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Abstract

Stringent fiscal rules and budgetary procedures might generate incentives for political decision-makers to cut predominantly productive public investment during periods of fiscal consolidation. While the influence of the European Stability and Growth Pact on public investment received a lot of attention in the empirical literature, only a few studies consider the impact of different budgetary decision-making rules and procedures at the national level on government investment spending. We test empirically for the effect of political factors and the institutional framework of budgeting on public investment in 15 'old' EU-countries over the period 1990-2005. Our result show that stringent quantitative constraints limit government investment, but a centralization of budgeting procedures by providing more agenda setting powers to the finance minister (delegation approach) or by the use of medium-term fiscal contracts are not related to public investment spending cuts.

JEL-classification: H11, H61, H54

1 Introduction

As upshot of the global financial crisis government debt and deficits increased to previously unknown levels in many industrial countries. Most European Union member states hence face pressing needs for a budget consolidation. Yet, a key concern with austerity plans is that fiscal adjustment would come at the expense of growth-promoting public investment. Although evidence differs with respect to the size of its positive effects there is still broad empirical support for the hypothesis that public capital formation is conducive to long-run economic growth performance (e.g. Aschauer 1989, Barro 1991, Easterly and Rebelo 1993, Romp and de Haan 2007, Romero-Avila and Strauch 2008, Egert et al. 2009).[1] Too little government investment might be harmful not only for growth but eventually for future tax receipts and long-run fiscal positions (Easterly, et al. 2007).

Declining public investment in OECD countries is a subject matter since the 1980s (de Haan, et al. 1996; Heinemann 2006). Several economic and political factors, from globalization to public infrastructure saturation effects in highly developed countries, have been discussed to explain the decline. In this respect, the imposition of supranational debt and deficit limits by the Stability and Growth Pact (SGP) in 1998 is often said to cause European Union member governments to downsize productive investment spending. Empirical evidence for an investment-depressing "Maastricht effect" is, at best, weak (Gali and Perotti 2003, Turrini 2004, Perée and Välilä 2005).

A hitherto mostly neglected point concerning the relationship between government capital spending and the fiscal framework is that several regulations at the individual country level may create different incentives for policy makers to undertake investment. Quantitative budgetary constraints typically do not distinguish between capital and current expenditures, stringent fiscal governance at the national level might generate incentives for politicians to abandon long-term investment projects during rule-enforced episodes of fiscal retrenchment. Further budgetary decision-making arrangements, e.g. fiscal contracts including a medium-term expenditure framework, or strong agenda setting powers of the finance minister, instead aim at a moderation of intra-governmental distributional conflict to reduce incentives to excessive spending and deficits (e.g., Hallerberg, Strauch, and von Hagen 2009). But what are their effects (if any) on public investment? Do budgetary regulations have an adverse impact on capital spending? Or do some procedures, on the contrary, by extending the time horizon of political decision makers even provide incentives to give higher priority to public investment?

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[1] Perotti (2004) however fails to provide robust evidence for growth-enhancing effects of public investment in five OECD countries (Australia, Canada, Germany, the United Kingdom, and the United States). Jong-a-Pin and de Haan (2008) suggest that the impact of government capital on output differs across countries and over time.

Against this background, the paper explores the impact of different budget institutions on public investment in 15 old European Union member states over the period 1990-2005. In section 2 we present some stylized facts on public capital spending. A long-run tendency of declining government investment spending has continued during the 1990s and early 2000s in many European Union countries, but less pronounced. In section 3 we provide a short overview on fiscal governance structures and conjectures about their relation to productive investment spending. We turn to the empirical investigation of the influence of budget institutions on government investment spending in sections 4 and 5. Briefly anticipating our results, we find more stringent quantitative fiscal constraints to limit government investment. A centralization of procedures by giving stronger agenda setting powers to the finance minister (delegation) or the use of medium-term fiscal contracts (commitment) are not related to investment spending. Section 6 summarizes and concludes.

2 Some stylized facts on public investment spending in Europe

We start with a short description of public investment, measured as general government gross fixed capital formation in relation to nominal GDP in the 15 'old' EU member countries.[2] Table 1 reports five year averages of spending levels over the periods 1980-84, 1985-89, 1990-94, 1995-99, 2000-04, and a four-year average over 2005-08. Averages are reported to smoothe expenditure variations over the business cycle and to mitigate the impact of extraordinary events.

Table 1: Government investment as a share of GDP, 1980-2008

	1980-84	1985-89	1990-94	1995-99	2000-04	2005-08
Austria	3.9	3.3	3.1	2.3	1.3	1.1
Belgium	4.3	2.5	1.9	1.8	1.7	1.7
Denmark	2.5	2.1	1.7	1.8	1.8	1.8
Finland	3.5	3.4	3.3	2.8	2.7	2.5
France	3.1	3.3	3.5	3.0	3.0	3.2
Germany	3.0	2.5	2.6	2.0	1.6	1.4
Greece	2.7	3.0	2.7	3.0	3.6	3.0
Ireland	4.2	2.7	2.2	2.6	3.9	4.3
Italy	3.3	3.3	2.8	2.2	2.3	2.3
Luxembourg	-	-	4.1	4.1	4.4	3.8
Netherlands	3.8	3.2	3.2	3.1	3.3	3.3
Portugal	4.3	3.4	3.7	4.1	3.5	2.4
Spain	2.6	3.8	4.5	3.3	3.4	3.7
Sweden	4.4	3.5	3.4	3.0	2.7	2.8
United Kingdom	2.4	2.2	2.2	1.5	1.5	1.8
average	3.4	3.0	3.0	2.7	2.7	2.6
median	3.4	3.3	3.1	2.8	2.7	2.5

Source: Own calculations based on Eurostat and OECD Economic Outlook database.

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[2] Reported data are general government gross fixed capital formation from OECD Economic Outlook No. 86 and, in case of Italy, Eurostat.

Over the 1980s, gross government investment in 14 European Union countries (Luxembourg excluded due to unavailability of data) declined on average from 3.4 to 3 percent of GDP. During the 1990s the downward trend continued, but slowed down a little. Public investment spending in EU-15 on average decreased to 2.6 percent of GDP over the 2005-08 period. Since the beginning of the new century, Austria, Belgium, Denmark, Germany, and the UK observe government investment ratios of less than 2 percent of GDP. France, Greece, Ireland, Luxembourg, the Netherlands and Spain, on the other hand, have a government investment-to-GDP ratio 3 percent or higher. Taking the early 1990s as a reference point, 11 out of 15 countries reduced government investment over GDP.

