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In 2004 all publications will carry a motif taken from the €100 banknote.

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Abstract

This paper examines the development of fiscal rules and budget procedures in EU countries, and their impact of public finances since the mid-1980s. It presents a new data set on institutional reforms and their impact in Europe. Empirical pattern confirm our prediction that more stringent fiscal rules exist under large coalition governments, while the centralisation of budgetary procedures is the main form of fiscal governance elsewhere. In addition, the centralisation of procedures does not restrain public debt in countries more prone to a rules-based approach, whereas more stringent fiscal rules seem to support fiscal discipline in almost all EU countries.

Keywords: public indebtedness, budgetary procedures, fiscal rules, European public finances

JEL classification: H11, H61, H62

Non-technical summary

In Europe and elsewhere, the past two decades have seen a strong and growing interest in fiscal policy rules aimed at containing public sector deficits and reducing public sector debts. Importantly, the Maastricht Treaty and the Stability and Growth Pact establish a European fiscal framework with the objective to enforce fiscal sustainability and the stabilising role of public finances in EU member states. However, while all EU member states face the same European policy framework, the application of fiscal rules and multi-annual targets varies considerably at the national level. This paper examines the development of fiscal rules and budget procedures in EU countries, and their impact of public finances since the mid-1980s.

Two alternative approaches to overcome the deficit bias inherent in fragmented budgetary decision-making can be distinguished: the contract and delegation approach. While the delegation approach mainly rests on the delegation of power to the minister of finance to overcome the coordination problem inherent in budgetary decision making, the contract approach hinges on pre-established budgetary targets and rules. These forms of fiscal governance differ in their functionality for the prevailing type of government in EU member states. The delegation approach is more suited for single party majority governments, usually present in majoritarian electoral systems, whereas the contract approach is more functional to the type of coalition governments that emerge regularly in highly proportional electoral systems.

In the present study we update and extend previous research on budgetary processes in European countries. When looking at the institutional development in Stage II and III of EMU, the main finding is that overall budgetary processes are more centralised now than they were in the early 1990s. At the onset of Stage II several countries still showed rather fragmented decision-making structures giving rise to a budgetary co-ordination problem. By comparison, spending and deficit biases should be less prevailing in budgetary decision-making now than they were a decade ago in several highly indebted countries. Second, institutional reforms are in line with our functional considerations relating the structure of government to the type of fiscal governance. Thus, the overall current pattern of budgetary institutions confirms that countries with predominantly coalition governments employ the contract approach while electoral systems leading regularly to majority government and persistent party constellations in government tend to follow a delegation approach of institutional centralisation to overcome the fiscal co-ordination problem. A mixed approach tends to emerge in states with minority governments. These institutional developments can be understood as instances of institutional choice yielding a functional form of governance. Our analysis thus links constitutional

regulations – such as electoral rules producing specific forms of governance – to more detailed decision-making structures.

As regards the budgetary impact of these fiscal rules and forms of governance, econometric evidence indicates that the effectiveness of centralising budgetary decision-making varies with the form of fiscal governance. It contributes less to fiscal sustainability for the contract approach, where the stringency of multi-annual targets seems to be more important. For delegation states, the centralisation of the budget process as well as more stringent budgetary targets seem to operate as disciplining devices. Various reasons can drive this result. From a theoretical point of view, the impact of multi-annual targets should be contingent on being backed by a strong minister of finance. Unfortunately, the empirical results do not allow us to determine the functional relation between these two sets of institutions. They may be either substitutes or complements.

I. Introduction

In Europe and elsewhere, the past two decades have seen a strong and growing interest in fiscal policy rules aimed at containing public sector deficits and reducing public sector debts. Policy rules specify numerical targets for annual government deficits, debts, or spending. Such rules have a venerable history at the sub-national level and some countries have used less specific ones – such as the 'golden rule' - at the national level for a long time. What is new is the application of specific annual targets at the national level. The Maastricht Treaty and the Stability and Growth Pact establish a European fiscal framework with the objective to enforce fiscal sustainability and the stabilising role of public finances in EU member states. The framework is based on fiscal rules, expressed as deficit and debt limits in the Treaty and the requirement to maintain a close to balance or in surplus position in the medium term in the Stability and Growth Pact. The surveillance procedure elaborated to enforce compliance with these rules is largely based on the announcement of multi-annual budgetary targets being monitored at the international level. The interest in fiscal rules in Europe and elsewhere is a reaction to the experience of rapidly rising debt levels and unsustainable deficits in the 1970s and 1980s. But while rules seem attractive and straightforward to contain the spending and borrowing bias of profligate governments, it is by no means clear what institutional design these rules and multi-annual budgetary targets need to be effective. This area is the main focus of our study, where we analyse the choice of budgetary rules and procedures at the national level and their impact on the sustainability of public finances.

While all EU member states face the same European policy framework, the application of fiscal rules and multi-annual targets varies considerably in fact at the national level. Hallerberg and von Hagen (1999) show that there are alternative approaches to overcome the common pool problem inherent in fragmented budgetary decision-making. The two approaches resemble some characteristics of the 'rules vs. discretion' alternative known from the monetary policy literature. For fiscal policy the two types of governance are the contract and delegation approach respectively. While the delegation approach mainly rests on the delegation of power to the minister of finance to overcome the coordination problem inherent in budgetary decision making, the contract approach hinges on pre-established budgetary targets and rules. Therefore, the contract approach seems to be much more compatible with the European fiscal framework than delegation states, since their budgets are based on the multi-annual target setting requested by the European fiscal framework. These forms of fiscal governance differ in their functionality for the prevailing type of government in EU member states. The delegation approach is more suited for single party majority governments, usually present in majoritarian electoral systems, whereas the contract approach is more functional to the type of coalition governments that emerge regularly in highly proportional electoral systems. Therefore they are not easily interchangeable or adaptable to a rules-based setting.

Beyond the work of von Hagen and coauthors[1] there is little research on the choice of the form of fiscal governance. The theoretical political economy literature concerned with institutional issues mainly focuses on specific decision-making prerogatives as a solution to a spending and deficit bias.[2] However, little is done on the institutional choice as such,[3] and given the restrictions on data availability empirical research also remains fairly limited.[4] Our paper provides new evidence based on a survey conducted in 2001 (Hallerberg et al. 2001). It describes the current budgetary institutions and their evolution over the past decade. The detailed institutional analysis shows that the choice of budgetary processes and national fiscal targets and rules corresponds to our predictions. Whereas contract states tended to tighten the stringency of their fiscal rules, delegation states moved towards more centralised decision-making procedures.

