

Supplementary Information for
It's Politics, Stupid! Political Constraints Determined Governments' Reactions to the Great
Recession

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ALTERNATIVE SPECIFICATIONS AND ROBUSTNESS CHECKS

Our main results could be sensitive to alternative specifications of factors we do include into our model, the inclusion of different explanatory variables and to changes in the underlying sample. In this Appendix, we shortly discuss a number of alternatives and present robustness exercises along these lines. In doing so, we concentrate on the dependent variable measuring the realised change in primary deficits for the year 2009. The results using other dependent variables are very much in line with those shown below. Overall, the important message from the robustness exercises is that the results confirm our hypothesis and show that the effect of political constraints is large, statistically significant and robust along different dimensions.

1. Using Forecasts to Capture the Size of the Economic Shock

Auerbach and Gorodnichenko (2012) find that the size of fiscal multipliers varies considerably over the business cycle: 0 to 0.5 in expansions, and 1 to 1.5 during recessions. This suggests that also the size of the demand shortfall could matter for the effectiveness of fiscal stimulus. An alternative to the change in export variable, we can capture the size of the economic shock based on changes in growth forecasts for the year 2009. To do so, we compare IMF projections in April 2008 (IMF 2008a) with those in October 2008 (IMF 2008b), i.e. after the collapse of Lehman Brothers, for the year 2009. This measure should capture the economic shock as perceived in the early days after the collapse of

Lehman Brothers, but only little, if anything, of the stimulus measures that were enacted in reaction to it.¹

By considering both the export and forecast measure we also, in an admittedly crude way, correct for two different types of shocks; the change in exports clearly reflects a trade shock, while the change in the growth forecast captures other types of shocks as well. To also capture a balance-of-payment crisis we take into account both the percentage change of the exchange rate vis-à-vis the US dollar and the growth in official reserves between the second and fourth quarter of 2008.²

¹ As is common practice in forecasting, the short-term fiscal policy assumptions used by the IMF are largely based on officially announced budgets. Hence, most if not all fiscal stimulus measures are not included in this measure, thereby alleviating the reverse causality problem.

² Ideally we would have also liked to take an explicit measure for real estate crises on board. However, data availability prevents us from doing so. This is therefore indirectly taken care of via our change-in-growth-forecast variable.

