Institutional Determinants of IMF Agreements

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Abstract

Do domestic institutions influence decisions to participate in IMF programs? I argue that executives facing more veto players are more likely to turn to the IMF, but the IMF is more likely to conclude agreements when there are fewer veto players. Reform-minded executives often use the IMF's leverage to push through unpopular policies. The more actors in a political system with the veto power to prevent policy change, the more likely an executive will find the IMF useful. Even with the added pressure of the IMF, however, the presence of additional veto players may limit policy change. Such limits are not preferred by the IMF. Thus, as the number of veto players increases, executives are more likely to enter into IMF agreements; the IMF is less likely. To test these arguments, I use a dynamic version of bivariate probit with partial observability.

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1. Introduction

Do domestic political institutions influence decisions to participate in programs sponsored by the International Monetary Fund (IMF or Fund)? This paper argues that the number of veto points in a political system matters: Executives facing more veto players are more likely to turn to the IMF, but the IMF is more likely to conclude agreements when there are fewer veto players.

Reform-minded executives often seek the leverage of the IMF to push through unpopular policies. The more actors in a political system with the veto power to prevent policy change, the more likely an executive will find the IMF useful. Even with the added pressure of the IMF, however, the presence of additional veto players may limit policy change. Such limits are not preferred by the IMF. Thus, as the number of veto players increases, executives are more likely to enter into IMF agreements; the IMF is less likely.

This paper is organized as follows. Section 2 presents the argument along with some illustrative examples. Section 3 presents empirical tests, starting with standard techniques followed by more sophisticated tests using a statistical model that reflects the joint decision-making setting. Section 4 concludes.

2. The Argument

When an executive of a country enters into an IMF arrangement, the Fund sets aside a line of credit, which “stands-by” for the duration of the agreement. The country can draw upon this credit at specified intervals as long as it lives up to certain conditions set by the Fund. These conditions entail specific fiscal and monetary policy changes. If the IMF deems that the country is not meeting the required policy changes, it can suspend disbursements of the loan and even

cancel the arrangement – both of which are costly to the country. Often countries turn to the IMF when they are in desperate need of a loan. But governments may also turn to the IMF for political reasons – to push policy past veto players.

The Decision of the Executive

How does bringing in the IMF help an executive push through unpopular policies? Note that unlike other international agreements, executives enter into IMF arrangements unilaterally. The approval of veto players – such as the legislature in a presidential system or a coalition partner in a parliamentary system – may be required for policy change, but their approval is not required for the executive to enter into an IMF arrangement. IMF arrangements are spelled out in a "Letter of Intent," written by IMF staff and government officials, and formally sent from the country's finance minister – recognized as the country's "proper authority" – to the IMF Managing Director. The Managing Director subsequently brings it before the IMF Executive Board for approval. Once the Board approves the Letter of Intent, the country is under an IMF program. The approval of veto players is bypassed.

After an executive has entered into an IMF arrangement, failure to enact policy change becomes more costly because rejection of reform is not merely the rejection of the executive, but also a rejection of the IMF. Rejecting the IMF is costly to all domestic actors including veto players: The IMF may restrict access to loans, it may precluded debt rescheduling with creditors who require an IMF arrangement to be in good standing, and decreased investment may result if investors take cues from the IMF.[1] Furthermore, as Drazen (2002) has shown, the executive can

[1] This does not mean that enforcement of IMF conditions perfect. Indeed, there are many anecdotes of the IMF relaxing conditions or continuing to extend credit to a country that has not fully complied with an IMF agreement. But, as other have shown, noncompliance is often sanctioned: Schadler (1995), Callaghy (1997, 2001), Stone (2002), Edwards (2000).

use the promise of continued IMF loans to entice veto players the enact policy change.[2]

It is important to note that the IMF imposes potential "rejection costs" on the country as a whole, and – if imposed – these costs may be higher for the executive than for the veto players. Thus, the strategy of bringing in the IMF is not without risk for the executive. But as long as there is positive probability that the veto players will also face costs, the strategy can be effective.[3] Facing a trade-off between rejection costs and policy changes, veto players may prefer the latter, and the executive can push through more of the reform program with the additional bargaining leverage that an IMF agreement brings.

Alternatively, one can argue that rejecting the IMF can have political benefits for opposing veto players. Opponents may claim that the executive is selling out the national patrimony to the IMF. Thus Remmer (1986) argues that the strategy of bringing in the IMF is a "double-edged sword" – it steps up the pressure for reform, but also leaves the executive open to the criticism of being the sell-out agent of the Western Capitalism. To avoid such "sovereignty costs" (Vreeland 2003), executives may be more likely to enter into agreements after elections, so that they are less an issue during campaigns. They may also be likely to enter into agreements when they can point out that other governments have followed a similar course: When other developing countries are also participating, or when they can point to other governments in their own country's history who have also participated in IMF programs. So executives may be more likely to participate in programs when the "sovereignty cost" edge of the sword is less sharp.

