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Breaking the Impediments to Budgetary Reforms: Evidence from Europe

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Abstract

Under what conditions are budget institutions likely to be strengthened? We find that fiscal deficits do not help in focusing policymakers on undertaking reforms. To the contrary, the larger the deficit, the lower is the likelihood of reforms. Large deficits apparently imply strong claims on the budget and, hence, generate unwillingness to impose self-discipline. As such, countries will tend to move either to small fiscal deficits and good institutions or large deficits and weak institutions. Economic shocks (if they are large enough) can help build a constituency for improving budget institutions. However, if forgiving markets accommodate economic shocks, even such pressure may be insufficient. Forward-looking and credible leadership appears to be an important ingredient of the solution.

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I. INTRODUCTION

A substantial literature shows that a strengthened institutional framework for the budget process can help improve fiscal discipline and performance. Contributions include Alt and Lowry (1994), Poterba (1994), von Hagen and Harden (1995), Hallerberg and von Hagen (1999), and Alesina and others (1999). These authors find that checks and balances in the formulation and implementation of the budget are not a "veil" but have real effects on budget outcomes. However, because these findings relied on cross-sectional evidence, they were open to the criticism that omitted determinants of fiscal outcomes may be correlated with budget institutions (rules and procedures of the budget process). Revisiting recently this subject, we have, in a series of demanding tests, examined the variation within countries over time and considered the influence of a wide variety of variables representing alternative hypotheses regarding the mechanisms contributing to budget deficits (Fabrizio and Mody, 2006). We continue to find that strong budget institutions are associated with greater fiscal discipline even when the politics is unfavorable to such discipline.

If strong budget institutions are so potent in determining fiscal outcomes, then the factors that lead to their strengthening are of obvious interest. Surprisingly, this enquiry has received little empirical attention. The principal contribution of this paper is that it conducts, to our knowledge, the first statistical examination of the determinants of budget reform, using time-series measures of the quality of budget institutions for 23 European economies during 1991-2004. We use this setting also to conduct a broader investigation of the political economy of reform.

A ready body of theory guides the empirical work reported in this paper. Three themes in the literature are relevant. First, reforms occur infrequently. For a variety of reasons, the political process tends to maintain the status quo in policies. The central source of this inertia is conflict among interest groups, a conflict that results in inaction. In the specific context of politics and budgets, the problem arises in allocating rights to the so-called common pool (Shepsle and Weingast, 1981; and Weingast, Shepsle, and Johnson, 1981). A strong incentive exists for public spending in favor of selectinterest groups that bear only a fraction of the taxes needed to finance the expenditures that benefit them. When the common pool-problem is severe, and is, hence, the source of budget indiscipline, Alesina and Drazen (1991) conclude that no group will be willing to forgo their benefits or bear the necessary tax burden, and fiscal consolidation will be delayed. In their words, a "war of attrition" will arise. While Alesina and Drazen (1991) emphasize the inertia on account of a distributional conflict, implicit in their analysis—and explicit in Fernandez and Rodrik (1991)—is the possibility of an impasse even when the size of the pie is known to grow once the reforms have been undertaken. Fernandez and Rodrik (1991) argue that the uncertainty surrounding the distribution of the gains—and the possibility that some may lose—hinders formation of the necessary consensus.

When public finances are healthy, the cost of "conceding" is relatively small. In other words, even if a group were to find its demands on the common pool to be restrained by stronger checks in the budget system, there remains enough scope in the budget to accommodate the group's reasonable and legitimate demands. All groups will, therefore, acquiesce in an earlier agreement to budgetary reform. This will be the case all the more so when the costs of conceding are equitably shared. Where a particular group is likely to bear a heavier burden, there may be a greater tendency to "hold out." As Alesina and Drazen note, reforms will be accelerated by "a conservative government with a solid majority" (p. 1174) and delayed by "weak and divided coalition governments" (p. 1173). Thus, healthier finances can be expected to aid budgetary reform, but this advantage may be compromised in a fractionalized government, implying interplay of the state of public finances and political divisions in the decision-making process.

Where the internal dynamics continue to result in a deadlock, the status quo may nevertheless become untenable following an economic shock or a "crisis." For some groups, the costs of continuing with the existing system may become too large. This forms the second strand in the literature. Indeed, as Rodrik (1996, p. 26) notes: "...if there is one single theme that runs through the length of the political economy literature it is the idea that crisis is the instigator of reform." In a crisis, the old distributional certainties dissolve. The war of attrition, for example, ceases when at least one interest group finds it superior to pay the price necessary for stabilization rather than continue to be hurt by the unresolved circumstances.

Rodrik himself is skeptical of the analytic content of the crisis hypothesis. It is not surprising, he says, that things must get bad before the perception sinks in that they must be changed. Drazen and Easterly (2001) argue that there remains an interesting empirical question of what is the threshold of pain at which reform becomes imperative. Alesina, Ardanga, and Trebbi (2006) also pursue the empirical relevance of crises in escaping from a war of attrition and instigating reform. They respond, moreover, to Rodrik's challenge to explain why the same crisis in different countries may elicit different reactions. Strong governments—those relatively unconstrained by internal or external opposition—they conclude, are more likely to undertake the necessary measures in the midst of a crisis.

This brings us to the third major theme on the political economy of reform: spurred by crises or otherwise, are governments in a position to take decisive actions? This depends, first, on the ability of governments to take the necessary measures, as Alesina, Ardanga, and Trebbi (2006) point out. This ability is, in turn, a function of veto points in the government structure. While the notion that strong governments can ram through necessary reforms is well-entrenched, it raises troubling issues. At one extreme, it implies that authoritarian systems are best suited to forcing the pace of reform. Even in a democratic setting, the implication is that governments must go against legitimate opposition, which is assumed to be misinformed or opportunistically obstructive. Accordingly, a second, avenue is for democratic governments to establish their credibility and, hence, persuade the relevant constituents on the value of

reform. In this regard, Cukierman and Tommasi (1998) offer the intriguing hypothesis that credibility is sometimes achieved by taking policy positions that go against the known ideological positions of policymakers. This they refer to as the "Nixon going to China" phenomenon.

In our empirical analysis, the dependent variable is the *change* in budget institutional quality two years ahead. Because the changes take discrete values, we categorize them into four groups: a large improvement, an improvement, no change, and a setback. Using ordered logit regressions, we have four main findings:

- The gap between the highest possible institutional quality and the country's state of fiscal institutions determines the scope of the subsequent improvements in the fiscal institutions' quality. Not surprisingly, the larger is this gap at the beginning of the period, the greater is the scope (and possibly the incentive) for further improvements in institutional quality.

- We find strong evidence for the "war of attrition." The reform of budget institutions becomes less likely just when it is most needed, i.e., when fiscal outcomes are poor. In other words, when the common-pool problem is severe, budget deficits will be large and the appetite to constrain them will be small. The implication is that countries will, all else equal, tend to move to two outcomes: small fiscal deficits and good institutions or large deficits and weak institutions.

- Hence, the crucial question is, How can a country exit from a vicious cycle of bad fiscal performance and delays in needed budget institutions reforms? The findings do suggest that domestic and external economic shocks (if they are large enough) can help focus the minds of those competing for scarce budgetary resources and, hence, help build a constituency for improving budget institutions. However, to the extent that markets are forgiving and accommodate these economic shocks, even this form of external pressure may be insufficient. Forward-looking and strongly unified leadership appears to be a necessary ingredient of the solution.

- Finally, government ideology tends to matter when the economic situation is difficult. In that setting, "leftist" coalitions tend to be more proactive in reforming the budget institutions than "rightist" coalitions. In line with Cukierman and Tommasi (1998), the "unlikely" party carries greater credibility in breaking the logjam, particularly if its constituents are hurt in the short run.

Though the interest in the political economy of reform is long-standing, the empirical literature remains dominated by case studies. Krueger (1993) and Williamson (1994) bring together several country case studies on the determinants of macroeconomic stabilization. In contrast, statistical testing of the rich set of available hypotheses has been more limited (see Drazen, 2000). Even within the statistically oriented literature, papers relying on direct

measures of reform are few. Thus, Drazen and Easterly (2001) test the hypothesis that crises contribute to economic reforms; however, unable to measure reform directly, they acknowledge (p. 149) that their approach requires the same variable to measure "crisis (when it indicates extremely poor performance) and reform (when there is a significant improvement)." This is also true for Alesina, Ardanga, and Trebbi (2006), who examine the determinants of deficit and inflation reduction in response to a crisis, where the crisis itself is measured by extreme outcomes of deficits and inflation. Our paper is related to Alesina, Ardanga, and Trebbi (2006) in the focus on the political economy of reform. We differ from them in analyzing the reform of the underlying budget processes rather than the fiscal outcome itself. Moreover, we define a crisis as an extreme macroeconomic outcome rather than as fiscal distress. Methodologically, we draw on Abiad and Mody (2005), who study the determinants of financial sector liberalization.