Table A.1: List of countries and values for the main dependent variables

COUNTRIES	Promised discretionary measures 2008-2012				Political constraint Democracy	COUNTRIES	Promised discretionary measures 2008-2012				Political constraint Democracy		
	Promised stimulus 2008-2009	Realised change prim. Deficit 2009	Realised change deficit 2009				Promised stimulus 2008-2009	Realised change prim. Deficit 2009	Realised change deficit 2009				
Albania		2.70	2.25	1	1	Liberia		0.54	0.45	1	1		
Algeria		13.94	14.16	0	0	Lithuania		4.29	3.87	1	1		
Angola		2.52		0	0	Luxembourg	3.6	3.93	3.22	1	1		
Argentina	6.4	2.3	3.15	2.48	0	1	Madagascar		2.15		1	1	
Armenia			5.01	4.85	1	1	Malawi		0.66		1	1	
Australia	5.4	5.2	3.37	3.27	1	1	Malaysia	2.8	2.2	2.14	2.60	0	0
Austria	1.2	3.7	3.02	2.93	1	1	Maldives		10.25	8.75	1	1	
Azerbaijan			13.83		1	0	Malta		-0.70		0	1	
Bangladesh			-0.50	-0.84	0	0	Mauritius		0.88		0	1	
Barbados			0.63	0.32	0	1	Mexico	1.6	2.0	3.48		1	1
Belarus			-1.23	-1.48	1	0	Moldova		5.10		0	1	
Belgium	1.4	4.2	4.49	4.64	1	1	Mongolia		0.71		1	1	
Belize			1.58	1.84	0	1	Morocco		2.62	2.73	0	0	
Bhutan			0.80		1	1	Mozambique		3.63		0	0	
Bolivia			3.33		1	1	Namibia		4.33	3.82	0	0	
Botswana			3.53	3.43	0	0	Nepal		2.71	2.53	1	1	
Brazil	5.6	1.9	1.94	1.75	1	1	Netherlands	2.5	5.9	5.91	6.04	1	1
Bulgaria		2.9	3.78	3.38	1	1	New Zealand	4.3	4.4	3.04	3.23	1	1
Burkina Faso			1.37	1.26	0	0	Nicaragua		0.85	0.65	1	1	
Burundi			3.18	3.32	0	1	Niger		7.14		1	1	
Cambodia			4.63	4.61	0	0	Nigeria		14.9	15.92	15.74	0	1
Cameroon			2.38		0	0	Norway	1.2	8.1	8.99	8.22	1	1
Canada	4.1	4.7	4.22	3.43	1	1	Pakistan		0.0	-0.87	-2.32	1	1
Cape Verde			6.19	6.15	1	1	Panama		1.68	1.87	1	1	
Chad			13.36	13.03	0	0	Papua New Guinea		12.43	12.13	1	1	
Chile	2.8	8.0	8.33	8.18	0	1	Paraguay		2.22		1	1	
China	6.2	3.4	2.58		0	0	Peru	3.2		4.38	4.61	1	1
Comoros			-3.16		1	1	Philippines	3.1	1.0	2.74	2.70	1	1
Costa Rica			3.57	3.71	1	1	Poland	1.2	1.2	4.12	3.56	1	1
Croatia			2.67	2.50	0	1	Portugal	0.8	4.6	6.27	6.32	0	1
Cyprus			6.95	7.24	1	1	Republic of Congo		19.29	20.59	1	0	
Czech Republic	3.0		3.44	3.18	1	1	Romania		2.24	1.86	1	1	
Côte d'Ivoire			1.05	1.24	1	0	Russia	5.4	6.6	10.81	10.67	0	0
Denmark	2.5	5.7	5.91	5.68	1	1	Rwanda		0.63	0.68	0	0	
Djibouti			6.13		0	0	Samoa		2.60		0	0	
Dominican Republic			0.70	0.33	1	1	Senegal		0.28	0.17	0	1	
Ecuador			4.17		1	1	Sierra Leone		-0.88	-0.65	1	1	
Egypt			0.02	0.43	0	0	Singapore	8.0		7.27	7.35	0	0
El Salvador			2.67		1	1	Slovak Republic	1.1		5.50	5.29	1	1
Equatorial Guinea			25.29		0	0	Slovenia		4.99	4.90	1	1	
Eritrea			-1.32		0	0	Solomon Islands		-1.97		1	1	
Estonia			-0.55	-0.52	1	1	South Africa	7.4	3.0	5.48	5.31	0	0
Ethiopia			-1.64		0	0	Spain	3.9	10.1	6.28	6.15	1	1
FYR Macedonia			1.72		1	1	Sri Lanka		3.78	1.58	1	1	
Finland	3.1	5.7	6.86	6.51	1	1	St. Lucia		2.22	2.32	0	1	
France	1.5	5.0	4.04	4.57	0	1	Suriname		4.19	3.51	1	1	
Gabon			5.32		0	0	Swaziland		5.77		0	0	
Georgia			4.19		0	1	Sweden	3.3	6.9	3.11	3.17	1	1
Germany	3.6	4.4	2.88	3.02	1	1	Switzerland	0.5		1.31	1.30	1	1
Ghana			-1.41		0	1	Syria		0.12		0	0	
Greece	0.8	3.0	5.56	5.57	0	1	Taiwan	2.1		2.98		1	1
Grenada			0.76	0.40	0	1	Tajikistan		1.06		0	0	
Guatemala			1.65	1.54	1	1	Tanzania		4.25		0	0	
Guinea			6.27	6.70	0	0	Thailand	3.4		3.20	3.34	1	1
Guinea-Bissau			-4.08	-3.43	1	1	The Bahamas		1.93	1.80	0	1	
Guyana			0.12	0.11	0	0	The Gambia		1.58	1.45	0	0	
Haiti			2.10		1	0	Timor-Leste		17.48		1	1	
Honduras			3.06	2.97	1	1	Togo		2.12	1.91	0	0	
Hungary	-7.7	-0.7	0.68	0.26	1	1	Trinidad and Tobago		15.40	15.07	0	1	
Iceland	-7.3	6.1	8.14	6.04	1	1	Tunisia		0.62	0.64	0	0	
India	1.8	4.3	2.49	1.93	1	1	Turkey	1.1	6.5	3.29	3.13	0	1
Indonesia	2.0	0.7	1.99		1	1	Turkmenistan		1.83		0	0	
Iraq			9.71	9.46	1	0	Uganda		0.08	-0.05	0	0	
Ireland	-8.3	10.8	5.21	4.64	1	1	Ukraine	2.7		2.86	2.25	1	1
Israel			3.02	3.03	1	1	United Arab Emirates		21.72	21.56	0	0	
Italy	0.3	3.4	2.51	3.18	1	1	United Kingdom	1.9	9.5	5.98	6.12	0	1
Jamaica			4.42	-1.71	0	1	United States	5.5	11.5	6.35	6.61	0	1
Japan	4.7	7.2	5.66	5.47	0	1	Uruguay		0.30	0.10	0	1	
Jordan			4.95	4.84	0	0	Uzbekistan		6.56	6.57	1	0	
Kenya			1.67	1.43	1	1	Vanuatu		0.83		1	1	
Korea	6.2	5.9	1.62	1.97	1	1	Venezuela		5.61	9.25	0	1	
Kyrgyz Republic			2.14		1	1	Vietnam		7.49	7.23	0	0	
Lao P.D.R.			4.67	4.87	0	0	Yemen		5.15	5.18	0	0	
Latvia			-1.16	-1.59	1	1	Zambia		2.08		1	0	
Lebanon			-0.01		1	0	Zimbabwe		1.06		0	0	
Lesotho			13.29	13.28	0	0							

2. Monetary Policy

Besides fiscal policy, monetary policy is another way in which the public sector can try to stimulate its economy. Hence, in those countries where – given the severity of the crisis, fiscal space and effectiveness of fiscal policy – monetary policy has reacted more strongly, the pressure on fiscal policy to act might be lower. Using both the change in policy rates, approximated by the change in the lending rate, from the beginning of the third quarter of 2008 to the start of 2009 and the growth rate of M1 during the same period, we try to capture this dimension of the overall policy reaction to the crisis.