Note that while opponents may accuse the executive of surrendering national sovereignty

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[2] Indeed, while the causal mechanism is not usually laid out, many have argued that a reform-oriented executive can use IMF arrangements to push through unpopular policies: Spaventa 1983, Vaubel 1986, Remmer 1986, Putnam 1988, Edwards and Santaella 1993, Dixit 1996.

[3] For a related argument about the WTO, see Reinhardt (2003).

to the IMF, taking the further step of actually causing the IMF agreement to fail can be a risky venture for veto players. If rejected, the IMF may punish the country and the executive can blame the veto players for not following his proposed policies. Veto players hold office themselves and have their own reelection concerns, which may be difficult under bad economic performance. This is not to say that veto players prefer successfully completed IMF programs. Never having entered an IMF program may be the best outcome for veto players. But this is out of their control, since the executive can enter IMF programs without their approval. And failed IMF programs result in worse outcomes than successful programs because of the rejection costs discussed above.

To illustrate this logic more concretely, consider Brazil, where President Cardoso entered into an IMF arrangement at the end of 1998. The Fund called for Brazil to meet certain conditions in return for the loan: cutting overall federal expenditures by 20 percent, cutting federal infrastructure projects by 40 percent, and reforming the social security system (*Reuters*: 9 November 1998). President Cardoso had been trying for years to get the approval for some of these measures but met resistance from within his governing coalition. After the East Asian financial crisis, Cardoso presented the changes as necessary to win IMF approval: “The whole world is watching us, watching to see if we’ll be able to resolve the crisis” (*Associated Press*: 5 November 1998). Under such scrutiny, those resisting reform acquiesced on some issues, and the pace of reforms stepped up.

As another example, consider Uruguay, where the executive entered into an IMF arrangement in 1990 despite a strong reserve position and despite surpluses in both the current account and the overall balance of payments. Uruguay did not need an IMF loan, but the newly elected president, Luis Alberto Lacalle, faced tough opposition to his unpopular program of

economic reform. Over the course of his administration, his coalition party and eventually even his own party abandoned him. Lacalle had few domestic allies for his reform program, and so he brought in the IMF to have conditions imposed. While he was unable to push through his entire program, he had many successes, notably recording the highest budget surplus in Uruguay's history. Although a majority of legislators (even many from his own party) denounced Lacalle, the legislature reluctantly voted in favor of measures demanded by the IMF (for the details of this case, see Vreeland 2003: 39-51).

This paper tests the implications of these observations in a large-n setting. Do certain domestic political institutions make executives more likely to use the strategy of bringing in the IMF to push through reform? While such a strategy is available to executives in different types of regimes, it is most likely to be pursued when there is greater institutional resistance to policy change. I follow Tsebelis (1995, 2002) who argues that policy stability (or resistance to change) is a function of the number of veto players in a political system. Thus, I argue that executives facing more veto players are more likely to turn to the IMF.

The Decision of the IMF

Increasing the number of veto players may have the opposite effect on the preferences of the staff and officials of the IMF. Executives hindered by a system with many checks and balances may require the most assistance to push through unpopular reforms, but they are also the least able to commit to large policy shifts. If the IMF prefers to enter into agreements with countries that can bring about the most reform, they may be more likely to enter into arrangements with countries with lower numbers of veto players. As Putnam (1988, 449) explains, "diplomats representing an entrenched dictatorship are less able than representatives of a democracy to claim credibly that domestic pressures preclude some disadvantageous deal." Often executives use domestic constraints to obtain more favorable conditions from the Fund (see Mo 1995, Iida 1993 and 1996, Milner and Rosendorff 1997), but sometimes these constraints actually preclude an agreement.

For example, under democracy in Nigeria in 1983, President Alhaji Shehu Shagari attempted to conclude an IMF arrangement, but the demands of the IMF were too harsh, considering Shagari's political constraints. Shagari faced opposition in the legislature and elections on the horizon. Publicly, he announced, "Nigeria will not be dictated to" by the IMF (*Financial Times*: 16 August 1983, cited in Vreeland 2003: 37). Privately, however, Shagari-administration officials admitted, "the whole idea of bringing in the IMF is to get the alibis to persuade the politicians of what we need to do." (*Financial Times*: 16 August 1983, cited in Vreeland 2003: 37). Shagari wanted to use IMF conditionality to push through certain reforms, but the IMF refused to grant the precise conditions required politically by his administration. The

IMF demanded too much.[4] No agreement was concluded because the democratic regime could not agree to the degree of reforms demanded by the IMF.

Interestingly, democracy soon collapsed in Nigeria, replaced by a new dictatorial regime – without the constraint of a legislative veto point or reelection concerns. The new regime was able to decree the economic reforms without the political assistance of the IMF, and no agreement was sought. Most of the reforms were exactly what Shagari had wanted but could not push through on his own. When the dictatorial government finally turned to the IMF four years later, the IMF agreed to the arrangement because all of the previous conditions had already been met and the government was willing to agree to even further reform (*IMF Survey 1987*: 46; *New York Times*: 1 October 1986).