Having established the main pattern of institutional choice, we explore the policy effect of these institutions, with respect to the main objectives of the European fiscal framework. Our empirical result confirms theoretical predictions. Delegation in budget procedures and more stringent fiscal rules contribute to fiscal discipline. However, more stringent fiscal targets seem to work largely across EU 15 countries, whereas delegation is only effective in delegation states. Thus, the delegation and the contract approach provide effective instruments to overcome the deficit bias associated with the coordination problem of public finances if employed in accordance with the existing government structure. This falls in line with much of the empirical literature on budgetary processes.[5]

The following section presents the theoretical background. The common pool resource problem and forms of governance as possible solution mechanisms are explained. Moreover, we derive predictions on the choice of forms of governance based on the structure of the electoral system and dominant type of government. Section 3 provides the empirical evidence on government structures. Section 4 and 5 explains which budgetary institution determine the stringency of

1 von Hagen (1992), von Hagen and Harden (1994), Hallerberg and von Hagen (1999)

2 See Alesina and Perotti (1999) and von Hagen (2000) for an overview.

3 The closest to the argument developed in this paper is actually the principal agent approach applied to US trade policy (see Lohmann and O'Halloran 1994, Epstein and O'Halloran 1999). The authors consider the willingness of Congress to delegate special discretionary authority to the President as consequence of a unified or divided government constellation.

4 For an exception see de Haan et al. (1999) who partly updated the information collected by von Hagen (1992).

5 See the contributions in Poterba and von Hagen (1999) as well as Strauch and von Hagen (2000) for an overview of the empirical literature on this topic.

fiscal rules or targets and the degree of delegation in the budget process and how these institutions developed in EU member states. Section 6 presents the empirical evidence on the impact of budgetary institutions on public indebtedness.

II. Theory – Forms of Governance and their Choice

II.1. Forms of Fiscal Governance

A growing body of empirical and theoretical literature suggests that the institutions governing the budget process are important determinants of a country's fiscal performance (von Hagen 1992, von Hagen and Harden, 1994b; see also the international contributions in Poterba and von Hagen, 1999, and von Hagen and Strauch, 2000; see also Buti and Sapir, 1998). Budgeting institutions encompass the formal and informal rules governing the drafting of the budget law, its passage through the legislature, and its implementation. These rules distribute strategic influence among the participants in the budget process and regulate the flow of information. In doing so, they have important effects of the outcomes of budgeting processes.

The starting point of the institutional approach to public budgeting is to recognize the externality resulting from the fact that government spending is commonly targeted at specific groups in society while being financed from a general tax fund to which all tax-payers contribute. The resulting incongruence between those who pay for and those who benefit from individual public policies implies that individuals bidding for the funding of such policies tend to recognize their full benefit but only a part of their social cost, as the costs are spread out more widely over the entire society. In such situations, common to all modern democracies, policymakers engage in excessive spending, since the constituencies they represent and who benefit from the public policy programs they bid for do not bear the full costs of these programs. Putting the argument into a dynamic context, one can show that the externality problem results in excessive deficits and debts (Velasco, 1999).

In the American form of the argument, politicians representing individual electoral districts use the federal budget process to direct money taken out of the national general tax fund to public policy projects benefiting their electoral districts. The difference between the spatial incidence of the costs and benefits of these projects creates a tendency to overestimate the net marginal benefit from spending. As a result, federal government spending grows too large. Applying this paradigm to a European political context, where politicians often represent countrywide groups in society rather than regions or electoral districts requires a translation of the geographical dimension into one of different constituencies in society. Still, politicians representing different groups in society spend money taken out of a general tax fund on programs aimed at different groups in society.[6]

The core of the argument then is that public budgeting involves a co-ordination failure among the relevant decision makers. The argument suggests that the tendency to spend more and to run large deficits increases with the number of representatives of individual spending interests that are allowed to make autonomous spending decisions, i.e., the more *fragmented* the budget process is. Since the most important representatives of individual spending interests in European governments are the individual spending ministers, an implication of this proposition is that government spending and deficits grow with the number of spending departments and ministers in a country's government. Kontopoulos and Perotti (1999) confirm this proposition empirically for OECD countries.

Interpreting the problem of excessive spending and deficits as a co-ordination failure leads one to look at similar problems in practice for solutions. Political economy emphasizes the importance of decision-making rules that promote a comprehensive view of the externality problem, i.e., one that takes the full benefits and costs of the costs and benefits of all public policy projects. The solution to fragmentation is thus *centralization* of the budget process, the creation of institutions forcing the participants in the budget process to recognize the true marginal cost and benefit of the projects financed from the general tax fund, and thus to internalize the budgeting externality.

There are two basic institutional approaches to achieve the necessary coordination overcoming the CPR problem are the *delegation approach* and the *contracts approach* (Hallerberg and von Hagen, 1999). The former emphasises the delegation of significant strategic powers to a decision-maker who is less bount to special interests than ministers heading spending departments. Typically this is the minister of finance. The delegation approach builds on a strong agenda-setting power of the finance minister during the initial budget planning stage. Then the subsequent approval stage must be sufficiently restrictive to avoid major changes to the budget proposal. In the final implementation stage, a finance minister vested with strong monitoring capacity in the implementation of the budget and the power to correct deviations from the budget plan. Under the contract approach, the coalition parties start the budget process by negotiating and agreeing on a set of key budgetary parameters. Participants in these negotiations are party leaders, who may be but need not to be cabinet members. Here, it is the

[6] Italy's experience with growing welfare payments is a prime example for this mechanism. In the past 30 years, Italian politicians used the disability pension system quite openly to buy voter support. See New York Times, Sept. 19, 1997.

process of negotiation that makes the participants realise the externalities created by the general tax fund.[7] These targets ideally should be considered as binding, and the minister of finance should mainly have the function of monitoring and enforcing their implementation, but little discretionary power. Compliance of the government itself with these targets is checked by a strong monitoring capacity of the parliament, which also should have the authority to correct the governmental budget proposal during the approval stage.

II.2. The Choice of the Form of Fiscal Governance and its Implications

The existence of two institutional approaches, delegation and contracts, obviously raises the question which one is the appropriate approach to solving the externality problem of the budget process for a given country. Hallerberg and von Hagen (1999) show that the two approaches are suited for different types of governments. Delegation is the proper approach for single-party governments or governments where coalition partners are close to one another ideologically and run together in elections, while the contract approach is better suited for multi-party coalition governments. In a nutshell, it is difficult for a coalition government to work under a strong finance minister, since the latter necessarily comes from one of the coalition parties. Vesting him with special authorities raises concerns among the other parties about a fair treatment of their spending preferences in the budget process. The principal agent problem emerging in coalition governments is certainly increasing in the ideological dispersion of the government and the degree of competition in the process of coalition formation. The obstacles to delegation are high when political preferences in a governing coalition are highly dispersed or the process of government formation is competitive, with frequently changing coalition partners even if fractions of the previous coalition stay in power, after the election a new governing coalition possibly will be formed. At the same time, a commitment to fiscal targets is harder to keep for a single-party government, since there is no effective threat against reneging on the targets. Enforcement of budget targets under the delegation approach ultimately relies on the ability of the head of the executive to remove recalcitrant spending ministers from office. This power may exist in single-party governments, where the hierarchy in cabinet conforms to the hierarchy of party power structures. It may also exist in governments where coalition partners cannot continue in power without each other, such as is common in France and in Germany and for an extended period of time in Austria. But this power does not usually exist in coalition governments where alternative coalitions of existing parties are evident and where parties traditionally run against each other in elections in any event.

