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It's politics, stupid! Political constraints determine governments' reactions to the Great Recession

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It's Politics, Stupid! Political Constraints Determine Governments' Reactions to the Great Recession*

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Abstract

Relying on a large sample of countries, this paper quantifies the effect of political constraints, as measured by legislative control by the incumbent government, on the size of fiscal stimulus packages that have been put in place as reaction to the Great Recession. The results suggest that on average, political constraints reduced the size of a country's fiscal stimulus packages by between 1.2 and 2.8 percentage points of GDP (depending on the stimulus measure used). This substantial effect is significant and robust to a number of alternative dependent variables and specifications. The results are thus in line with the widely held, but never tested, perception that political reality limits the de facto application of discretionary fiscal policy as reaction to negative economic shocks.

JEL codes: E02, E32, E62, E65, H12, P48

Key words: legislative control, fiscal stimulus, Great Recession

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1. Introduction

After the collapse of Lehman Brothers in September 2008, the world economy was hit by an economic crisis of a scale not seen since the Great Depression; during the winter half-year 2008/2009 world trade collapsed by almost 20 percent while world industrial production shrunk by about 12 percent (see Figure 1). The Great Recession, as the shock came to be known, did – at least in terms of size – come as a surprise to virtually everyone. Governments, too, were surprised but quickly realized that action as needed. Consequently, most countries in the world have introduced substantial fiscal policy packages, so-called fiscal stimuli, as a reaction to the crisis.

[Insert 'Figure 1: Trade and industrial production in the world' about here]

Although in general large, the size of these packages varied considerably across countries. The UNCTAD Trade and Development Report (UNCTAD 2009) highlights that countries such as Kazakhstan, Saudi Arabia and Singapore had scheduled to implement discretionary packages amounting to 11.1, 9.2 and 8 percent of GDP, respectively. On the other end of the spectrum, the packages scheduled by the governments in Italy and Switzerland were a mere 0.3 and 0.5 percent of their respective GDP levels.

What explains these large differences? The question became relevant once the crisis hit and countries started to react in substantially different ways. Early publications discussing these differences focused on three factors: the actual *need* for fiscal stimulus, a country's *fiscal space*, and the *effectiveness* of a program.[1]

The need for discretionary stimulus is itself a function of a country's automatic stabilizers and the size of the (expected) output gap. Larger automatic stabilizers reduce the need for discretionary spending, while a larger shock increases the need to react. Furthermore, the fiscal policy reaction might depend on the reaction of monetary policy. When the latter finds itself in a so-called liquidity trap, the need for fiscal policy to support the economy is likely to be higher.

[1] See, for instance, OECD (2009), IMF (2009a).

The second factor, fiscal space, can be thought of as the fiscal means available to the government to ameliorate negative economic shocks. It is determined by variables such as the initial level of public debt, deficit and interest rates on government bonds, but also by how easy it is to finance fiscal spending with the money press.[2]

Finally, effectiveness is likely to be a function of both the size of the shock and country-specific characteristics. Auerbach and Gorodnichenko (2012), for instance, 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. Country-specific characteristics such as size and openness might further affect the effectiveness of any measures taken.

For many, in particular smaller, countries the Great Recession primarily affected their export-oriented sectors, which are inherently difficult to support through fiscal policy.[3] More generally, small open economies have fewer opportunities to stimulate their own economy as a larger part of a given measure evaporates away to the rest of the world. At the same time, they also benefit more from measures undertaken by large trading partners. Both of these mechanisms reduce the incentives for fiscal stimulus measures in such countries. International policy coordination is intended to reduce such free-rider effects. During the Great Recession especially the US government pressured other governments to also stimulate their economies.

To summarize: everything else being equal, the larger the output gap, the less effective monetary policy, the more fiscal leeway and the higher the effectiveness of discretionary fiscal stimulus measures, the larger fiscal discretionary measures are likely to be. On the other hand, the larger the automatic stabilizers, the smaller these measures are going to be.[4] Academic research since the outset of the financial crisis has confirmed the importance of these factors as determinants of stimulus packages. Aizenman and Jinjarak (2011) directly test for, and confirm, their importance for the size of stimulus packages, while the findings

[2] For a more elaborate discussion on the link between fiscal space, or `fiscal leeway', and fiscal policy, see Blanchard et al. (2010).

[3] Copeland and Kahn (2013) find that the effect of discretionary fiscal stimulus on production is also weakened by the presence of inventories, which buffer the movements in sales. Limited information on inventories together with uncertainty on the exact mechanism and extent to which they buffer production make them an unlikely determinant in policy discussions. Already the first reason does not allow us to take them up in our analysis.

[4] For empirical evidence on these relationships see, for instance, IMF (2009a).

of Ilzetzki et al. (2013) suggest that more fiscal space and less trade openness makes stimulus more effective.

The role of 'need', 'fiscal space' and 'effectiveness' as determinants of stimulus packages is thus well established and is often considered to be important in discussions of governments' reactions during the 2009 crisis. What is surprising, however, is that domestic political factors are completely absent from this discussion. It seems, after all, reasonable to assume that because discretionary fiscal policy is the result of a political process, the environment within which this process takes place may influence the outcome.

This absence of domestic political considerations is surprising for two reasons. First, there is research that highlights the importance of politics for both fiscal and monetary policy outcomes: Porteba (1994) finds that one-party governments can and do react faster to unexpected fiscal deficit shocks than their divided-government counterparts. Weise (2012) concludes that the political environment in the United States in the 1970s was a main determinant of the Federal Reserve's too moderate anti-inflationary policy, and that a change in the political environment was also behind the Federal Reserve's switch to a more aggressive policy after 1979.

Second, political economy considerations are widely recognized as a main drawback of discretionary fiscal policy. Blinder (1997) outlines the merits of moving a greater number of policy decisions away from the realm of politics into the realm of technocracy, so as to make them the result of a deliberative and objective process rather than the outgrow of political considerations. Blanchard et al. (2010) mention the limits that political constraints impose on the de facto usefulness of discretionary fiscal policy. Cecchetti (2002) argues that when it comes to fiscal policy, political considerations tend to collide with economic prescriptions, while Romer (2012) mentions political-economy aspects to be important in understanding fiscal policy responses to the crisis.

Given the general agreement on politics' important role in shaping fiscal policy and given the alleged divergence between appropriate economic policy and political incentives in this domain, it is surprising that thus far, political factors have hardly been considered as an important determinant of how governments reacted to the Great Recession. An exception is Armingeon (2012), who finds that a unified government was a necessary condition for

deviating from what he calls the "default reaction" to the crisis: a moderate fiscal expansion. In particular, in his qualitative and categorical analysis, he finds that it was only unified governments that enacted "large" fiscal stimulus packages. While these findings indicate that politics have played a role in determining the size of fiscal stimulus packages, they provide limited information on the size and strength of this relationship.

