline and fiscal stability than the Social Democrats. The CDU is claimed to be simply more competent in fiscal policy. Our result for political opportunism offers a new explanation: leaving Länder effects aside, the CDU makes more use of lower debt issue in pre-election years to signal fiscal competence than

[14]This is well in line with the findings of Seitz (2000).

other parties do. In fact, this may have played a major role in their electoral campaign.[15]

6.3 Divided governments (Hypothesis 4)

There are several reasons for expecting higher deficits with coalition governments, e.g., as argued in Subsection 3.3, the common pool problem or the war of attrition. 206 years of coalition governments yield an average debt growth of 6.3 per cent compared to 6.5 per cent for the 203 single-party governments. The descriptives, thus, raise doubts about Hypothesis 4.

From our discussion on the results of political opportunism we know that one should be cautious when interpreting cross state averages. We therefore define the indicator variable COAL that assumes a value of one whenever two or more parties formed the government and zero otherwise. All estimates are in line with the hypothesis though significance levels of 9 per cent (OLS) and 14 per cent (LSDV) provide no overwhelming evidence.

Severity of the common pool problem increases in the size of the population exploiting an exhaustable resource. For our purposes, this simply means that debt issue incentives are the higher the more parties in the coalition. The number of parties in a coalition is summarized in COALSIZE. Its effect on debt growth, however, is insignificant. This does not necessarily prove that part (b) of the hypothesis is wrong. Since only 13 of 206 coalition years have more than two parties, and, all have had three parties, we cannot expect to find anything significant.

Before we turn to the analysis of political instability, let us briefly review the results obtained so far. We found support for political opportunism of the Rogoff and Sibert type, namely, lower debt growth in pre-election years. We also claimed that the CDU makes more use of this strategic tool than all other governments do. The following subsections on partisan theory and divided governments demonstrated that the "pre-election-CDU-effect" is not an artifact of partisan trends or special coalition incentives as neither Hypothesis 3 nor Hypothesis 4 was confirmed. One might argue that there

[15] This result survives when testing for pre-election effect on a left-right scale.

is some (weak) evidence that coalitions issue more debt than single-party governments. If this is true, then debt issue incentives of SPD single-party governments would be an appropriate benchmark. As the coefficient of the CDU/pre-election interaction is roughly 50 per cent higher than that of the SPD, our interpretation still remains valid.

6.4 Political instability (Hypothesis 5)

Finally, Hypothesis 5 suggests that the deficit a government runs is negatively correlated with the probability of being reelected. By issuing further debt the incumbent government can commit the future government's expenditures to debt service and can thereby, at least to some extent, prevent policies that would mainly favor the opponent's constituency from being implemented. This effect can only occur in election years for two reasons. First, the time lag from the day the budget was passed to the next election is simply too large for all other years. Second, reliable polling data two years prior to an election are simply not available. But consider, although unlikely, data were available. The deficit might then also be higher in pre-election years. From our analysis of political opportunism, however, we know that governments use pre-election deficits to signal fiscal competence. So trying to bind the future government's hands in pre-election years undermines exactly that signal. We therefore concentrate on election years.

Another fundamental question is how to approximate the probability of being thrown out of office. Maybe the best what could be done is construct a measure using polling data. But such data are, unfortunately, not available. There are many strategies for solving that problem and we present four of them.

Assumption 1 *The higher the current majority of the incumbent government, the lower the probability of being thrown out of office. A large current majority then goes along with low debt issue in the election year.*

The variable ASSUMP1 is constructed by lagging the government majority in the election year. This prevents that the government in the election year is the new one already, which would be the case if the inaugural date were before July 1. We find no

support for the hypothesis with Assumption 1. This may not be too surprising as the current majority is a rather poor predictor for the outcome of the next election.

One may argue that grand coalitions, i.e. those between SPD and CDU, are outliers. As they often have votes of more than 80 per cent this is, in fact, what they are. To neglect grand coalitions not only seems to make sense from an econometric perspective but also from a political one. Why, and how, should a grand coalition issue more debt, when one at least of the two parties will be in government next period? Therefore, we set ASSUMP1 to missing for grand coalitions and rerun regressions. Results do not change.

As with the strategic issue of less debt in pre-election years, some parties may make more use of the commitment strategy of Hypothesis 5 than others. Interacting ASSUMP1 with party or coalition dummies yields no significant effects.