7 See von Hagen and Harden (1996) for a formal discussion of the two approaches.

By comparison, the incentive to negotiate a fiscal contract or release a fiscal rule at the start of a government is much larger for coalition governments. Renegotiating the fiscal policy stance for each budget may be costly, particularly if the ideological constellation within the government is rather complex. Continued budgetary struggle distracts from the operational functions of the government and may hamper the effective implementation of policies. Moreover, so long as there are alternative possible coalition partners in the opposition, the threat to break up the coalition is a very effective one for enforcing negotiated budget targets in ideologically dispersed multi-party governments. This reasoning suggests that the contract approach is the more appropriate one for countries where governments are typically formed by coalitions of different parties.

The previous two types of governance referred to majority governments only. A mixed form of governance seems to fit most for minority governments, which are commonplace in Scandinavia. Since one party usually forms the government or is at the core of the governing coalition, the delegation approach is best suited for the budgetary planning stage. With regard to the parliamentary phase, however, the contract approach applies since the parties lending support to the governmental proposal may want to be assured in advance that their wishes are sufficiently heard. Therefore they are likely to insist upon strong parliamentary control of the government and fix budgetary targets in laws, since formal coalition agreements are not written. How this approach works in practice may, however, strongly depends on the party constellation in parliament. If the supporting parties have no alternative, it may resemble more the characteristics of a single party government operating under an delegation approach, while it comes probably closer to a contract approach when supporting parties credibly can threaten to support a different party able to form a minority government.

III. Electoral Systems and Party Constellations in Government in European Countries

Electoral institutions strongly influence the likelihood of one party wining a majority of legislative seats and consequently having the ability to form a one-party majority government. One important factor is the number of parties that win seats in parliament. If there are a few parties, there is a higher chance that one party can win an absolute majority, and an absolute majority is a virtual certainty in two-party systems. Several studies indicate that the number of effective parties in a given system is strongly and positively correlated with the number of representatives elected from each electoral district, known as district magnitude (Duveger 1954, Taagepera and Shugart 1989, 1993). Electoral systems with low district magnitudes distribute seats less proportionally than those with large district magnitudes, and lower proportionality usually favours larger parties. Other factors that affect proportionality include legal barriers that require a party to gain a certain percentage of the national vote to win legislative seats, the method used to apportion seats, and whether or not a second allocation of seats is used to reduce disparities at the district level. Plurality systems, which elect only one representative per district, encourage a two-party system, and they are consequently most likely to have one-party majority governments. Proportional representation (PR) systems have more variation in their district magnitudes, though the magnitudes are always larger than those found in plurality systems. They tend to have more parties in parliament and are characterised by multiparty majority or either one-party or multi-party minority governments.

Table 1 compares the electoral systems and government structures in EU member states. The first column describes some key characteristics of the electoral system, and column two the district magnitude. The following columns depict some indicators for the dispersion of preferences and the competitiveness of the government formation stage for period 1980 to 2000. The first indicator is the average number of parties in government. The figures show that there is a strong, but not perfect, correlation between the district magnitude and the number of parties a suggested by the theory. Plurality systems and proportional systems with a district magnitude of less than ten representatives tend to lead to one-party governments. Above that the relationship is more tenuous for European countries and possibly other factors, such as the traditional party structure or the main political cleavages in the party system becomes more important. The maximum average number of parties in government in our sample has Belgium with 4.5 and Italy (before 1996) with 4.2.

Our second indicator, the change in coalition of ruling parties as a share of the total number of new governments, is an indicator of the competitiveness of the electoral and government formation process. There are different reasons for the termination of governments, the electoral turn being the most important one, but the government formation process may not be very competitive since there are clearly established party blocks and parties continue in power for decades. Conversely, coalition governments may frequently reshuffle and the government formation process may be relatively uncertain ex-ante. The figures show that there is not a perfect relationship between the number of parties in government and the competitiveness of the government formation process. For example, Belgium has a large number of parties in government and a relatively competitive process. By comparison, governing coalitions in Italy are large, but also fairly stable during the 1980s to the mid-1990s. In Ireland, there is a small number of parties in government, but those change rather frequently after the end of a term or the breakdown of a coalition. The fifth and sixth columns then show the ideological range of a governing coalition. These and the previous indicators are taken from Tsebelis' dataset on veto players.[8] The first ideological indicator captures the classical left-right dimension, and the second one adds another policy that depends on the prevailing party divide in each country. Graph 1 shows that there is clearly a positive relationship between the number of parties in government and the ideological dispersion of governing parties. Thus one can expect the principal agent problem associated with a delegation regime in fact to be larger in countries like Belgium and Finland, with ideologically diverse ruling coalitions.

The final column then indicates the predicted form of fiscal governance based on these characteristics and the prevalence of minority governments in member states. In general, the classification is relatively clear if one assumes a threshold of around 2 parties in the governing coalition of average, which implies that there is generally a proper coalition government, and a threshold of low competitiveness of around 50%. Under these criteria, Belgium Finland, Ireland, and Italy (before 1996) would clearly belong to the group of countries where one would expect a contract approach. Conversely, Greece Portugal, Spain and the UK are among the countries where a dominance approach could be feasible. Borderline cases are probably Austria, Germany, France and Luxembourg. A difference among these countries is that Austria, Germany and France were marked by a party blocks, during large parts of the 1980s and 1990s, where it was clear before the election which party coalition would form even if other options would have been possible. This seems to have been less the case for Luxembourg, where the dominant Christian Socialist Party alternated coalitions with the Socialist Workers Party or the Democratic Party. The coalition was formed with the party that held more seats even though the previous constellation could have been continued without loosing majority in parliament. Possibly this pattern can be explained by the small ideological diversity of parties in Luxembourg, where the representation of local interest seems to play a larger role than in other countries (Dumont and De Winter 2000). Therefore, one could expect a contract regime since the smaller party may want to ensure that its agenda is pursued when the next election is approaching. Finally, there are two countries – Denmark and Sweden – where, with short interruptions,[9] minority governments always prevailed. While the Social Democrats often formed one-party governments in Sweden, they usually took small coalitions partners into government in Denmark. However, there may not have been a strong distinction between small parties in and out of government, giving it its support when needed, since the coalition partners changed frequently.

8 The dataset is made available on his webpage (http://www.polisci.ucla.edu/tsebelis/).

9 The interruptions were from January 1993 to September 1994 in Denmark and from January 1980 to May 1981 in the Swedish case.

IV. Fiscal Rules and the Structure of Budgetary Processes

Having spelled out our analytical framework, and the relevant characteristics of the government system, we now have to operationalise and describe budgetary institutions in Europe. The theoretical approach distinguishes a contract and a delegation approach to budgeting. The institutional correlate of these two approaches is the structure of fiscal rules and the budget process. Fiscal rules should be understood here as any behavioural or legal norm guiding budgetary decision-making and implementation. As such it can take different forms leading from political declarations, over multi-annual budget plans to legal budgetary regulations. The structure of the budget process is mainly characterised by the degree of fractionalisation of decision-making. However, it should be recalled that the institutional requirements to centralize decision-making and channelling the budget through the process without allowing for extensive changes are not identical for the two approaches.