In this paper we attempt to address this shortcoming by estimating the effect of political constraints on the size of stimulus packages that were enacted in the wake of the crisis. We approximate the degree of political constraints by looking at whether a country's executive party had control over the majority of legislative branches that are relevant for policy making. If it did, we consider it to have been free of political constraints as it had law-making power and was not required to cooperate with the opposition to enact fiscal stimulus measures.

Why should political constraints have an impact on a government's response to an economic shock? A vast literature on economic voting finds that if voters are satisfied with the economic performance prior to an election, they re-elect the incumbent government while if they are not, they do not.[5] At the same time, Evans (2006) investigates the effect of government spending on electoral results in Canadian federal elections and finds that additional spending benefits majority politicians, presumably because they are known to be responsible for the spending increase. Bridging these two different insights, Bartels (2011) looks at the electoral consequences of economic stimulus packages during the Great Recession and finds that

> "voters consistently punish [...] incumbent governments for bad economic conditions, with little apparent regard for the ideology of the government or global economic conditions at the time of the election. [There is also] some evidence of electoral responses to specific fiscal policy choices, most notably, a boost in incumbent governments' electoral support associated with spending on economic stimulus programs." (p. 1)

[5] For major contributions see Lewis-Beck (1988) and Duch and Stevenson (2008). For summaries of the literature see Lewis-Beck and Paldam (2000) and Hibbs (2006).

These findings have strong implications for political incentives. If incumbent governments expect to be punished for bad economic performance and to be rewarded for enacting stimulus packages in the wake of economic downturns, then we should expect them to enact stimulus packages that they see as appropriate given need, fiscal space and the effectiveness of such packages.

For the same reason, we would expect opposition parties to try to block such policies or at least to change the composition of such packages in order to delay their implementation. In addition to that political calculus, any type of fiscal stimulus will – almost by definition – have distributional consequences, making it highly unlikely that preferences between the opposition and the government are aligned. Hence, in countries where the opposition has the political means to influence legislation, we should, everything else being equal, expect stimulus packages to be smaller, at least initially.[6]

To the extent that the legitimacy for the political regime depends on its delivery of economic progress, the logic for fiscal stimulus in more autocratic countries is the same as the one just described for democracies. In case of a stable and durable non-democratic regime that appears to depend less on popular support, Olson (2000) argues that, to protect the economic system from which it extracts taxes and on which it lives on, it is in the regime's own interest to provide prosperity-enhancing public goods. While in this case the goal of a political regime is not political power, but rather the preservation of its rent, it still has the incentive to introduce fiscal stimulus measures. What is different, of course, is the absence of an opposition that can negotiate down the size of such packages or attempt to change its composition. All else equal, we therefore expect packages of non-democracies, like those in democracies that do not face political constraints, to be larger than those of democracies that do face such constraints.

This is precisely what the results of this paper suggest. The effect of political constraints on governments' fiscal reaction to the current crisis is large, statistically significant and robust to alternative dependent variables and specifications. It suggests that on average, governments without political constraints, either because they control the legislative branch

[6] A similar argument is presented by Spolaore (2004), who argues that cabinet systems in which there is a single decision maker adjust faster to shocks than systems with multiple decision makers.

or because they are outright autocracies, have implemented stimulus packages that were – depending on the fiscal stimulus measure used – about 1.2 to 2.8 percentage points of GDP larger in size.

The remainder of this paper is organized as follows. Section 2 discusses our main hypothesis, the data and the underlying model. The results are presented in Section 3. Section 4 offers some concluding remarks.

2. Model and data description

Dependent variables

To measure the size of the fiscal stimulus measures we rely on two different sources and construct four different variables. All four of these variables have in common that they concentrate on fiscal policy measures initiated or carried out in the crisis year 2009. We consider the bankruptcy of Lehman Brothers in autumn 2008 and the subsequent collapse in world trade as a largely exogenous shock and do not want to mix this up with events, like the euro crisis, happening after an initial recovery in the second half of 2009 and early 2010.

Our first variable is directly taken from Table 1.8 in UNCTAD (2009). This table was compiled by the UNCTAD secretariat using a number of different sources.[7] The variable corresponds to discretionary measures on public spending or revenues in response to the financial crisis, excluding so-called automatic stabilizers and scheduled to be implemented across a one to three year window. Hence, it covers discretionary 'promises' of governments in selected countries as percentage of GDP over a somewhat varying implementation horizon.

Not only time horizons of these stimulus packages differ substantially, also the exact definition of what is part of a stimulus package is likely to be country- and source-dependent to some extent. This should be kept in mind when interpreting the results below.[8] Furthermore, this particular data set only allows us to use a sample of 44 OECD and emerging market countries. Both data quality and coverage has led us to also look for other data sources.

[7] For six countries where UNCTAD does not provide data, we use data from OECD (2009). The relevant countries are the Czech Republic, Denmark, Finland, Luxembourg, New Zealand and Slovakia.

[8] Note, however, a country's method for measuring its stimulus package is unlikely to be correlated with the size of that package. The consistency of our results is therefore not compromised.

The other three variables are ultimately based upon information published by the IMF in different versions of its World Economic Outlook. The first of these is taken from Appendix Table 5 in IMF (2009). It compares primary deficit forecasts for 2009 as published by the IMF in its July 2009 Update (IMF 2009b) and its October 2007 release of the World Economic Outlook (IMF 2007). We view this as a measure for the forecasted change in fiscal policy induced by the Great Recession and not related to changing interest payments of the government. The difference with the UNCTAD measure is twofold. First, it includes both discretionary measure as well as changes caused by automatic stabilizers.[9] Second, it has a fixed time horizon: it reflects 'promises' for the year 2009. These differences notwithstanding, in both cases, we are looking at forecasts, i.e. 'promises', and not at actual realizations.

But there might be a difference between the political promises for spending made during the crisis year and the spending that was actually implemented. To take this into account, our two remaining variables focus on actual realizations. Focusing on actual spending also has the advantage that it avoids issues surrounding the definition of stimulus packages, which, as discussed above, are likely to differ between countries. To construct our variables we use information released in the April 2013 IMF World Economic Outlook (IMF 2013) and take actual changes in *primary* fiscal deficits between 2008 and 2009. To increase the sample size, we also look at actual changes in (total) fiscal deficits during the crisis year.