Assumption 2 *Consider that the incumbent government correctly anticipates the outcome of the upcoming elections in terms of votes. This is equivalent to assuming that perfectly reliable polling data were available (in the pre-election year at the time the election year's budget is set up). Then debt issue will be larger, the smaller the number of votes for the incumbent.*

The variable ASSUMP2 is obtained by lagging the pre-election year government in the election year and combining this information with the votes gained in the election. Again, independent of whether grand coalitions are included or excluded, evidence for Hypothesis 5 is lacking. Party effects also play no role.

Assumption 3 *Consider the incumbent government correctly anticipates that elections will be close, or that the competing party or block will be ahead in terms of votes, then the government may issue more debt as the likelihood of being reelected is small. Debt issue will be larger the further the competing block is ahead of the current government.*

We consider two blocks. The CDU forms one block and the SPD together with the Greens the other block. Putting the Social Democrats and the Greens together is obvious as, in all cases, the Greens were in government they formed a coalition with the Social Democrats. The FDP is much more flexible. 18 per cent of all governments were

SPD/FDP coalitions and 18 per cent were CDU/FDP coalitions. It is thus impossible to allocate the Liberals to one particular block.

The variable ASSUMP3 is calculated as the votes for the CDU in the upcoming elections minus the sum of votes for SPD and Greens when there is a government with SPD participation and the other way round for CDU government participation. No significant effect is observed.

Assumption 4 *Consider the incumbent government correctly anticipates a change of government, then it will issue more debt in the year of change.*

We set the change variable ASSUMP4 to 1 if government participation of both major parties, i.e. SPD and CDU, changes. A change from, or to, a grand coalition is, thus, never considered a change. There are 11 of these major changes and debt growth in these years is, with 8.1 per cent, considerably higher than in years with no major change of government (6.5 per cent). This result is to some extent mirrored in our estimation results. The coefficient always obeys the correct positive sign. Moreover, the GMM estimate yields significance at the 10 per cent level. Hence, we find some evidence of strategic debt issue when a major change is correctly anticipated.

It is tempting to check whether SPD or CDU governments tend to use this tool more aggressively. We therefore interact the variable ASSUMP4 with SPD and CDU. CDU governments, correctly anticipating that they will be thrown out of office, produce, on average, 9.7 per cent debt growth in the year of change (6 cases), whereas the SPD only produces 6.1 per cent (5 cases), which is well below the overall average of 6.5 per cent.

For two reasons, these results should be interpreted very cautiously. First, there were only 11 cases and results are very sensitive. Second, we considered all major changes and, in contrast to the other three assumptions, did not concentrate on election years. When only election years are analyzed, the number of major changes reduces to 8. Average debt growth then is 4.3 per cent, which is clearly below the overall average. No evidence for Assumption 4 remains. There is, however, still a pattern. If the CDU is thrown out of office in an election year, debt growth is 5.9 per cent (5 cases) and 1.7 per cent for the SPD (3 cases). The lower value of the SPD can also be found in the regressions: the coefficient for ASSUMP4*SPD is negative, while the one for ASSUMP4*CDU is positive.

7 Conclusion

We analyzed the political determinants of the West German Länder deficits from 1960 to 2000. Since political institutions and electoral rules are identical across German states, our study does not suffer from the fundamental problem of disentangling the effects of political variables from the impact of political institutions that typically arises when comparing jurisdictions.

Overall we tested five hypotheses taken from the broad theoretical literature on the political economy of public expenditures and/or public debt issue. We found no evidence for public debt being higher in election years. Thus, opportunistic behavior, as suggested by Nordhaus (1975) and MacRae (1977), cannot be found. Rather than buying votes through higher debt in election years, parties issue significantly less debt in pre-election years. As suggested by Rogoff and Sibert (1988), parties use low debt in pre-election years to signal fiscal competence.

While the opportunistic school considers that parties only care about winning the next election, the partisan school claims that the policies implemented are driven by party ideology alone (Hibbs (1977)). Partisan theory predicts that left wing parties will issue more debt since they are more inclined to run redistributive policies. We find no partisan trends in German states' fiscal policies. This result holds for a left/right-scale as well as for more flexible specifications, like dummies for all different party constellations. The Social Democrats, for example, do not issue significantly more debt than the Christian Democrats.

Coalition governments may arise in proportional electoral systems. There may thus be another stage of conflict once electoral competition is over. This is expected to result in larger public deficits (Persson and Tabellini (1997) and Alesina and Perotti (1994)). More than 50 per cent of state governments were (mostly two-party) coalitions. The sign of the estimated coefficients was found to be in line with these theories, though statistical significance was not overwhelming.

