

Graph 1: Government Constellation and Ideological Range

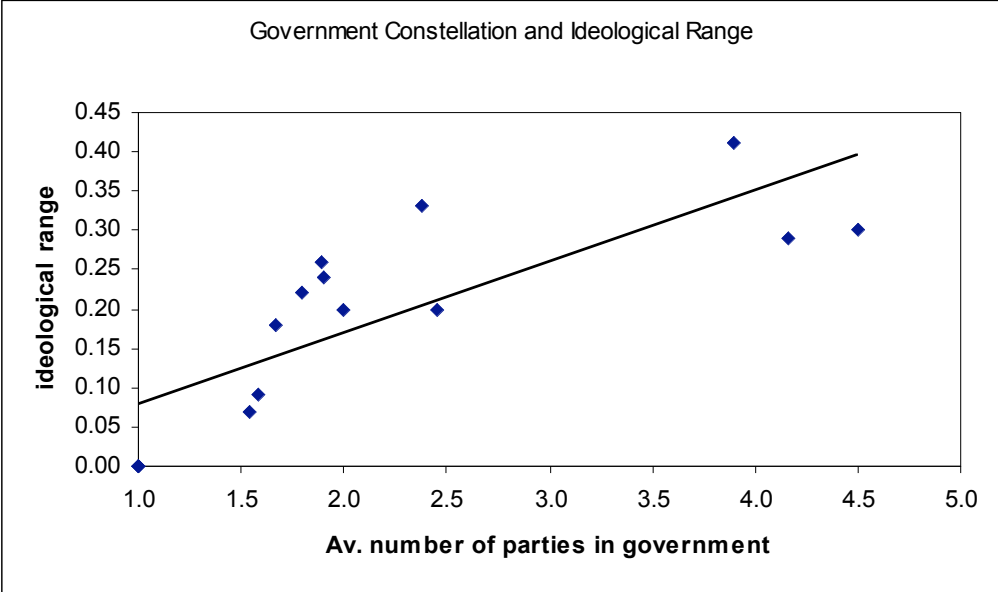
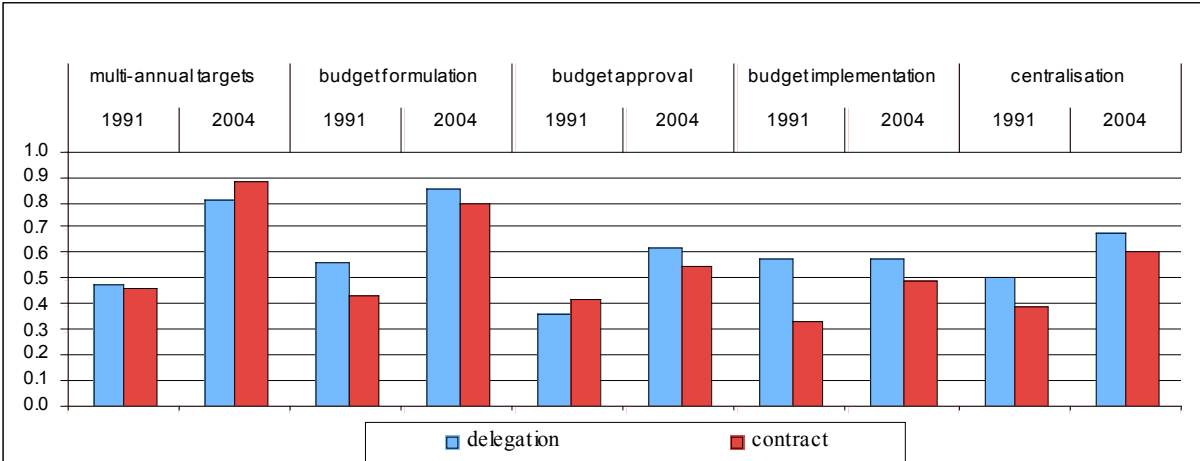


Table 2: Institutional Items

Budgetary Process		
Executive Planning	Legislative Approval	Implementation
<ul style="list-style-type: none"> - general constraint - agenda setting of minister of finance - budget norms (broad or for specific spending items) - structure of negotiations in cabinet 	<ul style="list-style-type: none"> - 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) 	<ul style="list-style-type: none"> - minister of finance can block expenditures - cash limits - constraints on transfer allowance - changes in budget law - disbursement approval - carry-over regulations
Fiscal Rules		
<ul style="list-style-type: none"> - type of multiannual target (revenues, spending, deficits) - horizon - nature of plan (quality and regularity of planning exercise) - degree of commitment (legal, political or indicative) 		

Graph 2: Pattern of Institutional Change in EU member states, 1991 – 2001



Note: For institutional items included see Table 2. The sum of all items has been normalized to one.