Table 2 illustrates government investment as a share of primary spending. In the early 1980s, the investment share in 14 countries amounted on (unweighted) average to 7.8 percent of primary expenditure. The EU-15 average dropped to 6.2 percent over 2005-08. As compared to the early 1980s, only Ireland, the Netherlands and Spain improved its capital spending share in the entire sample, after observing a significant downturn during the late 1980s and the early 1990s. In Austria and Germany government investment in relation to primary expenditure has been reduced by (almost) 50 percent.

Table 2: Government investment as a share of primary spending, 1980-2008

country	1980-84	1985-89	1990-94	1995-99	2000-04	2005-08
Austria	7.9	6.6	6.2	4.4	2.6	2.3
Belgium	8.3	5.6	4.3	4.2	3.9	3.6
Denmark	4.9	4.5	3.4	3.4	3.5	3.6
Finland	8.6	7.7	5.9	5.4	5.8	5.3
France	6.7	6.8	7.2	6.0	6.1	6.5
Germany	6.8	6.1	6.0	4.2	3.7	3.4
Greece	8.2	8.5	7.9	8.5	9.0	7.6
Ireland	8.8	6.4	5.8	7.8	12.2	12.1
Italy	8.4	7.8	6.5	5.4	5.4	5.3
Luxembourg	-	-	10.6	10.3	10.9	9.8
Netherlands	7.1	6.4	6.6	7.0	7.8	7.7
Portugal	13.2	10.6	10.3	10.5	8.3	5.6
Spain	7.0	10.1	10.9	8.9	9.4	10.0
Sweden	7.5	6.3	5.5	5.3	5.0	5.5
United Kingdom	5.6	5.5	5.4	4.0	3.8	4.0
average	7.8	7.1	6.8	6.3	6.5	6.2
median	7.7	6.5	6.2	5.4	5.8	5.5

Source: Own calculations based on Eurostat and OECD Economic Outlook database.

Summing up, available data show that a decline of government investment spending has continued in some countries since the 1980s, but the pace of deterioration somewhat slowed down. To be sure, part of these developments might be explained by corporatization and privatization in several network industries. In telecommunications, electricity or rail sectors, former state owned enterprises or public utility firms are not included in the classification of general government, but are counted as private entities. In many cases the classification of

these firms did not change as these companies always belonged to the private sector according to the System of National Accounts.[3]

The public/private infrastructure investment mix is also influenced by new instruments of co-operation between both sectors. In Portugal, Spain and especially in the UK, Public Private Partnerships have found increasing use for financing infrastructure projects, also possibly leading to a statistical decline in government investment according to the European System of National Accounts 1995. The statistical treatment of Public Private Partnerships yet does not necessarily lead to an underreporting of government investment figures. Unfortunately, comparable data which take into account all these developments are yet unavailable. Declining and historical low levels of public investment spending in many countries, however, do not seem to be primarily caused by systematic under-reporting and measurement problems (Clark et al. 2002, Välilä et al. 2005, Mehrotra and Välilä 2006).

3 Government investment and the budgetary framework

3.1 Political myopia and government fragmentation

A decline in public investment is often attributed to political short-sightedness and dispersed decision-making in government. The impact of myopia and fragmentation on government investment behavior is yet not straightforward.

A first argument says that parliamentary elections and frequent changes of government amplify political uncertainty, raise decision-makers' discount rates and reduce incentives to consider negative future consequences of their spending decisions. Myopia in the political process then leads to higher than optimal total spending, i.e. including investment spending, as adverse consequences of larger deficits and debt do not fall on the current government (Tabellini and Alesina 1990, Grilli et al. 1991, Debrun and Kumar 2007).

Political myopia might yet also lead to less than optimal public investment during times of fiscal adjustment. Short-sighted governments undervalue the economic and social benefits from long-run productive spending. Heavy discounting of future benefits would bias spending decisions towards current consumption (Darby et al. 2004). The political cost of postponing public investment appear to be lower than the political cost of cutting current spending, as economic consequences of a decline of government capital are less immediately visible[4] than those of a reduction of social transfers, subsidies or public sector wages. Hence, current

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[3] Sometimes this is not the case, though. Austria, for example, privatized its highway planning and maintenance corporation (ASFINAG), public hospitals and several municipal services in 1997. All these entities had previously been classified as governmental units. Thus, from 1996 to 1997 general government investment dropped from 2.8 percent of GDP to 2.0 percent. Although these companies are not part of the government sector in National Accounts definition any more, they are still under control of the government. Part of their investment is now financed via government subsidies and capital transfers.

[4] Sometimes, long-run underinvestment becomes suddenly visible. Shughart (2006) argues that the failure of flood protection during the Katrina catastrophe in New Orleans was a consequence of politicians' myopia.

expenditures have a higher value to political decision makers than capital expenditures, especially during election years (Vergne 2009).

A possible second source of inefficiencies in government spending decisions is a common pool problem. According to this perspective, higher than optimal public expenditures result from a fragmentation of the decision-making process such that politicians systematically do not fully internalize the true total cost of their spending decisions. Hence, political actors choose over-sized budgets from the perspective of the entire society and provide too many services for their constituency. An overspending bias is more pronounced if decision-making is dispersed among many decentralized actors (Weingast, et al. 1981, Velasco 2000, Volkerink and de Haan 2001, Perotti and Kontopoulos 2002). Fragmented decision-making might lead to over-sized capital spending, as investment projects are well-suited for geographically targeted pork-barrel politics.

Again, consolidation pressures will probably change incentives. Roubini and Sachs (1989) argue that weak, fragmented governments take the path of least resistance when it comes to budgetary policy-making. During times of fiscal stress, weak governments are expected to cut investment, as political resistance is heavier when it comes to a reduction of current consumption. Moreover, compared to social welfare spending there are no or only weak political entitlements to public investment. This leaves more discretion to policy makers in the case of capital as compared to current expenditure (Roubini and Sachs 1989, Oxley and Martin 1991, de Haan et al. 1996, Mintz and Smart 2006, Serven 2007). Provided that coalition and minority governments are less stable than single-party governments, fragmentation will additionally augment the problem of political myopia.

Summing up so far, the effects of political uncertainty and of a fragmentation of budgetary decision-making on government investment spending are theoretically ambiguous. There are opposing forces at work, some leading to a general overspending bias that comprises all expenditure categories, and others causing a bias towards current spending at the expense of capital formation. These latter effects might be more pronounced when pressure for fiscal consolidation is high. However, it is hardly plausible that political uncertainty and fragmented decision-making increased so much over the last decades that these are the driving factors of a (further) decline in public investment in Europe.

3.2 The budgetary framework

What actually *did* change in the 1990s is the fiscal framework under which governments in Europe act. Hallerberg, Strauch, and von Hagen (2009) show that over the last 20 years European countries have tightened their budgetary decision-making rules significantly. Little is known, however, about how budgetary institutions that are designed to reduce overall spending, debts and deficits shape a government's investment decisions.