Among others, Persson and Tabellini (1997) linked the probability of being reelected to debt issue in election years. The more unlikely a government is to be reelected, the

smaller is the internalized fraction of costs of further borrowing. We considered four different approximations of the reelection probability and found no evidence for an impact of political instability on state public finance. This is not too surprising as German politics are characterized by reasonable stability. Over all the ten states there were only 11 major government turnovers within these forty years.

Although we found no partisan effects and no impact of coalition governments, political parties do use the strategic tools discussed to different degrees: the opportunistic behavior of the Rogoff/Sibert type suggested lower deficits in pre-election years in order to signal fiscal competence. We found that CDU single-party governments use this strategy more aggressively than any other government constellation. This may explain why the CDU is typically considered more competent in fiscal policy even though no partisan effects can be detected.

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Appendix

Variable	**Explanation**
DEFICIT	debt growth rate
DEFICIT(-1)	lagged debt growth rate
GDP	real growth rate of gross domestic product
INTRATE	real interest rate
UNIFIC	unification dummy, equals 1 from 1991 on
EQUAL	equalization scheme dummy, 1 from 1995 on
OIL1	first oil crisis dummy, 1 for 1974 and 1975
OIL2	second oil crisis dummy, 1 for 1978 to 1981
ELECTION	= 1 in election years
PREELEC	= 1 in pre-election years
LEFT	= 1 for SPD dominated governments
RIGHT	= 1 for CDU dominated governments
SPD	= 1 for single-party Social Democratic governments
CDU	= 1 for single-party Christian Democratic governments
SPDFDP	= 1 for SPD coalitions with Liberals
SPDGREEN	= 1 for SPD coalitions with Greens
SPDCDU	= 1 for SPD and CDU coalitions
CDUFDP	= 1 for CDU coalitions with Liberals
ELSE	= 1 for remaining government constellations
COAL	= 1 for coalition governments
COALSIZE	number of parties in a coalition
ASSUMP1	current government majority in election year
ASSUMP2	current government votes in upcoming elections in elelction year
ASSUMP3	difference in votes in upcoming elections of opposition block and incumbent block in election year
ASSUMP4	change from CDU to SPD government or vice versa

Table 1: Explanation of variables.

Variable	N	mean	s.d.	min	max
DEFICIT	409	.0648	.1143	-.1760	1.1946
GDP	409	.0318	.0330	-.0770	.1383
INTRATE	410	4.4649	1.5982	2.5000	8.2100
DEFICIT*ELECTION	100	.0727	.1159	-.0982	.8687
DEFICIT*PREELEC	102	.0465	.0941	-.1760	.3536
DEFICIT*PREELEC*SPD	23	.0406	.0676	-.0731	.2482
DEFICIT*PREELEC*SPDFDP	17	.0351	.0947	-.1049	.2222
DEFICIT*PREELEC*SPDGREEN	8	.0301	.0361	-.0424	.0662
DEFICIT*PREELEC*SPDCDU	6	.0799	.1082	-.0283	.2439
DEFICIT*PREELEC*CDU	27	.0573	.0746	-.0723	.3382
DEFICIT*PREELEC*CDUFDP	18	.0383	.1459	-.1760	.3536
DEFICIT*PREELEC*ELSE	3	.0848	.1656	-.0657	.2623
LEFT	410	.5268	.4999	0	1
RIGHT	410	.4732	.4999	0	1
SPD	410	.2244	.4177	0	1
SPDFDP	410	.1829	.3871	0	1
SPDGREEN	410	.0780	.2686	0	1
SPDCDU	410	.0488	.2157	0	1
CDU	410	.2707	.4449	0	1
CDUFDP	410	.1805	.3851	0	1
ELSE	410	.0244	.1544	0	1
DEFICIT*LEFT	216	.0623	.1030	-.1319	.8687
DEFICIT*RIGHT	193	.0671	.1261	-.1760	1.1946
DEFICIT*SPD	92	.0646	.0751	-.0731	.2887
DEFICIT*SPDFDP	71	.0801	.1413	-.1212	.8687
DEFICIT*SPDGREEN	32	.0293	.0245	-.0423	.0787
DEFICIT*SPDCDU	20	.0501	.1080	-.0572	.3527
DEFICIT*CDU	111	.0680	.0821	-.0982	.3927
DEFICIT*CDUFDP	73	.0690	.1766	-.1760	1.1946
DEFICIT*ELSE	10	.0355	.1184	-.1319	.2623
COAL	410	.5049	.5006	0	1
COALSIZE	410	1.5366	.5593	1	3
DEFICIT*COAL	206	.0632	.1411	-.1760	1.1946
ASSUMP1	99	53.8030	7.6443	41.7000	84.8000
ASSUMP1†	93	52.3376	4.7765	41.7000	67.0000
ASSUMP2	99	52.7423	9.5092	33.3000	92.0000
ASSUMP2†	93	50.9172	5.9199	33.3000	67.0000
ASSUMP3	101	-10.4109	11.0157	-37.3000	24.4000
ASSUMP3†	95	-10.5316	11.2293	-37.3000	24.4000
ASSUMP4	410	.0268	.1618	0	1
ASSUMP4‡	410	.0195	.1385	0	1
DEFICIT*ASSUMP4	11	.0806	.0960	-.0113	.2888
DEFICIT*ASSUMP4‡	8	.0431	.0452	-.0113	.1153
DEFICIT*ASSUMP4*SPD	5	.0607	.0974	-.0113	.2242
DEFICIT*ASSUMP4*SPD‡	3	.0166	.0468	-.0113	.0706
DEFICIT*ASSUMP4*CDU	6	.0973	.1006	.0237	.2888
DEFICIT*ASSUMP4*CDU‡	5	.0589	.0405	.0237	.1153