Table 1 summarizes our four main dependent variables. Overall, the size of the fiscal stimulus is substantial with averages ranging from close to 2½ to almost 5 percent of (pre-crisis) GDP. Although it covers up to three years, the UNCTAD variable contains the lowest values. A likely explanation for this is that by construction, it is the only variable that does not include the effect of automatic stabilizers. The table also reveals that, on average, democracies have enacted smaller fiscal stimulus measures than autocracies.[10,11] Finally,

[9] Conceptually, we prefer a measure that only takes discretionary aspects into account. However, we do have to realise that it is far from obvious to disentangle cyclical and structural movements in fiscal data. As it is likely that the extent of automatic stabilisers in an economy is related to the size of the public sector, we include the latter as explanatory variable in all of our models.

[10] In defining democracies, we use the classification of Cheibub et al. (2010). Accordingly, the basic conditions for a regime to be coded as democratic are that i) the executive and legislative are elected and ii) multiple parties are allowed for and exist.

[11] A two-group mean-comparison test reveals that the averages of democracies and non-democracies are significantly different from each other.

with standard deviations between 3.3 and 4.5 percent of GDP, it is also safe to say that there is wide variation in the size of stimulus packages initiated during the Great Recession.

[Insert "Table 1: Descriptive statistics and correlation matrix for the dependent variables" about here]

Main explanatory variable

The main hypothesis of this paper is that because political constraints limit governments' leeway to act, they help explain part of this variation. In particular, the possibility of opposition parties to overtly or covertly block measures that incumbents seek to implement is potentially important in understanding the size of fiscal stimulus measures.

Political constraints are captured by a binary variable that equals one if during the Great Recession (i.e. during the winter of 2008/2009) a country's executive party did not have a majority in the legislative branches that have law-making power. Conversely, the variable is equal to zero if throughout that same period, the party of the executive did have a majority in these branches and could therefore unilaterally enact law.[12,13,14]

Given the exogenous character of the shock we are analyzing, we are convinced that we can treat our political constraint dummy as exogenous. Nevertheless, in the robustness section we will investigate to what extent its potential endogeneity drive some of our results, even though it is difficult to imagine any channels through which such a situation could arise.

While the constraints dummy likely captures the most direct dimensions of political constraints, there are more subtle constraints that, by virtue of being a dummy variable, it cannot capture. Consider, as an example, the events in the United States in early 2011. At the time the American Recovery and Reinvestment Act was enacted and signed into law by the democratic president Barack Obama, the Democratic Party also controlled both the

[12] All political variables – including this one – are taken from the 2012 version of the Database of Political Institutions (Beck et al. 2001). This particular variable is based upon the variable labelled ALLHOUSE.

[13] During the year 2009, the only election that potentially led to a change in this variable relative to 2008 was the legislative election in June 2009 in Argentina. We, however, take values as relevant for the winter 2008/2009, which always equal those for 2008.

[14] Henisz (2000; 2002) constructed political constraint variables that indicate whether the executive party is the largest party in the upper- and lower house. As being the largest party does not necessarily imply having a majority, the correlations between the ALLHOUSE variable and those from Henisz are merely around 0.3. Given that in our line of argumentation having a majority is indispensable, we stick to using the ALLHOUSE variable.

Senate and the House of Representatives. So, according to the definition of our constraints dummy, the Democrats were free of political constraints. And yet, there is evidence to suggest that both the Democratic Party's internal disputes as well as public pressure prevented the stimulus package from being even larger than the actual $787 billion. Alter (2011) and Wallace-Wells (2001) report, for instance, that Christina Romer and Larry Summers, the President's key economic advisers at the time, both believed that to close the entire output gap, the stimulus package would need to be above the politically incendiary 1 trillion dollar mark. So, as in the case of our stimulus measures, it is important to realize that while the variable captures an important part of what we aim to measure, it cannot account for all the country-specific subtleties.

Control variables

As discussed in the introduction, need, fiscal space and effectiveness are generally considered to be important determinants of the size of fiscal stimulus packages. We will subsequently discuss how we measure these three different dimensions.

The need for discretionary measures depends on both the expected size and type of the shock and the expected degree to which automatic stabilizers will alleviate it. To proxy the role of automatic stabilizers we follow Gali (1994) and use the pre-crisis level of government expenditure as a percentage of GDP, as measured for 2007 and published by the IMF in April 2013 (IMF 2013).

We thus assume that a larger public sector is more stabilizing than a smaller one. Depending on the dependent variable, we expect either a positive or a negative effect of this variable: for a given output gap, a higher level of government expenditure should reduce the size of discretionary measures, while it should increase the change in the deficit (i.e. in the total fiscal stimulus). The change in the deficit should increase because for a given size of the discretionary stimulus, higher government expenditures automatically alleviate the negative consequences of the shock, independent of the political decision making process.

To proxy the size of the shock, we construct two different measures. The first is based on changes in growth forecasts for the year 2009. 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.[15] Our second measure concentrates on the realized drop in exports during the winter half-year 2008/2009 relative to the winter half-year 2007/2008, measured as a percentage of 2007 GDP levels. For this we resort to the monthly export figures published in the IMF Direction of Trade Statistics. The timing of when stimulus measures were announced and implemented makes it very unlikely that they had a substantial impact on the size of this export shock, so that we can treat it as exogenous.

By including both measures 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.[16]

Of course, 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. To capture a government's fiscal space, we mainly use the gross public debt-to-GDP ratio as measured for 2007. Another measure that falls into the same category is the deficit-to-GDP ratio for 2007. Both are taken from the IMF World Economic Outlook published in April 2013 (IMF 2013). The differences across countries, particularly in pre-crisis deficit levels, are substantial. These reflect, among other things, differences in natural resources. In particular, those countries that export substantial amounts of oil or gas tend to have much smaller

[15] As is common practise 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.

[16] 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.

deficits or even substantial surpluses.[17] By using pre-crisis data, i.e. data that is not yet influenced by the economic shock following the collapse of Lehman Brothers in September 2008, we try to avoid issues of reverse causality. 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.[18]

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 might 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 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.[19,20]

[17] We have also looked into using oil and gas reserves as published by British Petroleum. However, that would reduce our sample substantially.

[18] 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.

[19] 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.

To take the effectiveness of any fiscal stimulus into account, we finally include a broad measure of economic globalization as part of the KOF Globalization Index. We refer to figures for the year 2007. Countries that are economically highly globalized might find it difficult to replace the lack in foreign demand by domestic stimulus measures.

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 focus 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 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.

[20] 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.