The rest of this paper is organized as follows. Section II describes the construction of the index of budget institutions' quality and the basic empirical approach. Section II provides the main evidence for a reform process that is consistent with the war of attrition. Section IV assesses how economic shocks—including a crisis—can shake the status quo that arises from the war of attrition. Section V examines how economic shocks interact with political ideology and whether this interaction provides evidence of unexpected political actions in times of economic stress. A final section draws lessons for the political economy of reform.

II. Data and Empirical Approach

Effective budget institutions create mechanisms for fiscal self-discipline. From the initiation of budget design to its implementation, several decisions are necessary. At each point, various economic and political interests are represented. As such, budget priorities can be influenced, and, indeed, the budget can be hijacked as it makes its way through the complex approval and implementation process. Discipline is, therefore, crucial for ensuring the integrity of the process. This discipline may be generated in two ways, which, in practice, are typically combined (Hallerberg and von Hagen 1999). The "delegation," or hierarchical decision making, approach creates clear authority and accountability by assigning budgetary powers to a strong central player (and is regarded as more suitable for single-party governments or governments where coalition parties are closely aligned). The contrasting "contract" approach allows for a cooperative process, buttressed by transparent rules, to balances tendencies to indiscipline (more suitable for multi-party coalition governments). There is, however, a minimum level of required centralization that fiscal institutions provide in all countries (Hallerberg and others, 2008). Our index is built from these core institutions that all countries need and draws on the desirable elements of both approaches.

The index applies the principles of effective budget institutions to three stages of the budgetary process: preparation, authorization, and implementation, as described in Table A1 of Appendix I. For the preparation stage, the following features are considered as contributing to discipline: (1) fiscal rules that limit deficit spending; (2) budget parameters

and norms; and (3) the relative dominance of the finance/prime minister in the budget negotiation process. The authorization phase requires (1) limiting on the scope of amendments; (2) setting an appropriate sequence of decision making in the legislative budget process; and (3) balancing the power of the executive and parliament. In the implementation stage, firmness in the execution of the budget is needed, together with the procedures governing adjustments to unforeseen shortfalls or unexpected overspending.

We first construct a quantitative index of the quality of budget institutions over the period 1994-2004 for 23 European countries.[2] We follow closely our own recent paper (Fabrizio and Mody, 2006), which, in turn, drew on Gleich (2003) and Yläoutinen (2004). Expanding the data to a broader set of European countries was made possible by the reporting in Hallerberg, Strauch, and von Hagen (2007). To confirm and update the status of budgetary practices, we have consulted annual fiscal budget laws and the Fiscal Transparency Module of the International Monetary Fund's Reports on the Observance of Standards and Codes (ROSC). Where ambiguities persisted, we were in direct contact with the country authorities.

As constructed, the index can vary from zero to four. Table A1 in Appendix A reports the weights used to aggregate the various characteristics. Table A2 reports the changes over time to the individual features in the different countries. On this basis, an index representing the overall quality of budget institutions for each country is constructed for each year in our sample. Table A3 reports the index for two years, 1994 and either 2003 or 2004. As is clear, budget institutions have tended to improve over time in almost all countries. Figure 1 aggregates the indices for two groups of countries. The more advanced economies have gradually reached a plateau of improvement along the dimensions we examine. Countries in emerging Europe have made progress to varying degrees, with some suffering occasional setbacks. Figure 2 confirms that richer economies tend to have better institutions. Figure 3 shows that, because there is more scope for improvement when institutions are relatively backward, countries at the lower end of the spectrum tend to make more progress.

The dependent variable is the *change* in budget institutions two years ahead. The two-year gap is an empirical compromise. Often, the exact timing of a reform is not known with precision and, hence, fixing it in a particular year is difficult and potentially incorrect. Considering a longer spell would, however, have further shortened an already short time series. The change in institutional quality is categorized into four groups. Most (78 of the 102) observations are associated with no change in institutional quality. Twelve observations are associated with strengthening of up to 0.7 point (on the scale from zero to four),

[2] Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxemburg, the Netherlands, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom. The index is also available for France and Ireland; however, these two countries are not included in the study as data for some of the political variables used in the analysis are not available for them.

designated "an improvement," and a strengthening larger than 0.7 (associated with six observations) is referred to as "a large improvement." Finally, for six observations, there is an institutional setback. We check our results for robustness to these categorizations (both by combining the two improvement categories and by further dividing them).

The natural approach to analyzing these changes is through an ordered regression technique. Notice, it may appear in principle that we have over 200 observations, for 23 countries and 10 years. However, that is not strictly true. Because we project reforms two years from the date of assessment, taking into account intervening years would lead to counting the same reform more than once. While there are statistical approaches to dealing with overlapping samples, we have chosen to put our analysis to a stringent test by dropping the intervening years. Taking account of missing values, we are left with about 100 observations for the analysis. Also, throughout, we report robust standard errors. Though there is no evidence that the residuals "misbehave," there is the risk that the standard errors may not be consistent. However, in all cases, the results are manifestly stronger with the conventional standard errors.

III. THE SETTING: WAR OF ATTRITION

Table 1 presents the basic results to illustrate the presumption of a "war of attrition." A few preliminaries are in order, however. First, we include throughout the gap between the highest possible institutional quality (taking the value four) and the country's state of fiscal institutions. This "institutional gap" variable serves several purposes. First, the gap determines the scope of the subsequent improvements in quality of the fiscal institutions. Not surprisingly, the larger the gap in the quality of fiscal institutions at the beginning of the period, the greater the scope (and possibly the incentive) for further improvements in their quality. This is just a statistical validation of Figure 3. Second, as Figure 2 showed, per capita income is correlated with institutional quality. When we add per capita income as an additional explanatory variable, it is insignificant, while the institutional gap variable remains robustly significant. Finally, the strongly statistical positive sign on the institutional gap variable also captures the secular tendency for improvement in budget institutions.

Year dummy variables that are included throughout pick up additional common influences in any particular year across all countries. Also, country dummy variables are also included throughout to minimize the risk of omitted country variables. These dummies allow for the possibility that influences unobserved by us, the econometricians, contribute to the likelihood of reform. We find that, in some cases, these fixed effects are of considerable importance. In other words, historical country features create inertia in institutions. While we have not attempted to identify the sources of this inertia, the implications are clear: overcoming it will require the country's leadership to make a special effort to undertake reforms. Thus, the strongly negative coefficient on the Hungary dummy, for example, puts the onus on that country's leadership to break through the historical constraints against reform.

We use two variables to focus on the war of attrition. First, we use the lagged balance as defining the bargaining context within the existing resource constraints (for definitions and sources of all variables, see Appendix II). The use of the lag reduces the risk of reverse causality from budget institutions to budgetary outcomes. The result is that a larger primary budget surplus increases the probability of budgetary reforms (a deficit delays reforms). Thus, a worse fiscal balance at time t-1 is associated with a smaller likelihood of improvements in fiscal institutions' quality between t and (t+2). This finding is consistent with a more intense war of attrition among policymakers when the budget situation is adverse and, by implication, the claims on the budget are large. Thus, a country experiencing large fiscal deficits will find it difficult to embark on reforms of fiscal institutions before the deficit itself is brought under greater control.

The implication also is that countries may move in "virtuous" and "vicious" circles. Stronger budget balances help strengthen budget institutions, which, in turn feeds back to further improving budget balances. In contrast, deficits are likely to persist as countries are unable to impose rules and procedures that impose self-discipline. This finding may, at first sight, seem to contrast with the conventional finding that a large deficit is associated with an adjustment. Thus, Alesina, Ardanga, and Trebbi (2006), among others, report that a deficit "crisis" (defined as crisis outcomes in the top quartile of their sample) is associated with a subsequent decline in the deficit. The implication of our finding is that the forces of the war of attrition tend to move countries to the corners: small deficits (surpluses)/strong institutions and large deficits/weak institutions. Clearly, a country in a large deficit/weak institutions outcome, reaches a crisis point, which forces a deficit reduction: it is only when the deficit is under control that the process of strengthening institutions can start.[3]

Our second variable, a more fragmented government coalition, is the conventional channel through which attrition is thought to act. The negative sign on this variable implies that more fragmentation is, indeed, less supportive of reforms, although this direct effect is not statistically significant. An indirect effect, however, is important. This is seen in the negative sign on the interaction between primary balance and fragmentation. The negative sign can be read two ways. First, fragmentation exercises a stronger negative influence when a larger primary balance provides the resource latitude for undertaking reforms. In other words, fragmentation is more powerful when the likelihood of reforms exists. When that likelihood is low, then fragmentation matters less, if at all. Second, as fragmentation increases, the positive influence of a larger primary balance is mitigated. These interpretations are pursued in Figure 4, following Franzese and Kam (2007).