Table 2: Descriptive statistics. Notes: †without SPD/CDU coalitions, ‡major government changes for election years only

Variable	OLS		LSDV		GMM	
DEFICIT(-1)	.3212***	(.0436)	.3068***	(.0444)	.2914***	(.0421)
GDP	-.6503***	(.1744)	-.6322***	(.1788)	-.5702***	(.1671)
INTRATE	-.0078**	(.0038)	-.0079**	(.0039)	-.0080**	(.0035)
OIL1	.1444***	(.0240)	.1450***	(.0241)	.1409***	(.0218)
OIL2	.0177	(.0175)	.0182	(.0176)	.0271*	(.0161)
UNIFIC	-.0333*	(.0194)	-.0335*	(.0195)	-.0059	(.0195)
EQUAL	-.0525	(.0240)	-.0257	(.0241)	-.0080	(.0230)
CONSTANT	.1039***	(.0203)	.1049***	(.0204)	-.0024***	(.0008)
ELECTION	.0080	(.0111)	.0085	(.0112)	.0150	(.0100)
PREELEC	-.0222**	(.0110)	-.0216*	(.0111)	-.0154	(.0100)
PREELEC*SPD	-.0244	(.0208)	-.0244	(.0214)	-.0220	(.0202)
PREELEC*SPDFDP	-.0300	(.0246)	-.0284	(.0253)	-.0375	(.0241)
PREELEC*SPDGREEN	-.0011	(.0348)	-.0006	(.0355)	.0026	(.0337)
PREELEC*SPDCDU	.0219	(.0393)	.0277	(.0404)	.0426	(.0397)
PREELEC*CDU	-.0404**	(.0193)	-.0363*	(.0202)	-.0302	(.0191)
PREELEC*CDUFDP	-.0228	(.0234)	-.0288	(.0239)	-.0025	(.0232)
PREELEC*ELSE	.0513	(.0554)	.0536	(.0567)	.0420	(.0580)
LEFT	.0071	(.0099)	.0121	(.0157)	.0159	(.0280)
SPD	.0087	(.0139)	.0147	(.0194)	-.0073	(.0332)
SPDFDP	.0187	(.0148)	.0299	(.0206)	-.0031	(.0357)
SPDGREEN	.0228	(.0220)	.0349	(.0282)	.0230	(.0399)
SPDCDU	.0185	(.0239)	.0273	(.0271)	.0189	(.0376)
CDUFDP	.0209	(.0151)	.0163	(.0172)	-.0112	(.0248)
ELSE	.0404	(.0337)	.0593	(.0397)	.0500	(.0590)
COAL	.0169*	(.0099)	.0163	(.0109)	.0057	(.0165)
COALSIZE	.0077	(.0091)	.0061	(.0098)	-.0029	(.0148)
ASSUMP4	.0303	(.0292)	.0226	(.0298)	.0532*	(.0289)
ASSUMP4*SPD	-.0035	(.0431)	-.0120	(.0438)	.0380	(.0444)
ASSUMP4*CDU	.0584	(.0394)	.0511	(.0398)	.0637*	(.0376)

Table 3: Regression results, dependent variable DEFICIT. Notes: a horizontal line indicates a new regression. All regressions include the variables of the first regression. To save space, coefficients are not reported.
Significance levels: *** = 0.01, ** = 0.05, * = 0.10, standard errors in brackets.