Because countries with fewer veto players are less constrained, they have the ability to agree to greater reform and may be preferred by the Fund. So my argument is not that the IMF has an intrinsic preference for dictatorships, or any other political system with a low number of veto players. The IMF actually has had a reputation for not paying attention to politics or political regimes (Polak 1991, Tanzi 1989, Denoon 1986). Rather, the IMF has a preference for countries that promise a high degree of economic reform. The public choice approach to the IMF contends that the Fund maximizes its utility by imposing the most conditions per loan (see Bird 1995: 94-6, also see Willett 2002). Thus, the IMF may prefer to enter into arrangements with countries that agree to the most amount of policy change. Countries with fewer numbers of veto players, on average, will be able to accept a greater degree of policy change, so the IMF may prefer to enter into agreements with them. Countries with a high number of veto players are unable to

[4] The sticking point was currency devaluation.

make the same commitments. Because the IMF faces a budget constraint,[5] it may prefer to sign agreements with countries that commit to the most reform and tend to avoid countries with many veto players.

Empirical Implications of the Argument

I conjecture the following: (1) Executives are more likely to enter into arrangements with the IMF when there are more veto players. (2) The IMF is more likely to enter into arrangements with countries that have fewer veto players.

Note that these conjectures should only hold stochastically. Some particular cases will not fit. For example, there could be a country with many veto players in favor of reform and an executive who is opposed. I would not expect such an executive to bring in the IMF to gain leverage over veto players to force through reform. On the other hand, there could be a country with a pro-reform executive and just one veto player who is opposed to reform. Such an executive would be likely to bring in the IMF for political leverage, even though he faces only one veto player. Thus, my argument could best be tested if we could get inside of the heads of actors and measure their true preferences. Data on true "political will," however, is unobservable. But the argument has other testable implications.

Consider what one might find using standard statistical techniques: The combination of the two effects of the number of veto players may result in a nonlinear relationship between this variable and the probability of an IMF arrangement. On the one hand, executives who do not face veto players do not require political assistance from the IMF. After controlling for factors that may lead a country to sign an IMF agreement for economic reasons, countries facing few

[5] Like most bureaucracies, this budget has grown over the years, but at any given point in time, the resources of the IMF are limited.

veto players should be unlikely to enter into an IMF agreement. On the other hand, executives facing too many veto players – who do require political assistance – may not agree to adequate reform to please the IMF. These countries should also be unlikely to conclude IMF agreements because they are not preferred by the IMF. Thus, after one controls for economic factors, executives facing a mid-range level of veto players should be the most likely to enter into an IMF agreement to have conditions be imposed.

A further way of testing the argument is to use a statistical model that explicitly addresses the two actors deciding to enter an IMF agreement or not. Thus, after presenting results using standard techniques, I turn to a statistical model of bilateral cooperation, which reflects that IMF agreements are joint decisions made over time by executives and the IMF. This statistical model allows me to assign the number veto players as a variable – with potentially different effects – to both the executive and the IMF.

3. Empirical tests

This section begins with descriptive statistics showing that increasing the number of veto players may have two countervailing effects. Next, I use standard statistical techniques to show that the descriptive pattern holds when one controls for a host of other factors. Finally, I turn to a more sophisticated statistical model indicating that the effect of the number of veto players on entering into an IMF program is positive for the government and negative for the IMF.

In this empirical work, I use Beck et al.'s (1999) measure of the number of veto players in a political system. They define the number of veto players as follows: For presidential systems, the sum of 1 if multiple parties are legal and compete in executive elections, 1 for the president, and 1 for each legislative chamber (the number of legislative chambers is dropped to

zero if either of the following is true: the electoral system is closed list and the president's party has more than 50 percent of the seats in the legislature, or multiple parties do not participate in legislative elections). For parliamentary systems, the sum of 1 for the prime minister, and 1 for each party in the governing coalition (the number of parties in the coalition is reduced by one if the electoral system is closed list and the prime minister's party is in the coalition, and if multiple parties do not participate in legislative elections, the number of parties in the coalition is dropped to zero).[6] Other variables used in this section are described in the appendix.