In order to capture these two dimensions, von Hagen (1992) investigates different institutional aspects of the budgetary process: the structure of negotiations within government, the structure of the parliamentary process, the flexibility of budget execution, and the stringency of long-term planning constraints. We follow his approach. The relevant items constituting each institutional aspect are presented in Table 2. Fiscal rules and targets are more stringent, the more encompassing the budget category or aggregate for which a multi-annual target is set, the longer the forecast horizon, the more elaborate the forecast on which they built and the higher the degree of political commitment attached to them.

The budget negotiations are the more centralised, the more general the budgetary constraint set at the beginning of the budgetary negotiations, the more power given to the minister of finance in the budgetary, the broader the scope of the budget norms the minister can set for budget negotiations, and the more centralised the structure of negotiations. The budget negotiations in parliament are the more constrained the less scope is given to amendments, the higher the costs of a failure to pass the budget imposing discipline on legislators, and the less room for log-rolling is given by the voting procedure. The degree of flexibility or control during the budget execution is determined by the authority of the minister of finance to block expenditures, the existence of cash limits, the need for an disbursement approval from the minister of finance or a controller, the scope of budgetary transfers, the institutional barriers to changes of the budget law during the implementation phase and the strictness of carry-over regulations.

V. Fiscal Rules and Budgetary Processes in EU Member States

The data on fiscal institutions in EU member states are mainly based on two expert surveys conducted in 1992 and 2001.[10] They were complemented by documentary analysis and in depth interviews. For the sake of comparability across time and countries, we operationalise institutional items and code fiscal rules according to their stringency and budgetary processes according to the degree of centralisation or control they entail. Each institutional code *i* is normalised to $i \in [0,4]$.[11] Countries are then grouped by the form of fiscal governance, which we would expect according to its government system as discussed in Section III and presented in Table 1. We computed average institutional scores for each sub-group to detect whether the actual pattern and development of budgetary institutions corresponds to our predictions.

Table 3 displays the rules in place concerning long-term constraints, and indeed the reported changes over the past ten years have been fairly dramatic for two items. EU member states now uniformly report the usage of targets, while the usage of multi-annual targets varied largely in the early 1990s, and has been particularly weak in mixed governance structures and strongest for contract states. Moreover, large improvements apparently occurred regarding the nature of the plan. While a lot of plans were based on ad-hoc assumptions they are now more often reported to be based on a consistent macro-economic framework. Beyond this, the degree of commitment has improved in selective countries, but above all in the two states where a mixed governance structure would be appropriate. Therefore the level of commitment in 'mixed' states seems to be equivalent to those where a contract system would be suitable. In line with our predictions, the existing rules in delegation states are less stringent than those in contract states in 2001, and the overall institutional reform has been somewhat less pronounced.

Table 4 presents the average scores for different institutions structuring the governmental planning stage according to the predicted form of fiscal governance. The table shows that overall budgetary negotiations are more centralised now than they were in the early 1990s. The general constraint and the type of norm given out for budgetary requests tightened across the board. Other institutions have developed more selectively. In particular, the agenda-setting power of the minister of finance and the structure of cabinet negotiations provides the minister of finance with more authority now. These reforms have above all transformed the fragmented structures in Greece, Italy and Spain towards a delegation model, as our theoretical framework would have predicted. To a lesser extent they have also helped to overcome the institutional weakness in some contract states, such as Belgium and Ireland.

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[10] In between a survey was conducted by de Haan et al. (1999)

[11] For the coding scheme see von Hagen (1992) and Hallerberg et al. (2003)

Table 5 indicates that overall there has been some strengthening of the government vis-à-vis parliament. Changes have been particularly strong in delegation states, where it may be much easier now for the minister of finance to channel budgetary proposals through parliament than before. The most notable change concerned offsetting amendments - a majority of states introduced this requirement. Additional restraints on amendments have tightened the budgetary process in Germany, Greece and Italy, i.e. delegation states. Institutional changes are equally apparent, but somewhat more balanced across types of government when examining the global vote on the total budget—eight states introduced this requirement after 1991. This group of countries comprises delegation states and all states where we would predict mixed types of governance. Overall, countries with rather fragmented parliamentary institutions, such as Greece, Germany, Italy and Sweden have introduced major changes to centralise the process.

As Table 6 shows, there has been less change at the implementation stage of the budget process than at other stages. However, some patterns emerge. The right to block expenditures has been mainly strengthened among states where a mixed governance structure is appropriate. Cash limits and disbursement approval have gained more prevalence in delegation states. Regulations on transfers have been reported for six countries. But those were distributed evenly across the different types of governance. Carry-over regulations seem to be tighter in two delegation states – Germany and Spain – now than a decade ago. Almost surprisingly, regulations on budgetary changes apparently are less stringent in several EU member states now, with seven of fifteen allowing changes mid-year that did not allow them before. Regarding cross sectional performance, most institutional changes are again reported for Italy, but there is no clear pattern apparent beyond that.

The main development that can be detected for EU member states is that several countries, which previously had rather fragmented budgetary processes, now have more centralised institutional settings reflecting a delegation approach. This is the direction of institutional reform that our analytical framework would predict based upon the forms of government in these countries. By 2001, countries where we would have predicted a delegation approach have less stringent fiscal rules and targets, more centralized budget negotiations during the planning stage and a more restrictive amendment and voting process in parliament. This reflects the functionality of different institutions in accordance with our theoretical scheme.

VI. The Impact of Fiscal Forms of Governance and Fiscal Rules on Public Debt

Having shown that institutional settings in countries follow different patterns, we now investigate whether these institutions also differ in their impact. To analyse the impact of budgetary institutions on deficits and debt, we estimate the following model which has been used in several other studies (see e.g. Roubini and Sachs 1989, de Haan and Sturm 1994, Hallerberg and von Hagen 1999):

$$\Delta debt_{i,t} = \alpha + \beta\,\Delta debt_{i,t-1} + \beta_1 X_{i,t} + \beta_2 P_{i,t} + \beta_3 S_{i,t} + \beta_4 I_{i,t} + \varepsilon_t \quad (1)$$

The dependent variable is the change in the gross debt burden as share of GDP for country *i* at time *t*. Macro-economic variables are included in matrix *X*={real GDP growth, change in unemployment rate, debt service costs}. The matrix *P* comprises two political controls, *P*={election year, veto}. The *veto* variable is taken from Tsebelis' concept of veto-players and captures the ideological complexion of government. It measures the maximum ideological distance among government parties based on ideological scores along an economic, left-right dimensions (see Table 1 for further explanation). It has been argued that coalition governments should find it more difficult to agree on consolidation efforts (see Spolaore 1993). The simple idea is that coalitions find it more difficult to agree, if they are not ideologically closely aligned. This aspect has not been fully captured by previous studies, which include often the numbers of parties in government as neglect ideological positions.