[3] Tracing this dynamic fully requires longer time series on institutions. Preliminary efforts within the context of our data did not produce helpful results.

As Franzese and Kam (2007) have emphasized, when interpreting interaction terms, it is important to recognize that the effective coefficient on one of the two variables varies with the changes in the other variable—but so also does the standard error of that effective coefficient. Using the STATA code that they have generously posted, we generated Figure 4, which plots the effective coefficient and the upper and lower bands giving the 95 percent confidence interval within which the coefficient lies. The first panel shows that the effective coefficient on fractionalization has a point estimate close to zero in the lower ranges of the primary balance. In this range, the upper confidence band lies above the zero line and the lower confidence band lies below this line, implying that the effective coefficient is statistically not different from zero when the fiscal balance is in deficit. When the fiscal balance is about 3 percent of GDP, both the upper and lower bands are below the zero line: fractionalization, at that point begins to exercise a statistically significant negative effective on budgetary reforms. We will see below in a more fully specified model that fractionalization may exert its negative influence even earlier, before the primary balance reaches 2 percent of GDP.

The second panel of Figure 4 shows that that the primary balance always has a positive and statistically significant value; thus, a larger primary balance aids reforms. However, as fractionalization increases, a given primary balance has a smaller stimulative effect. In other words, while a comfortable primary balance reduces the fight over scarce resources and, hence, creates the conditions for forward-looking discipline, a more fractionalized government interferes with achieving this discipline. This indirect effect of fractionalization, our data suggests, can be potent.

Since the political process is complex, the possibility of omitted variables is always a serious one. In Table 2, we discuss a number of extensions of the basic model in Table 1. In particular, we examine if other variables commonly considered in the literature have a bearing on budgetary reforms. For example, fiscal discipline often weakens in an election year. Also, where the checks and balances through veto points are substantial, the risks of poor decisions are minimized. Finally, ideology is thought to influence reform decisions. Our results suggest that these variables apparently do not have an influence on budgetary reforms. It is possible, however, that there are more subtle influences that these variables exert. We explore one of these—that related to ideology—in Section V. Importantly, the basic findings of this section—a direct influence of a larger primary balance and the erosion of this effect as fractionalization increases— remain intact when these additional variables are included in the regression specification.

IV. Economic Shocks and Crises

Thus, clearly, political influences matter. The question that arises whether economic shocks or a crisis can mitigate the tendency to the status quo arising from a war of attrition to encourage reform—or even, following from our analysis above, what forces are likely to halt

and reverse the possibly unfortunate dynamic of a worsening budget situation and weakening controls. We explore these considerations in this section.

In column 1 of Table 3, we add, as proxies to the so-called misery index, the unemployment rate and log of the inflation rate. The evidence is that a worsening domestic economic situation raises the likelihood of reforms. The unemployment rate is significant at the 10 percent level and the inflation rate is significant at the 1 percent level. The inference is that as domestic "misery" increases, political alliances cannot proceed with business as usual and are called on tighten the grip over public finances. In column 2, we add the current account surplus. The negative sign implies that a larger surplus reduces the likelihood of reform—an increasing deficit raises external vulnerability and with it the pressure to reform. Though, once again, the coefficient is significant only at the 10 percent confidence level, the combined sense of the exploration thus far is that internal and external economic distress does generate the expected tendency toward reforms.

Before proceeding to examine this possibility in somewhat greater depth, two observations are in order. First, the core "war of attrition model" comprising the primary balance and government fractionalization performs well with the introduction of the additional variables; in fact, the point estimate on fractionalization is increased and the statistical significance of the interaction variable is stronger than before. Second, we also evaluated the influence of other plausible variables. We find, for example, that a country under the European Union's watch through the Excessive Deficit Procedure does not do any better on reform proclivity than a country not subject to this discipline. There is some suggestion that countries that have adopted the euro, all else equal, tend to create more checks and balances in their budgetary process; however, this coefficient falls just short of being significant, even at the 10 percent level. Similarly, a country's trade openness appears to favor reform but the statistical significance does not pass the relevant thresholds.

With that, we return to the trio of unemployment, log of inflation, and the current account deficit. It seems reasonable to presume that the effects of these variables are not linear. In other words, an increase in the current account deficit from a low level likely has a smaller effect than an equivalent increase when the deficit is already large. It is beyond some benchmark that a country's perception of itself as in a crisis forces political forces into needed action.

As a first step, we construct two principal components of these three variables. The first principal component has an interesting interpretation. It is highly correlated with the inflation rate and with the current account deficit. We refer to this variable as "overheating" since unsustainable domestic demand is likely to be reflected in a combination of high inflation rates and large current account deficits. Our labeling of the second principal component as "stagflation" is more of a stretch: it has a tight correlation with the unemployment rate and

more modest correlations with inflation and the current account deficit. In the rest of the analysis, we use these two principal components as our economic variables.

In the first column of Table 4, we add the "overheating" variable. It has the expected positive sign but is not statistically significant. This we would expect since, at low levels of inflation and the current account deficit, there would be little pressure to respond. We test for a nonlinear response in two ways. First, in column 2, we allow for the possibility that the response to overheating changes once that variable crosses the 75th percentile of all the observations in our data set. Thus, our "overheating, nonlinearity" variable takes the value zero for all values of overheating below the 75th percentile and then takes the overheating values thereafter. The positive sign with strong statistical significance points to a sharp nonlinearity. In column 3, we add the stagflation variable, which has a positive sign, but one that is not statistically significant. Thus, stagflation does improve the prospect of reform, and efforts to identify nonlinearities lead to findings similar to that for overheating. Once we add the stagflation variable, the sum of the "overheating" and "overheating, nonlinearity" coefficients is positive and statistically significant at the 5 percent level.

A second approach is to create a "crisis" dummy, which takes the value one when the overheating variable is over its 75th percentile and zero otherwise. The coefficient on this variable is positive and significant; this is so with our without the stagflation variable (which is positive and statistically significant in this specification). Thus, the evidence once again is that, when overheating crosses a threshold, it significantly improves the likelihood of reform.

V. CREDIBILITY: DOES IT TAKE NIXON TO GO TO CHINA?

The evidence that reforms become more likely in a crisis raises a further intriguing possibility. In such exceptional conditions, Cukierman and Tommasi (1998) propose that desirable policy reforms could be undertaken by the less likely political party. Just as Richard Nixon, a Republican U.S. president, took the initiative to build ties with communist China, a leftist government may be better positioned to persuade voters that belt-tightening reforms are needed. The premise is that leftist governments are not otherwise disposed to tightening the fiscal belt (see, among others, Fabrizio and Mody, 2006) and are, therefore, when they push reforms in that direction, likely to be taken seriously and not penalized by voters in subsequent elections.

Our framework allows us to test this proposition. In Table 5, we first reestablish, as in Table 2, that the political ideology variable is not significant by itself (column 1). In the second column, we interact overheating with ideology. Now, the overheating variable by itself is positive and significant, implying that more overheating raises the possibility of reform. But the interaction variable is negative and also significant. This says that the response to overheating is smaller the more "right wing" the ruling government. Stated alternatively, a "leftist" government is more likely to respond to overheating. At its median value of the "rightist ideology" index, 11, the effective coefficient on overheating is almost zero and, at

the 75th percentile, 13.5, the response is negative (as if strongly rightist governments find it difficult to respond to overheating).

In column 3, we interact the "rightist ideology" variable with our crisis dummy (which first appeared above in Table 4). We obtain a similar result. The crisis dummy itself is positive and significant, as above. And the interaction between this dummy variable and "rightist ideology" is negative and also highly significant. In this specification, the "rightist ideology" variable is positive and with a higher *t*-value than before. In the absence of a crisis, a rightist government will be more prone to reform. However, in a crisis, there is a reversal: the more leftist a government, the more likely it is to reform. Similarly, the force of response to a crisis depends on government ideology. Using once again the techniques of Franzese and Kam (2007), we show the effective coefficient on the crisis dummy as a function of the ideology variable. The response to a crisis is strongest under leftist governments. This response falls as the ideology moves rightward until it becomes insignificant, just beyond the 75th percentile of the ideology variable.