3. Government Lending Rate

Although monetary policy turned expansionary around the globe and thereby also reduced refinancing costs of governments, substantial differences in interest rates still existed during the winter of 2008/2009. To reflect such cross-country differences, we include the average lending rate during the winter half-year of 2008/2009 as published by the IMF in its International Financial Statistics.³

4. Central Bank Independence

From a political-institutional point of view, the probability that the money printing press might ultimately be used to deal with high public debt levels could alleviate worries of the current government regarding the unsustainability of future higher debt levels and reduce fiscal constraints. Thus, countries in which the central bank is politically less independent from the government might be willing to increase deficits substantially more than other countries. To take this into account, we use two different indicators for central bank independence, both of which are available for a relatively large number of countries. The first one measures legal independence and goes back to the work of Cukierman (1992) and Cukierman et al. (1992). It is based on how a central bank works internally (how is the central bank governor appointed and is an explicit policy target defined) and how its relationship with the government is arranged (how are disputes settled and are there rules limiting the amount of

³ We have also experimented with the long-term government bond yields, Treasury bill rates, money market rates and discount rates, as published by the IMF in its International Financial Statistics. These series are in general highly correlated. As, in contrast to these other interest rates, lending rates are available for most of the countries in our sample, we prefer using those. The results do not change qualitatively.

lending to the government). Crowe and Meade (2008) have updated this *de jure* indicator of central bank independence to reflect the year 2003. Especially for emerging and developing countries such a legal measure might, however, deviate substantially from actual practice. For that reason, we follow the literature and also construct a *de facto* measure of central bank independence based on the frequency of *irregular* central bank governor turnovers.^{4,5}

5. International Policy Environment

Countries more sensitive to international political pressure or that are strongly integrated in international policy coordination activities might put greater effort into stimulating their own, and thereby also foreign, economies.

After the collapse of Lehman Brothers, the general fear of an overall meltdown generated a substantial amount of political pressure on governments to act in a timely and substantial manner. As indicated by the Leader's Statement after the London Summit, the G20 very much pushed for strong coordinated actions on the side of its partners (G20 Information Centre 2009). To take this into account, we both experiment with a G20 dummy and a variable measuring the degree to which a country is politically integrated with the rest of the world, which we proxy with the political globalization measure from the KOF Globalization Index.

Whereas international pressure might have induced countries to spend more than they otherwise would have, one could also argue that an international political constraint like the Maastricht Treaty or the Stability and Growth Pact (SGP), which force member countries of the European Monetary Union to focus on certain deficit and debt targets, had exactly the opposite effect. By using EU and EMU dummies, we check whether this international political constraint had an influence on the size of average fiscal stimulus measures in the euro area.

Hence, whereas international policy coordination (via the G20) might have reduced the free-rider problem during the Great Recession, the existence of other international arrangements like the SGP

⁴ Based on the work of Sturm and De Haan (2001) and Dreher et al. (2008; 2010), the KOF Swiss Economic Institute published annually a database containing information on the term in office of central bank governors for almost all countries in the world starting from the year 1970. We use the 2013-vintage and calculate the average irregular turnover rate during the period 1990-2008.

⁵ We also experimented with the use of a central bank governor turnover rate that includes changes occurring after the regular term in office did end. The qualitative results are unaffected by this.

could have had the opposite effect. The involvement of the IMF in domestic (fiscal) policy also belongs to this latter category. In case a country was already under a program of the IMF at the start of the Great Recession, this is likely to have limited its fiscal space.

Table A.2: Robustness Tests for extended versions of the baseline model using the realised change in primary deficits as dependent variable

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Change growth forecast for 09	%-change exchange rate	Growth official reserves	Lending rate in winter 08/09	CBI, legal measure	irr. CB gov. turnover rate	Change in lending rate	Growth rate of M1	KOF Political Globalisation	G20 dummy	EU dummy	Euro area dummy
Political constraint	-2.844*** (-3.523)	-2.555*** (-3.306)	-2.589*** (-3.068)	-2.119** (-2.257)	-2.915*** (-3.222)	-2.178*** (-2.989)	-2.059** (-2.180)	-2.367*** (-3.134)	-2.696*** (-3.457)	-2.711*** (-3.371)	-2.621*** (-3.245)	-2.767*** (-3.458)
Gov.expenditures in 2007 (%GDP)	0.0534 (1.239)	0.0636 (1.640)	0.0556 (1.628)	0.0626 (1.035)	0.0195 (0.513)	0.0671 (1.551)	0.0648 (1.076)	0.0226 (0.624)	0.0662 (1.436)	0.0564 (1.274)	0.0664 (1.313)	0.0447 (1.014)
Change of exports in winter 2008/09 (%2007-GDP)	-0.189 (-1.301)	-0.0704 (-0.643)	-0.0688 (-0.653)	-0.315* (-1.800)	-0.0423 (-0.330)	-0.0868 (-0.764)	-0.358* (-1.903)	0.100 (0.978)	-0.199 (-1.324)	-0.213 (-1.373)	-0.219 (-1.368)	-0.217 (-1.444)
Gov.debt in 2007 (% of GDP)	-0.00872 (-0.654)	-0.0177* (-1.683)	-0.0188* (-1.762)	-0.0120 (-0.675)	-0.00728 (-0.499)	-0.0150 (-1.346)	-0.0103 (-0.551)	0.00679 (0.609)	-0.00841 (-0.600)	-0.00851 (-0.622)	-0.00898 (-0.651)	-0.00994 (-0.719)
Gov.deficit in 2007 (% GDP)	-0.414*** (-2.668)	-0.368** (-2.544)	-0.356** (-2.513)	-0.287* (-1.987)	-0.503*** (-4.117)	-0.391*** (-5.204)	-0.287* (-1.867)	-0.451*** (-3.414)	-0.421*** (-2.689)	-0.428** (-2.599)	-0.421** (-2.544)	-0.427** (-2.600)
KOF Economic Globalisation in 2007	0.00279 (0.0735)	0.00778 (0.233)	0.00488 (0.151)	-0.0566 (-1.262)	0.00176 (0.0546)	-0.0247 (-0.693)	-0.0537 (-1.226)	0.0384 (1.303)	-0.00462 (-0.122)	-0.0149 (-0.387)	-0.00836 (-0.211)	-0.0216 (-0.560)
Under an IMF program	-1.006 (-1.020)	-1.686** (-2.085)	-1.987** (-2.544)	-1.412 (-0.992)	-1.517* (-1.709)	-1.362 (-1.549)	-1.620 (-1.197)	-0.806 (-0.805)	-1.430 (-1.543)	-1.207 (-1.161)	-1.221 (-1.256)	-1.148 (-1.162)
Constant	4.057** (2.097)	4.335** (2.507)	4.296** (2.456)	7.456*** (3.206)	3.945** (2.014)	5.715*** (2.949)	6.133*** (2.811)	2.064 (1.178)	6.569*** (2.724)	4.650** (2.358)	4.022 (1.660)	5.395** (2.521)
Additional variable (see column header)	0.518 (1.352)	-0.0451 (-1.276)	0.0153 (0.561)	-0.0709 (-1.240)	2.012 (1.405)	-3.469 (-1.013)	-0.0990 (-0.638)	-0.0266 (-0.569)	-0.0369 (-1.299)	0.0388 (0.0593)	-0.620 (-0.529)	1.076 (1.375)
Observations	94	92	90	68	69	84	68	65	94	94	94	94
Adjusted R-squared	0.354	0.369	0.366	0.240	0.443	0.314	0.228	0.477	0.356	0.335	0.337	0.341
Mean dependent variable	4.111	3.835	3.766	4.113	3.945	3.820	4.113	3.823	4.111	4.111	4.111	4.111
St.dev. dependent variable	4.318	3.888	3.903	4.293	3.935	3.482	4.293	3.450	4.318	4.318	4.318	4.318