Descriptive Statistics

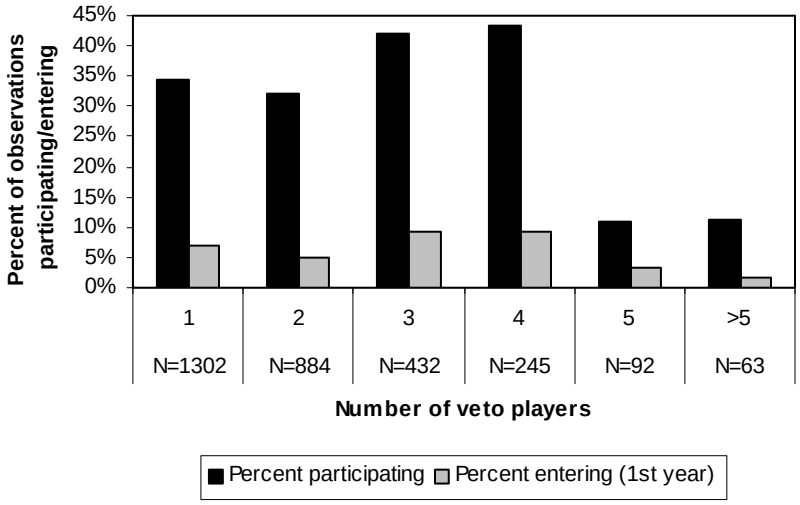
First, consider what is observed. My data include 3,018 country-year observations of 179 countries between 1975 and 1996. Of these observations, there are 1,033 observations of countries participating in IMF conditioned agreements during some part of the year.[7] The average number of veto players in the entire sample is 2.07. The average number of veto players in country-years observed participating in IMF agreements is 2.01. And the average number of veto players in country-years observed not participating is 2.10. The correlation between these two variables is -0.03.

This obviously does not confirm either the conjecture that governments with more veto players are more likely to turn to the IMF, or that the IMF is more likely to avoid such countries. A closer look at the data, however, indicates the nonlinear relationship between the number of veto players and the probability of an IMF agreement. Figure 1 breaks down participation in IMF

[6] I use this measure for veto players – "Check1a" in the *Database of Political Institutions* – because it is the most consistent with my argument. The empirical findings below also hold when I use "Check2a," which is "recommended" by Beck et al. (1999).
[7] See Appendix 1 for a description of all variables used.

programs by number of veto players. Participation when there are 1 or 2 veto players is between 30 and 35 percent of observations. When there are 3 or 4 veto players, participation is between 40 and 45 percent. When there are 5 or more veto players, participation is less than 5 percent. The observations of countries entering into their *first* year of participation in IMF programs exhibit a similar pattern.

Figure 1: IMF participation by number of veto players



Preliminary Analysis

Next, I use a standard static probit model to analyze IMF participation. I include both the number of veto players and the square of the number of veto players to allow the number of veto players to have two different effects.[8] The results, reported in Model 1 of Table 1, show it is important to control for GDP per capita – it has a significant negative effect on the probability of participating in an IMF agreement. Poor countries are more likely to enter into IMF agreements. Note that because income is correlated with democracy, and democracies are likely to have more

[8] Not reported here, I also used the natural logarithm of the number of veto players and the square of this variable, and obtained similar results (available from the author on request). The reason for testing with the natural logarithm is that there may be diminishing returns from adding additional veto players if their preferences are correlated.

veto players, failing to control for per capita income may mask the effects of veto players. Controlling for GDP per capita, the number of veto players turns out to have interesting effects.

Table 1: Estimating the effect of veto players on IMF participation

	Static probit				Conditional logit		Cox hazard	
	Model 1		Model 2		Model 3		Model 4	
Variable	**Coefficient**	**Mean**	**Coefficient**	**Mean**	**Coefficient**	**Mean**	**Coefficient**	**Mean**
Constant	-0.24 (0.11)	1	-0.10 (0.21)	1				
Number of veto players	**0.57** **(0.09)**	**2.25**	**0.70** **(0.12)**	**2.23**	**0.80** **(0.21)**	**2.10**	**0.45** **(0.19)**	**2.22**
Number of veto players squared	**-0.08** **(0.01)**	**6.92**	**-0.10** **(0.02)**	**6.80**	**-0.08** **(0.03)**	**6.02**	**-0.07** **(0.03)**	**6.86**
GDP per capita	-0.0002 (0.00001)	4993	-0.0001 (0.00002)	3035	-0.0013 (0.0002)	2558	-0.0001 (0.00004)	3061
Foreign reserves			-0.07 (0.02)	3.49			-0.08 (0.03)	3.49
Debt service			0.06 (0.01)	6.33			0.05 (0.01)	6.23
Investment			-0.02 (0.005)	22.79			-0.02 (0.01)	22.80
Budget			0.01 (0.01)	-3.97			0.020 (0.014)	-3.99
Current account			0.01 (0.01)	-4.36			0.01 (0.01)	-4.27
			(Standard errors in parentheses.)					
Number of observations	2085		928		1309		965	
Log likelihood function	-1123.05		-574.49		-585.92		-717.97	

Estimated probability of IMF program by number of veto players (holding other variables to their means):		
1 veto player	0.23	0.41
2 veto players	0.34	0.56
3 veto players	0.41	0.63
4 veto players	0.41	0.62
5 veto players	0.35	0.53

The number of veto players has a significant positive effect on the probability of IMF participation, while the square of this variable has a significant negative effect. Thus, increasing the number of veto players from 1 to 2 increases the probability of an IMF agreement, but increasing the number of veto players from 3 to 4 veto players does not. The bottom of Table 1

presents the predicted probability of IMF participation for 1 to 5 veto players holding GDP per capita to its mean (similar results are obtained when this variable is held to its median).