A country's fiscal framework is composed of the entire set of formal and informal rules which direct the preparation, legislation and execution of the budget (e.g., von Hagen 2003,

Hallerberg, et al. 2009). A specific set of rules contains quantitative targets for key budgetary aggregates, i.e. ceilings for expenditures, revenues, budget balances and debt. The debt and deficit limitations of the Stability and Growth Pact (SGP) at the supranational level, which came into effect in 1998, clearly fall under this category. It demands member states to run budget deficits smaller than 3 percent of GDP in general and to keep the debt-to-GDP-ratio below 60 percent. In principle, the SGP contains sanctions up to a monetary fine in serious cases of non-compliance. Following a controversial debate over its working properties, the rules of the SGP have been revised and the constraining effects for the member states have become questionable. Nevertheless, countries in Europe have also introduced more or less tight restrictions at the national level during the 1990s (Hallerberg, Strauch, and von Hagen 2009. See also Debrun et al. 2008).

Simple quantitative constraints are supposed to increase budgetary pressures and thus to have an adverse effect on public investment as they usually do not specify the means how to meet the targets. To be sure, borrowing constraints, balanced budget rules or spending ceilings are not necessarily incompatible with an investment-oriented fiscal policy. Provided that short-sighted politicians find it more costly to cut current outlays, such constraints could nevertheless weaken incentives for capital spending. For this reason, some economists advocate 'Golden Rules' or a general exemption of capital expenditure from the calculation of deficit or spending limits (e.g. Blanchard and Giavazzi 2004, Agenor and Yilmaz 2006). If public investment is (partially) excluded from spending or deficit limits, adverse effects on capital spending will probably be weakened.[5]

Hypothesis 1

Tight quantitative fiscal constraints reduce public investment.

Besides the introduction of numerical constraints Europe Union member states established and strengthened procedural arrangements to cope with a deficit bias. Common pool problems in budgeting are a consequence of dispersed competences in the cabinet or legislative bodies. Limiting overspending predispositions might therefore be accomplished by a centralization of the decision-making process. Various reforms of procedural rules can complement quantitative constraints to facilitate coordination. In broad categories, a delegation approach and a commitment approach may be distinguished (e.g. von Hagen and Harden1995, Hallerberg 2004, Annett 2006, Hallerberg, Strauch, and von Hagen 2009).

In a delegation approach centralization is achieved by empowering the bargaining position of the Minister of Finance vis-à-vis spending ministries and the legislature during preparation, legislation and implementation of the budget. This reflects the notion that the Finance

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[5] Balassone and Franco (2000) argue that a special treatment of public investment different from current expenditure can nevertheless have growth-retarding effects, as spending priorities would be shifted towards physical capital at the expense of other productive expenditure categories which contain important elements of public consumption (e.g. education and R&D). Applying the Golden Rule to capital funding also generates loop-holes and opportunities for politicians to escape the fiscal rule constraints (Mintz and Smart 2006).

Minister serves as a protector and a guard of the budget, while line ministers and members of parliament primarily strive for higher budget appropriations to please bureaucracies, vested interest groups and constituencies. Improving the agenda setting position of government actors with a more comprehensive view of the budget is supposed to lead to more responsive fiscal behavior.

As far as the reputation and the political success of a Finance Minister depends on her ability to keep budget deficits low, we may expect more stringent rules to be negatively related to overall spending increases, ceteris paribus. With respect to long-term productive expenditures the Finance Minister yet should be mostly agnostic. If her political success depends primarily on the current budget balance, she does not care whether this is achieved by tax increases, cutting investment or, say, social security transfers. Seen from this view a delegation of competences to the Finance Minister should show effects on investment expenditure that are similar to simple numerical constraints. If, on the contrary, the Finance Minister has a more pronounced interest in longer-term fiscal solvency, a stronger strategic position might be associated with a higher level of investment spending. On the one hand one could argue that legislators in parliament have a particular short time horizon from election to election date, leading to a bias in favor public consumption against long-term investment spending. On the other hand, there is no reason to believe that members of the legislature are generally more myopic than ministers, as in parliamentary democracies both depend strongly on each other. Hence, we suppose that.

Hypothesis 2

A stronger position of the Finance Minister by means of delegation is associated with lower public investment.

Alternatively, some countries follow a contract or commitment approach. In a delegation regime, the Finance Minister plays the key role in budgetary decision making, including the setting of budgetary targets for government. In a fiscal contract regime, commitments take the form of multi-annual fiscal targets which address the fiscal externality problem when coalition partners negotiate a fiscal plan for all spending dimensions. Countries with legally or politically binding long-term fiscal contracts should not only be more fiscally responsive in the short run. A medium-term fiscal plan might also foster inter-temporal consistency of budgetary policies (OECD 2005). A contract framework that limits the bias towards myopic spending preferences by extending the time horizon of politics by fiscal contracts might at the same time gives stronger incentives for productive investment spending (Blöndal 2003, OECD 2005).

Hypothesis 3

Medium-term fiscal plans are associated with higher public investment.

4 Empirical strategy

4.1 Quantifying the restrictiveness of the budgetary framework

Numerical constraints index

To measure the institutional aspects of fiscal rules and budgetary procedures, we rely on the data set compiled by Hallerberg, Strauch, and von Hagen (2009) (henceforth: HSVH). Based on an extensive survey of European budgetary rules, including an analysis of budget laws and personal communications, HSVH develop indicators reflecting rules and procedures that are supposed to be conducive to budgetary discipline. Their work shows that fiscal norms and overall budget institutions have generally become more stringent in the European Union during the 1990s. Still, there exist some notable differences between the countries' choices of a reformed fiscal framework. Due to space limitations we only give a very brief overview of developments in Europe. Appendix A shows separate country developments. For further and more detailed information on index construction issues consult HSVH.

The *constraint index* covers the restrictiveness of fiscal rules, ranging from no constraints at all to ceilings for both spending and debt as a share of GDP. The data are normalized on a 0-1 scale, higher values reflecting more stringent budgetary restrictions. Figure 1 provides evidence that the use of quantitative fiscal rules as measured by the constraint index has increased significantly in the 15 European Union members over the 1990-2004 period. On average, the index score increased from 0.42 to 0.85 over the respective time period.

Delegation index

Centralization of decision-making powers at the Ministry of Finance is measured by the *delegation index*, comprising data for centralization at all three stages of budgetary decision-making. At the budget formulation stage, the index covers agenda setting powers of the Finance Minister, the structure of negotiations vis-à-vis the line ministers in the cabinet, and the scope of budget norms in the setting of the agenda. Centralization in the phase of budget approval indicates, inter alia, whether the legislature can amend the budget, whether amendments have to be off-setting, i.e. total spending has to be untouched, or if there is an initial vote on the total spending. The stronger the executive's rights vis-à-vis the legislature, the higher is the degree of centralization in budgetary policy making. A third component of centralization by delegation is concerned with budget execution. The easier it is to change budget appropriations during its execution, the weaker becomes the position of the finance minister and the less fiscal discipline is expected.

