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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

The Political Economy of the German Länder Deficits

by Beate Jochimsen and Robert Nuscheler *

We analyze the deficits of the German Länder for the period from 1960 to 2005 and test a number of hypotheses derived from the literature on the political economy of public deficits. Estimating a dynamic panel data model, we find evidence for political opportunism in the spirit of Rogoff and Sibert: German voters seem to favor fiscal discipline as debt issue is significantly lower in pre-election years. As suggested by the theory, coalition governments issue significantly more debt than single party governments. There is no evidence for partisan behavior; party ideology plays a negligible role. Strategic debt issue may occur when the probability of reelection is small. Our results suggest that this kind of political instability has no impact on debt issue.

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

JEL Classification: D72, E60, H62

ZUSAMMENFASSUNG

Die politische Ökonomie der Budgetdefizite der deutschen Bundesländer

Wir analysieren die Entwicklung der Budgetdefizite in den deutschen Bundesländern von 1960 bis 2005 und testen eine Reihe von Hypothesen, die sich aus der politökonomischen Literatur öffentlicher Defizite ableiten lassen. Im Rahmen eines dynamischen Panel-Modells finden wir Evidenz für politischen Opportunismus im Sinne von Rogoff und Sibert: Deutsche Wähler scheinen fiskalische Disziplin zu befürworten, da die Verschuldung in Vorwahljahren signifikant weniger ansteigt als in anderen Jahren. Wie die Theorie nahe legt, wächst die Verschuldung bei Koalitionsregierungen signifikant mehr als bei Alleinregierungen. Wir finden hingegen keine Belege für Partisanenverhalten, Parteiideologien spielen also eine zu vernachlässigende Rolle. Strategische Neuverschuldung könnte erfolgen, wenn die Wiederwahlwahrscheinlichkeit gering ist. Unsere Ergebnisse lassen jedoch erkennen, dass diese Art der politischen Instabilität keinen Einfluss auf die Neuverschuldung hat.

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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 states (Länder) is analyzed as the jurisdictions have almost identical political institutions and electoral rules. However, they differ quite substantially in other dimensions such as fiscal policy outcomes and per capita income. Thus, our data set offers a promising 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. The empirical literature on opportunistic behavior, where political behavior is solely designed to win the next elections, gives no clear picture. Nordhaus (1975) finds evidence of this for two out of four elections in the United States. Berger and Woitek (1997) as well as Galli and Rossi (2002) find weak support for the opportunistic school. Berger and Woitek (1997), however, conclude that "[...] the evidence in favor of the Nordhaus approach (is) not convincing" (p. 190). Evidence for partisan politics, where policy is primarily driven by party ideology, is mixed, too. Alesina (1989), Boix (2000), Cusack (1997), Hibbs (1977), Tavares (2004) and Reed (2006), for example, find support for the partisan theory, whereas Berger and Woitek (1997), Heckelman (2001), Seitz (2000), and Galli and Rossi (2002), for instance, find no evidence for it.[1]

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-

[1]Evidence for partisan politics is also scarce in non public finance fields. Duso (2002), for example, showed that the government's ideological position played only a minor role in explaining regulatory reform in the mobile telecommunications industry in the OECD.

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 fragmentation. Using a different data set, DeHaan and Sturm (1997) find no coalition effects – neither with the dispersion index used by Roubini and Sachs nor with the one used by Edin and Ohlsson. In a recent study on debt of the Flemish municipalities, Ashworth, Geys and Heyndels (2005) find that political fragmentation affects local indebtedness only in the short but not in the long run. 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 and Persson and Svensson, 1989).

We estimate a dynamic panel data model and find evidence for opportunistic behavior, i.e., debt issue is significantly lower in pre-election years. Thus, German voters seem to favor fiscal discipline or, at least, the incumbent may believe they do. There is no evidence for partisan behavior. We find evidence for coalitions issuing more debt than single party governments. A strategic deficit bias due to political instability may arise when the probability of being thrown out of office is high. We consider four approximations of that probability but find no evidence for any of them.