The matrix *S*={population, openness, output volatility} comprises some structural characteristics that may be related to budgetary performance. Population is taken as a measure for the size of the economy. Generally the size of a country can affect the economies of scale in the production of public services. Larger populations may therefore be associated with lower spending, and possibly deficit levels. More importantly in our context, however, is the political weight of large countries in European decision-making processes. Big countries have more leverage in the implementation of the Stability and Growth Pact. People in large countries may therefore care less about the supra-national level and the loss of reputation for breaching European rules may be less. This would reduce the disciplining impact. Openness is related to the exposure of economic sectors to external competitiveness. Small, open economies tend to built more corporatist governance structures (Katzenstein 1985) which could lead to a stronger deficit bias. Output volatility is obviously related to the openness of the economy. However, it should capture more generally the demand for fiscal insurance (see also Rodrik 1998). Since insurance may be provided the automatic stabilisation of disposable income, there is no obvious deficit bias over the cycle. This could nevertheless lead to a deficit bias if the policy reaction to economic fluctuations is asymmetric, or tax and benefit systems lead to a ratcheting up of unemployment rates.

The matrix *I* represents the institutional variables consisting of an indicator for borrowing restrictions for sub-national governments, a fiscal convergence indicator for Stage II of EMU, a centralisation and a rules index. The first institutional variable captures is operationalized as a dummy variable, which captures whether regional or local governments are restricted by law or the control of the central government for borrowing.[12] The convergence indicator is the distance to the 3% deficit to GDP reference value, capturing the adjustment need for those countries with larger deficits between 1992 and 1997.

The institutional variables *I* deserve some explanation. We have shown that budgetary institutions are not used equally across states and that government systems tend to follow certain patterns. Therefore, budgetary institutions obviously interact and their composition is not random. Institutions constituting long-term constraints are indeed highly correlated. This holds partially as well for the structure of budgetary negotiations and amendment rules in parliament and other procedural aspects. Therefore we prefer to construct an aggregate index of centralisation and strictness instead of including all institutions individually. The index values used in levels in the regression exercise. Since budgetary institutions did not change in the mid to late 1980s (see von Hagen 1992), this allows us to base our analysis of budgetary effects on a sample starting in 1985 and ending in 2001. The data when budgetary institutions were reformed are known for Belgium, Greece, Italy, Spain and Sweden where the most significant changes occurred (see Hallerberg 2004). For the remaining countries the dates of institutional reforms are not always known. In those cases we assume that changes became effective in 1998, since this is the time period covered by Hallerberg et al. (2001). However, this measurement error problem will be taken into account for the empirical analysis by excluding Stage II of EMU for those countries with incomplete information on the timing.

The coefficients are estimated as OLS. The computation of standard errors allows disturbances to be group-wise heteroscedastic and contemporaneously correlated across countries. Our model in its extended form includes a number of control variables, some of them showing considerably more between than within-country variation, in order to exclude an omitted variables bias. Therefore we see no reason to estimate the model using fixed or random effects, which is often done to control for these omitted factors. Estimating a random or fixed effects model would moreover lead to the additional complications. First, institutional variables unfortunately show little variation over time. Introducing country effects could therefore lead

[12] The information is taken from Eichengreen and von Hagen (1995) and Hallerberg et al. (2001). Unfortunately data restrictions did not allow to compute the distribution of taxes among different layers of government, which had been suggested as a measure of fiscal decentralisation in some comments. We would like to thank Gerhard Schwab for the data screening.

to unreliable coefficient estimates. Second, our model includes a dynamic component on the right hand side. Consistently estimating common coefficients in a dynamic panel with country effects requires an IV or GMM approach. The Anderson-Hsiao (1982) approach would be the most appropriate for our data set with a relatively small time and cross-sectional dimension. To estimate consistent common coefficients, the approach eliminates country effects through differencing and yields the above model in first differences without a constant and an instrument of the endogenous variable. Estimating the transformed model may however be associated with significant efficiency losses.

The results of the estimations are presented in Table 7. First, the baseline model including economic controls and political factors explains 60% of the variance. This is quite satisfactory. A number of macroeconomic variables have the expected positive or negative effect on changes in public debt, which is confirming for the quality of the model. Real GDP growth has a negative impact, while changes in unemployment produce a strong rise in public debt. Furthermore, we find empirical evidence for an electoral cycle. Adding the structural factors to this model does not lead to any additional explanatory power. All three structural variables – population, openness and volatility – remain insignificant. When the set of institutional variables is added, the overall explanatory power of the model increases slightly. The centralisation index and the fiscal rules index both carry a negative coefficient, which are statistically significant at a 5% level.

Although both indices turn out to be statistically significant, it is not clear whether this holds for all groups of countries in the same manner, since fiscal targets are integral part of the contract approach, whereas the centralisation of decision-making seems more important for the delegation approach. We will analyse this aspect in turn and Table 8 contains the estimates. The estimates for the macroeconomic and political variables are reported since they reveal some interesting differences with regard to the political and institutional factors. First, the overall explanatory power of the model increases for contract and delegation states compared to the sample including all countries. Institutional variables add 5% of explained variance for contract states and 14% for delegation states. Second, political business cycles seem to be more important for delegation states. This is an intuitive result compatible with von Hagen (1998) and Clark and Hallerberg (2000) since large coalition governments in competitive party systems may be bound by the fiscal contract and may find it much more difficult to agree on a deficit increase since it may not benefit all parties equally. By comparison, a one-party government will have a larger benefit from a pre-electoral budgetary expansion. Third, we moreover find opposite effects for fiscal restraints on lower levels of government. While they are associated with a large negative coefficient for contract states, they carry a strong positive coefficient on delegation states. It is not fully clear what produces the latter. The endogeneity of the institutional constraint or its lack of credibility due to the existence of a bailout provision, as for example in Germany, may provide possible explanations. Finally, we findf moreover a positive effect of the centralisation of the budgetary process on changes in public debt for contract states, which is however only statistically significant at the 10% level. Moreover, it is not robust to the specification of the model, as will be shown later and vanishes if either Belgium or the Netherlands is dropped from the sample. By contrast the rules index is associated with a highly significant negative effect. The opposite holds for the group of non-contract states. As shown in the second column, the centralisation of the budget process appears to be the main disciplining device in this group of countries. This finding, however, is based on the performance of mixed countries. Replicating the exercise for the sub-sample of delegation states yields negative and statistically significant coefficients for the centralisation and stringency indices.

The lack of significance of fiscal targets may seem somewhat surprising given the characterisation of the mixed form of governance presented in Section 4 and 5. However, it should be noted that these countries do not operate under a multi-annual contract system as others. Fiscal targets in Denmark are yearly and there is no effective multi-annual budgeting. Similarly, in Sweden, the government renegotiates the three-year targets with opposition parties each year. While the government sticks closely to the expenditure targets during budget execution, they are subject to revision each budgetary year. These systems differ from the multi-annual contracts existing in other countries. In addition, the budgetary volatility in these countries inflates the variance of the estimate and propels against a more clear cut pattern.