An alternative story of why increasing the number of veto players may increase the probability of IMF participation is that political systems with more veto players are too slow to respond to crises, and thus governments end up requiring the financial assistance of the Fund. The apparent effect of the number of veto players could be spurious – the number of veto players may in fact lead to economic crisis, which in turn leads to a need for an IMF loan.[9]

I control for this possibility by including standard economic variables used to predict selection into IMF programs (see Bird 1996b for a review). I include Foreign reserves (as a proportion of average monthly imports), the Current account balance (as a percentage of GDP), Debt service (as a percentage of GNP), and Investment (as a percentage of GDP). In addition to these variables, I also include Budget – the budget surplus as a percentage of GDP. Countries with high budget deficits may have the most need for fiscal discipline to be imposed. Thus, I expect countries with large budget deficits to be more likely to participate. Model 2 of Table 1 presents the results. Note that when the new control variables are included, more than half of the country-year observations are lost, due to missing data. Of the countries lost, however, most of them are from the industrialized world, where participation in IMF programs has been rare, and the Communist world, where most countries were not even members of the IMF until the 1990s.

It turns out that the effects of veto players hold when these other variables are taken into account. Increasing the number of veto players from 1 to 2 increases the estimated probability of IMF participation from 0.41 to 0.56; increasing the number of veto players from 4 to 5 decreases

[9] Roubini and Sachs (1989) argue that divided political systems will have particular difficulty responding to a fiscal crisis. Beck et al. (1999, 27), however, find no significant relationship between the number of veto players and response to fiscal crisis.

the estimated probability of IMF participation from 0.62 to 0.53.

While it may be true that more veto players in a political system lead to economic crises and greater need for IMF financial assistance,[10] the number of veto players has a direct effect on the probability of IMF participation. Essentially, the results indicate that for whatever values the other variables may take on – "crisis" values or not – having more veto players in the political system increases the probability of an IMF agreement to a point, and then decreases the probability.

This specification shows that most of the control variables have the expected effects. Countries with low foreign reserves – with a greater need for an IMF loan – are more likely to participate in an IMF program. When debt service is high – when countries are more sensitive to the decisions of creditors – countries are more likely to participate in IMF programs. Countries with low investment – those particularly sensitive to the decisions of investors – are more likely to participate in an IMF agreement. Although the current account balance has no significant effect, nor does the level of budget deficit. In general, the results indicate that countries are more likely to participate in IMF agreements when "rejection costs" are high.

The importance of the economic variables should be underscored. The strong significant effects of foreign reserves, debt service and investment indicate that the need for an IMF loan is a strong predictor of IMF agreements. Often governments turn to the IMF because they have a desperate need for foreign exchange. Yet, the political institutions should not be ignored. Even after controlling for these economic factors, the nonlinear effect of veto players remains significant.

[10] To establish this, one would of course need to consider the effect of veto players on different dependent variables, such as the balance of payments, foreign reserves, or inflation.

What happens when more rigorous statistical tests that control for country fixed effects and the effects of time are employed? Consider the results of a "conditional logit," which accounts for country fixed effects with a dichotomous dependent variable, and a "Cox regression," which accounts for duration dependence.

Model 3 of Table 1 shows that the veto players results even hold when one employs a fixed effect logit (see Chamberlain 1980 and Green et al. 2000). Due to the unbalanced nature of the panel data, 776 country-year observations are lost when this method is used (from 2,085 observations to 1,309 observations). The coefficients on Number of veto players and Number of veto players squared show that increasing the number of veto players has a significant positive effect when the number of veto players is low, and a significant negative effect when the number of veto players is high.[11]

Model 4 of Table 1 presents a further test using a Cox proportional hazard model. My argument is about the decision to *enter* into IMF arrangements, not about participation in general. The Cox proportional hazards regression model is a "hazard" model that estimates the transition probability of going from one state to another. In my case, I estimate the transition probability of *signing* an IMF agreement. This model treats each country as a separate subject (in Model 4 there are 92 countries), so country-specific effects are not ignored. More importantly, the model controls for potential duration dependence. The results are strikingly similar to the results previously presented. Further testing employing exponential and Weibull hazard models also

[11] This result is obtained when controlling for GDP per capita. Estimated probabilities are not presented, since these vary by country in the fixed effects model. I also attempted to estimate the fixed effects model controlling for Foreign reserves, Debt service, Investment, Budget and Current account. Only 340 observations can be used with this model specification, due to missing observations. Using this small sample, the number of veto players and the square of this variable have the expected signs, but they are not statistically significant. It cannot be known if this is because of the specification changes or the reduction of the sample size.

yield similar results and indicate that duration dependence is weak. The results are so similar to the Cox model results that I do not present them here.[12]

The results presented so far broadly confirm my hypotheses: After controlling for economic determinants of IMF participation, executives facing few veto players do not require political assistance from the IMF, and IMF participation is less likely. When executives face too many veto players, they may seek political assistance but cannot agree to enough reform to please the IMF because large policy changes will be vetoed; IMF participation is again less likely. When there is a mid-range level of veto players, the executive seeks political assistance, and the IMF grants it. IMF participation is most likely when there is a mid-range level of veto players.