[Insert 'Table 2: Descriptive statistics and correlation matrix for the main explanatory variables' about here]

Table 2 shows the descriptive statistics for the above-mentioned right-hand-side variables. Regarding our main variable of interest, about half of the countries in our sample face political constraint, in the sense that the executive and legislative are controlled by different parties. Quite a number of these are non-democratic countries. When focusing on democracies only, around 70 percent of the governments were not able to enact law unilaterally and were thereby politically constrained during the crisis period. The constraints dummy is not highly correlated with any of the control variables, so that including these variables into the model will most likely only have the effect of increasing the precision by which we can estimate the effect of the constraints dummy. There is also hardly any correlation among the control variables themselves, with the natural exception being the dummies for EU and euro area membership, where the correlation coefficient is 0.71. Apart from that, the second highest correlation coefficient is between narrow money growth and official reserves and equals 0.56. Furthermore, our economic globalization measure and our measure of government size have a high absolute correlation of 0.45; more globalized economies, which often are European, also tend to have higher government expenditure shares.

Additional domestic political-institutional variables

Besides facing domestic political constraints, other political and institutional factors might also have played a role in setting the size of the fiscal stimulus programs in a country. For that reason, we also explore a set of additional standard political-institutional variables that are related to the function of a government. Controlling for these variables generally makes sense only when we look at democracies. Hence, in the empirical analysis we will restrict attention to that particular subset.

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.[21] 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.[22] By including dummies for plurality- and parliamentary systems we control for what might be more underlying causes of differences in fiscal policy.

There is a substantial literature on whether a government's political orientation has an effect on its fiscal policy.[23] 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.

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, within the literature looking into the determinants of forecast errors, Brück and Stephan (2006) find that minority governments tend to make overly optimistic forecasts. We include a minority government dummy and a

[21] See, for instance, Lijphart (1990; 1999).

[22] 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.

[23] 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).

variable measuring the fraction of seats help by the government to capture such potential effects.

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 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.[24]

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

[24] 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 as expected; in both cases, the first variable is a dummy version of the second.

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 economy. 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, signaling 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 budget forecasts errors or even 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. The effect of the political business cycle could itself depend on the degree of political constraints. In case the incumbent does not face any constraints, it might have increased pre-election spending even more during the Great Recession than it otherwise would have. Conversely, in the case the incumbent did face political constraints, the opposite could have happened. To capture such effects, we also include a cross-term in one of our specifications.

[Insert 'Table 3: Descriptive statistics and correlation matrix for additional political-institutional variables' about here]

Table 3 shows the descriptive statistics for the remaining domestic institutional and political variables. Again the correlations between these variables as well as their correlation with the variables presented in Table 2 are generally low. The only notable exception is the high correlation between the probability that government members are not of the same party and our political constraint dummy. Coalition governments, and in particularly those that are not dominated by a single party, are more likely to also control the legislative bodies.

3. Empirical results

Table 4 presents the results from estimating our baseline model. This baseline model is derived using a general-to-specific methodology using all variables as described in Table 2.[25] Columns (1), (2), (3) and (5) report results for each of the four dependent variables using the full sample for which data is available. Columns (4) and (6) of the table restrict the sample of our two realized deficit measures to only democratic countries.

Although only marginally significant when using our first measure of promises, in all specifications the political constraint variable shows a strong impact on the size of each of these fiscal stimuli measures.[26] Depending upon the dependent variable the results suggest that, on average, political constraints decrease the size of the fiscal stimulus by between 1.2 and 2.8 percentage points of GDP. The last row of the table reports the average size of the stimulus packages within each sample. The average stimulus packages range from 2.4 to 5.0 percent of GDP. Relative to that, the average impact of such political constraints amounts to between 45 and 70 percent of this average size. Also, compared to the remaining variables in the model, the political constraint variable is by far the most robust. Of these other variables, only the initial government deficit turns out to be significant with the expected sign as often as our political constraints dummy; countries with high deficits enacted smaller stimulus packages, on average. The initial debt level has the expected negative sign, but is not statistically significant in most specifications. Nevertheless, fiscal space indeed appears to have been an important factor when explaining the size of the fiscal stimulus measures.

[Insert 'Table 4: Regression results for the baseline model' about here]

Perhaps surprisingly, 'need' does not appear to have been that important. Whereas the effect of the change in exports during the winter half-year 2008/2009 mostly has the expected negative sign – a stronger drop has led to larger stimulus measures –, it is rarely significant.[27] The initial size of the government sector, as measured by government expenditures as share of GDP, turns significantly positive when focusing on realized changes

[25] As will be indicated by the results shown in Table 5, the other variables are not robustly related to our measures of fiscal stimulus in our sample.

[26] When removing the IMF dummy from the first column the political constraint variables turns significant with an estimated coefficient of about -1.8

[27] Our growth forecast comparison for the year 2009 usually did not lead to an expected significant negative coefficient and is therefore not included in this baseline regression.

in primary deficits. In line with the argument that government size largely reflects the importance of automatic stabilizers, and that larger automatic stabilizers reduce the need for discretionary stimulus in a crisis, the measure has a statistically significant negative effect on the size of discretionary stimulus packages in column 1.

Being under an IMF program reduces at least the promises made by the government. Regarding actual realization it is less often significant. Nevertheless, these results indicate that this kind of international pressure does have an effect on the fiscal policy stance.

[Insert 'Table 5: Regression results for extended versions of the baseline model' about here]

The results presented in Table 5 underline our previous conclusions. Each of the remaining variables listed in Table 2 is included to our baseline model one at a time. We thereby concentrate on the dependent variable measuring the realized change in primary deficits for the year 2009.[28]

In short, none of these additional variables turns significant and occasionally even have the opposite sign from what we expected. For instance, a worsening of the growth forecasts for 2009 tends to reduce primary deficits. The only variable in Table 5 that comes close to being significant is the exchange rate. All else equal, a depreciation of the currency did reduce the change in primary deficits in 2009. As we do not find a significant impact of the KOF Economic Globalization index, we cannot empirically support the idea that more open economies have enacted smaller stimulus measures either because these measures would have had a smaller effect or because these countries benefitted more from fiscal impulses abroad.

[Insert 'Table 6: Results when including additional political variables, one at a time, while using the realized change in primary deficits as dependent variable' about here]

There are a number of other domestically relevant institutional and political factors that might potentially influence the size of fiscal stimulus packages. In the following, we include the most prominent ones into the baseline model. While they might shed some additional

[28] The results using other dependent variables are very much in line with those shown in Table 5. Our conclusions are robust to changing the dependent variable.

light on the question of what determines the size of these fiscal stimulus packages, the regressions are also intended as a further robustness check of the baseline model.

The validity of our results relies heavily on the assumption that in the context of the estimated model, the degree of political constraints is as good as randomly assigned. In section 2 we have argued why that should be so. In particular, we have argued that first, the value of the constraints dummy depends primarily on institutional choices and political variables that are unlikely to be related to the size of fiscal stimulus and second, that the constraint dummy is not systematically related to economic variables that determine the political fate of individual parties.