Figure 1: Evolution of restrictiveness of budgetary institutions, EU-15 averages 1990-2005
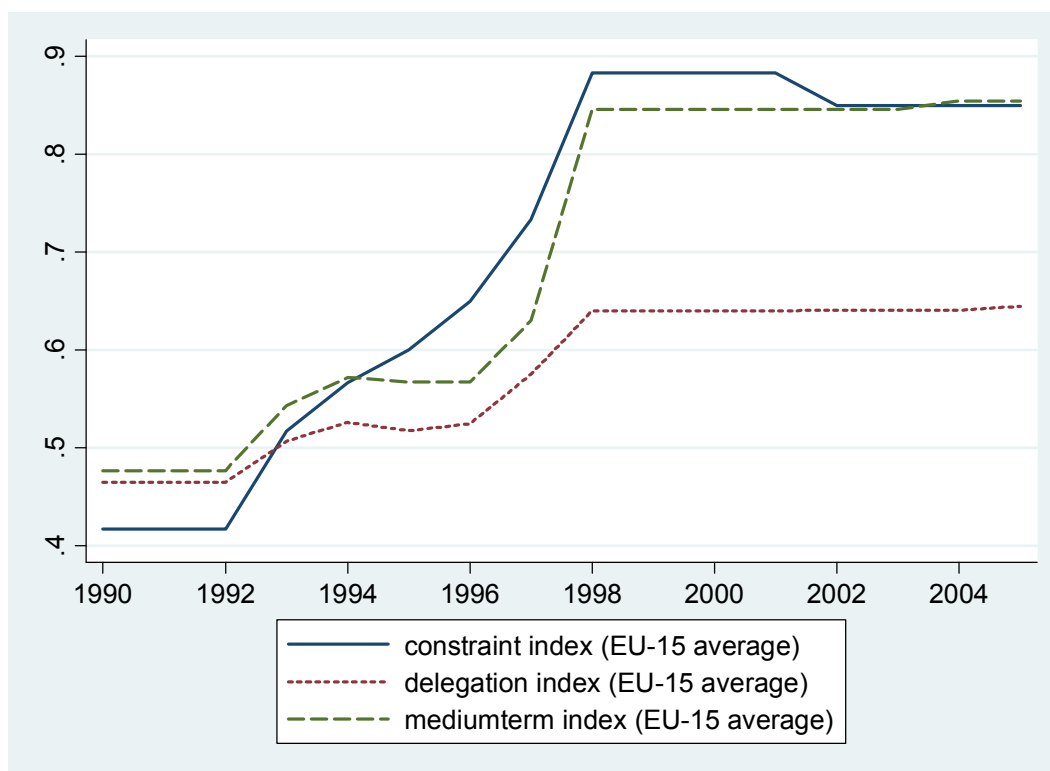
Following HSVH, all three indices measure centralization of budgetary decision making by concentration of agenda setting powers, are merged into a single delegation index, which is simply the average index score.[6] Figure 1 shows the evolution of our comprehensive index of delegation. Again we see that there is a general tendency in the EU 15 to centralize decision making and agenda setting powers at the Ministry of Finance over the period 1990-2004.

Medium-term planning index

Multi-annual budget plans and fiscal contracts also gained popularity in Europe. With the introduction of the Stability and Convergence Programs, governments are supposed to publicize and report medium-term fiscal plans and targets to the Commission. On the national level, some countries have introduced more or less binding fiscal targets not only for next year's budget, but for a longer time horizon. HSVH (2009) also provide an indicator for reliance on multi-annual fiscal contracts on a 0-1-scale. Countries with legally binding, long-term fiscal targets for both spending and taxation that are based on a regularly updated and consistent macro-framework receive the highest scores for fiscal contracts. Figure 1 shows that medium-term contracts become increasingly important as an instrument for fiscal

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[6] Note, however, that HSVH (2009) also include the quantitative constraints index in their overall delegation score.

planning and decision making in the EU 15 countries. Average development parallels closely the constraint index. However, individual developments differ strongly.

To sum up, budgetary institutions have changed considerably in EU 15 countries over the last 20 years. In most countries we observe reliance on more stringent constraints and procedures, but still some notable differences exist. From a theoretical perspective, all three types of institutional arrangements can contribute to a reduction of debt and deficits, but differences might occur when it comes to their impact on capital spending. The main issue in this respect is different effects on long-term planning. Quantitative fiscal rules as well as a centralization of fiscal decision making procedures via delegation might be harmful for investment because they do not provide positive incentives to take into account longer-run fiscal developments. Fiscal contracts, on the other hand, should be associated with higher public investment if they fulfill their fundamental aim, i.e. to make governments care more about longer-term developments.

To get a first impression of the possible impact of different institutional arrangements for budgetary policy making on government capital spending, we look at the change of government investment in the aftermath of major reforms of the institutional framework. HSVH provide data on the timing of reforms of budgetary institutions. Table 3 compares government investment ratios five years prior to the major reform date and five years after major reforms.

Table 3: Government investment before and after major budgetary reforms

country	Year of major reform	pre-reform investment	post-reform investment	difference
Austria	1998	2.85	1.50	-1.35
Belgium	1993	1.93	1.88	-0.05
Denmark	1998	1.82	1.76	-0.06
Finland	1996	3.11	2.80	-0.30
France	1998	3.23	2.96	-0.27
Germany	1998	2.27	1.78	-0.49
Greece	1998	2.82	3.37	+0.54
Ireland	1993	1.99	2.34	+0.37
Italy	1997	2.36	2.31	-0.05
Luxembourg	1998	3.98	4.37	+0.40
Netherlands	1995	3.21	3.08	-0.14
Portugal	1998	4.07	3.84	-0.22
Spain	1994	4.61	3.47	-1.15
Sweden	1997	3.36	2.70	-0.66
United Kingdom	1998	1.76	1.34	-0.42
Unweighted average		2.89	2.63	-0.26

Source: Hallerberg, Strauch and von Hagen (2009), own calculations based on OECD and Eurostat.

On average, government investment declines by almost 0.3 percentage points from 2.9 to 2.6 percent of GDP. A simple paired t-test shows that the difference between pre-reform and post-reform investment is weakly significant at a 5 percent level (pr= 0.0385). Yet, we also observe very heterogeneous developments in the EU-15-sample. While public investment in

the post-reform years increased considerably in Luxembourg, Ireland and Greece, it strongly declined in Austrian, Sweden, and in Spain, albeit from an initially high level in case of Spain.