Figure 5 also repeats the interactions between the primary balance and fractionalization for the fuller model of column 3, Table 5. These basic findings are reinforced. The effective coefficient on the fractionalization variable now becomes negative and statistically significant for a lower value of the primary deficit (just under 2 percent of GDP). The effective coefficient on the primary balance variable is now generally higher than in the simpler model.

Table 6 shows that the actual changes and those predicted by the model match rather well. We tested the results by dropping one country at a time to assess if one country was driving the findings. This was not the case (results can be obtained from the authors). Also, we collapsed the institutional improvements into one category rather than dividing them into "an improvement" and "a large improvement." Going in the other direction, we divided the improvements into three rather than two categories. Once again, our results held up well.

VI. Conclusions

As the process of globalization continues its inevitable march, some policy changes are increasingly being thrust on governments. This is especially the case for financial sector reforms. In Abiad and Mody (2005), we show that regional competition for reforms spurs all countries ahead. A research agenda that examines the relative influence of domestic and international factors on reform efforts still needs to be undertaken. But we have proceeded in this paper on the premise that fiscal policy is deeply influenced by domestic politics. There is evidence, even in the context of this paper, that external vulnerability (reflected in current account deficits) helps the reform process. Nevertheless, the basic setting of the war of attrition is strongly based in domestic politics.

Our findings suggest that a country can enter a fiscally "virtuous" or vicious" cycle. In "favorable fiscal times," when fiscal performance is good, reforms are easier to undertake. The compromises necessary for the reforms apparently bite less. In "bad fiscal times," when reforms have significant distributional implications (e.g., when imposing stronger checks and controls to reduce a large budget deficit by containing expenditures hurts particular constituencies), needed reforms are delayed. These findings are in line with Alesina and Drazen (1991), who argue that, when budgetary resources are limited and there are many claimants, a war of attrition ensues. No political interest group wants to give in, so the reform process stalls.

How, then, does a country shake the status quo and, in particular, emerge from a vicious into a virtuous cycle? The answer is that economic pain helps. When economic conditions deteriorate, intractable opposing political positions are weakened, interest groups are unable to hold onto their claims, and compromises become feasible. We found, in particular, that an "overheating" crisis raises reform probabilities. Such a crisis is a combination of high inflation and large current account deficits, reflecting unsustainable domestic demand. Fiscal probity to withdraw stimulus from the economy—not just on a cyclical but on a structural basis as well—is a key policy requirement in this context. The results suggest that, indeed, such a response is forthcoming.

Our finding on the importance of a crisis as a pressure for reform raised the question of whether the response to a crisis depended on the ruling government's political ideology. We found, in line with Cukierman and Tommasi (1998), that needed credibility in a democratic context generates the conditions for the "unlikely" ideology to lead the response to a crisis. Thus, we find evidence that while in a noncrisis situation, rightist parties may well lead the reform process, in a crisis, leftist parties acquire credibility for reform because such action goes against their mandate. This is a hopeful finding since it points to a mechanism through which democracies can to deal with crisis. Reforms based on a government's credibility are likely to be more inclusive, and, hence, possibly more sustainable than those based on "strong" democratic leaders. Political leadership is necessary in breaking the logjam, especially where long-standing historical forces create inertia in the reform of institutions. However, such leadership can derive from persuasion rather than force.

Appendix I: Quality of Budget Institutions

Following Fabrizio and Mody (2006) and Hallerberg, Strauch, and von Hagen (2007), we constructed a quantitative index of the overall quality of budget institutions for 23 European countries: Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom.

The index is intended to consolidate the objective features of the budget process, such that a larger value implies more checks and balances. Values were assigned to the three phases of the budget process: (1) the preparation stage, when the budget is drafted; (2) the authorization stage, in which the draft budget is approved and formalized; and (3) the implementation phase, when the budget is executed and may be modified or amended.

Data sources include annual fiscal budget laws, Reports on the Observance of Standards and Codes (ROSC) Fiscal Transparency Module, produced by the International Monetary Fund, and direct contact with the countries' authorities.

The tables in this appendix provide: (1) the components of this index (A1); (2) the changes over time (A2); and (3) two snapshots (1994 and 2003 or 2004) of the budgetary quality for the countries in our sample (A3).

Table A1. Construction of the Index: Fiscal Institutions and Their Index Parameters

	Weighting Factors		
	Index	Sub-index	Numerical Coding
Preparation	0.33		
General constraint		0.33	
Spending and debt as share of GDP			4.00
Spending as share of GDP or golden rule or limit on public borrowing			3.00
Balance and debt as share of GDP			2.00
Balance as share of GDP			1.00
None			0.00
Agenda setting		0.33	
MF or PM determines budget parameters to be observed by spending ministers			4.00
MF proposes nudget norms to be voted on by cabinet			3.00
Cabinet decides on budget norms first			2.00
MF or cabinet collects bids subject to the pre-agreed guidelines			1.00
MF or cabinet collects bids from spending ministers			0.00
Structure of negotiations		0.33	
Finance ministry holds bilateral negotiations with each spending ministry			4.00
Finance ministry holds multilateral negotiations.			2.00
All cabinet members are involved in the negotiations at the same time			0.00
Legislation			
Parliamentary amendments of the budget		0.33	
Are not allowed, or required to be offsetting			4.00
Do not required to be offsetting			0.00
Sequence of votes		0.33	
Initial vote on total budget size or aggregates			4.00
Final vote on budget size or aggregates			0.00
Relative power of the executive vis-à-vis the parliament; can cause fall of government?		0.33	
Yes			4.00
No			0.00
Implementation	0.33		
Changes in the budget law during execution		0.25	
Only new budgetary law to be passed under the same regulations as the ordinary budget			4.00
Requires parliament consent			2.00
At total or large discretion of government			0.00
Transfers of expenditures between chapters (i.e. ministries' budgets)		0.25	
Not allowed			4.00
Only possible within departments with MF consent			3.20
Only possible within departments			2.56
Require approval of parliament			1.92
Only if provided for in initial budget or with MF approval			1.28
Limited			0.64
Unlimited			0.00
Carryover of unused funds to next fiscal year		0.25	
Not permitted			4.00
Limited and required authorization by the MF or parliament			2.67
Limited			1.33
Unlimited			0.00
Procedure to react to a deterioration of the budget deficit (due to unforeseen revenue shortfalls or expenditure increase)		0.25	
MF can block expenditures			4.00
MF cannot block expenditures			0.00

Sources: Fabrizio and Mody (2006); and Hallerberg, Stranch, and von Hager (2008).