The finding that the stringency of fiscal rules is a relevant factor, not only in contract but also in delegation states, contradicts somewhat von Hagen’s (1992) earlier analysis, where no evidence for a significant impact of long-term constraints could be found. At the time, a multiannual framework effectively did not exist in a number of countries. The impact apparent in our estimates could thus capture mainly the implementation of such a system. Alternatively, it could be argued that more stringent rules are more effective because the help to tie in parts of the general government, which are not directly controlled by the budget process, such as social security funds. Finally, one would expect the stringency to be important, even theoretically, if it is backed by the power of the minister of finance. This would presume that there is a complementary relationship between these two institutions.

We consider the issue of interaction between centralisation of decision-making processes and stringency of budgetary targets by using different combinations of indices. A multiplicative interaction reflects the complementary relation, while an additive aggregation implies a substitutive relation. Again we distinguish between contract and non-contract states. Due to the collinearity between individual indices and interactive terms it is not possible to include both in the model and thus make conditional statements. The empirical results are somewhat inconclusive since they do not allow us to distinguish which functional form may be more appropriate (see Table 9). The coefficients of the multiplicative and the additive interactive terms are negative but insignificant at standard levels for contract states, while both are statistically significant for non-contract states. The latter result carries through to delegation states. The conclusion which can be drawn is that the centralisation of budgetary procedures indeed seems not to matter for contract states, while the interaction is relevant in other countries, but it remains an open issue whether the institutional relationship is indeed complementary or not.

VII. Robustness Checks

There may be various objections to the above exercise. A first one could question the validity of the above specification to estimate equation (1) due to the potential endogeneity of contemporaneous macro-variables. Contemporaneous output growth and the unemployment rate or the prevailing interest rate may be affected by fiscal shocks. Controlling for this factor would require to instrumentalise these variables. We do so using lagged values and the contemporaneous US figures of the growth rate, the change in the unemployment rate and real long-term interest rate. It is notoriously difficult to instrument changes and the quality of our instruments unfortunately remains fairly poor.[13] This caveat has to be kept in mind when interpreting the results presented in Table 10. For the sake of brevity, we report coefficients for institutional variables only. A first consequence is that the overall predictive power of the model decreases since it explains only half of the variance when applied to all countries. The sign and the significance of coefficients nevertheless does not change for the main macro variables. With respect to the institutional indices, the negative coefficients for the rules and the centralisation index remain statistically significant at standard levels. However, when looking at subgroups of countries, we see that this effect becomes weaker for contract states while both institutional variables maintain a negative highly significant coefficient for

[13] The first stage regressions achieved an adj_R_square of around 0.4 for output growth and the change in the unemployment rate and 0.54 for the debt servicing costs.

delegation states. The weak result for contract states should be read as refuting the previous finding since even the impact of macro-variables vanishes for this specification.

Further objections may be raised regarding the validity of our institutional measures. The change in budgetary institutions may have been an endogenous component of the fiscal adjustment strategies required to comply with the Maastricht criteria.[14] If this were the case, the above estimates would be biased. To control for that factor, we instrumentalise the change in the centralisation and rules index using the institutional setting and the debt level in 1991. Table 11 provides the results of these exercises. The coefficient of the rules index in contract states remains negative but loses explanatory power for all countries, but it remains highly statistically significant for the group of contract states. The centralisation index carries a less significant impact for the group of non-contract states. The results for delegation states are however fully robust. The negative coefficient for the centralisation and stringency indices remain statistically highly significant. Thus, the previous results are clearly confirmed.

VIII. Summary

In the present study we have updated and extended previous research on budgetary processes in European countries. Using a new data set we have described the current structure of budgetary processes and the development of a selected set of institutions over the last ten years. The main finding is that overall budgetary processes are more centralised now than they were in the early 1990s, when several countries still showed rather fragmented decision-making structures giving rise to a budgetary co-ordination problem. By comparison, spending and deficit biases should be less prevailing in budgetary decision-making now than they were a decade ago in several highly indebted countries. Second, institutional reforms are in line with our functional considerations relating the structure of government to the type of fiscal governance. Thus, the overall current pattern of budgetary institutions confirms that countries with predominantly coalition governments employ the contract approach while electoral systems leading regularly to majority government and persistent party constellations in government tend to follow a delegation approach of institutional centralisation to overcome the fiscal co-ordination

[14] An important question to consider is why countries change their budget institutions. The answer is beyond the scope of this paper, but there is work that considers this question. In a book-length treatment that traces changes in budget institutions in the EU-15, Hallerberg (2004) contends that two preconditions are needed for the appropriate institutions to be put in place. First, the party system must be competitive so that voters can punish incumbents who do not maintain fiscal discipline. Second, the party system must be stable so that budget rules have time to become institutionalized. Hallerberg (2004) concludes that Maastricht may have helped focus decision-makers on maintaining fiscal discipline in some countries like Belgium and Italy, but it was the institutionalization of certain forms of fiscal governance (Belgium contracts, Italy delegation) that mattered the most.

problem. A mixed approach tends to emerge in states with minority governments. These institutional developments can be understood as instances of institutional choice yielding a functional form of governance. Our analysis thus links constitutional regulations – such as electoral rules producing specific forms of governance – to more detailed decision-making structures.[15]

The budgetary impact of these fiscal rules and forms of governance has been the main topic of the last section. We found that the impact of centralisation of budgetary decision-making actually varies with the form of fiscal governance. It contributes less to fiscal sustainability for the contract approach, where the stringency of multiannual targets seems to be more important. For delegation states, the centralisation of the budget process as well as more stringent budgetary targets seem to operate as disciplining devices. Various reasons can drive this result. From a theoretical point of view, the impact of multiannual targets should be contingent on being backed by a strong minister of finance. Unfortunately, the empirical results do not allow us to determine the functional relation between these two sets of institutions. They may be either substitutes or complements.

[15] It thereby contributes to a field of research which Persson and Tabellini (2002) have recently identified as major topic of future studies.