4.2 Empirical model

In order to investigate effects of budget institutions as well as economic and political factors on total government capital expenditure, we follow recent studies of fiscal policy behavior by estimating an empirical fiscal policy reaction function of the form

$$(1) \quad inv_{i,t} = \alpha_i + \phi inv_{i,t-1} + \beta binst_{i,t} + \gamma pol_{i,t-1} + \delta econ_{i,t-1} + u_{i,t}.$$

The subscripts i and t denote country and year. The sample consists of all 'old' 15 EU member countries with annual observations over the period 1990-2005. Due to missing data for some country-years the panel data set is unbalanced, however.

The dependent variable inv is general government gross fixed capital formation, expressed in relation to GDP. As government spending is often sticky and usually shows a high degree of persistence over time, we employ a lagged dependent variable $inv_{i,t-1}$ on the right hand side of equation (1).

Budget institutions

The vector $binst$ represents budget institutions (constraints, delegation and medium-term index) in a country and enters with contemporary values. The data are derived from HSVH (2009). Note that, in contrast to these authors, we do not merge the fiscal constraints index in a more comprehensive delegation index, as we want to separate their distinctive effects on public investment spending.[7]

The coefficient β shows the marginal effect of different institutional restrictions on government investment. The central questions to be answered in this respect are: Do several institutional arrangements that aim to restrain a deficit bias have an adverse impact on government investment? Or do some procedures, by extending the time horizon of political decision makers generate incentives to redirect expenditure towards capital spending?

Political controls

Several political variables $pol_{i,t-1}$ are taken into account to capture effects of fragmented decision-making and government instability on investment spending. In particular, we include

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[7] In additional regressions we checked the inclusion of dummy variables for the period 1993-1998 and a SGP-period thereafter to account for possible effects of adjustment in advance of the Euro and for the adoption of the SGP rules. We tested several model specifications but never found significant effects. Thus, these variables were left out of our analyses.

- *coalition size* (number of parties in government) as a measure of fragmented decision-making. Data are calculated from the Database of Political Institutions (Beck et al. 2001); they are lagged one year to account for a budgetary decision making lag.
- a dummy variable for parliamentary *elections* in the respective year;
- a "*government turnover rate*", i.e. the number of government changes over the last three years, as a proxy for political uncertainty and instability of government. The data are derived from the Comparative Political Data Set (Armingeon et al. 2008) and count every termination of a government due to the resignation of the Prime Minister, a dissension within the government, a lack of parliamentary support, an intervention by the head of state, or elections. The turnover rate enters with a lag of one year. Hence, instability due to contemporary elections is not taken into account.

Economic controls

Finally, $econ_{i,t-1}$ is a vector of variables which reflect economic conditions that supposedly have an impact on government investment. To mitigate problems of reverse causality which arise when estimating equation (1), economic controls enter regressions with a lag of one year. More specifically, we employ the following covariates reflecting economic conditions at the time of budgetary policy making:

The stock of *government debt* as a share of GDP is an indication for the sustainability of public finances in a country. Fiscal consolidation measures are generally motivated with the purpose to reduce public debt. Hence, we would expect higher government debt figures to be negatively related to government spending in the subsequent period to improve fiscal solvency. Especially when public debt ratios reach some critical amount this could provide incentives for consolidation efforts. In this respect, several studies show that increasing debt-to-GDP ratios are related to lower public deficits in the following period (e.g. Hallerberg, Strauch, and von Hagen 2007, Tujola and Wolswijk 2007, Afonso and Hauptmeier 2009). The source of our debt figures is Eurostat's AMECO database,

Inclusion of the (lagged) *output gap* intends to measure the fiscal responsiveness to current macroeconomic conditions. Keynesian stabilization theories assume government to respond to an economic downturn with a fiscal stimulus, and vice versa. Public investment may be especially suited for a counter-cyclical demand policy. Recent studies (e.g. Hallerberg and Strauch 2002) yet show that fiscal policy in EU countries has become more pro-cyclical during the last decades, possibly also as a consequence of implementation lags. Output gap data are taken from Eurostat's AMECO database. We measure the output gap as deviation from trend GDP.

Throughout all regressions we control for *real GDP per capita*. In industrial countries with an already well-developed public infrastructure, investment in road and rail networks, energy facilities, water and sewer lines, or communication systems may be subject to decreasing returns. Hence, if per capita income is a good proxy for the capital endowment of a country, we expect real GDP per capita to be negatively related to government investment.

Finally, we take into account international *trade openness* of a country. At the heart of many papers on public expenditure composition is the discussion on the impact of globalization on budget structures, reflected in the efficiency vs. compensation-hypothesis-controversy (e.g. Rodrik 1998, Garrett and Mitchell 2001, Gemmell, Kneller, and Sanz 2008, Heinemann 2006, Dreher, Sturm and Ursprung 2008). The empirical literature yet finds no conclusive results supporting either hypothesis, i.e. it is not clear whether increasing capital mobility and trade openness lead to a re-allocation of spending in favor of efficiency enhancing investment, or higher spending for social security purposes.[8]

Estimation procedure

In the regressions we include unit fixed effects α_i to account for an omitted variable bias and unobserved heterogeneity in the cross-country dimension.[9] Unit fixed effects models relate intra-country changes of a dependent variable to intra-country changes in explanatory variables. As unit fixed effects eliminate most of the cross-country information, results should be interpreted as 'over time'-impact of explanatory variables. Unit fixed effects also rule out an inclusion of time-invariant covariates. This precludes the use of several possible institutional determinants of public spending, i.e. the voting system. If country fixed effects are however not included in the model, included time-invariant variables will carry the weight of all country specific factors relevant for government expenditures. Despite its acknowledged problems, we decided to opt for a unit fixed effects estimator, although the focus shifts from explaining differences between countries to explaining effects within countries (over time).

The use of unit fixed effects in a dynamic model specification carries with it a further problem. A model that includes the lagged dependent variable on the RHS of the estimation equation and which has limited length of the time series, an ordinary least-square dummy variable (LSDV) estimator can be seriously biased (Nickell 1981). While various instrument variable and GMM procedures can help to overcome the bias in panels with many cross-unit observations (large N), in a typical macroeconomic sample of small N, as in our case with 15 country-units, choosing a bias-correction procedure is superior. We therefore estimate fiscal policy reaction function (1) with a Corrected Least Square Dummy Variable (LSDVC) estimator developed by Kiviet (1995) and Bruno (2005).[10]

From an econometric point of view, a further problem is endogeneity. We cannot exclude the possibility that an unobserved factor drives both government investment and budget

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[8] There might exist a further channel that links trade openness to public spending. In small, open economies fiscal multipliers are generally smaller than in bigger and more closed economies. Hence, openness creates disincentives for active fiscal policies over the business cycle in smaller countries. We leave the empirical investigation of this to a separate paper.