Notes: t-statistics in parentheses. Huber-White robust standard errors are used.
*** p<0.01, ** p<0.05, * p<0.1

Table A.2 presents the results in case each of these alternative variables is added to the specification listed in Table 3. None of these variables turn out to be significant and most importantly, the results regarding our main explanatory variable, political constraints, does not qualitatively change.

In a next step we add political-institutional variables. Including these variables only makes sense when we look at democracies. Hence, we will now restrict our attention to that particular subset.

6. Political System

Our main explanatory variable, the degree of political constraints, will generally be determined by institutional choices and a complex political game, both of which seem unlikely to be systematically related to the size of fiscal stimulus packages. There is a considerable body of literature in political

science that shows that the two most important factors influencing the probability of one party controlling both executive and legislative bodies are the decision between presidential and parliamentary system and the choice of the voting system.⁶

In a presidential system, such as the United States, where there are separate elections for both executive and legislative bodies, the probability of one party controlling both bodies is smaller than in a parliamentary system, such as the United Kingdom, where winning a majority in the House of Commons allows a party to appoint the prime minister.

At the same time, a plurality voting system, as it is being used in the United Kingdom, makes it more likely for a single party to win a majority than in case of a proportional system, such as in Germany. Within any given system, whether one party rules both bodies further depends on a host of factors such as election dates and the political climate, all of which are unlikely to be systematically correlated with any factor determining the size of fiscal stimulus packages.⁷ By including dummies for plurality- and parliamentary systems we control for what might be more underlying causes of differences in fiscal policy.

7. Political Orientation of Government

There is a substantial literature on whether a government's political orientation has an effect on its fiscal policy.⁸ Partisan theory suggests that left-wing governments implement more expansionary policies and intervene more heavily in the economy in general (Dreher and Sturm 2012). We therefore control for partisan composition of the government by including a dummy that equals one in case the executive is considered to be from a left-wing party.

⁶ See, for instance, Lijphart (1990; 1999).

⁷ While the political fate of individual political parties is clearly tied to economic variables, this seems unlikely to be the case for the political constraints the ruling party faces. To see this, consider an exemplary case where dire economic conditions lead an incumbent party to lose both its legislative and executive powers to an opposition party. This change in political power would leave the value of the constraints dummy unchanged. However, in case only legislative elections were held, it would have only lost its legislative powers, causing our constraints dummy to switch from zero to one. This stylized example illustrates that rather than depending directly on economic conditions, the political constraints variable depends on a complex mix of different factors ranging from institutional choices to economic and political conditions at the time of elections.

⁸ See, for instance, Alesina et al. (1998), Alt and Lassen (2006), Andrikopoulos et al. (2004), Angelopoulos et al. (2012), Cusack (1997, 1999), Herwartz and Theilen (2014) and Person and Svensson (1989).

8. *Minority Governments*

Edin and Ohlsson (1991) argue that minority governments have more difficulties than majority (coalition) governments to reduce deficits and debt levels. In a similar vein, Falcó-Gimeno and Jurado (2011) argue that minority governments have to negotiate with the opposition over the budget. Furthermore, Brück and Stephan (2006) find that minority governments tend to make overly optimistic budget forecasts. We include a minority government dummy and a variable measuring the fraction of seats held by the government to capture such potential effects.