Table 6 provides evidence for the first of these two claims. In the first two columns, we introduce dummy variables that indicate whether a country relies on a plurality voting system or whether it has a presidential system. As discussed in section 2, these are two major determinants of the degree of political constraints. Upon including these variables, the coefficient on our variable of interest hardly changes and clearly remains significant. The fact that their inclusion does not substantially change the coefficient of the constraints variable does support the argument that they are not systematically related to the size of fiscal stimulus packages.

Conventional wisdom might suggest that left-leaning governments would enact higher stimulus packages on average. We test for this in column (3) of Table 6 by including a dummy variable that indicates whether or not a country's government was left-leaning during 2008 and 2009. The insignificant coefficient is in line with our discussion in the introduction. If governments can expect to be rewarded for stimulus measures regardless of ideological preferences, then the result is what we should expect.

In the previous section, we have discussed why minority or coalition governments, or settings in which either the government or the opposition is made up of a large number of political parties, may change the bargaining power and political calculus in the context of enacting discretionary fiscal stimulus packages. In columns 4 to 8 we have included the respective control variables to capture these effects. As neither of the variables is even close to being statistically significant, we do not find support for any of these arguments.

In last few columns of Table 6, we test whether election times had an influence on the size of stimulus packages. In line with the PBC theory, one might expect governments that have to face voters to react more forcefully to a negative economic shock. The results broadly confirm the PBC reasoning. According to column 10, governments that face executive elections enacted stimulus packages that were on average about 2.4 percentage points higher. When, however, at the same time facing political constraints, this effect completely disappears: the opposition parties were in such cases successfully able to block or delay packages in the run up to the executive election. A slightly different picture emerges when looking at legislative elections (column 12). From a statistical point of view, here we cannot distinguish between legislative election with or without political constraints. This makes sense, as it is the legislator that is voted upon. Column (11) reveals that, when doing so, stimulus packages were about 1.3 percentage points higher.

Overall, the important message from Table 6 is that the results confirm our hypothesis and show that the effect of political constraints is large, statistically significant and robust in a number of alternative specifications.

4. Concluding remarks

In this paper, we use a simple framework to assess the impact of political constraints on the size of fiscal stimulus packages. The results show that on average, political constraints reduce the size of fiscal stimulus packages by about 1.2 to 2.8 percentage points of GDP – an effect that is large, statistically significant and robust to alternative specifications. The results are thus in line with the widespread perception that political realities limit the de facto usefulness of discretionary fiscal policies as a tool to ameliorate negative economic shocks. To our knowledge it is, however, the first paper that quantifies that effect.

The results are important because in trying to make sense of policy decisions, we naturally focus on what we deem important. The accuracy of growth forecasts and, even more so, the role of fiscal space are omnipresent in policy discussions since the outset of the crisis. What the results of this paper suggest is that discussing how legislative procedures can be designed to allow for optimal reactions to an economic crisis would be important as well.

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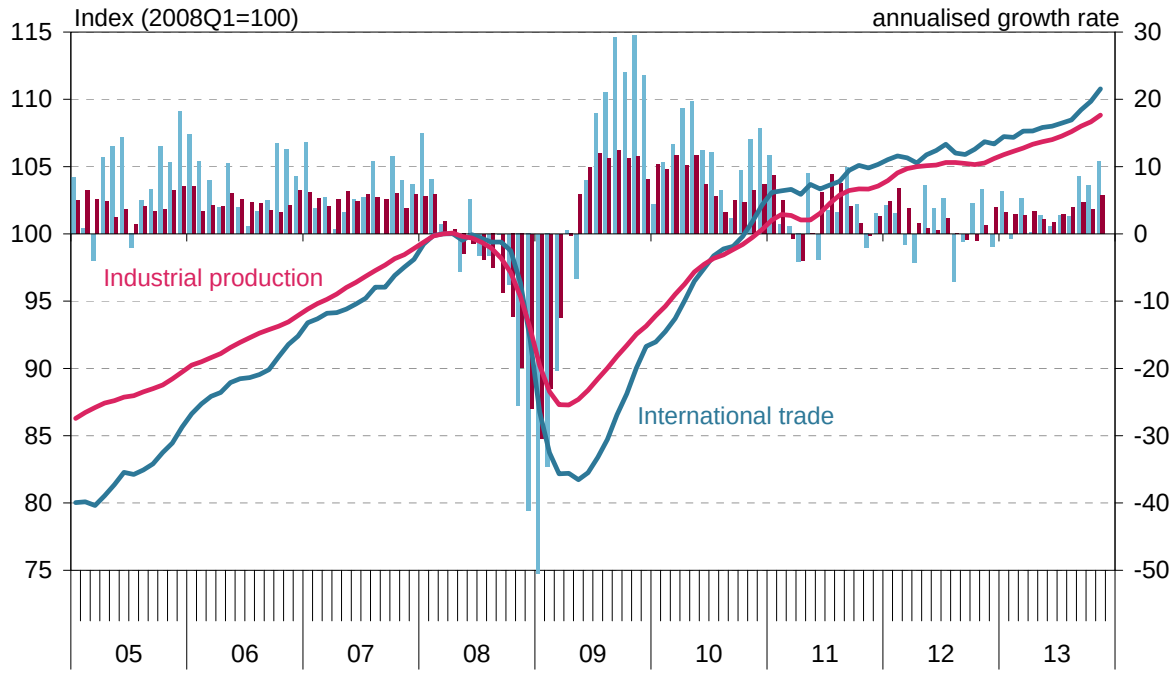
Figures

1: Trade and industrial production in the world



Source: CPB Netherlands Bureau for Economic Policy Analysis

Tables

1: Descriptive statistics and correlation matrix for the dependent variables

		Descriptive statistics					
		Obs.	Avg.	St.D.	Min.	Max.	Source
Promised stimulus 2008-2012	Discretionary measures	44	2.44	3.39	-8.3	8.0	UNCTAD
Promised stimulus 2008-2009	Change forecasted primary deficit	40	4.97	3.29	-0.7	14.9	IMF 2009b/2007
Realised stimulus in 2009	Change primary deficit 2009 (% 2007-GDP)	108	4.16	4.31	-3.4	21.6	IMF 2013
	(only democracies)	77	3.58	3.36	-3.4	15.7	IMF 2013
Realised stimulus in 2009	Change deficit 2009 (% 2007-GDP)	151	4.00	4.48	-4.1	25.3	IMF 2013
	(only democracies)	100	3.52	3.50	-4.1	17.5	IMF 2013

			correlation \ obs.					
	Variable description		(1)	(2)	(3)	(4)	(5)	(6)
(1)	Promised stimulus 2008-2012	Discretionary measures		36	40	36	44	39
(2)	Promised stimulus 2008-2009	Change forecasted primary deficit	-0.01		37	34	40	36
(3)	Realised stimulus in 2009	Change primary deficit 2009 (% 2007-GDP)	0.14	0.75		77	108	77
(4)		(only democracies)	-0.01	0.79	1.00		77	77
(5)	Realised stimulus in 2009	Change deficit 2009 (% 2007-GDP)	0.03	0.74	0.98	0.96		100
(6)		(only democracies)	-0.11	0.77	0.96	0.96	1.00	