Note, however, that the models used in Table 1 can be improved upon: IMF arrangements are a joint decision of an executive and the IMF, and the number of veto players should have opposite effects for the two actors – positive for the executive, negative for the IMF. To test this, I require a statistical model that allows for two actors making decisions to participate in IMF programs. Thus, I turn to a dynamic model of bilateral cooperation (Przeworski and Vreeland 2002). This more theoretically informed statistical model[13] allows me to test the effects of variables on (1) the decision of the executive to enter into an IMF agreement, and (2) the decision of the IMF to enter into an agreement.

Modeling the Joint Decision

Assume participation at time *t* depends on participation at time *t*-1 (i.e., assume the data obey a first-order Markov process). Let $p_{NU,i,t}$ denote the "transition probability" that country *i* enters into an IMF arrangement at time *t* (that it goes from *not* under at time *t*-1 to *under* at time

[12] The results are available on request and online at ***.
[13] Also see Signorino (1999) and Smith (1999).

t). Note that in using this model, the dependent variable is the same as in the previous statistical model used in Table 1 – the dichotomous variable coded 1 if a country participates at time *t* and 0 otherwise – but one considers only those observations where lagged participation is equal to 0.[14] This is essentially a hazard model with no duration dependence.[15] Thus the model predicts the probability of *entering* into an IMF arrangement.

To model this transition probability as a joint decision, let $p_{NU,i,t} = F_2\left(\beta' \mathbf{x}_{i,t-1}^{Gov}, \mu' \mathbf{x}_{i,t-1}^{IMF}, \rho\right)$, where $F_2(\cdot)$ represents the cumulative distribution function of the standard bivariate normal distribution. $\boldsymbol{x}_{i,t-1}^{Gov}$ is the vector of variables that determine the decision of the executive, and β is the vector of parameters that captures the effects of these variables on the decision. $\boldsymbol{x}_{i,t-1}^{IMF}$ is the vector of variables that determine the decision of the IMF, and $\boldsymbol{\mu}$ is the vector of parameters that captures the effects of these variables on the decision. ρ captures the correlation between unobserved variables driving the decisions of the executive and the IMF. This is essentially a dynamic version of Poirier's (1980) bivariate probit with partial observability.[16] In some specifications presented below, unobserved variables are found to be uncorrelated (ρ is not statistically significant). In these specifications, a better fit was produced by using the Abowd and Farber (1982) variant of Poirier's model, which assumes uncorrelated error terms: $p_{NU,i,t} = F\left(\beta' \mathbf{x}_{i,t-1}^{Gov}\right) F\left(\mu' \mathbf{x}_{i,t-1}^{IMF}\right)$, where $F(\cdot)$ is the cumulative distribution function of the standard

[14] When one considers observations where lagged participation is equal to 1, one estimates the determinants of continued participation, which is not what the argument of this paper is about. For more on this as well as a description of the full model, see Przeworski and Vreeland (2002).

[15] See Amemiya (1985: Chapter 11) for details. Note the assumption of no duration dependence has support from the results of the Cox, exponential and Weibull hazard models discussed above.

[16] A partial observability model is required because it is impossible to observe the individual decisions of the executive and the IMF for all but the rarest cases of IMF negotiations, which are typically held behind closed doors. Moreover, either side can initiate negotiations.

normal distribution.

Using a bivariate approach allows one to include some of the same variables for the two actors. With standard probit, the probability of an IMF agreement is a function of one vector of variables. With bivariate probit (with partial observability), the probability of an IMF agreement is a function of two vectors of variables. One variable that I assign to both actors is the natural logarithm of the number of veto players. I expect it to have a positive effect for the government and a negative effect for the IMF. I use the logarithm of this variable to allow for the possibility of diminishing effects, which are likely if veto players' preferences are correlated.