9. *Coalition Governments and Fragmentation*

Game theory suggests that cooperation is more difficult when the number of players is large. In this view, coalition governments will find it more difficult to close budget deficits after adverse shocks, since parties in the coalition will veto spending cuts or tax increases that impinge on the interests of their respective constituencies. Roubini and Sachs (1989a; 1989b) find that broad coalition governments experience higher deficits than one-party governments. Subsequent research by Edin and Ohlsson (1991) and De Haan and Sturm (1994; 1997) found less support for this hypothesis. We nonetheless include a coalition dummy control for this in our setting. Perotti and Kontopoulos (2002) subsequently broadened this approach somewhat by arguing that this overlooks what they call size fragmentation. One possible source of fragmentation of fiscal policy making is the number of decision makers. The larger the number of decision makers, the less each will internalize the costs that a certain policy will impose on others. It can be argued that the relevant group here is each political party in government. Indeed, Kontopoulos and Perotti (2002) find evidence that the higher the number of parties in government, the looser fiscal policy is. Although De Haan et al. (1999) do not find that coalition governments generally have more difficulty in keeping their budgets in line after an adverse economic shock, they also report that more fractionalized governments experience larger government debt growth. To capture possible effects of government fragmentation, we include a variable measuring the probability that two members of government do not belong to the same party. In a similar vein, we also take into account how fractionalized the opposition is by taking on board the probability that two members of the opposition are not of the same party.⁹

⁹ The high correlation between our minority government dummy and the fraction of seats held by the government and that between the coalition dummy and the probability of government members not to be of the same party is expected; in both cases, the first variable is a dummy version of the second.

10. Political Budget Cycles

The final political-institutional variable that we include reflects the findings of the political budget cycles (PBC) literature and is closely linked to our motivation for why political constraints are relevant in democracies. PBC research examines the existence and determinants of election cycles in public spending, taxes and government budget deficits. Older theoretical PBC models emphasize the incumbent's intention to secure re-election by maximizing his expected vote share at the next election (Nordhaus 1975). It is assumed that the electorate is backward looking and the government is evaluated on the basis of its past track record. As a result, these models imply that governments, regardless of ideological orientation, adopt expansionary fiscal policies before elections in order to stimulate the economy¹⁰. More recent PBC models emphasize the role of temporary information asymmetries regarding the politicians' level of competence in explaining electoral cycles in fiscal policy. In these models, signalling is the driving force behind the PBC (see, e.g., Rogoff and Sibert 1988; Tabellini and Persson 2003; and Shi and Svensson 2006). Pina and Venes (2011) and Jong-a-Pin et al. (2012) show that in OECD countries, there is evidence of electoral effects in revisions of official revenue and spending statistics. To capture possible effects from political business cycles, we include dummies for both executive and legislative elections that took place in the period between October 2008 and June 2009.

¹⁰ For recent empirical contributions that find a political business cycle, see, for instance: Aidt et al. (2011), Benito et al. (2013).

Table A.3: Robustness tests with additional political variables, one at a time, while using the realised change in primary deficits as dependent variable

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Plurality system	Parliamentary system	Left-wing executive	Minority government	Fraction seats held by gov.	Coalition government	P(gov. member not same party)	P(opp. member not same party)	Executive election	Executive election	Legislative election	Legislative election
Political constraint	-2.410** (-2.249)	-2.465** (-2.302)	-2.414** (-2.195)	-2.495** (-2.243)	-2.661** (-2.493)	-2.430* (-1.944)	-2.531** (-2.175)	-2.571** (-2.264)	-2.413** (-2.209)	-2.221* (-1.967)	-2.414** (-2.262)	-2.179* (-1.791)
Gov.expenditures in 2007 (%GDP)	0.0850** (2.007)	0.0991** (2.315)	0.0845* (1.972)	0.0886** (2.142)	0.0564 (1.451)	0.0842* (1.802)	0.0644 (1.497)	0.0469 (1.282)	0.0848* (1.958)	0.0791* (1.819)	0.0752** (1.999)	0.0778** (2.054)
Change of exports in winter 2008/09 (%2007-GDP)	-0.216 (-1.314)	-0.235 (-1.510)	-0.214 (-1.399)	-0.227 (-1.412)	-0.211 (-1.353)	-0.214 (-1.373)	-0.230 (-1.339)	-0.200 (-1.205)	-0.215 (-1.349)	-0.229 (-1.435)	-0.247 (-1.518)	-0.253 (-1.559)
Gov.debt in 2007 (% of GDP)	-0.0241* (-1.828)	-0.0230* (-1.765)	-0.0242* (-1.843)	-0.0245* (-1.864)	-0.0188 (-1.468)	-0.0242* (-1.832)	-0.0198 (-1.498)	-0.0153 (-1.159)	-0.0242* (-1.785)	-0.0227 (-1.670)	-0.0277** (-2.171)	-0.0295** (-2.396)
Gov.deficit in 2007 (% GDP)	-0.206* (-1.789)	-0.209* (-1.879)	-0.206* (-1.878)	-0.211* (-1.961)	-0.215* (-1.878)	-0.205* (-1.846)	-0.216* (-1.869)	-0.216* (-1.925)	-0.206* (-1.846)	-0.200* (-1.780)	-0.186* (-1.781)	-0.192* (-1.730)
KOF Economic Globalisation in 2007	-0.0284 (-0.815)	-0.0231 (-0.694)	-0.0284 (-0.804)	-0.0299 (-0.850)	-0.00412 (-0.119)	-0.0282 (-0.761)	-0.0119 (-0.304)	0.00370 (0.107)	-0.0285 (-0.782)	-0.0276 (-0.749)	-0.0283 (-0.846)	-0.0314 (-0.912)
Under an IMF program	-1.813* (-1.885)	-1.957** (-2.020)	-1.814* (-1.935)	-1.938** (-2.000)	-1.470 (-1.553)	-1.810* (-1.841)	-1.579 (-1.575)	-1.382 (-1.517)	-1.816* (-1.924)	-1.836* (-1.937)	-1.739* (-1.954)	-1.734* (-1.903)
Constant	5.126** (2.211)	4.779** (2.189)	5.181** (2.121)	5.091** (2.198)	3.549 (1.244)	5.154** (2.197)	4.524* (1.886)	3.654 (1.497)	5.163** (2.210)	5.043** (2.119)	5.233** (2.274)	5.247** (2.241)
Additional political variable (see column header)	0.0248 (0.0326)	-0.935 (-1.007)	-0.0312 (-0.0454)	0.691 (0.772)	1.123 (0.434)	0.0390 (0.0401)	-0.428 (-0.277)	0.158 (0.109)	0.00391 (0.00395)	2.430*** (2.844)	1.330* (1.758)	2.127 (1.417)
Add. political variable * political constraint dummy										-3.352*** (-2.948)		-1.128 (-0.655)
Observations	71	71	71	71	70	71	70	69	71	71	71	71
Adjusted R-squared	0.241	0.257	0.241	0.246	0.263	0.241	0.262	0.246	0.241	0.240	0.269	0.261
Mean dependent variable	3.594	3.594	3.594	3.594	3.520	3.594	3.520	3.437	3.594	3.594	3.594	3.594
St.dev. dependent variable	3.289	3.289	3.289	3.289	3.254	3.289	3.254	3.202	3.289	3.289	3.289	3.289