2: Descriptive statistics and correlation matrix for the main explanatory variables

	Descriptive statistics					
	Obs.	Avg.	St.D.	Min.	Max.	Source
Political constraint dummy	151	0.54	0.50	0.0	1.0	DPI2012
Gov.exp. in 2007	151	30.25	10.38	7.6	52.6	IMF, WEO Apr.2013
Change in 2009-growth forecast in Apr. 2009 r.t. Apr. 2008	148	-0.47	1.23	-5.0	4.1	IMF, WEO Apr.2009/Oct.2008
Change of exports in winter 2008/09 (%2007-GDP)	143	-4.03	5.31	-44.2	2.6	IMF, DOTS 2013
%-change local currency to USD between 2008Q2 and 2008Q4	140	12.43	11.68	-8.0	63.5	IMF
Growth official reserves (in USD) between 2008Q2 and 2008Q4	142	-4.65	18.27	-48.1	94.9	IMF
Gov.debt in 2007 (% of GDP)	145	49.22	50.17	1.3	494.9	IMF, WEO Apr. 2013
Gov.deficit in 2007 (% GDP)	151	-0.48	6.91	-57.1	15.7	IMF, WEO Apr. 2013
Lending rate in winter 2008/09	116	13.46	7.95	1.0	52.6	IMF
Central bank independence, legal measure	88	0.62	0.20	0.2	0.9	Crowe and Meade (2008)
Central bank governor irregular turnover rate	124	0.12	0.10	0.0	0.6	KOF
Change in the lending rate between Aug. and Dec. 2008	116	0.46	2.33	-8.1	8.2	IMF
Growth rate of M1 between between Aug. and Dec. 2008	78	5.14	10.25	-18.4	31.7	Datastream, central banks
KOF Economic Globalisation in 2007	131	63.82	16.95	23.9	96.4	KOF
KOF Political Globalisation in 2007	150	69.45	19.64	23.4	98.0	KOF
G20 dummy	151	0.12	0.33	0.0	1.0	G20
Dummy for EU membership	151	0.18	0.38	0.0	1.0	EU
Dummy for EMU/euro area membership	151	0.10	0.30	0.0	1.0	ECB
Under an IMF program	151	0.24	0.43	0.0	1.0	ECB

		correlation \ observations																		
	Variable description	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(1)	Political constraint dummy		151	148	143	140	142	145	151	116	88	124	116	78	131	150	151	151	151	151
(2)	Gov.exp. in 2007	0.10		148	143	140	142	145	151	116	88	124	116	78	131	150	151	151	151	151
(3)	Change in 2009-growth forecast in Apr. 2009 r.t. Apr. 2008	0.04	-0.13		140	138	139	142	148	114	86	121	114	77	129	147	148	148	148	148
(4)	Change of exports in winter 2008/09 (%2007-GDP)	-0.10	-0.01	-0.27		134	134	138	143	111	86	119	111	77	127	143	143	143	143	143
(5)	%-change local currency to USD between 2008Q2 and 2008Q4	0.24	0.24	-0.17	0.02		138	135	140	109	85	122	109	76	125	140	140	140	140	140
(6)	Growth official reserves (in USD) between 2008Q2 and 2008Q4	-0.06	0.00	0.05	-0.11	-0.23		136	142	110	87	122	110	78	125	141	142	142	142	142
(7)	Gov.debt in 2007 (% of GDP)	0.01	0.04	0.25	-0.45	-0.18	0.12		145	110	87	119	110	76	127	144	145	145	145	145
(8)	Gov.deficit in 2007 (% GDP)	-0.12	0.17	-0.07	0.34	-0.15	-0.14	0.21		116	88	124	116	78	131	150	151	151	151	151
(9)	Lending rate in winter 2008/09	0.08	-0.11	-0.01	0.19	-0.01	0.13	-0.05	0.11		66	100	116	59	101	116	116	116	116	116
(10)	Central bank independence, legal measure	0.28	0.22	-0.19	0.00	0.10	0.16	-0.17	0.03	0.16		86	66	68	86	88	88	88	88	88
(11)	Central bank governor irregular turnover rate	0.16	-0.15	-0.03	0.20	-0.01	0.02	-0.11	0.03	0.35	0.26		100	75	115	124	124	124	124	124
(12)	Change in the lending rate between Aug. and Dec. 2008	0.09	-0.06	0.00	0.03	0.20	-0.17	-0.12	-0.02	0.28	0.20	0.31		59	101	116	116	116	116	116
(13)	Growth rate of M1 between between Aug. and Dec. 2008	-0.07	-0.07	0.23	0.06	-0.03	0.56	0.21	0.20	0.28	-0.04	0.23	-0.11		74	77	78	78	78	78
(14)	KOF Economic Globalisation in 2007	0.24	0.48	-0.31	-0.37	0.31	-0.09	-0.11	-0.26	-0.23	0.27	-0.10	0.02	-0.35		131	131	131	131	131
(15)	KOF Political Globalisation in 2007	0.10	0.20	-0.21	0.12	0.38	-0.20	-0.10	0.14	-0.03	0.17	0.09	0.14	-0.19	0.27		150	150	150	150
(16)	G20 dummy	-0.03	0.12	-0.10	0.13	0.21	-0.05	0.05	0.06	-0.04	-0.10	0.01	0.04	0.05	0.00	0.38		151	151	151
(17)	Dummy for EU membership	0.25	0.54	-0.26	-0.13	0.32	-0.19	-0.05	0.04	-0.22	0.45	-0.09	0.03	-0.45	0.62	0.44	0.04		151	151
(18)	Dummy for EMU/euro area membership	0.13	0.44	-0.15	-0.05	0.17	-0.16	0.05	0.03	-0.19	0.40	-0.05	-0.10	-0.24	0.45	0.34	0.08	0.71		151
(19)	Under an IMF program	0.11	-0.14	0.07	0.00	-0.05	0.05	0.12	0.02	0.24	0.11	0.00	0.03	0.12	-0.31	-0.10	-0.21	-0.18	-0.19	