Table A2. Index of Quality of Budget Institutions

	A. Preparation Stage					B. Authorization Stage					C. Implementation Stage						Overall Quality Index	
	Variable			1994	2003-04	Variable			1994	2003-04	Variable				1994	2003-04	1994	2003-04
	1	2	3	Score	Score	4	5	6	Score	Score	7	8	9	10	Score	Score	Score	Score
Austria	2	4	4	1.98	3.30	0	2	0	0.66	0.66	2	4	2.66	4	2.49	3.17	1.69	2.35
	0[1/]	2[1/]										1.28[1/]						
Belgium	4	2	2	2.64	2.64	4	4	4	2.64	3.96	0	0	0	4	1.00	1.00	2.07	2.51
	0[12/]	1[12/]	0[12/]			0[4/]	0[12/]				4[12/]	2.56[12/]		0[12/]				
Bulgaria	0	3	4	1.32	2.31	0	0	4	1.32	1.32	0	1.28	4	4	3.32	2.32	1.97	1.96
		0[1/]									4[2/]							
Czech Republic	0	3	4	1.32	2.31	0	4	4	2.64	2.64	4	1.28	1.33	0	2.32	1.65	2.07	2.18
		0[1/]											4[2/]					
Denmark	4	4	2	3.63	3.30	0	4	0	1.32	1.32	2	0	0	4	1.48	1.50	2.12	2.02
		3[1/]	4[1/]				0[1/]	4[1/]			4[1/]	1.92[1/]		0[1/]				
Estonia	3	3	4	3.30	3.30	4	0	4	1.32	2.64	4	1.92	2.67	4	3.15	3.15	2.56	3.00
								0[4/]										
Finland	4	2	2	1.65	2.64	0	0	4	1.32	1.32	0	4	4	0	2.00	2.00	1.64	1.97
	1[7/]																	
Germany	3	2	2	2.64	2.31	0	4	4	1.32	2.64	0	0.64	2.66	4	2.49	1.83	2.13	2.24
		1[1/]	4[1/]				0[1/]				2[1/]	1.28[1/]						
Greece	2	4	4	0.33	3.30	4	4	4	1.32	3.96	0	1.28	0	4	2.32	1.32	1.31	2.83
	0[1/]	1[1/]	0[1/]			0[1/]	0[1/]	0[1/]					4[1/]					
Hungary	0	3	4	2.31	2.31	0	0	0	0.00	0.00	0	0.64	1.33	0	0.49	0.49	0.92	0.92
Italy	2	1	4	1.65	2.31	0	4	4	1.32	2.64	0	0	1.33	4	0.00	1.33	0.98	2.07
	2[7/] 4[2/]		2[9/]			4[9/]	0[9/]	0[9/]					0[5/]	0[9/]				
Latvia	3	3	2	2.64	2.64	0	0	4	1.32	1.32	4	1.92	2.67	4	3.15	3.15	2.35	2.35
Lithuania	0	1	4	1.32	1.65	4	0	0	1.32	1.32	4	1.28	1.33	4	3.32	2.65	1.97	1.86
		0[6/]											4[2/]					
Luxemburg	4	4	0	2.31	2.64	4	0	4	2.64	2.64	4	4	4	4	3.00	4.00	2.62	3.06
	3[8/]											0[1/]						
Netherlands	3	2	4	2.64	2.97	0	4	4	2.64	2.64	0	1.92	**1.33**	0	0.33	0.81	1.85	2.12
	1[1/]	3[1/]										0[10/]						
Poland	3	1	4	1.32	2.64	4	0	4	1.32	2.64	4	1.28	2.67	0	1.99	1.99	1.53	2.40
	0[1/]	0[6/]				0[1/]												
Portugal	2	2	2	2.31	1.98	0	0	4	1.32	1.32	0	0	1.33	4	1.67	1.33	1.75	1.53
	1[1/]		4[1/]								4[1/]		2.66[1/]	0[1/]				
Romania	0	3	4	1.65	2.31	4	0	**4**	1.32	2.64	4	**1.28**	**4**	**0**	2.32	2.32	1.75	2.40
		1[4/]				0[4/]												
Slovak Republic	0	1	2	0.99	0.99	0	0	4	1.32	1.32	0	1.28	1.33	0	0.65	0.65	0.98	0.98
Slovenia	0	3	4	2.31	2.31	4	0	4	2.64	2.64	0	1.28	2.67	0	0.99	0.99	1.96	1.96
Spain	3	4	4	3.63	3.63	0	4	0	1.32	1.32	0	1.28	4	0	1.32	1.32	2.07	2.07
													1.33[11/]					
Sweden	3	3	4	1.32	3.30	0	4	4	1.32	2.64	4	4	2.66	0	1.33	2.67	1.31	2.84
	0[9/]	0[9/]					0[9/]					0[9/]	1.33[9/]					
United Kingdom	4	3	4	3.30	3.63	4	4	4	3.96	3.96	4	2.56	0	4	1.81	2.64	2.99	3.38
		2[1/]										1.92[1/]	1.33[1/]	0[1/]				

Sources: Authors' calculations.
1/ Before 1998.
2/ Before 2001.
3/ Before 2000.
4/ Before 2003.
5/ Before 2002.
6/ Before 1999.
7/ Before 1996.
8/ Before 2004.
9/ Before 1997.
10/ Before 1995.
11/ Before 1994.
12/ Before 1993.
13/ Before 1992.

Table A3. Fiscal Institutions' Quality Index

	Rank 1/							
	1994				2003-04 2/			
	Preparation	Authorization	Implementation	Overall	Preparation	Authorization	Implementation	Overall
Austria	11	3	17	8	18	2	22	15
Belgium	16	18	6	16	11	21	5	18
Bulgaria	3	4	22	13	4	3	15	6
Czech Republic	3	18	14	17	4	11	11	12
Denmark	22	4	9	18	22	3	10	8
Estonia	21	4	20	21	18	11	20	21
Finland	8	4	13	7	11	3	14	7
Germany	16	4	17	19	4	11	12	13
Greece	1	1	14	1	18	21	6	19
Hungary	12	1	3	2	4	1	1	1
Italy	8	4	1	4	4	11	8	10
Latvia	16	4	20	20	11	3	20	14
Lithuania	3	4	22	13	2	3	18	4
Luxemburg	12	18	19	22	11	11	23	22
Netherlands	16	18	2	11	16	11	3	11
Poland	3	4	12	6	11	11	13	16
Portugal	12	4	10	10	3	3	8	3
Romania	10	4	14	9	4	11	15	17
Slovak Republic	2	4	4	3	1	3	2	2
Slovenia	12	18	5	12	4	11	4	5
Spain	22	4	7	15	23	3	6	9
Sweden	3	4	8	5	18	11	19	20
United Kingdom	16	23	11	23	16	21	17	23

Sources: Fabrizio and Mody (2006); and Hallerberg, Stranch, and von Hager (2008); and authors' calculations.
1/ Higher rank indicates better quality (highest rank=23).
2/ Data for the new Member States are available until 2003.

Appendix II: Definitions and Sources of Variables Used in Regression Analysis

Variable	Definition	Source
Institutional reform	The change in the quality of budget institutions two years ahead, i.e., between *t* and *t+2*.	Appendix I
Institutional gap	The difference between 4 (the maximum value of the quality index and the quality of budget institutions in the country at time *t*.	Appendix I
Primary balance	The primary budget balance/GDP in *t-1*.	IMF, *World Economic Outlook*
Fractionalization	Measure of the distribution of parties in the government's coalition, represented by the Herfindahl index, $[1-[\sum s_i]]$, where s_i is the share of party "*i*" in the coalition in year *t*.	Parties and Elections in Europe (www.parties-and-elections.de) and Elections Around the World (www.electionworld.org).
Election year	A dummy variable taking the value 1 if an election occurred at time *t*.	
Political constraints	The political constraint index (POLCON): measure of veto players at time *t*, a higher value representing more constraints.	www-management. wharton.upenn.edu/henisz/
"Rightist" ideology	An index of ideology at time *t*, taking values from [5 to 16], with higher values representing a more "rightist" world view.	Benoit and Laver, 2006, www.politics.tcd.ie /ppmd/
Unemployment	The country's unemployment rate at time *t*.	IMF, *World Economic Outlook*
Log (inflation)	The log of the country's [consumer price] inflation rate at time *t*.	IMF, *World Economic Outlook*
Current account surplus	The country's current account surplus at time *t*.	IMF, *World Economic Outlook*
Excessive deficit procedure dummy	A dummy taking the value 1 if the country was subject to the [European Union's] Excessive Deficit Procedure.	
Euro adoption dummy	A dummy taking the value 1 in the year the country adopted the euro and thereafter.	
Trade/GDP	[Exports+Imports]/GDP at time *t*.	IMF, *World Economic Outlook*
Overheating	First principal component of the unemployment rate, log (inflation), and the current account surplus. Larger values imply a combination of larger current account deficits and higher inflation; hence, the reference to "overheating."	Authors' construction.
Overheating	Takes the values of the overheating variable above the 75th percentile and zero below	Authors' construction.

nonlinearity	that. Is intended to allow for nonlinearity in policy response to overheating.	
Crisis	Takes the value 1 if the overheating variable is above its 75th percentile and zero otherwise.	Authors' construction.
Stagflation	Second principal component of the unemployment rate, log (inflation), and the current account surplus. Strongly correlated with the unemployment rate and more modestly with inflation and the current account deficit.	Authors' construction.

Table 1. War of Attrition

	Dependent Variable: Institutional Reform			
	(1)	(2)	(3)	(4)
Institutional gap	4.61	6.23	6.34	7.35
	[4.02]***	[3.85]***	[3.92]***	[4.38]***
Primary balance		0.50	0.49	0.92
		[1.90]*	[1.76]*	[2.93]***
Fractionalization			-2.09	-0.80
(FRAC)			[1.00]	[0.42]
Primary				-0.97
Balance*FRAC				[1.92]*
Observations	102	102	102	102
Pseudo *R*-squared	0.39	0.44	0.45	0.48

Notes: Robust z statistics in brackets, * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent; Coefficients for country and year dummies not reported

Table 2. Political Constraints

	Dependent Variable: Institutional Reform		
	(1)	(2)	(3)
Institutional gap	7.33	7.36	7.30
	[4.25]***	[4.41]***	[4.53]***
Primary balance	0.92	0.92	0.91
	[2.98]***	[2.91]***	[3.05]***
Fractionalization	-0.76	-0.80	-0.62
(*FRAC*)	[0.42]	[0.42]	[0.29]
Primary	-0.99	-0.97	-0.98
Balance**FRAC*	[1.99]**	[1.90]*	[1.95]*
Election year	-0.54		-0.54
	[0.54]		[0.54]
Political constraints		-0.23	-0.15
		[0.04]	[0.02]
"Rightist" ideology			-0.02
			[0.11]
Observations	102	102	102
Pseudo *R*-squared	0.48	0.48	0.48

Notes: Robust *z* statistics in brackets, * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent; coefficients for country and year dummies not reported.