The first econometric study with German data that considers political variables as covariates is Frey and Schneider (1979). The current paper, however, is most related to Seitz (2000) and Galli and Rossi (2002) who also analyze the political economy of German Länder fiscal policy. Seitz considers the time period from 1976 to 1996 whereas Galli and Rossi analyze the period from 1974 to 1994. While Seitz concentrates on partisan politics and deficit data, Galli and Rossi are more ambitious and additionally test for political business cycles using deficits, expenditures and expenditure categories. We extend these two works along three lines. First, we explicitly address the role of coalition governments and political instability and thereby gain a number of new insights. Secondly, due to the availability of better estimation methods, we also econometrically go beyond Seitz and Galli and Rossi. Seitz only applies the least squares dummy variable estimator. As this estimator may be severely biased in short panels we use the bias corrected least

squares dummy variable estimator that clearly outperforms the uncorrected version (see, e.g., Bruno, 2005). Galli and Rossi deal with heteroscedasticity but also ignore the bias. Thirdly, we use data from 1960 to 2005 and thereby extend the analysis from 21 to 46 years. Note that our main result, that is the negative preelection year effect on deficits, stands in contrast to the findings in Galli and Rossi who essentially obtain a positive election year effect.

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. The empirical model and the different estimators applied are introduced in Section 4. The data set and the results are presented in Section 5. Finally, Section 6 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, which form the local level (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,

Bremen and Hamburg, 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. We therefore

[2]In our empirical model, the state fixed effects account for that fundamental difference as well as for other time invariant state characteristics.

concentrate on public deficits and their political determinants.

There are two more important aspects: First, in 1990, the five new Länder of former East Germany and East Berlin 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 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 in our empirical analysis. Secondly, from 1995 onwards, the new German Länder, i.e. the former East Germany, and Berlin were included in the fiscal equalization system. A large part of this equalization is amongst the Länder (horizontal equalization). As the new participants were net recipients, this introduced a fiscal burden on the Western Länder, an effect that we account for in our analysis.

Finally, two German states, namely Bremen and Saarland, were bailed out by the federal government. From 1994 onwards they received transfers over and above those of the fiscal equalization scheme. This bailout is likely to reduce debt issue in both states. Moreover, one could imagine that the occurrence of a federal bailout alters the incentives of the states to issue debt in general. Our empirical model considers all these aspects.

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. The programmes of CDU and CSU, however, 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.

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

Since 1960 the West German Länder were either governed by majority governments of CDU or 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 5. Our focus is on four theories, namely, political opportunism, partisan theory, fragmented governments, and political instability.

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

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

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 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.[5]

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

For such a policy to be successful, voters must not (fully) anticipate that the debt burden has to be borne after the election; they must be myopic. However, opportunistic cycles also occur with rational expectations when (some) voters are uninformed in the sense that they 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

[5]Of course, one may argue that if the election is early in the year expenditures should raise in the pre-election year. We discuss this in some detail in Section 5.1.

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 provide a given level of public goods reasonably efficient. 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).

3.2 Partisan theory

The partisan theory predicts a more expansionary policy for left governments than for 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. 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 (Alesina, 1988, p. 796). 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 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 modeled 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 modeling 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 due to the non-existence of partisan behavior or due to strong reputational effects that lead to an adaptation of party policies.[6]

3.3 Fragmented governments

The theories discussed so far modeled 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.

[6]Drazen and Eslava (2005, 2006) offer another argument: if the main partisan trends are in the structure of public spending rather than in its level, then a deficit approach cannot detect ideological objectives.

Persson and Tabellini (1997, pp. 68-71) argue that a coalition government generates a common pool problem. Each coalition partner tries to allocate as much as possible of the budget to its constituency neglecting the negative externalities on coalition partners. As a consequence the costs of further borrowing are not fully internalized.

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

Another theory that explains higher deficits for coalition governments is offered by Alesina and Drazen (1991) and 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 modeled by the 'war of attrition'. In general, delayed adjustment to the fiscal shock will obtain, allowing debt to accumulate.

Duverger's law suggests 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.[7] 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. So, if the incumbent cannot directly commit the succeeding government to certain policies, it can do so indirectly by strategic debt issue. It thereby obliges future expenditures to debt service (Persson and Svensson, 1989). 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

[7]For an excellent survey of Duverger's law see Riker (1982).

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 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

$$d_{it} = \gamma d_{i,t-1} + \beta_1' x_{it} + \beta_2' z_{it} + \mu_i + \epsilon_{it}, \tag{1}$$

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, $t = 2, ..., T$. The political variables are summarized in the vector x_{it}, the control variables in z_{it}. We control for real GDP growth (GDP), 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). The direct and indirect effects of the federal government bailout are picked up by the variables BAILOUTHB, BAILOUTSL and BAILOUT. Finally, debt issue may respond to the financial costs of borrowing, namely, the real interest rate (INTRATE).[8] Note that the interest rate varies over time but not over states. This limits the explanatory power to within state variation.