[9] We also tested the inclusion of time dummies to account for possible common unknown time effects. Somewhat surprisingly, time effects were not jointly significant in any model specification. So we finally left them out.

[10] Bruno (2005) extends the LSDVC estimator to be applicable to unbalanced panels with the Stata routine xtlsdvc. To correct the bias one we use the Arellano and Bond estimator. Standard errors are bootstrapped with 50 repetitions.

institutions simultaneously. The adoption of certain budget rules might be a reflection of the preferences of the citizens or the government. Estimating instrument-variable regressions however requires a set of instruments for budget institutions uncorrelated with the dependent variable but with high explanatory power for budget institutions. Such instruments are not available, yet.

Before starting the analysis we tested the order of integration of our series of government investment. We applied various panel unit root tests by Im, Pesaran and Shin (2003), Levin, Lin and Chu (2002) and Maddala and Wu (1999). According to the employed tests the public investment series appear to be stationary.

5 Determinants of government investment

Table 4 reports results of our baseline regressions, in which political variables are not included, except for the budgetary restrictions. As controls we take into account several economic determinants of government investment.

Table 4: Determinants of public investment expenditure (baseline results)

	(1)	(2)	(3)	(4)	(5)
L. government investment	0.810	0.774	0.811	0.809	0.756
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
L. government debt	-0.004	-0.004	-0.004	-0.004	-0.005
	(0.113)	(0.114)	(0.111)	(0.105)	(0.035)
L. output gap	0.018	0.018	0.018	0.018	0.019
	(0.081)	(0.087)	(0.081)	(0.086)	(0.071)
L. GDP per capita	-0.036	-0.030	-0.038	-0.037	-0.034
	(0.006)	(0.023)	(0.005)	(0.007)	(0.012)
L. trade openness	0.008	0.008	0.008	0.008	0.007
	(0.002)	(0.002)	(0.003)	(0.003)	(0.013)
constraint index		-0.128			-0.259
		(0.114)			(0.011)
delegation index			0.146		0.368
			(0.461)		(0.103)
medium term index				0.031	0.114
				(0.811)	(0.415)
Observations	224	224	224	224	224
Number of groups	15	15	15	15	15

Bias Corrected LSDV-estimator. P-values in parentheses, based on standard errors obtained from bootstrap regressions with 50 repetitions. Country fixed effects not reported.

Most economic variables behave as expected. Lagged public investment levels have a significant and coefficient of about +0.8, which indicates a substantial budgetary inertia. Public debt levels are negatively related to investment spending, but the effects are only marginally significant. A 10 percentage point increase of the debt-to-GDP ratio is associated with a fall of the government investment quota of 0.04 percentage points. A higher GDP per capita level is also associated with lower government investment spending, which might be interpreted as a signal of a saturation effect with respect to public capital. Trade openness is

positively related to government investment at high confidence levels. A 10 percentage point increase of the sum of imports and exports over GDP is associated with higher investment of almost 0.1 percent of GDP. Our results also show that a positive output gap (actual GDP higher than trend GDP) is positively related to investment spending. This is in line with Turrini (2004,) who also finds a positive relation between output gap and investment spending, using a longer time period of investigation.

Examining the role of budgetary institutions at the national level in equations (2) to (5), we find a negative coefficient for the constraint index, supporting the view that numerical constraints reduce government investment. If we control simultaneously for all budgetary institutions the effect becomes significant at a 2 percent level. According to our estimates changing the numerical constraints from zero to full-fledged restrictions reduces government investment spending by 0.13 to 0.25 percent of GDP. The delegation index is, on the contrary, positively related to investment spending. Yet it is only 'borderline significant' in regression equation (5) and totally insignificant when we do not control for other institutional restrictions. Finally, fiscal contracts appear to be totally unrelated to government investment in our sample.

Table 5: Determinants of public investment expenditure (political variables included)

	(1)	(2)	(3)	(4)
L. government investment	0.758	0.791	0.789	0.750
	(0.000)	(0.000)	(0.000)	(0.000)
l. government debt	-0.005	-0.005	-0.005	-0.005
	(0.042)	(0.046)	(0.038)	(0.025)
L. output gap	0.013	0.014	0.014	0.016
	(0.234)	(0.232)	(0.236)	(0.179)
L. GDP per capita	-0.034	-0.041	-0.041	-0.035
	(0.008)	(0.002)	(0.003)	(0.009)
L. trade openness	0.008	0.008	0.008	0.007
	(0.002)	(0.002)	(0.001)	(0.011)
L. coalition size	-0.011	-0.015	-0.016	-0.002
	(0.582)	(0.480)	(0.446)	(0.916)
election year	-0.085	-0.082	-0.083	-0.070
	(0.042)	(0.052)	(0.049)	(0.082)
L. government turnover	-0.047	-0.047	-0.048	-0.031
	(0.234)	(0.227)	(0.225)	(0.428)
constraints index	-0.123			-0.232
	(0.142)			(0.026)
delegation index		0.051		0.285
		(0.799)		(0.203)
medium term index			-0.000	0.093
			(0.997)	(0.518)
Observations	224	224	224	224
Number of group	15	15	15	15

Bias Corrected LSDV-estimator. P-values in parentheses, based on standard errors obtained from bootstrap regressions with 50 repetitions. Country fixed effects not reported.

In table 5 we add political co-variates to the baseline regressions. We do not find an impact of coalition size on public investment spending, in line with de Haan et al. (1996). In additional

estimates (not shown) we replaced the number of parties in government by a measure of government fractionalization, but could not find any influence. The number of government turnovers during the three years prior is negatively related to the government investment ratio in all model specifications, but coefficients are not significant at conventional levels. This provides only weak evidence in favor of the hypothesis that uncertainty of staying in power reduces the time horizon of political decision makers and leads to deeper cuts of investment spending. The only political variable that is significantly related to government investment throughout all regressions is our dummy for election years. Confirming results of Vergne (2009) (for a completely different sample) we observe a reduction of government investment in parliamentary election years.

Inclusion of political variables does not substantially change our results for the impact of economic determinants and institutional restrictions. The only institutional variable that always appears to be (negatively) related to government capital spending is the restrictiveness of numerical constraints, although in equation (1) the coefficient's p-value increases to 0.14. The delegation index and the medium term index are not statistically different from zero.

Sensitivity to the omission of single countries is analyzed in table 6. There we estimate a model including the three budgetary variables simultaneously plus the set of economic controls and an election year dummy. In equations (1) to (15) we always omit one country (see header). Throughout almost all regressions the constraint index is negative and statistically significant at the 5 percent level. If Austria or Portugal are omitted, the coefficient is still significant at a 10 percent level. The delegation index shows a positive sign in all regressions and is significant at the 10 percent level in 7 out of 15 estimations. The highest p-value (p = 0.68) is found when Greece is omitted. Our results show again no indication that multi-annual fiscal contracts have any relation to government investment.