Table 3: Hausmann Tests for Endogeneity of Macro-economic and institutional variables

Variables		
Endogeneity of macro-variables	4.42	13.69
Endogeneity of macro- and institutional variables	5.18	15.88
Nobs	152	140
Country:	contract	delegation

Note: The dependent variable is the change in gross general government debt as share of GDP. Asterisks indicate statistical significance at the 10 (*), 5 (**) and 1 (***) percent level. The H0-hypothesis of the Hausmann test is that the difference in coefficients are not significant. The three macro-economic variables GDP growth, change in unemployment and debt servicing costs were instrumentalised using all exogenous variables of the model described in model 1 plus lags of the output gap and real GDP growth, lagged changes in unemployment, lagged long term interest rates and US GDP and long-term interest rates. The delegation and rules index were instrumentatized using the debt level and institutional setting in 1991.

Table 4: The Impact of Budgetary Institutions on Public Debt

Variables			
Constant	2.19*** (0.57)	1.86** (0.89)	3.29*** (1.15)
Change in Debt_t-1	0.33*** (0.07)	0.31*** (0.07)	0.28*** (0.07)
Debt_t-1 (Level)	-0.02*** (0.008)	-0.02*** (0.008)	-0.02*** (0.008)
Real GDP growth	-0.34*** (0.11)	-0.32*** (0.12)	-0.37*** (0.13)
Change in unemployment rate	1.34*** (0.26)	1.09*** (0.26)	1.09*** (0.26)
Debt servicing costs	0.42*** (0.17)	0.44*** (0.17)	0.31* (0.16)
Openness		-0.005 (0.003)	-0.003 (0.004)
Population		-0.0 (0.0)	0.01 (0.01)
Output Volatility		0.36 (0.23)	0.30 (0.23)
Electoral year	1.13** (0.50)	1.11** (0.49)	1.10** (0.47)
Veto	-2.09*** (0.85)	-1.92* (1.12)	-1.45 (1.13)
Borrowing restraints for lower level of government			-0.22 (0.44)
Fiscal convergence			-0.12 (0.18)
Delegation index			-2.01* (1.19)
Rules index			-0.76 (0.48)
R-squared	0.58	0.59	0.60
Wald Statistic	274.82***	296.22***	342.08***
Nobs	296	296	296

Note: The dependent variable is the change in gross general government debt as share of GDP. Standard errors are shown in parenthesis. Asterisks indicate statistical significance at the 10 (*), 5 (**), and 1 (***) percent level. The rules index is statistically significant at p=0.109.

Table 5: The Impact of Budgetary Institutions on Public Debt

Variables	Country groups	
	contract states	delegation states
Constant	0.76 (1.85)	6.32*** (1.42)
Change in Debt_t-1	0.23*** (0.08)	0.20*** (0.06)
Debt_t-1 (Level)	-0.02** (0.01)	-0.03*** (0.008)
Real GDP growth	-0.21 (0.13)	-0.51*** (.15)
Change in unemployment rate	1.39*** (0.33)	0.65** (0.27)
Debt servicing costs	0.72*** (0.21)	0.14 (0.17)
Openness	0.009 (0.006)	-0.03* (0.02)
Population	0.08*** (0.03)	-0.01 (0.01)
Output Volatility	0.20 (0.32)	0.00 (0.26)
Electoral year	-0.12 (0.72)	2.31*** (0.52)
Veto	-0.56 (1.90)	0.68 (1.77)
Borrowing restraints for lower level of government	-2.52** (1.22)	7.05 (0.66)
Fiscal convergence	0.18 (0.22)	-0.24 (0.16)
Delegation index	2.24 (3.31)	-2.20** (1.11)
Rules index	-1.53** (0.78)	-0.95 (0.91)
R-squared	0.72	0.48
Wald Statistic	268.03***	316.86***
Nobs	152	144

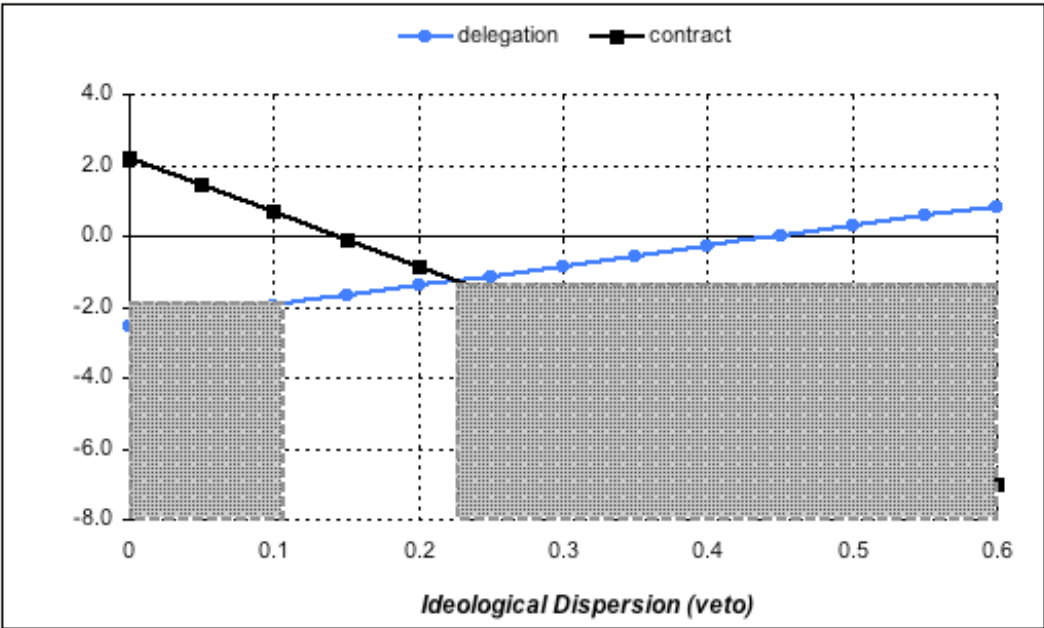
Note: The dependent variable is the change in gross general government debt as share of GDP. Standard errors are shown in parenthesis. Asterisks indicate statistical significance at the 10 (*), 5 (**), and 1 (***) percent level.