Notes: t-statistics in parentheses. Huber-White robust standard errors are used. Only democratic countries are included in the sample.
*** p<0.01, ** p<0.05, * p<0.1

Adding these additional political-institutional variables to our regressions does not affect our conclusion. The political constraint variable remains significant and its coefficient of a similar order of magnitude. With only two exceptions, none of the additional political-institutional variables turns out to be significant in explaining our stimulus measure. These exceptions relate to elections and further strengthen our results. In case of executive elections in an environment without political constraints, the actual change in the primary deficit is significantly larger than when the same elections take place in a politically constrained environment. In the latter case, the overall reduction is more than 3 percentage points of GDP larger than without any elections (but still facing political constraints). The occurrence of legislative elections also seem to stimulate running a larger deficit. Albeit statistically not significant, this again appears to be largely due to elections in countries without political constraints.¹¹

¹¹ We have not only estimated models in which the election variables are interacted with the political constraint variable, but have also done this for our baseline variables and all other political-institutional variables checked in this Appendix. Whereas the interaction effects are basically never significant, the coefficient on our political constraints variable remains negative and almost always highly significant. Our qualitative conclusions are not affected by including such interaction effects.

11. Changes in (primary) deficits over a longer time horizon

Our empirical analysis is set up as such that all control variables are measured before the start of the crisis and the crisis is treated as an exogenous shock. By at the same time focusing on the year 2009, which circumvents interference of other events (like the euro crisis and the Fukushima catastrophe), non-conventional policy reactions (like monetary Quantitative Easing programmes in certain countries), or the euro area debt crisis, we try to get as close as possible to a causal interpretation of our results. Nevertheless, one could argue that political constraints cause policy-makers to react slower, but not necessarily less. By 2010, many countries, however, already moved into recovery mode and first stimulus measures were put to a halt. Hence, it could well be argued that policy reactions by that time would already have been “behind the curve”. To have some first suggestive evidence on whether policy action was merely postponed, we have extended our dependent variables measuring realised changes in (primary) deficits to not only capture the change during 2009, but also that including the year 2010. Table A.4 summarizes the results. Whereas the sign of our political constraint variable remains negative, its impact declines and is no longer statistically significant.

Table A.4: Changing the time horizon of the realised changes in (primary) deficits while using the realised change in primary deficits as dependent variable