Table 6: Determinants of public investment expenditure (varying sample composition)

Country omitted:	(1) AT	(2) BE	(3) DE	(4) DK	(5) ES	(6) FI	(7) FR	(8) GR	(9) IE	(10) IT	(11) LU	(12) NL	(13) PT	(14) SE	(15) UK
L. gov. investment	0.710	0.732	0.747	0.749	0.767	0.750	0.756	0.709	0.722	0.753	0.849	0.755	0.755	0.752	0.751
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
constraint index	**-0.188**	**-0.291**	**-0.265**	**-0.264**	**-0.245**	**-0.310**	**-0.242**	**-0.254**	**-0.288**	**-0.289**	**-0.182**	**-0.330**	**-0.229**	**-0.252**	**-0.274**
	(0.091)	(0.007)	(0.025)	(0.015)	(0.022)	(0.011)	(0.028)	(0.020)	(0.009)	(0.003)	(0.021)	(0.006)	(0.058)	(0.039)	(0.024)
delegation index	**0.297**	**0.383**	**0.336**	**0.349**	**0.332**	**0.378**	**0.388**	**0.135**	**0.262**	**0.367**	**0.288**	**0.468**	**0.319**	**0.379**	**0.362**
	(0.173)	(0.079)	(0.089)	(0.098)	(0.127)	(0.077)	(0.063)	(0.677)	(0.279)	(0.137)	(0.105)	(0.052)	(0.168)	(0.098)	(0.103)
medium term index	**0.068**	**0.054**	**0.096**	**0.132**	**0.120**	**0.164**	**0.076**	**0.114**	**0.193**	**0.125**	**0.041**	**0.163**	**0.141**	**0.170**	**0.100**
	(0.493)	(0.572)	(0.419)	(0.260)	(0.340)	(0.239)	(0.605)	(0.394)	(0.142)	(0.327)	(0.729)	(0.224)	(0.272)	(0.234)	(0.439)
L. debt	-0.005	-0.006	-0.004	-0.006	-0.005	-0.006	-0.005	-0.007	-0.004	-0.005	-0.003	-0.005	-0.005	-0.005	-0.005
	(0.058)	(0.037)	(0.110)	(0.046)	(0.085)	(0.036)	(0.052)	(0.018)	(0.243)	(0.088)	(0.256)	(0.096)	(0.045)	(0.042)	(0.072)
L. output gap	0.019	0.018	0.019	0.018	0.017	0.013	0.018	0.016	0.019	0.019	0.016	0.020	0.021	0.024	0.017
	(0.045)	(0.076)	(0.027)	(0.077)	(0.114)	(0.292)	(0.088)	(0.106)	(0.078)	(0.052)	(0.064)	(0.041)	(0.034)	(0.017)	(0.074)
L. GDP per capita	-0.031	-0.039	-0.032	-0.035	-0.033	-0.035	-0.037	-0.035	-0.033	-0.032	-0.027	-0.036	-0.034	-0.036	-0.027
	(0.004)	(0.001)	(0.031)	(0.005)	(0.007)	(0.006)	(0.002)	(0.006)	(0.023)	(0.018)	(0.041)	(0.008)	(0.010)	(0.009)	(0.049)
L. trade openness	0.007	0.009	0.007	0.007	0.006	0.006	0.007	0.007	0.005	0.006	0.006	0.006	0.006	0.006	0.005
	(0.003)	(0.000)	(0.019)	(0.006)	(0.010)	(0.013)	(0.003)	(0.006)	(0.099)	(0.010)	(0.021)	(0.012)	(0.012)	(0.010)	(0.018)
election year	-0.071	-0.062	-0.054	-0.055	-0.038	-0.056	-0.045	-0.058	-0.048	-0.056	-0.034	-0.063	-0.051	-0.067	-0.028
	(0.114)	(0.158)	(0.319)	(0.247)	(0.426)	(0.232)	(0.369)	(0.184)	(0.276)	(0.169)	(0.309)	(0.122)	(0.158)	(0.035)	(0.416)
Observations	209	209	210	209	209	209	209	209	209	209	209	209	209	209	209

Bias Corrected LSDV-estimator. P-values in parentheses, based on standard errors obtained from bootstrap regressions with 50 repetitions. Country fixed effects not reported.

Table 7 reports the results of several further tests. Equation (1) adds a dummy variable that indicates a year of budget consolidation. The dummy variable has a value of 1 if the cyclically adjusted primary balance of general government improves by at least 1.5 percentage points in a certain year. The coefficient is -0.15 and significant at a 1 percent level. Hence, government investment is not protected during periods of stronger fiscal adjustment. The results for our budgetary institutions as well as economic controls are not affected by the inclusion of this indicator variable.

In equation (2) we add an indicator variable for regional borrowing restrictions, also from HSVH. As government investment often occurs at the regional or local level, we would expect heavier restrictions at this governmental level to be negatively related to investment. Our result confirms this assumption in principle, although the coefficient is not significant at conventional levels. The national level constraint index remains negative and the delegation index becomes significant at the 10 percent level.

One of the problems with our results is an almost exclusive focus on within-group variation. While the use of country fixed effects is recommended to deal with problems of an omitted variable bias, the procedure also has the disadvantage that the impact of slowly moving and time-invariant variables is more or less completely captured by included unit effects. To check the robustness of our results with respect to the cross-sectional dimension, we re-estimate the basic model specifications by pooled OLS without country fixed effects, using the Beck and Katz (1995) estimator with panel corrected standard errors to correct for cross-sectional heteroskedasticity and cross-sectional correlation. Moreover, the estimates now include a full set of year-dummy variables as tests show joint significance of these variables – in contrast to the LSDVC estimates. Results are displayed in (3) and (4).

Most importantly, the cross-sectional estimates show again a negative correlation between the constraint index and government investment. The delegation index shows a positive sign at a 10 percent level. The medium term index is not related to public investment. These results strengthen the view that strict numerical constraints indeed have a negative impact on government capital spending. The positive sign of the delegation index should be interpreted cautiously, as it disappears if we omit the constraint index from the regressions (not shown). Except for international trade openness our economic determinants lose explanatory power in the cross-section estimates. At least with respect to GDP per capita this is also caused by the inclusion of the time dummies. The election dummy variable remains negative.

In equation (4) we add an indicator variable for European cohesion countries (Greece, Ireland, Portugal and Spain) to capture effects on public investments that might be caused by special European Union investment programs. The sign is positive as expected and significant at a 10 percent level,. Including the cohesion dummy makes GDP per capita completely insignificant. District magnitude shows the average number of political representatives elected from an electoral district. Higher numbers are typical for proportional representation, while lower numbers reflect more majority rule-oriented systems. In the case of pure first-past-the-post majority rule – as in the United Kingdom – district magnitude has a

value of one. Typically it is argued that systems of proportional representation have a tendency to provide more transfers, while pure majority rule with only one representative from one district is more associated with higher pork barrel-spending, e.g. local public infrastructure projects (Milesi-Ferretti, Perotti and Rostagno 2002). Our results do not support that view.