Table 6: The Impact of Budgetary Institutions and Veto-players on Public Debt

Variables	Country groups	
	contract states	delegation states
Constant	-0.61 (1.89)	6.37*** (1.40)
Change in Debt_t-1	0.20** (0.08)	0.20*** (0.06)
Debt_t-1 (Level)	-0.02** (0.01)	-0.03 (0.008)
Real GDP growth	-0.25** (0.13)	-0.50*** (0.15)
Change in unemployment rate	1.29 (0.33)	0.67*** (0.27)
Debt servicing costs	0.68*** (0.21)	0.14 (0.17)
Openness	0.01* (0.006)	-0.03 (0.02)
Population	0.08*** (0.03)	-0.02 (0.01)
Output Volatility	0.23 (0.31)	0.007 (0.25)
Electoral year	-0.11 (0.70)	2.32 (0.52)
Veto	10.10** (4.87)	-0.39 (5.29)
Borrowing restraints for lower level of government	-2.78** (1.17)	0.69 (0.68)
Fiscal convergence	0.15 (0.21)	-0.24 (0.16)
Delegation index	0.79 (3.45)	-2.94** (1.28)
Delegation index * Veto		5.63 (8.98)
Rules index	2.22 (1.78)	-0.85 (0.92)
Rules index * Veto	-15.41** (6.61)	
R-squared	0.74	0.48
Wald Statistic	2.88.83***	328.70***
Nobs	152	144

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

Graph 3: Conditional Impact of Fiscal Forms of Governance



Note: The graph is based on coefficient estimates reported in Table 6 for institutional indices and the interaction with the ideological constellation in government. The grey shaded area indicates the zone of statistical significance $p < 0.1$

Annex

Table A1: Variables – Definitions and Data Sources

Variable	Definition/Code	Source
change in debt	Δ gross government debt to GDP ratio (in percent)	European Commission AMECO data set
balance	general government budget balance	European Commission AMECO data set
real GDP growth (in percent)		European Commission AMECO data set
change in unemployment rate	Δ unemployment rate (in percent)	European Commission AMECO data set
debt service	debt service costs: $\frac{(r_t - y_t)}{100} D_{t-1}$ where r = real long-term interest rates; y = real GDP growth; D = debt/GDP ratio.	own computation based on European Commission AMECO data set
election year	Coded as the percent of a year that was a pre-electoral year; July 1, for example, is .5 this year and .5 the previous year.	Clark and Hallerberg (2000) and Hallerberg (2004), suppl. with the country studies at http://www.economist.com
veto	maximum ideological distance among parties based on ideological scores along an economic, left-right dimension needed for passage of a budget bill. Where the government has a majority, this corresponds to the coalition parties. Where the government is in minority, we add the parties that usually supported the budget or, where this was unknown, the closest parties that would result in a majority.	Own computation based on http://www.polisci.ucla.edu/tsebelis/
population (in mill.)		European Commission AMECO data set
openness	exports and imports as share of GDP (in %)	Own computation based on European Commission AMECO data set
output volatility	standard deviation of real GDP growth over the past 8 years (t-9 to t-1)	Own computation based on European Commission AMECO data set
federal borrowing restriction	1 if restriction exists, 0 otherwise	Eichengreen and von Hagen (1995) until 1995, Hallerberg et al. (2001) thereafter
fiscal convergence	(deficit to GDP ratio – 3%) if deficit stood above 3% deficit to GDP reference value during the period from 1992 to 1997; 0 otherwise	Own computation based on European Commission AMECO data set; the contemporaneous deficit value is instrumentalized using the past deficit, annual dummies and macro-variables capturing the international environment in year t
delegation index	Sum of average scores of institutional items in the budget formulation,	Computations based on data presented in Table A2-A4

	approval and implementation stage	
rules index	Average score of institutional items	Computations based on data presented in Table A5

Note: Δ is the first difference operator.