[8]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. A more substantial argument is the existence of long-lasting governments, Bavaria, for instance, was ruled by the CSU for the entire period considered here. North-Rhine Westfalia is an example of almost continuous SPD government. Obviously we will have $E(x_{it}\mu_i) \neq 0$, i.e. state fixed effects.[9] 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 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, LSDV, estimator) eliminates this source of inconsistency by taking account of the Länder fixed effects μ_i. There nevertheless remains a bias, as the lagged endogenous 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.[10]

Several consistent instrumental variable methods have been developed that, in general, can improve on the LSDV estimates. These estimators typically consider the first

[9] The Hausman test suggests that the random effects model is consistent. Note, however, that the test requires that the fixed effects estimator is consistent. As this is clearly violated in a dynamic model (see below) we follow our intuitive argument and use fixed effects.

[10] He also showed, however, that the bias approaches zero as T tends to infinity. Since T is relatively large in our study ($T = 46$), the bias is likely to be moderate. Note that although T is much smaller in Seitz (2000, $T = 21$) and Galli and Rossi (2002, $T = 21$) they use exactly that argument to justify their respective estimation procedure.

difference version of the model described in equation (1),

$$\Delta d_{it} = \gamma \Delta d_{i,t-1} + \beta_1' \Delta x_{it} + \beta_2' \Delta z_{it} + \Delta \epsilon_{it}, \tag{3}$$

where Δ is the first difference operator, e.g., $\Delta d_{it} = d_{it} - d_{i,t-1}$. This transformation eliminates the (time invariant) fixed effects. The estimator developed by Anderson and Hsiao (1982, AH estimator), for example, uses $d_{i,t-2}$ as an instrument for $\Delta d_{i,t-1}$ and thereby removes the source of the bias. The generalized method of moments estimator of Arellano and Bond (1991), henceforth AB estimator, uses all valid lags of the dependent variable (in levels) as instruments for Δd_{it}. The AB estimator is consistent and asymptotically efficient (when N tends to infinity).[11] Due to the larger set of instruments, AB is more efficient than AH. There is a homoscedastic (one-step) version of the AB estimator and a two-step version, that, by allowing for heteroscedasticity, may improve efficiency. Simulation studies have shown, however, that the two-step AB is - in most cases - less efficient than the one-step AB, i.e. the two-step AB yields higher standard errors (see, e.g., Arellano and Bond, 1991; Kiviet, 1995; Judson and Owen, 1997). In principle, efficiency gains may be achievable when applying the system GMM estimator developed by Arellano and Bover (1995) and Blundell and Bond (1998), henceforth BB estimator. However, both the AB and the BB estimator are micro panel data estimators and have poor finite sample properties. As N is small in our study ($N = 10$), results of both estimators should mainly be seen as robustness checks.

A more reliable estimator is the bias corrected LSDV estimator (LSDVC). The bias may be approximated to the order of $O(T^{-1})$ when using the approximation derived in Nickell (1981), $O(T^{-1}N^{-1})$ when using Kiviet (1995), and $O(T^{-1}N^{-2})$ when using Kiviet (1999). In a simulation study, Bun and Kiviet (2003) show that the Kiviet (1999) approximation accounts for about 90 per cent of the actual bias. Several simulation studies

[11] We consider the regressors summarized in w_{it} as strictly exogenous so that variables themselves and all their lags are valid instruments. Furthermore, note that the AB estimator takes first order autocorrelation of $\Delta\epsilon$ into account. Thus, neither consistency nor efficiency is affected by first order autocorrelation. But second order correlation implies inconsistency (Arellano and Bond, 1991, pp. 281-282).

have shown that the LSDVC estimator outperforms the consistent estimators described above in terms of both bias and standard errors (see, e.g., Bruno, 2005 and Judson and Owen, 1997, 1999). We therefore use the LSDVC estimator for our analysis.

To actually correct the bias one needs an initial consistent estimate of the coefficients and each of the three estimators AH, AB and BB may be used. As the AB estimator typically outperforms the AH estimator and appears more robust than the BB estimator (see Bruno, 2005), we opt for the AB estimator and use the Kiviet (1999) bias approximation. Standard errors are bootstrapped with 100 repetitions.[12]

5 Empirical analysis

The data set comprises yearly data for 10 West German Länder from 1960 to 2005. 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. As already mentioned, 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. We arrive at a balanced panel with 460 observations. The average annual *real* GDP growth was 2.8 per cent, whereas the average annual *nominal* debt grew with 9.7 per cent. The *real* interest rate was on average 4.1 per cent (see Table

[12]The estimates with BB as initial estimator have slightly higher standard errors. Apart from that results remain unchanged. The complete estimates for the BB and AH estimator are available upon request.