Table 3. Economic Shocks

	Dependent Variable: Institutional Reform			
	(1)	(2)	(3)	(4)
Institutional gap	10.99	11.68	11.76	14.20
	[2.75]***	[2.55]**	[2.67]***	[2.52]**
Primary balance	1.42	1.41	1.41	1.85
	[2.09]**	[2.00]**	[2.03]**	[2.07]**
Fractionalization	-0.17	-1.38	-1.41	-1.50
(*FRAC*)	[0.06]	[0.48]	[0.49]	[0.55]
Primary	-1.46	-1.34	-1.37	-2.02
Balance**FRAC*	[2.00]**	[1.97]**	[2.01]**	[2.16]**
Unemployment	0.94	0.97	1.00	0.90
	[1.84]*	[1.80]*	[1.90]*	[2.26]**
Log (inflation)	4.66	5.25	5.32	3.16
	[2.91]***	[2.83]***	[2.92]***	[2.43]**
Current account		-0.30	-0.29	-0.24
Surplus		[1.78]*	[1.78]*	[1.79]*
Excessive deficit			-2.55	-2.80
Procedure dummy			[1.13]	[1.26]
Euro adoption				4.37
Dummy				[1.60]
Trade/GDP				0.09
				[1.45]
Observations	102	100	100	100
Pseudo *R*-squared	0.54	0.56	0.56	0.60

Notes: Robust *z* statistics in brackets, * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent; coefficients for country and year dummies not reported.

Table 4. Crises and Reforms

	Dependent Variable: Institutional Reform				
	(1)	(2)	(3)	(4)	(5)
Institutional gap	7.27	8.00	14.45	8.22	12.38
	[4.01]***	[4.49]***	[2.05]**	[4.01]***	[3.13]***
Primary balance	0.86	0.96	1.61	0.97	1.57
	[2.52]**	[2.32]**	[2.09]**	[2.63]***	[2.53]**
Fractionalization	-1.00	-0.90	-1.07	-0.37	-0.45
(*FRAC*)	[0.42]	[0.32]	[0.43]	[0.16]	[0.21]
Primary	-0.95	-1.05	-1.25	-1.02	-1.31
Balance**FRAC*	[1.87]*	[1.74]*	[2.02]**	[1.85]*	[2.06]**
Overheating	0.41	-0.46	0.00		
	[1.05]	[0.83]	[0.01]		
Overheating		1.33	2.36		
Nonlinearity		[2.22]**	[2.77]***		
Crisis				4.71	6.91
				[2.05]**	[2.45]**
Stagflation			2.24		1.55
			[1.56]		[2.20]**
Observations	100	100	100	102	100
Pseudo *R*-squared	0.49	0.52	0.60	0.52	0.58

Notes: Robust *z* statistics in brackets, * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent; coefficients for country and year dummies not reported.

Table 5. Credibility

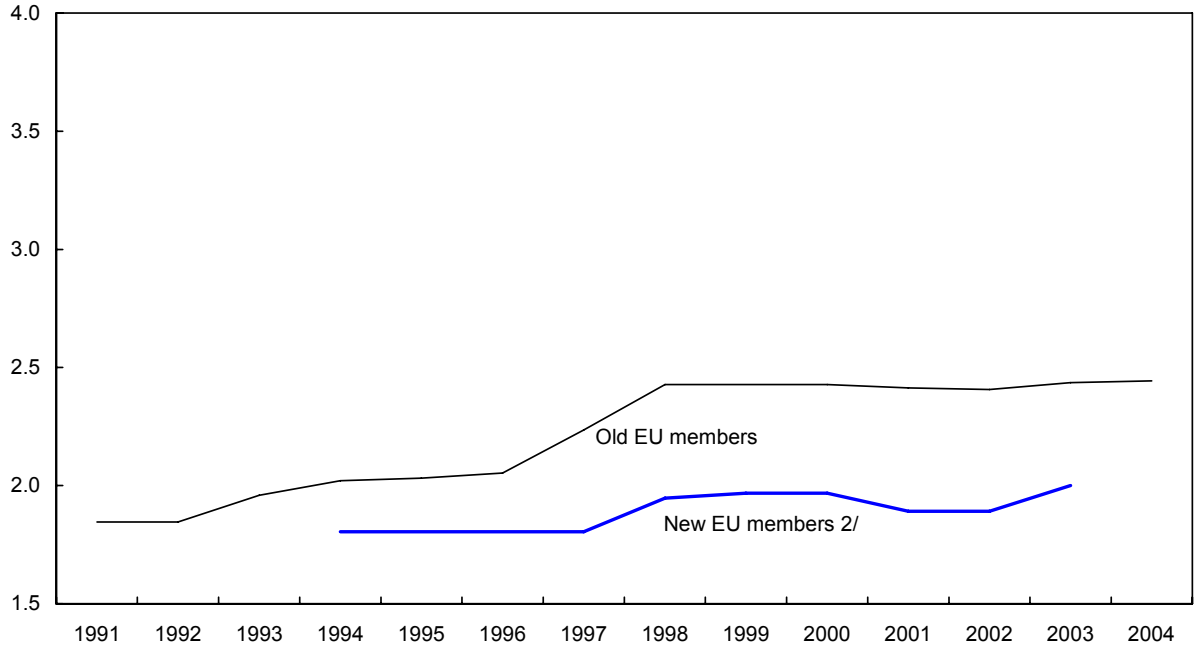
	Dependent Variable: Institutional Reform		
	(1)	(2)	(3)
Institutional gap	7.32	9.93	17.06
	[4.73]***	[3.10]***	[4.43]***
Primary balance	0.91	1.12	1.29
	[3.09]***	[2.16]**	[2.61]***
Fractionalization	-0.66	-4.43	-3.81
(*FRAC*)	[0.30]	[1.41]	[1.11]
Primary	-0.96	-1.27	-1.55
Balance**FRAC*	[1.90]*	[1.87]*	[2.08]**
"Rightist" ideology	-0.02	0.32	0.41
	[0.11]	[1.11]	[1.81]*
Overheating		3.71	
		[2.36]**	
Overheating* "Rightist"		-0.31	
Ideology		[1.97]**	
Crisis			45.79
			[3.67]***
Crisis* "Rightist"			-3.06
Ideology			[3.75]***
Stagflation			
Observations	102	100	102
Pseudo *R*-squared	0.48	0.52	0.60

Notes: Robust *z* statistics in brackets, * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent; coefficients for country and year dummies not reported.