Table 7: Determinants of public investment expenditure (political variables included)

	(1)	(2)	(3)	(4)
L. government investment	0.774	0.748	0.907	0.886
	(0.000)	(0.000)	(0.000)	(0.000)
constraint index	-0.219	-0.216	-0.178	-0.159
	(0.030)	(0.051)	(0.044)	(0.088)
aggregate delegation	0.263	0.437	0.235	0.229
	(0.249)	(0.060)	(0.081)	(0.110)
medium term planning	0.092	0.106	0.020	0.033
	(0.501)	(0.455)	(0.871)	(0.802)
L. government debt	-0.004	-0.006	-0.001	-0.001
	(0.058)	(0.015)	(0.197)	(0.319)
L. output gap	0.017	0.019	0.008	0.007
	(0.097)	(0.081)	(0.592)	(0.636)
L. GDP per capita	-0.034	-0.037	-0.011	-0.001
	(0.010)	(0.008)	(0.112)	(0.897)
L. trade openness	0.007	0.005	0.002	0.001
	(0.011)	(0.063)	(0.001)	(0.037)
parliamentary election year	-0.060	-0.052	-0.072	-0.073
	(0.069)	(0.136)	(0.085)	(0.079)
consolidation (1.5% threshold)	-0.149			
	(0.002)			
sub-national restrictions		-0.166		
		(0.207)		
Cohesion dummy				0.122
				(0.093)
district magnitude				0.004
				(0.813)
Observations	224	224	237	237
Number of groups	15	15	15	15

Equations (1) and (2): Bias Corrected LSDV-estimator. P-values in parentheses, based on standard errors obtained from bootstrap regressions with 50 repetitions. Country fixed effects not reported. Equations (3) and (4): OLS with panel corrected standard errors

6 Concluding remarks

Institutional arrangements shape the political behavior in the process of fiscal policy decision making and, hence, budgetary outcomes. The central question in the present context is how different rules and procedures influence government investment behavior.

From an economic point of view, a possible weakness of stringent fiscal governance structures aimed at a containment of public deficits and debt is a potentially harmful effect on productive government spending. During episodes of (rule-enforced) fiscal adjustment, short-sighted politicians may have an incentive to abandon long-term investment projects

first, as this appears to be politically less costly than cutting current outlays. In this paper we investigated empirically the effects of budgetary rules and procedures on government spending composition. We tested empirically for the effect of political factors and the institutional framework of budgeting on public investment in 15 'old' EU-countries over the period 1990-2005.

Our result show that stringent quantitative constraints limit government investment, but a centralization of budgeting procedures by providing more agenda setting powers to the finance minister (delegation approach) or by the use of medium-term fiscal contracts are not related to public investment spending cuts. Seen from this view the continuing decline of government investment since the 1990s can partly be attributed to more stringent restrictions on government spending, borrowing and debt. Yet, evidence is also found for a detrimental effect of high public indebtedness on investment, as well as a negative impact of higher GDP per capita – which is in line with assumptions about a decreasing marginal value of additional government investment.

Our estimations provide evidence for hypotheses which link international openness and globalization to less overall public spending and an increase of government investment. We also found clear and robust evidence that in years of parliamentary elections total spending and education spending are increased. There is however no evidence for public investment to be related to such electoral cycles. Our fixed effects regressions show that government instability is negatively related to public investment spending and positively related to aggregate primary spending, which clearly supports the idea that political instability makes governments behave more short-term oriented.

In theory it is yet often claimed that delegation and fiscal contracts should not be equally effective in enhancing fiscal discipline in different regimes. While delegation ought to be the preferred method for single-party governments, fiscal contracts are an adequate way to deal with a deficit bias in countries with coalition governments and politically polarized partners. Hence, the effects of fiscal delegation on budget composition may also depend on the political environment. Future work should aim to test this hypothesis.

Acknowledging the needs for fiscal consolidation in the next decade(s), it is of special interest whether sound future policies will be supported by the current budgeting framework. There is clearly both more theoretical as well as empirical work to be done in the future to explore on this more deeply.

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Appendix

Table A1: Index of budgetary institutions in EU 15, 1990 and 2004

country	Constraints		Delegation		Medium term	
	1990	2004	1990	2004	1990	2004
Austria	0	1	0.42	0.6	0.44	0.81
Belgium	0	1	0.23	0.48	0	1
Denmark	1	1	0.57	0.56	0.5	0.81
Finland	0.25	1	0.38	0.49	0.88	0.88
France	1	1	0.9	0.76	0.19	0.81
Germany	0.75	0.75	0.57	0.61	0.88	0.88
Greece	0	0.5	0.23	0.78	0.31	0.75
Ireland	0.5	1	0.3	0.75	0.75	0.75
Italy	0.5	0.5	0.27	0.73	0.69	0.81
Luxembourg	0.75	1	0.52	0.63	0	1
Netherlands	0.25	0.75	0.61	0.48	0.88	0.94
Portugal	0.25	1	0.52	0.57	0.38	0.88
Spain	0	0.75	0.31	0.6	0.38	0.81
Sweden	0	0.75	0.42	0.72	0.06	0.88
United Kingdom	1	1	0.72	0.85	0.81	0.81
Average	0.42	0.85	0.46	0.64	0.48	0.85
Standard deviation	0.40	0.18	0.19	0.12	0.32	0.08
Coeff. of variation	0.95	0.21	0.41	0.18	0.68	0.09

Source: Own calculations based on Hallerberg, Strauch, and von Hagen (2009) and Fabrizio and Mody (2008)

Table A2: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Government investment	240	2.786184	.8911857	.6379191	5.060404
Delegation index	240	.5731667	.1683391	.23	.9
Medium term index	240	.6934583	.2766856	0	1
Constrain index	240	.671875	.3436371	0	1
Subnational constraints	240	.4041667	.4377378	0	1
Government debt	240	62.96006	28.66243	4.0563	134.1601
Output gap	239	-.2227658	2.202104	-9.432387	7.120249
GDP per capita	240	25109.33	7608.804	13152.08	59939.53
Trade openness	240	87.29111	52.20041	35.39383	291.664
Fiscal consolidation	239	.1715418	.377784	0	1
Election year	240	.2583333	.438633	0	1
Government turnover	240	1.1375	.7986979	0	4
Cabinet size	240	2.454167	1.398588	1	6
District magnitude (log)	240	2.054838	1.202587	0	5.010635
Cohesion country	240	.2666667	.4431408	0	1