2).[13]

Before testing the political economy of debt issue, we briefly discuss the results with economic indicators and some controls only (Model 1). The regression results are shown in the first column of Table 6 (see Appendix). With a coefficient of around .34, autoregression is relatively moderate. The impact of real GDP growth is, as expected, significantly negative. When real GDP growth drops by two percentage points debt growth gears up by roughly one percentage point. This may be due to expenditure programmes, reduced tax revenues, or both. Both the first and second oil crises, OIL1 and OIL2, respectively, increased debt growth. The effect of the second oil crisis, though, is only significant in in the political models 2 and 3. German unification had a negative impact on debt growth in West Germany. Its insignificance may be due to the fact that most of the financial burden of unification was borne by the social security systems and the German unification fund and not by the states. 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 costs of borrowing, measured by the real interest rate (INTRATE), have the expected negative but insignificant impact on debt issue. Finally, the federal government bailout helped consolidating the budget of Saarland but not Bremen. There seems to be no significant incentive effect on debt issue arising from the occurrence of the bailout.[14] As can be seen from the coefficients and standard errors of the models 2 and 3 (Table 6) all results are robust to the addition of political variables.

[13]Deficit data are taken from Statistisches Bundesamt (Federal Statistical Office, 2001). Data for the gross domestic product (GDP) have been provided by the Statistical Office of Baden Württemberg and the Federal Statistical Office. GDP growth and interest rates, were deflated by the consumer price index for all households obtained from Statistisches Bundesamt (2003). 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).

[14]Note that the variables EQUAL and BAILOUT are highly correlated; they only differ in 1994. Even if we drop one of them we do not gain significance of the other.

5.1 Political opportunism (Hypothesis 1 and 2)

Before we test the hypotheses let us first take a brief look at the descriptive statistics shown in Table 3. The average debt growth rate calculated over all years and all states is 9.7 per cent. For election years, we find a growth rate of as much as 10.4 per cent and for pre-election years 8.0 per cent.

[Table 3 about here]

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 6, column 2, in the Appendix reveals that debt growth in election years is not significantly different from reference years. In contrast debt growth is significantly lower in pre-election years. With an only two percentage points smaller debt growth in pre-elections years the effect appears relatively small. But when relating this number to average debt growth we arrive at a 20 per cent lower debt growth in pre-election years: the effect is substantial! We thus find support for Hypothesis 2 but not for Hypothesis 1.[15] 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.

When the election is early in a year one might argue that it is not appropriate to use election years to test for Hypothesis 1. In that case Nordhaus opportunism may well imply higher debt in the pre-election year. We would then have to set a cut off date for elections. For elections thereafter the election year would be appropriate whereas elections prior to that date require an investigation of debt in the pre-election year. Of course, the cut off date choice will always be arbitrary and it is not clear at all whether such an approach would yield more reliable results than ours. For two reasons the problem is of

[15] This differs from Galli and Rossi (2002) who found significantly positive election year effects but no preelection year effects.

little relevance for our study. First, there were only very few elections early in the year (8 per cent of elections were in January or February). Second, a cut off date later than January 1 would combine the positive election year effect with the negative pre-election year effect. Thus, our result on Hypothesis 1 can hardly change. A similar argument can be made with respect to Hypothesis 2. Since the incumbent can easily communicate deficit information of the last fiscal year even when the elections are early such an argument has not much bite.

One might ask whether the strategy of 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 (see Table 6, Model 3 for results). Although coefficients for SPDFDP coalitions and CDU single party governments are considerably smaller than for the other government constellations non of these effects is statistically significant.

5.2 Partisan theory (Hypothesis 3)

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 labeled right. It is difficult to ascribe a political orientation to grand coalitions, i.e., coalitions formed by SPD and CDU. There are basically two alternatives. First, do not label such coalitions at all and use them as a reference category in the estimation. Second, use the party affiliation of the prime minister to assign an orientation. We opted for the second alternative as only 27 years of grand coalition governments out of 460 years are simply too few observations for a sensible reference category.[16] A similar reasoning applies to all other government constellations summarized in ELSE (also 27 of 460 years). These government constellations are considered left when the Social Democrats were involved and right when the Christian Democrats were. When the government turns over from left to right, or vice versa, the question of whether the government should be labeled

[16] Results are independent of the alternative adopted.

left or right in that particular year becomes an issue. We consider the new government's ideological position if its inaugural date was prior to July 1 of the respective year.