Table 6. Model Predictions

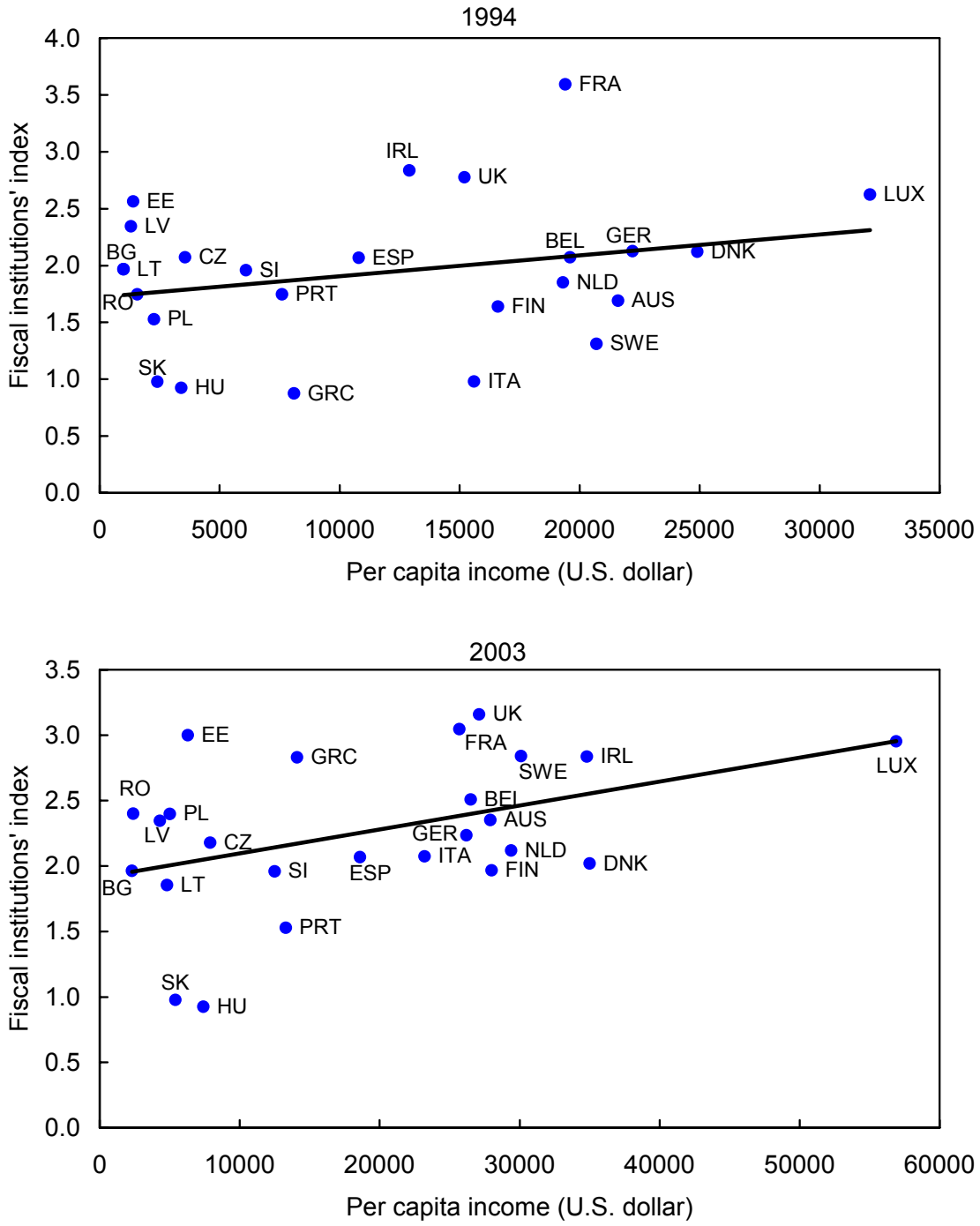
	Predicted Probability of Change			
Actual change	Reversal	No Change	Improvement	Large Improvement
Reversal	0.49	0.51	0.00	0.00
No change	0.04	0.89	0.06	0.01
Improvement	0.00	0.38	0.51	0.11
Large improvement	0.00	0.06	0.26	0.68
Total	0.06	0.76	0.12	0.06

Figure 1. Average Value of Fiscal Institutions' Index, 1991-2004 1/



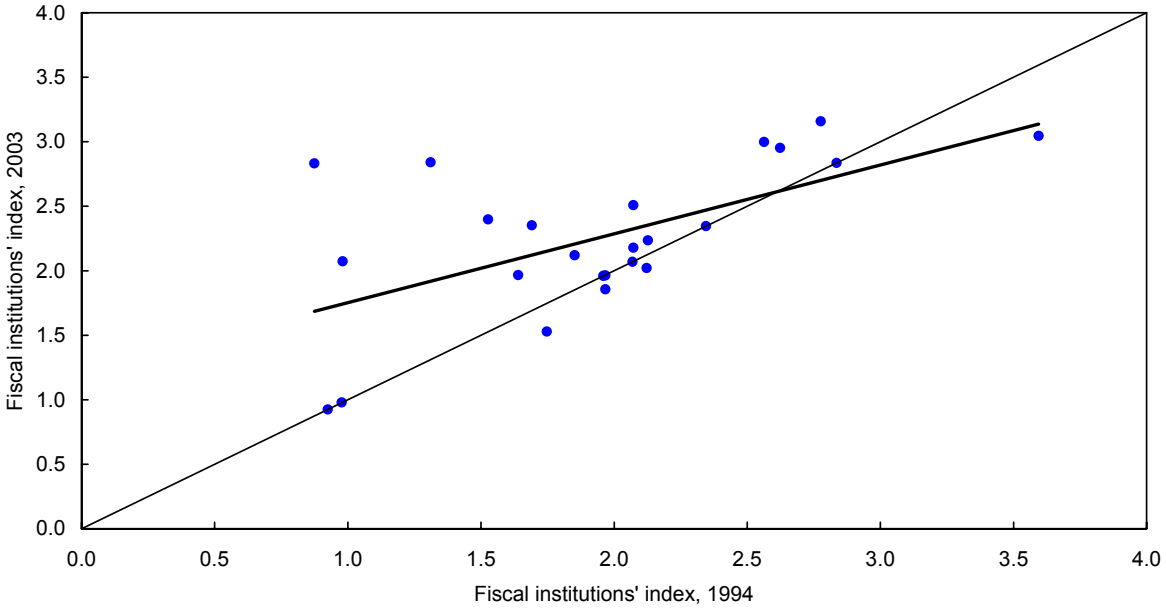
Sources: Fabrizio and Mody (2006); and Hallerberg, Strauch, and von Hagen (2007); and authors' calculations.
1/ Higher rank indicates better quality (highest rank=23).
2/ Data for the new Member States are available until 2003.

Figure 2. Quality of Fiscal Institutions' Index and Per Capita Income 1/



Sources: Fabrizio and Mody (2006); and Hallerberg, Strauch, and von Hagen (2007); and authors' calculations.
1/ Higher rank indicates better quality (highest rank=23). Data for the new Member States are available until 2003.

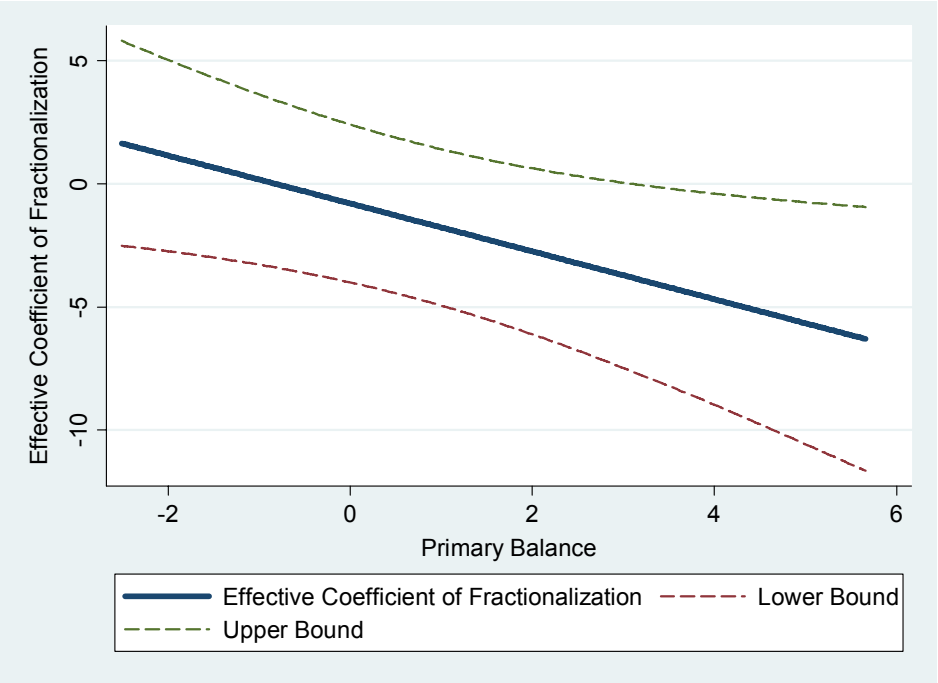
Figure 3. Fiscal Institutions' Index, 1994-2003



Sources: Fabrizio and Mody (2006); and Hallerberg, Strauch, and von Hagen (2007); and authors' calculations.

1/ Higher rank indicates better quality (highest rank=23). Data for the new Member States are available until 2003.