VARIABLES	(1) Realised change prim. deficit 2009	(2) Realised change prim. deficit 2009-2010	(3) Realised change prim. deficit 2009 - democracies	(4) Realised change prim. deficit 2009-10 - democracies	(5) Realised change deficit 2009	(6) Realised change deficit 2009-2010	(7) Realised change deficit 2009 - democracies	(8) Realised change deficit 2009-10 - democracies
Political constraint	-2.712*** (-3.397)	-1.325 (-1.445)	-2.413** (-2.223)	-1.206 (-1.059)	-1.613** (-2.357)	-0.747 (-0.918)	-1.730* (-1.770)	-0.848 (-0.857)
Gov.expenditures in 2007 (%GDP)	0.0567 (1.325)	0.0420 (0.836)	0.0848** (2.050)	0.0612 (1.243)	0.0527 (1.440)	0.0386 (0.801)	0.0864** (2.426)	0.0590 (1.362)
Change of exports in winter 2008/09 (%2007-GDP)	-0.212 (-1.402)	-0.0782 (-0.452)	-0.215 (-1.366)	-0.187 (-0.956)	-0.154 (-1.196)	0.0749 (0.481)	-0.135 (-0.935)	-0.150 (-0.885)
Gov.debt in 2007 (% of GDP)	-0.00845 (-0.619)	-0.0108 (-0.849)	-0.0242* (-1.846)	-0.0161 (-1.183)	-0.00451 (-0.355)	-0.00616 (-0.474)	-0.0182 (-1.445)	-0.0152 (-1.299)
Gov.deficit in 2007 (% GDP)	-0.428*** (-2.643)	-0.316*** (-3.196)	-0.206* (-1.882)	-0.190*** (-3.463)	-0.419*** (-2.695)	-0.335*** (-3.633)	-0.229* (-1.736)	-0.227*** (-3.621)
KOF Economic Globalisation in 2007	-0.0150 (-0.398)	-0.0324 (-0.841)	-0.0285 (-0.812)	-0.0269 (-0.492)	-0.00534 (-0.169)	-0.00615 (-0.190)	-0.0247 (-0.815)	-0.0207 (-0.477)
Under an IMF program	-1.216 (-1.237)	-2.013** (-2.072)	-1.816* (-1.948)	-2.703*** (-3.345)	-0.733 (-1.065)	-1.357 (-1.635)	-0.888 (-1.251)	-1.892** (-2.373)
Constant	4.658** (2.433)	5.779*** (2.879)	5.163** (2.236)	4.645 (1.483)	3.353** (2.113)	3.846** (2.450)	4.259* (1.981)	4.083 (1.663)
Observations	94	94	71	71	123	123	88	88
Adjusted R-squared	0.343	0.133	0.253	0.103	0.287	0.083	0.168	0.091
Mean dependent variable	4.111	3.590	3.594	3.375	3.896	3.297	3.535	3.326
St.dev. dependent variable	4.318	4.185	3.289	3.805	3.998	4.267	3.090	3.738

Notes: t-statistics in parentheses. Huber-White robust standard errors are used.

*** p<0.01, ** p<0.05, * p<0.1

12. Changing the sample of countries

Given that we use what is arguably an unexpected exogenous shock hitting all countries around the world, we are working in a cross-section framework. This limits our degrees of freedom and we therefore concentrate most of our analysis on those samples that are as large as possible. Nevertheless, differences across different country groups might exist. To check the robustness of our results in this sense, Table A.5 varies the underlying sample in different ways.

Table A.5: Robustness tests with changing the underlying set of countries, while using the realised change in primary deficits as dependent variable

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Full sample	Democracies	Multi-party systems	OECD countries	Non-OECD countries	G20 countries	Non-G20 countries	European Union member states	non-EU member states	Euro area members	Non-euro area members
Political constraint	-2.712*** (-3.397)	-2.413** (-2.223)	-2.254*** (-2.904)	-3.364*** (-4.740)	-2.159** (-2.176)	-2.929** (-3.248)	-2.708*** (-2.778)	-1.965* (-1.983)	-2.308** (-2.487)	-3.337** (-2.495)	-2.665*** (-3.056)
Gov.expenditures in 2007 (%GDP)	0.0567 (1.325)	0.0848** (2.050)	0.0614 (1.441)	-0.00213 (-0.0331)	0.0729 (1.146)	0.0715 (0.912)	0.0555 (1.198)	-0.0259 (-0.313)	0.0704 (1.137)	-0.105 (-0.825)	0.0480 (1.008)
Change of exports in winter 2008/09 (%2007-GDP)	-0.212 (-1.402)	-0.215 (-1.366)	-0.236 (-1.468)	0.00201 (0.0174)	-0.233 (-1.106)	0.134 (0.574)	-0.220 (-1.374)	0.0240 (0.219)	-0.291 (-1.304)	-0.0381 (-0.312)	-0.250 (-1.446)
Gov.debt in 2007 (% of GDP)	-0.00845 (-0.619)	-0.0242* (-1.846)	-0.00559 (-0.368)	0.0100 (0.897)	-0.0124 (-0.664)	0.00562 (0.537)	-0.0119 (-0.698)	0.0265 (1.383)	-0.0168 (-1.083)	0.0257 (1.292)	-0.0121 (-0.830)
Gov.deficit in 2007 (% GDP)	-0.428*** (-2.643)	-0.206* (-1.882)	-0.338** (-2.304)	-0.296*** (-6.265)	-0.489* (-1.890)	-0.554* (-1.895)	-0.426** (-2.476)	-0.183 (-1.241)	-0.408** (-2.146)	-0.454* (-2.069)	-0.427** (-2.476)
KOF Economic Globalisation in 2007	-0.0150 (-0.398)	-0.0285 (-0.812)	-0.00625 (-0.152)	0.0687 (1.314)	-0.0244 (-0.521)	-0.0104 (-0.155)	-0.0153 (-0.365)	0.0523 (0.923)	-0.00726 (-0.164)	0.0381 (0.438)	-0.0266 (-0.643)
Under an IMF program	-1.216 (-1.237)	-1.816* (-1.948)	-0.780 (-0.678)	-0.515 (-0.322)	-1.443 (-1.294)		-1.192 (-1.165)	-4.076*** (-4.924)	-0.812 (-0.765)		-1.192 (-1.230)
Constant	4.658** (2.433)	5.163** (2.236)	3.018 (1.393)	0.844 (0.283)	4.702 (1.620)	3.979 (1.159)	4.830** (2.207)	1.648 (0.343)	3.749 (1.305)	7.347 (0.726)	5.549** (2.502)
Observations	94	71	84	29	65	15	79	26	68	14	80
Adjusted R-squared	0.343	0.253	0.259	0.336	0.339	0.469	0.321	0.375	0.358	-0.198	0.346
Mean dependent variable	4.111	3.594	3.787	4.370	3.996	4.194	4.096	3.969	4.166	4.924	3.969
St.dev. dependent variable	4.318	3.289	3.890	1.818	5.060	2.368	4.607	2.191	4.907	1.437	4.634

Notes: t-statistics in parentheses. Huber-White robust standard errors are used. Dependent variable: Change in primary deficit in 2009 (% 2007-GDP).