Before we interpret estimation results let us again first take a look at the descriptive statistics. Table 4 identifies right governments as the ones issuing more debt. As the difference in debt growth rates between right governments (9.9 per cent) and left governments (9.4 per cent) is - as compared to the standard errors - rather low, a significant partisan effect can hardly exist. So, not surprisingly, the corresponding coefficient is not statistically different from zero (Table 6, Model 2) Note, however, that the coefficient obeys the ' correct' sign.

[Table 4 about here]

Although we find no support for Hypothesis 3 – which is well in line with Seitz (2000) and Galli and Rossi (2002) – interpretation remains difficult (see also the discussion in Subsection 3.2). It may well be that there are no partisan trends in German Länder fiscal policy – 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.

5.3 Fragmented governments (Hypothesis 4)

231 years of coalition governments yield an average debt growth of 9.4 per cent compared to 9.9 per cent for the 219 single-party governments. The descriptives, shown in Table 5, thus, raise doubts about Hypothesis 4.

[Table 5 about here]

However, one should be cautious when interpreting cross state averages. We, therefore, define the indicator variable COAL that assumes a value of 1 whenever more than one party formed the government and zero otherwise.[17] We find a significant coalition effect. Its positive sign is perfectly in line with the theory, formulated as part (a) of the hypothesis. Note also that the coalition effect compares, in absolute terms, to the pre-election effect, i.e., the effect is large.

Debt issue incentives are the higher the more parties in the coalition. Since there are only 12 (of 231) coalition years with more than two parties (and all had three parties) results are very sensitive to outliers. Therefore, we cannot seriously address part (b) of Hypothesis 4.

5.4 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. For two reasons this effect can only occur in election years. 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

[17] Again, in years of government changes, we use the inaugural date of the new government and July 1 as cut off date to assign a value to COAL.

data. But such data are, unfortunately, not available. There are many strategies for solving that problem and we consider four of them:[18]

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.

2. 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.[19]

3. 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.[20]

4. the incumbent government correctly anticipates a change of government, then it will issue more debt in the year of change. We set a change variable to 1 if government participation of both major parties, i.e. SPD and CDU, changes and if elections took place. A change from, or to, a grand coalition is, thus, never considered a change.

[18] One may argue that the unemployment rate is a good predictor of the reelection probability. Since unemployment was never significant we do not follow that route.

[19] Of course, there could be the reverse causality, i.e., the incumbent only gains few votes because he ran a high deficit in the election year. This shortcoming makes interpretation of results difficult.

[20] 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. 16 per cent of all governments were SPD/FDP coalitions and 17 per cent were CDU/FDP coalitions. It is thus impossible to generally allocate the Liberals to one particular block.

Independent of the approximation used we find no support for Hypothesis 5.[21] For approximations 1 to 3 one may argue that grand coalitions, i.e. coalitions 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 at least one of the two parties will be in government next period? Therefore, we exclude grand coalitions and rerun regressions. Results do not change.

6 Conclusion

We analyzed the political determinants of the West German Länder deficits from 1960 to 2005. Since political institutions and electoral rules are almost 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 addressed five hypotheses taken from the broad theoretical literature on the political economy of public expenditures and/or public debt issue. We found that debt growth is significantly lower in preelection years. This is well in line with the Rogoff and Sibert (1988) argument of signalling fiscal competence via low debt. With a twenty per cent lower debt growth rate in pre-election years the effect is large. We also found a positive and significant coalition effect on debt issue. In absolute terms, the effect is about as large as the pre-election effect. There seems to be a kind of coordination failure within coalition governments. Ideological motives or strategic considerations do not contribute to explaining regional variation in deficits of the German states.

[21] This is why we do not report any estimation results in this subsection. Results are available upon request.

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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
OIL1	= 1 from 1974 to 1975 (first oil crisis)
OIL2	= 1 from 1978 to 1981 (second oil crisis)
UNIFIC	= 1 from 1991 to 2005 (unification)
EQUAL	= 1 from 1995 to 2005 (equalization scheme)
BAILOUT	= 1 from 1994 to 2005 (federal government bailout)
BAILOUTHB	= 1 if BAILOUT = 1 and Bremen (Bailout-Bremen interaction)
BAILOUTSL	= 1 if BAILOUT = 1 and Saarland (Bailout-Saarland interaction)
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
GRANDC	= 1 for SPD coalitions with the CDU or vice versa
SPDCDU	= 1 for GRANDC = 1 and SPD prime minister
CDUSPD	= 1 for GRANDC = 1 and CDU prime minister
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

Table 1: Explanation of variables.