3: Descriptive statistics and correlation matrix for additional political-institutional variables

	Descriptive statistics					
	Obs.	Avg.	St.D.	Min.	Max.	Source
Political constraint dummy	100	0.73	0.45	0.00	1.00	DPI2012
Plurality system	100	0.61	0.49	0.00	1.00	DPI2012
Parliamentary system	100	0.50	0.50	0.00	1.00	DPI2012
Left-wing executive	100	0.31	0.44	0.00	1.00	DPI2012
Government is a minority government	100	0.22	0.40	0.00	1.00	DPI2012
Fraction of seats held by the government	99	0.57	0.16	0.09	1.00	DPI2012
Government is a coalition government	100	0.56	0.48	0.00	1.00	DPI2012
Probability government members are not of same party	99	0.27	0.28	0.00	0.87	DPI2012
Probability opposition members are not of same party	97	0.44	0.28	0.00	1.00	DPI2012
Executive election between Oct. 2008 and Jun. 2009	100	0.10	0.30	0.00	1.00	DPI2012
Legislative election between Oct.2008 and Jun. 2009	100	0.23	0.42	0.00	1.00	DPI2012

		correlation \ observations										
	Variable description	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)	Political constraint dummy		100	100	100	100	99	100	99	97	100	100
(2)	Plurality system	-0.16		100	100	100	99	100	99	97	100	100
(3)	Parliamentary system	-0.11	0.02		100	100	99	100	99	97	100	100
(4)	Left-wing executive	-0.01	-0.10	-0.03		100	99	100	99	97	100	100
(5)	Government is a minority government	0.25	0.02	-0.23	0.10		99	100	99	97	100	100
(6)	Fraction of seats held by the government	-0.19	0.05	0.04	-0.17	-0.68		99	99	97	99	99
(7)	Government is a coalition government	0.40	-0.16	0.19	-0.16	-0.20	0.12		99	97	100	100
(8)	Probability government members are not of same party	0.49	-0.22	0.21	-0.10	-0.17	0.14	0.82		97	99	99
(9)	Probability opposition members are not of same party	0.36	-0.25	-0.05	0.09	0.18	-0.16	0.29	0.34		97	97
(10)	Executive election between Oct. 2008 and Jun. 2009	0.05	-0.01	-0.27	-0.04	0.15	-0.13	-0.04	-0.08	0.00		100
(11)	Legislative election between Oct.2008 and Jun. 2009	-0.04	-0.08	-0.02	-0.03	0.15	-0.19	-0.02	-0.03	0.16	0.29	

Note: the sample is restricted to democracies.

4: Regression results for the baseline model

VARIABLES	(1) Promised discretionary measures 2008-2012	(2) Promised stimulus 2008-2009	(3) Realised change prim. deficit 2009	(4) Realised change prim. deficit 2009 - democracies	(5) Realised change deficit 2009	(6) Realised change deficit 2009 - democracies
Political constraint	-1.195	-2.404**	-2.800***	-2.445**	-1.974***	-1.895*
	(-1.525)	(-2.038)	(-4.139)	(-2.326)	(-3.327)	(-1.986)
Gov.expenditures in 2007 (%GDP)	-0.106***	0.0584	0.0608**	0.0598**	0.0663***	0.0615**
	(-3.310)	(1.374)	(2.310)	(2.346)	(2.640)	(2.351)
Change of exports in winter	0.0490	0.0801	-0.153	-0.194*	-0.106	-0.132
2008/09 (%2007-GDP)	(0.641)	(0.423)	(-1.510)	(-1.774)	(-1.121)	(-1.295)
Gov.debt in 2007 (%GDP)	0.00774	-0.00920	-0.0139*	-0.0193*	-0.00987	-0.0157*
	(0.743)	(-0.589)	(-1.667)	(-1.978)	(-1.219)	(-1.737)
Gov.deficit in 2007 (%GDP)	-0.141	-0.292***	-0.433***	-0.193**	-0.484***	-0.215*
	(-1.327)	(-3.524)	(-3.040)	(-2.007)	(-3.631)	(-1.819)
Under an IMF program	-6.223**	-1.868*	-1.072	-1.609**	-0.562	-0.541
	(-2.694)	(-1.982)	(-1.146)	(-2.018)	(-0.856)	(-0.826)
Constant	7.199***	5.257***	4.035***	3.840**	3.154***	3.196**
	(4.842)	(2.839)	(3.411)	(2.409)	(3.303)	(2.166)
Observations	43	40	102	75	138	94
Adjusted R-squared	0.365	0.192	0.360	0.275	0.383	0.179
Mean dependent variable	2.444	4.973	4.073	3.491	3.903	3.336

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

5: Regression results for extended versions of the baseline model using the realized change in primary deficits as dependent variable