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Table 1: Electoral System, Government Constellation and Fiscal Form of Governance, 1980-2000

	Electoral System	District Magnitude	Average No of Parties	Change in Coalition or Ruling Party	Ideological Range (1 Dimension)	Ideological Range (2 Dimensions)	Expected regime
Austria	2-tier PR; remainder transfer	20/91	1.9	37.5	0.26	0.17	D
Belgium	PR	23	4.5	63.6	0.30	0.24	C
Denmark	2-tier PR; adjustment seats	7/175	2.5	60.0	0.20	0.17	M
Finland	PR	13	3.9	66.7	0.41	0.31	C
France	Plurality	1	1.6	53.8	0.09	0.09	D
Germany	2-tier PR, adjustment seats	1/603	1.9	30.0	0.24	0.19	D
United Kingdom	Plurality	1	1.0	20.0	0.00	0.00	D
Greece	reinforced PR	6	1.0	42.8	0.00	0.00	D
Ireland	STV	4	1.8	77.8	0.22	0.19	C
Italy	2-tier PR; remainder transfer	19/625	4.2	23.5	0.29	0.27	C
Luxembourg	PR	14	2.0	40.0	0.20	0.12	C
Netherlands	PR	150	2.4	71.4	0.33	0.26	C
Portugal	PR	12	1.7	18.2	0.18	0.20	D
Spain	PR	6	1.0	28.6	0.00	0.00	D
Sweden	2-tier PR	11/350	1.5	40.0	0.07	0.05	M

Note: Data for electoral systems and district magnitude are taken from Hallerberg and Von Hagen (1999). The data were updated where necessary. Other data are own calculations based on data provided by Georges Tsebelis (at http://www.polisci.ucla.edu/tsebelis/). A two-tiered electoral system is one where an upper level of seats is used to fill in the results at a lower level to make the overall distribution of seats more proportional; in Denmark, for example, there are seven seats per electoral district on average but there are 175 seats used to fill in the results so that the proportion of seats a party wins matches more closely the proportion of votes it receives. In all 2 tier systems, the district magnitude lists first the number of seats per district at the lower level then the number of seats in the upper level. The average number of parties in government and changes in the coalition or ruling party include data until 1995 for Italy and exclude three short-term caretaker governments in Greece (1989-90). The ideological range is computed for the years 1980 to 1999. They are calculated according to Tsebelis (2002) and normalized to be on a scale between 0 and 1. A score of 0 means that there are no ideological differences among the party(ies) in government. The first dimension is economic policy only, while the second dimension averages economic policy with foreign policy. Abbreviations in the last column indicate the expected form of fiscal governance: C = contract, D = delegation, and M = mixed.

Graph 1: Government Constellation and Ideological Range

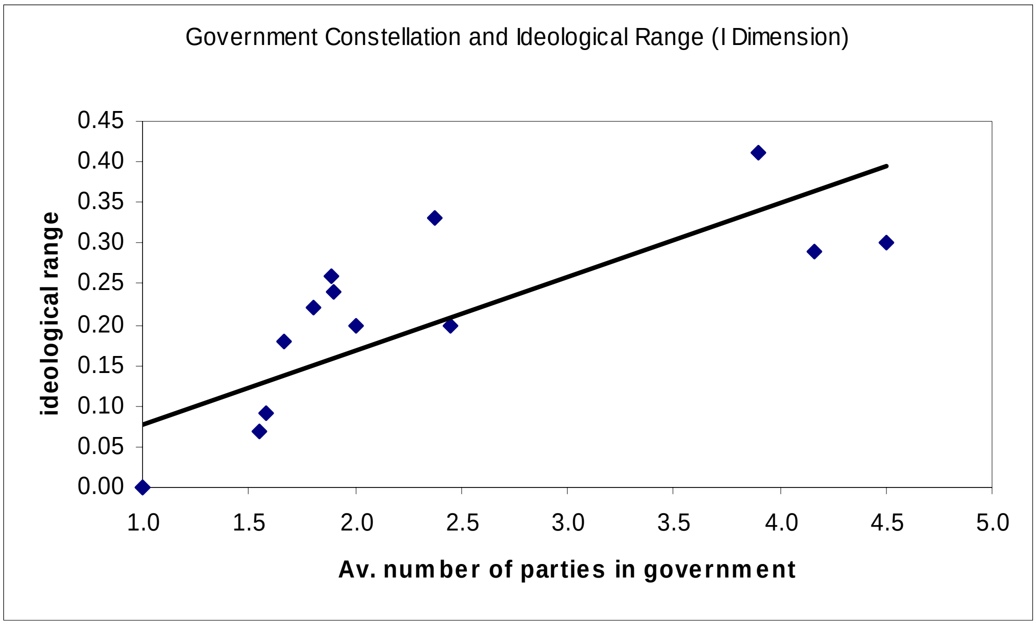

Table 2: Institutional Items

Budgetary Process		
Budget Formulation	**Budget Approval**	**Budget Implementation**
- general constraint - agenda setting of minister of finance - budget norms (broad or for specific spending items) - structure of negotiations in cabinet	- amendment limitations - amendment off-setting - budget amendment can lead to fall of government - all expenditures passed in one vote - global vote on budget (vote on total size of budget)	- minister of finance can block expenditures - cash limits - constraints on transfer allowance - changes in budget law - disbursement approval - carry-over regulations
Multi-annual Targets		
- type of multiannual target (revenues, spending, deficits) - horizon - nature of plan (quality and regularity of planning exercise) - degree of commitment (legal, political or indicative)		

Table 3: Long-term Planning Constraints

Country	**Multi-annual Target**		**Planning Horizon**		**Nature of Plan**		**Degree of Commitment**		**Sum Long-Term**	
	1991	**2001**	**1991**	**2001**	**1991**	**2001**	**1991**	**2001**	**1991**	**2001**
delegation	1.1*	4.0	2.7	2.4**	1.9	4.0	2.0	2.8*	7.7	13.1*
contract	2.7	4.0	2.3	3.2	1.3	3.6	2.2	3.4	8.5	14.2
mixed	1.0	4.0	1.0	2.5	1.5	4.0	1.0	3.0	4.5	13.5
overall average	1.7	4.0	2.3	2.7	1.6	3.9	1.9	3.0	7.6	13.5

Note: Data are from Von Hagen (1992) and Hallerberg, Strauch, and von Hagen (2001).

Table 4: Structure of Negotiations within Government and Constraints at the Planning Stage

Country	General Constraint		Agenda Setting		Budget Norms		Structure of Negot		Sum Planning	
	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001
delegation	1.7	3.5	2.1	3.3	2.7	4.0	2.6	3.3***	9.1	14.0**
contract	1.5	3.6	2.0	2.8	1.6	4.0	1.3	1.6	6.4	12.0
mixed	2.0	3.5	1.5	3.5	1.3	4.0	4.0	3.0	8.8	14.0
overall average	1.7	3.5	2	3.1	2	4	2.3	2.7	8.0	13.3

Note: Data are from von Hagen (1992) and Hallerberg, Strauch, and von Hagen (2001). Statistical significance levels for one-tailed test. "Budget norms" indicate whether they are narrow and consider only the deficit (low score) or whether they are broad (high score).

Table 5: Amendment and Voting Rights at the Parliamentary Stage

Country	Amendments Limited		Amendments Offsetting		Amendment Cause Fall		Global Vote on Total Budget		Expenditure Vote		Sum Parliament	
	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001
delegation	1.7	1.5	0.6	3.0***	2.3	3.0	1.3	3.5**	1.4	1.5	7.3	12.5
contract	2.7	1.6	0.0	0.8	3.3	4.0	0.7	1.6	1.3	2.0	8.0	10.0
mixed	0.0	0.0	2.0	2.0	4.0	2.0	2.0	4.0	4	4	12	12.0
overall average	1.9	*1.3*	0.5	2.1	2.9	3.2	1.1	2.9	1.7	2	8.2	11.6

Note: Data are from von Hagen (1992) and Hallerberg, Strauch, and von Hagen (2001). Statistical significance levels for one-tailed test. Amendments cause fall is coded as zero if a parliamentary amendment to the budget cannot cause a fall in government and coded as four if an amendment can lead to the collapse of the government.