Variable	N	mean	s.d.	min	max
DEFICIT	450	.0967	.1174	-.1500	1.2632
GDP	450	.0275	.0333	-.0476	.1478
INTRATE	460	.0407	.0162	.0112	.0790
SPD	460	.2043	.4037	0	1
SPDFDP	460	.1565	.3637	0	1
SPDGREEN	460	.0783	.2689	0	1
SPDCDU	460	.0348	.1834	0	1
CDU	460	.2739	.4465	0	1
CDUSPD	460	.0239	.1529	0	1
CDUFDP	460	.1696	.3757	0	1
ELSE	460	.0587	.2353	0	1
GRANDC	460	.0587	.2353	0	1

Table 2: Descriptive statistics.

Variable	N	mean	s.d.	min	max
DEFICIT	450	.0967	.1174	-.1500	1.2632
DEFICIT*ELECTION	110	.1037	.1232	-.0700	.9814
DEFICIT*PREELEC	111	.0799	.0988	-.1500	.4189

Table 3: Descriptive statistics for political opportunism (Hypotheses 1 and 2).

Variable	N	mean	s.d.	min	max
LEFT	460	.5130	.5004	0	1
RIGHT	460	.4870	.5004	0	1
DEFICIT	450	.0967	.1174	-.1500	1.2632
DEFICIT*LEFT	232	.0942	.1077	-.0886	.9814
DEFICIT*RIGHT	218	.0992	.1272	-.1500	1.2632

Table 4: Descriptive statistics for partisan politics (Hypothesis 3).

Variable	N	mean	s.d.	min	max
COAL	460	.5217	.5001	0	1
COALSIZE	460	1.5565	.5631	1	3
DEFICIT	450	.0967	.1174	-.1500	1.2632
DEFICIT*COAL	231	.0943	.1408	-.1500	1.2632
DEFICIT*(1−COAL)	219	.0991	.0864	-.0621	.4767

Table 5: Descriptive statistics for divided governments (Hypothesis 4).

Variable	LSDVC (model 1)		LSDVC (model 2)		LSDVC (model 3)	
DEFICIT(-1)	.3410***	(.0469)	.3433***	(.0463)	.3432***	(.0460)
GDP	−.5067***	(.1669)	−.5258***	(.1669)	−.5270***	(.1700)
INTRATE	−.5896	(.3844)	−.4476	(.3997)	−.3955	(.4067)
OIL1	.1733***	(.0280)	.1728***	(.0281)	.1738***	(.0287)
OIL2	.0280	(.0171)	.0302*	(.0173)	.0302*	(.0179)
UNIFIC	−.0183	(.0205)	−.0234	(.0209)	−.0189	(.0212)
EQUAL	.0085	(.0320)	.0075	(.0318)	.0079	(.0334)
BAILOUT	−.0441	(.0343)	−.0412	(.0347)	−.0420	(.0361)
BAILOUTHB	−.0199	(.0352)	−.0256	(.0351)	−.0384	(.0473)
BAILOUTSL	−.0709**	(.0355)	−.0580	(.0365)	−.0579	(.0386)
ELECTION			.0016	(.0112)	.0018	(.0114)
PREELEC			−.0187*	(.0111)		
LEFT			.0026	(.0106)		
COAL			.0177*	(.0100)		
PREELEC*SPD					−.0190	(.0228)
PREELEC*SPDFDP					−.0322	(.0257)
PREELEC*SPDGR					−.0077	(.0404)
PREELEC*GRANDC					.0247	(.0472)
PREELEC*CDU					−.0300	(.0216)
PREELEC*CDUFDP					−.0192	(.0249)
PREELEC*ELSE					.0194	(.0439)
SPD					−.0038	(.0174)
SPDFDP					.0162	(.0184)
SPDGR					.0031	(.0240)
GRANDC					.0134	(.0316)
CDUFDP					.0193	(.0190)
ELSE					−.0105	(.0312)

Dependent variable DEFICIT, $N = 430$, standard errors in brackets.
Significance levels: *** = 0.01, ** = 0.05, * = 0.10,

Table 6: Regression results. Bias correction of LDSV estimator initialized by Arellano-Bond estimator.