VARIABLES	(1) Change growth forecast for 09	(2) % change exchange rate	(3) Growth official reserves	(4) Lending rate in winter 08/09	(5) CBI, legal measure	(6) irr. CB gov. turnover rate	(7) Change in lending rate	(8) Growth rate of M1	(9) KOF Economic Globalisation	(10) KOF Political Globalisation	(11) G20 dummy	(12) EU dummy	(13) Euro area dummy
Political constraint	-2.834***	-2.407***	-2.498***	-2.616***	-2.910***	-2.316***	-2.572***	-2.098***	-2.712***	-2.737***	-2.798***	-2.613***	-2.855***
	(-4.206)	(-3.576)	(-3.365)	(-3.216)	(-3.259)	(-3.308)	(-3.150)	(-2.792)	(-3.397)	(-4.128)	(-4.086)	(-3.762)	(-4.163)
Gov.expenditures in 2007 (%GDP)	0.0615**	0.0752***	0.0626**	0.0627*	0.0205	0.0552**	0.0689*	0.0498*	0.0567	0.0782**	0.0604**	0.0812*	0.0505
	(2.112)	(2.821)	(2.576)	(1.703)	(0.742)	(2.097)	(1.887)	(1.682)	(1.325)	(2.343)	(2.246)	(1.916)	(1.559)
Change of exports in winter 2008/09 (%2007-GDP)	-0.141	-0.109	-0.112	-0.181*	-0.0445	-0.0727	-0.210*	0.0404	-0.212	-0.157	-0.154	-0.173	-0.154
	(-1.435)	(-1.198)	(-1.251)	(-1.759)	(-0.388)	(-0.794)	(-1.983)	(0.422)	(-1.402)	(-1.506)	(-1.477)	(-1.515)	(-1.514)
Gov.debt in 2007 (%GDP)	-0.0173*	-0.0143*	-0.0136*	-0.0166*	-0.00734	-0.00960	-0.0184*	0.00949	-0.00845	-0.0152*	-0.0140	-0.0154*	-0.0143*
	(-1.969)	(-1.809)	(-1.717)	(-1.784)	(-0.521)	(-0.938)	(-1.983)	(0.923)	(-0.619)	(-1.703)	(-1.637)	(-1.683)	(-1.728)
Gov.deficit in 2007 (%GDP)	-0.417***	-0.392***	-0.378***	-0.321**	-0.505***	-0.392***	-0.321**	-0.515***	-0.428***	-0.429***	-0.432***	-0.426***	-0.430***
	(-2.903)	(-2.858)	(-2.709)	(-2.261)	(-4.036)	(-5.240)	(-2.155)	(-3.712)	(-2.643)	(-3.097)	(-3.010)	(-2.951)	(-3.010)
Under an IMF program	-1.265	-1.569**	-1.748**	-0.788	-1.530*	-1.021	-1.035	-0.905	-1.216	-1.345	-1.061	-1.205	-0.972
	(-1.281)	(-1.993)	(-2.424)	(-0.594)	(-1.734)	(-1.303)	(-0.875)	(-0.978)	(-1.237)	(-1.507)	(-1.086)	(-1.316)	(-1.036)
Constant	4.558***	4.136***	3.942***	4.594***	4.009**	4.182***	3.691**	3.359**	4.658**	6.056***	4.034***	3.560**	4.292***
	(3.837)	(3.593)	(3.437)	(2.828)	(2.530)	(3.080)	(2.580)	(2.356)	(2.433)	(3.724)	(3.389)	(2.466)	(3.334)
Additional variable (see column header)	0.464	-0.0495	0.0180	-0.0617	2.040	-2.468	-0.128	-0.0287	-0.0150	-0.0335	0.0613	-0.964	0.710
	(1.334)	(-1.509)	(0.690)	(-0.971)	(1.421)	(-0.789)	(-0.833)	(-0.612)	(-0.398)	(-1.442)	(0.101)	(-0.882)	(0.953)
Observations	101	99	97	75	69	88	75	66	94	102	102	102	102
Adjusted R-squared	0.366	0.392	0.383	0.236	0.452	0.319	0.230	0.478	0.343	0.374	0.353	0.359	0.356
Mean dependent variable	4.020	3.791	3.725	4.028	3.945	3.865	4.028	3.908	4.111	4.073	4.073	4.073	4.073

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

6: Results when including additional political variables, one at a time, while using the realized change in primary deficits as dependent variable

VARIABLES	(1) Plurality system	(2) Parliamentary system	(3) Left-wing executive	(4) Minority government	(5) Fraction seats held by gov.	(6) Coalition government	(7) P(gov.member not same party)	(8) P(opp.member not same party)	(9) Executive election	(10) Executive election	(11) Legislative election	(12) Legislative election
Political constraint	-2.435**	-2.519**	-2.445**	-2.539**	-2.577**	-2.520**	-2.555**	-2.477**	-2.433**	-2.244**	-2.465**	-2.299*
	(-2.352)	(-2.432)	(-2.303)	(-2.357)	(-2.547)	(-2.059)	(-2.360)	(-2.247)	(-2.287)	(-2.022)	(-2.355)	(-1.992)
Gov.expenditures in 2007 (%GDP)	0.0607**	0.0799***	0.0597**	0.0631**	0.0543**	0.0583**	0.0559**	0.0537**	0.0593**	0.0561**	0.0489*	0.0483*
	(2.235)	(2.737)	(2.241)	(2.455)	(2.144)	(2.060)	(2.189)	(2.152)	(2.321)	(2.207)	(1.926)	(1.890)
Change of exports in winter 2008/09 (%2007-GDP)	-0.194*	-0.203*	-0.194*	-0.195*	-0.206*	-0.191*	-0.203*	-0.186	-0.193*	-0.194*	-0.228*	-0.232**
	(-1.760)	(-1.876)	(-1.834)	(-1.769)	(-1.854)	(-1.800)	(-1.834)	(-1.641)	(-1.743)	(-1.730)	(-1.994)	(-2.040)
Gov.debt in 2007 (%GDP)	-0.0193*	-0.0200**	-0.0193*	-0.0201**	-0.0190*	-0.0193*	-0.0196*	-0.0181*	-0.0192*	-0.0191*	-0.0224**	-0.0232**
	(-1.964)	(-2.044)	(-1.993)	(-2.014)	(-1.992)	(-1.987)	(-1.993)	(-1.793)	(-1.941)	(-1.897)	(-2.215)	(-2.319)
Gov.deficit in 2007 (%GDP)	-0.194*	-0.197**	-0.193**	-0.196**	-0.214**	-0.190*	-0.210**	-0.217**	-0.192*	-0.185*	-0.173*	-0.177*
	(-1.940)	(-2.003)	(-2.005)	(-2.093)	(-2.048)	(-1.967)	(-2.078)	(-2.131)	(-1.969)	(-1.900)	(-1.872)	(-1.816)
Under an IMF program	-1.608*	-1.802**	-1.607**	-1.720**	-1.493*	-1.586*	-1.542*	-1.496*	-1.628*	-1.675**	-1.517*	-1.474*
	(-1.991)	(-2.123)	(-2.006)	(-2.066)	(-1.808)	(-1.916)	(-1.832)	(-1.862)	(-1.987)	(-2.046)	(-1.992)	(-1.852)
Constant	3.763**	3.838**	3.854**	3.766**	3.226*	3.840**	4.007**	3.794**	3.859**	3.833**	3.960**	3.873**
	(2.246)	(2.472)	(2.179)	(2.359)	(1.689)	(2.410)	(2.525)	(2.242)	(2.405)	(2.354)	(2.490)	(2.367)
Additional political variable (see column header)	0.0630	-0.988	-0.0252	0.653	1.229	0.178	-0.257	0.191	-0.202	2.381***	1.348*	1.991
	(0.0931)	(-1.154)	(-0.0383)	(0.831)	(0.503)	(0.188)	(-0.205)	(0.139)	(-0.208)	(3.120)	(1.776)	(1.536)
Add. political variable * political constraint dummy										-3.512***		-0.921
										(-3.233)		(-0.578)
Observations	75	75	75	75	74	75	74	73	75	75	75	75
Adjusted R-squared	0.265	0.284	0.265	0.269	0.294	0.265	0.292	0.278	0.265	0.266	0.292	0.284
Mean dependent variable	3.491	3.491	3.491	3.491	3.420	3.491	3.420	3.340	3.491	3.491	3.491	3.491

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