Table 6: The Flexibility of Budget Execution

Country	MF can Block		Cash Limits		Disburse-ment Approval		Transfers		Budget Changes		Carry-over		Sum Execution	
	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001
delega-tion	2.3*	3.5	3.4***	4.0***	2.0	2.5	1.3	1.36	3.0	0.8	1.8	1.5	14.1**	13.6
commitm ent	0.7	2.4	0.0	0.8	2.3	1.6	1.6	2.1	2.2	1.6	2.0	2.1	8.5	10.6
mixed	0.0	2.0	2.0	2.0	0.0	0.0	1.0	2.0	4.0	3.5	0.7	1.3	7.6	10.8
overall average	1.3	2.9	1.9	2.67	1.9	*1.9*	1.4	1.7	2.8	*1.4*	1.73	*1.7*	11.0	12.2

Note: Data are from von Hagen (1992) and Hallerberg, Strauch, and von Hagen (2001).

Table 7: The Impact of Budgetary Institutions on Public Debt

Variables			
Constant	0.89***	0.15	2.08**
	(0.39)	(0.76)	(0.89)
Change in Debt_t-1	0.39***	0.39***	0.33***
	(0.07)	(0.08)	(0.08)
Real GDP growth	-0.37***	-0.40***	-0.47***
	(0.14)	(0.14)	(0.14)
Change in unemployment rate	1.08***	1.07***	1.00***
	(0.23)	(0.22)	(0.25)
Debt servicing costs	0.20	0.21	0.15
	(0.15)	(0.15)	(0.16)
Openness		0.002	0.008*
		(0.004)	(0.005)
Population		0.007	0.02***
		0.007	(0.00)
Output Volatility		0.29	0.23
		(0.22)	(0.22)
Electoral year	0.95***	0.96***	0.92***
	(0.37)	(0.37)	(0.35)
Veto	-1.12	-1.22	-1.71
	(0.82)	(0.89)	(1.07)
Borrowing restraints for lower			-0.94*
level of government			(0.49)
Fiscal convergence			-0.08
			(0.17)
Centralisation index			-0.19**
			(0.10)
Rules index			-0.25**
			(0.12)
R-squared	0.60	0.60	0.62
Wald Statistic	189.07***	210.69***	294.01***
Nobs	208	208	208

Note: The dependent variable is the change in gross general government debt as share of GDP. Standard errors in parenthesis. Asterisks indicate statistical significance at the 10 (*), 5 (**) and 1 (***) percent level.

Table 8: The Impact of Budgetary Institutions on Public Debt

Variables	**Country groups**		
	contract states	**non-contract states**	**delegation states**
Constant	1.03	4.14***	2.65***
	(2.08)	(1.33)	(0.93)
Change in Debt_t-1	0.17	0.40***	0.27***
	(0.10)	(0.08)	(0.05)
Real GDP growth	-0.34**	-0.66***	-0.10
	().15)	(0.19)	(0.13)
Change in unemployment rate	0.87**	0.91***	0.53***
	(0.37)	(0.18)	(0.15)
Debt servicing costs	0.78***	-0.15	0.40**
	(0.21)	(0.19)	(0.17)
Openness	0.006	-0.01	0.05***
	(0.008)	(0.02)	(0.02)
Population	0.08***	0.01	0.006
	(0.03)	(0.0009)	(0.008)
Output Volatility	0.05	-0.02	-0.28
	(0.32)	(0.31)	(0.25)
Electoral year	0.06	1.70	1.50***
	(0.54)	(0.44)	(0.35)
Veto	-3.60	-1.81	-1.21
	(2.58)	(1.13)	(0.97)
Borrowing restraints for lower	-3.32***	-0.83	3.00***
level of government	(1.31)	(0.66)	(0.47)
Fiscal convergence	0.37*	-0.33	-1.61***
	(0.20)	(0.32)	(0.19)
Centralisation index	0.61*	-0.21***	-0.60***
	(0.34)	(0.08)	(0.08)
Rules index	-0.73***	-0.10	-1.14***
	(0.18)	(0.26)	(0.22)
R-squared	0.75	0.61	0.68
Wald Statistic	276.88***	410.93***	1015.71***
Nobs	89	119	90

Note:The dependent variable is the change in gross general government debt as share of GDP. Standard errors in parenthesis. Asterisks indicate statistical significance at the 10 (*), 5 (**) and 1 (***) percent level.

Table 9: The Impact of Fiscal Rules on Public Debt

	additive index			multiplicative index		
Centralisation	-0.18	-0.38**	-1.30***	-0.03	-0.05*	-0.15***
and Rules	(0.20)	(0.19)	(0.14)	(0.02)	(0.03)	(0.02)
R_squared	0.72	0.61	0.67	0.72	0.61	0.64
Wald Test	227.98***	342.68***	743.24	237.71***	325.92***	859.32***
Nobs	89	119	90	89	119	90
sample:						
country group	contract	non-contract	delegation	contract	non-contract	delegation

Note: Standard errors in parenthesis. Asterisks indicate statistical significance at the 10 (*), 5 (**) and 1 (***) percent level.

Table 10: The Impact of Budgetary Institutions on Public Debt (instrumental macro variables)

Variables				
Centralisation index	-0.30***	-0.15	-0.24**	-0.60***
	(0.11)	(0.51)	(0.11)	(0.12)
Rules index	-0.39***	-0.51*	-0.44	-1.37***
	(0.15)	(0.28)	(0.34)	(0.27)
R-squared	0.51	0.52	0.56	0.65
Wald Statistic	188.73***	139.42***	296.80	546.17
Nobs	205	89	116	87
Country:	all	contract	non-contract	delegation

Note: The dependent variable is the change in gross general government debt as share of GDP. Standard errors in parenthesis. Asterisks indicate statistical significance at the 10 (*), 5 (**) and 1 (***) percent level.

Table 11: The Impact of Fiscal Rules on Public Debt (instrumented institutional index)

Variables				
Centralisation	-0.23**	0.25	-0.15*	-0.55***
	(0.10)	(0.27)	(0.09)	(0.09)
Rules	-0.20*	-0.59***	-0.14	-1.12***
	(0.12)	(0.23)	(0.22)	(0.20)
R_squared	0.62	0.73	0.61	0.65
Wald Test	310.05***	304.91	465.80***	859.85
Nobs	208	89	119	90
sample:				
country group	all	contract	non-contract	delegation

Note: Standard errors in parenthesis. Asterisks indicate statistical significance at the 10 (*), 5 (**) and 1 (***) percent level.

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