*** p<0.01, ** p<0.05, * p<0.1

The first two columns repeat the main results from Table A.3. Whereas in the main text we rely on the definition of Cheibub et al. (2010) to distinguish between democracies and autocracies, column (3) uses a different split. Parts of our reasoning assumes competitive elections. As an alternative, we therefore include in column (3) only those countries in which multiple parties did win seats.¹² Although this increase the number of observations slightly, it does not affect our conclusions. The subsequent columns (4) to (11) distinguish between OECD, non-OECD, G20, non-G20, EU, non-EU and

¹² The data are taken from the Database of Political Institutions and imply that the variables LIEC and EIEC of that database take on values larger than 5.

euro area and non-euro area members. In all of these subsamples our political constraint variable remains significantly negative.

13. Checking for outlying observations

Perhaps some extreme and thereby potentially outlying observations might drive our results. Particularly noteworthy are the three negative stimulus packages of Hungary, Ireland and Iceland in the UNCTAD (2009) data. As reported by UNCTAD (2009), these countries did all commit large financial resources to rescue their financial sectors while, at the same time, imposing restrictive fiscal policies such as tax increases and cuts in public expenditures of more than 7 percent of GDP. The extraordinary conditions in these countries might have an influence on our results. Column (2) of Table A.6, however, shows that dropping these observations has no real impact on our regression results.

Table A.6: Robustness tests by removing potentially influential observations, while using the realised change in primary deficits as dependent variable

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Full sample	Excl. Hungary, Iceland and Ireland	Excl. tails of change in primary deficit	Excl. tails of government expenditure shares	Excl. tails of change in growth	Excl. tails of change in export shares	Excl. tails of Gov. debt shares	Excl. tails of Gov. deficit shares
Political constraint	-2.712*** (-3.397)	-2.731*** (-3.406)	-1.262** (-2.371)	-2.026** (-2.460)	-3.396*** (-3.660)	-3.075*** (-3.244)	-1.971** (-2.401)	-2.158** (-2.127)
Gov.expenditures in 2007 (%GDP)	0.0567 (1.325)	0.0572 (1.275)	0.0510* (1.902)	0.134*** (2.740)	0.0421 (1.113)	0.0683 (1.448)	0.0555 (1.341)	0.0346 (0.772)
Change of exports in winter 2008/09 (%2007-GDP)	-0.212 (-1.402)	-0.231 (-1.417)	-0.0258 (-0.362)	-0.487*** (-2.751)	-0.134 (-1.092)	-0.357** (-2.091)	-0.124 (-1.094)	-0.184 (-1.388)
Gov.debt in 2007 (% of GDP)	-0.00845 (-0.619)	-0.00800 (-0.584)	0.000485 (0.0611)	-0.00553 (-0.432)	-0.0176 (-1.638)	-0.0187 (-1.593)	-0.0459** (-2.555)	-0.00404 (-0.356)
Gov.deficit in 2007 (% GDP)	-0.428*** (-2.643)	-0.418** (-2.497)	-0.262*** (-4.999)	-0.551*** (-3.836)	-0.340** (-2.433)	-0.359** (-2.183)	-0.228** (-2.165)	-0.442** (-2.411)
KOF Economic Globalisation in 2007	-0.0150 (-0.398)	-0.0162 (-0.421)	0.00346 (0.134)	-0.0709** (-2.132)	0.0112 (0.261)	-0.0232 (-0.572)	0.00726 (0.201)	-0.0176 (-0.457)
Under an IMF program	-1.216 (-1.237)	-1.178 (-1.012)	-0.713 (-1.137)	0.0309 (0.0278)	-1.394 (-1.517)	-1.287 (-1.386)	-2.257** (-2.573)	-1.379 (-1.570)
Constant	4.658** (2.433)	4.613** (2.214)	2.734* (1.889)	4.368* (1.966)	4.488** (2.092)	5.136** (2.577)	4.792** (2.382)	5.086** (2.408)
Observations	94	91	77	74	72	77	76	77
Adjusted R-squared	0.343	0.339	0.234	0.455	0.431	0.409	0.287	0.151
Mean dependent variable	4.111	4.127	3.730	3.987	4.198	4.152	3.894	3.730
St.dev. dependent variable	4.318	4.365	2.231	4.242	3.979	4.191	3.508	3.201

Notes: t-statistics in parentheses. Huber-White robust standard errors are used.

In columns (3) to (8), the upper and lower 10 percent of the observations regarding the respective variable are removed from the sample.

Dependent variable: Change in primary deficit in 2009 (% 2007-GDP). *** p<0.01, ** p<0.05, * p<0.1

Countries with (in an absolute sense) large values of either the dependent variable or any of the control variables might also have a substantive influence on our regression results. For that reason, we exclude in each of the remaining columns in Table A.6 the upper and lower 10 percent of the distribution regarding either the dependent variables, or in turn each of the control variables. Each time discarding around 20 percent of our (potentially influential) observations does not change our results in any qualitatively meaningful way. The political constraint variables remains highly significant and negative.