One caveat of the bivariate approach is that $\boldsymbol{x}^{Gov}$ cannot include exactly the same set variables as $\boldsymbol{x}^{IMF}$, or the model will not be identified. One must, therefore, have prior beliefs about the variables that matter to the executive and those that matter to the IMF. At least one of these variables must not be in common between the two actors. The variable I use to distinguish the IMF is the overall balance of payments deficit weighted by the economic size of a country. I use this variable because part of the mandate of the IMF is to promote global financial stability. A given government may care about the relative size of its own foreign exchange crisis, but the IMF is also concerned with how this crisis will impact the world economy. It will be more willing to grant a loan to a large economically important country than a small country, all else equal. The overall balance of payments is used for the IMF throughout. I also use elections as a variable to "identify" the government in the final specification. In addition to this, I have also employed other variables to "identify" the IMF. For example, following Stone's (2002, 2003) argument that the IMF cares more about economically important countries, I employ a variable measuring the "size" of a country's economy, as measured by the GDP in constant dollars. The results (presented in Appendix 3) are strikingly similar to the results presented below. All

statistically significant variables have the same sign and relative magnitude, and the veto player results discussed below hold.[17]

Table 2 presents results using the bivariate approach. In Model 5, I include the "rejection cost" variables described above as well as the budget deficit variable for the executive. For the IMF, I include a variable to capture its mandate to maintain world economic stability, using the overall balance of payments as a proportion of GDP weighted by the size or importance of the country in terms of GDP. (This is, of course, simply the absolute size of the balance of payments deficit.) To measure the budget constraint of the IMF, I use a rough proxy: the number of other countries currently participating in an IMF program. If one could include an actual measure of the IMF budget constraint, one might get a better picture, but such data are not generally available. I include the natural logarithm of the number of veto players for both actors because, as noted above, if the ideal points of veto players are correlated, there will be diminishing returns from additional veto players.[18] I also include GDP per capita, current account deficit as a proportion of GDP, and rate of inflation for both actors. The variables have been divided by powers of ten so that they are

[17] I also tried using a measure of foreign aid to capture the importance of countries to the G-7, following Stone, although this variable was not a significant predictor of either actor's decision to participate. Stone (2002, 2003) shows, however, that US foreign aid is a significant predictor of whether a country will comply and be punished for noncompliance. The IMF does not severely punish countries that receive large amounts of US foreign aid because of their importance to the US. Consequently, these countries are less likely to comply with the IMF, since rejection costs are so low. My argument about identifying the IMF follows Stone's findings that the IMF cares more about important countries.

[18] The main qualitative findings presented below hold when I include the number of veto players, but results are stronger and more significant with the logarithm of the number of veto players. Note, however, that these results are also robust when I exclude outlying observations of countries with high numbers of veto players (>5). Thus, I believe that results are stronger with the natural logarithm of the number of veto players because there are indeed diminishing effects of additional veto players, not because less weight is placed on outliers. These results are not reported but are available on request.

all of the same order of magnitude.[19]

[19] Foreign reserves, Debt service, Budget, Current account, Number under and Years under were divided by 10; Investment and Inflation were divided by 100; Balance of payments (already measured in millions of 1987 dollars) was divided by 1,000; GDP per capita was divided by 10,000.

Table 2: A statistical model of bilateral cooperation to explain IMF participation

	Model 5	Model 6	Model 7	Mean of x
Variables assigned to executive				
Constant	1.08	0.93	-0.28	1.00
	(0.80)	(0.78)	(0.62)	
Log (number of veto players)	**1.18**	**1.25**	**0.90**	**0.48**
	(0.51)	**(0.51)**	**(0.43)**	
Foreign reserves	-2.13	-2.05	-2.58	0.37
	(1.08)	(1.06)	(1.09)	
Debt service	0.91	1.16	1.69	0.44
	(0.50)	(0.61)	(0.74)	
Investment	-5.82	-6.03	-7.15	0.15
	(2.59)	(2.68)	(2.96)	
Budget	-0.39	-0.37	-0.43	-0.55
	(0.22)	(0.23)	(0.26)	
GDP per capita	-1.76	-1.48	0.01	0.26
	(1.43)	(1.44)	(1.53)	
Current account	0.27	0.24	0.08	-0.77
	(0.26)	(0.26)	(0.25)	
Inflation	-0.21	-0.09	0.21	0.16
	(0.90)	(0.91)	(0.86)	
Latin America		-0.36	-0.92	0.27
		(0.34)	(0.48)	
Past agreement			0.91	0.63
			(0.37)	
Variables assigned to the IMF				
Constant	0.78	1.02	1.70	1.00
	(0.88)	(0.89)	(0.99)	
Log (number of veto players)	**-1.06**	**-1.04**	**-0.82**	**0.48**
	(0.45)	**(0.43)**	**(0.39)**	
Interact BOP and Size	-1.04	-1.10	-1.46	-0.08
	(0.41)	(0.39)	(0.55)	
Number under	-0.21	-0.26	-0.45	3.76
	(0.15)	(0.15)	(0.18)	
GDP per capita	0.99	0.58	-0.43	0.26
	(1.52)	(1.36)	(1.05)	
Current account	-0.23	-0.20	-0.18	-0.77
	(0.21)	(0.20)	(0.19)	
Inflation	-0.13	-0.17	-0.27	0.16
	(0.70)	(0.67)	(0.55)	
Correlation of error terms	-0.75	-0.70	Not significant	
	(0.33)	(0.36)		
Number of obs	437	437	437	
Observations correctly predicted	59%	61%	70%	
Log likelihood function	-140.72	-140.11	-137.62	
Restricted likelihood function	-185.50	-185.50	-185.50	

(Standard errors in parentheses.)