Figure 4. Interaction of Primary Balance and Fractionalization



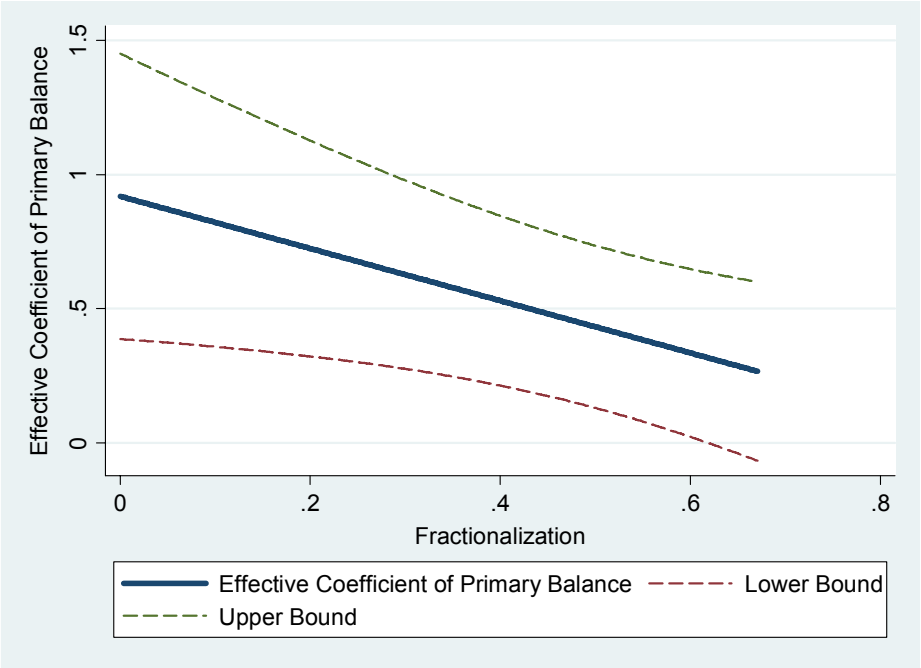
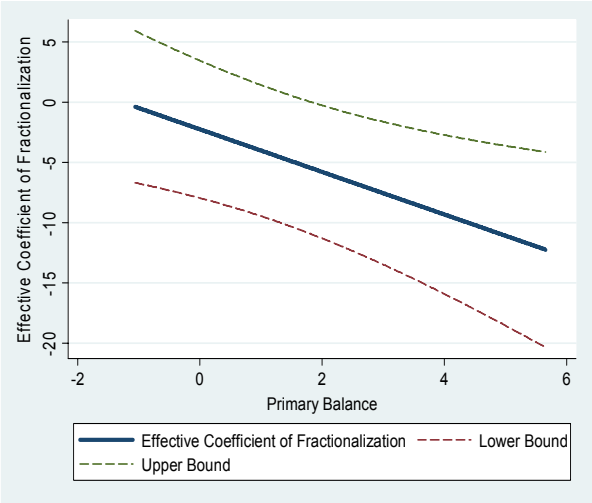
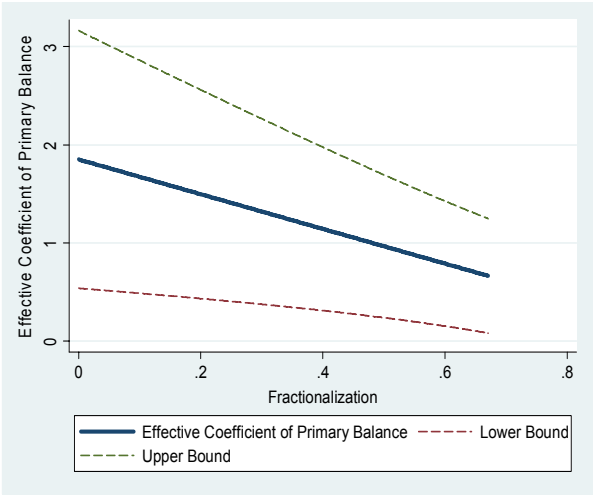


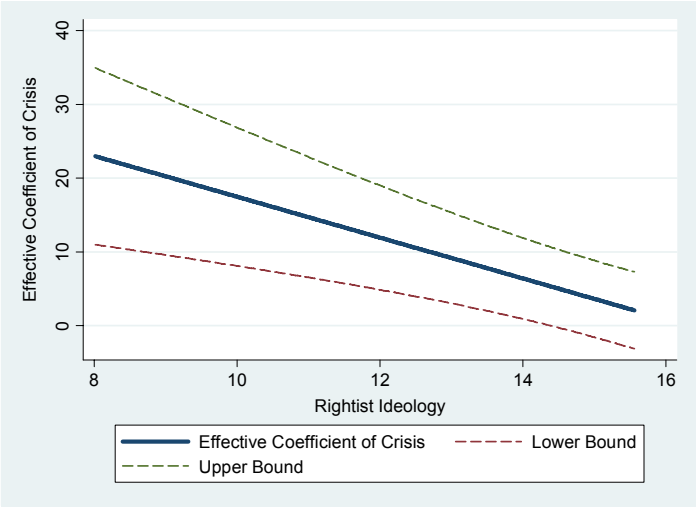
Figure 5. Nonlinear Effects in the Full Model

Interaction of Primary Balance and Fractionalization





Interaction of Economic Overheating and Political Ideology



References

Abiad, A., and A. Mody, 2005, "Financial Reform: What Shakes It? What Shapes It?" *American Economic Review*, Vol. 95, No. 1, pp. 66-88.

Alesina, A., S. Ardanga, and F. Trebbi, 2006, "Who Adjusts and When? On the Political Economy of Reforms," *IMF Staff Papers,* Vol. 53: (Special Issue), pp. 1-29.

Alesina, A., and A. Drazen, 1991, "Why Are Stabilizations Delayed?" *American Economic Review*, Vol. 81, No. 5, pp. 1170-88.

Alesina, A., and others, 1999, "Budget Institutions and Fiscal Performance in Latin America," *Journal of Development Economics*, Vol. 59, No. 2, pp. 253–73.

Alt, J., and R. Lowry, 1994, "Divided Government, Fiscal Institutions, and Budget Deficits: Evidence from the States," *American Political Science Review,* Vol. 88, No. 4, pp. 811–28.

Benoit, K., and M. Laver, 2006, *Party Policy in Modern Democracies* (London: Routledge).

Cukierman, A., and M. Tommasi, 1998, "When Does It Take a Nixon to Go to China?" *American Economic Review*, Vol. 88, No. 1, pp. 180-97.

Drazen, A., 2000, *Political Economy in Macroeconomics* (New Jersey: Princeton University Press).

Drazen, A., and W. Easterly, 2001, "Do Crises Induce Reform? Simple Empirical Tests of Conventional Wisdom," *Economics and Politics*, Vol. 23, No. 2, pp129-57.

Fabrizio, S., and A. Mody, 2006, "Can Budget Institutions Counteract Political Indiscipline?" *Economic Policy*, Vol.21, pp. 689-739.

Fernandez, R., and D. Rodrik, 1991, "Resistance to Reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty," *American Economic Review*, Vol. 81, No, 5, pp. 1146-55.

Franzese, R., and C. Kam, 2007, *Modeling and Interpreting Interactive Hypotheses in Regression Analysis* (Ann Arbor, Michigan: University of Michigan Press).

Hallerberg, M., and J. von Hagen, 1999, "Electoral Institutions, Cabinet Negotiations, and Budget Deficits in the European Union" in *Fiscal Institutions and Fiscal Performance*, ed. by J. Poterba and J. von Hagen (Chicago: University of Chicago Press).

Hallerberg M., R. Strauch, and J. von Hagen, 2007, "The Design of Fiscal Rules and Forms of Governance in European Union Countries," *European Journal of Political Economy,* Vol. 23, No. 2, pp. 338-59.

Hallerberg M., R. Strauch, and J. von Hagen, 2008, *Fiscal Governance: Theory and Evidence from Europe*, forthcoming book manuscript.

Gleich, H., 2003, "Budget Institutions and Fiscal Performance in Central and Eastern European Countries," European Central Bank Working Paper No. 215 (Frankfurt, Germany: European Central Bank).

Krueger, A., 1993, *Political Economy of Policy Reform in Developing Countries* (Cambridge, Massachusetts and London: MIT Press).

Poterba, J., 1994, "State Responses to Fiscal Crises: The Effects of Budgetary Institutions and Politics," *Journal of Political Economy*, Vol. 102, No. 4, pp. 799–821.

Rodik D., 1996, "Understanding Economic Policy Reform," *Journal of Economic Literature*, Vol. 34, pp 9-41.

Shepsle, K. and B. Weingast, 1981, "Political Preferences for the Pork Barrel: A Generalization," *American Journal of Political Science*, Vol. 25, No. 1, pp. 96–111.

von Hagen, J., and I. Harden, 1995, "Budget Processes and Commitment to Fiscal Discipline," *European Economic Review,* Vol. 39 (April), pp. 771–9.

Weingast, B., K. Shepsle, and C. Johnson, 1981, "The Political Economy of Benefits and Costs: A Neoclassical Approach to Distributive Politics," *Journal of Political Economy,* Vol. 89, No. 4, pp. 642–64.

Williamson, John, ed., 1994, *The Political Economy of Policy Reform* (Washington: Institute for International Economics).

Yläoutinen, S., 2004, "Fiscal Frameworks in the Central and Eastern European Countries," Finnish Ministry of Finance Discussion Paper No. 72 (Helsinki: Ministry of Finance of Finland).