Table 3: The effect of veto players on the probability of IMF participation (holding other variables to their means)

	Model 5		Model 6		Model 7	
Number of veto players	Pr(Gov)	Pr(IMF)	Pr(Gov)	Pr(IMF)	Pr(Gov)	Pr(IMF)
1	0.25	0.68	0.24	0.66	0.16	0.54
2	0.56	0.40	0.57	0.38	0.35	0.32
3	0.74	0.24	0.75	0.23	0.49	0.21

Model 5 shows that the natural logarithm of the number of veto players has a significant *positive* effect on the decision of the executive to enter into IMF agreements and significant *negative* effect on the decision of the IMF to enter agreements. The size of the coefficients are relatively large with respect to their standard errors, so we can say with more than 95% confidence that as the number of veto players increases, the probability that the executive wants to enter into the IMF agreement increases, and the probability that the IMF wants to enter decreases. Table 3 shows that the effect of increasing the number of veto players is dramatic.[20] When the number of veto players goes from 1 to 2, the estimated probability that the executive will enter into an agreement goes from 0.18 to 0.37; the estimated probability that the IMF will enter goes from 0.57 to 0.33.

All of the other variables for the executive that were presented in Model 2 have the same qualitative effects in Model 5 with the exception of the **budget deficit** variable, which here has a significant effect, as originally predicted: when the deficit is high (i.e., when the surplus is small), executives are more likely to turn to the IMF. Executives are more likely to enter into agreements when Foreign reserves are low, Debt service is high, and Investment is low.

[20] For presentation purposes, Table 3 presents the *unconditional* probability that each actor want the agreement. Thus, the estimated probability that the executive wants to enter is calculated from $F\left(\beta' \mathbf{x}_{i,t-1}^{Gov}\right)$, and the estimated probability that the IMF wants to enter is calculated from $F\left(\boldsymbol{\mu}' \boldsymbol{x}_{i,t-1}^{IMF}\right)$.

The variables included for the IMF also have the expected effects. The IMF is more likely to enter into agreements with countries with large absolute balance of payments deficits.[21] The effect of the number of other countries under IMF agreements ("Number under") is negative. The IMF – facing a budget constraint – is less likely to enter into agreements when it already has many other countries participating in agreements.[22]

In the remaining specifications presented in Table 2 (Models 6 and 7), I introduce additional control variables. In Model 6, I include a Latin American regional dummy for the executive. I include this variable because Latin American countries tend to have higher numbers of veto players than other regions in the developing world due to the prevalence of presidential systems. The region is also known to have the most extensive history of IMF participation in the world. Yet, the effects of veto players persist when this variable in included.

Another important control variable is introduced in Model 7: Past agreement. In his review of literature on the IMF, Bird (1996a) reports that the dummy variable indicating past participation in an IMF program has been found in some studies to have a significant positive effect on current participation. When included for the executive, it does have a significant positive effect. Countries that have participated in the past are more likely to enter into new agreements with the IMF. The introduction of this variable, however, does not substantially change the effects of the number of veto players.

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[21] Using the size of the GDP variable ("Size"), the sign is positive, but the interpretation is similar. The IMF is more likely to enter into agreements with economically important countries. See Appendix 3.

[22] Notably, while all of the variables have significant effects on the decisions of executives and the IMF to enter into agreements, none of them have significant effects on the decisions to continue agreements or "remain." These results are available from the author upon request. Using this statistical model, the continuation of IMF agreements appears to be largely stochastic. For further research on the duration of IMF agreements, see Joyce (2001).

Table 4 continues the robustness checks. In Model 8, three more variables are introduced for the executive: Number under, Election and Years under. These variables were found to have significant effects by Przeworski and Vreeland (2000) and Vreeland (2003). The Number under variable has a significant positive effect for the executive. This indicates that governments are more likely to turn to the IMF when other countries are doing so.[23] The election variable is also significant (at the 90% level), indicating that governments are more likely to enter into IMF agreements following elections, perhaps to give time for the reform policies to take effect, and perhaps to avoid an unpopular IMF agreement right before elections. The effect of Years under, which is a variable that counts the total number of years in the past that a country has participated, is not significant in this specification.

The introduction of these variables decreases the size of the coefficient of veto players for the executive without decreasing the standard error. But one can still be 90% confident that increasing the number of veto players increases the probability that the executive will enter into an IMF agreement. The negative effect of the number of veto players for the IMF (found on the continuation of Table 4) is also significant at the 90% level.

In Model 9, variables that were introduced above for the executive are introduced for the IMF as well: Latin America, Past agreement, Election, and Years under (Number under is already included for the IMF). Interestingly, the IMF does not appear to be particularly inclined to enter into agreements with Latin American countries – when included in this specification, it has a large standard error and a negative coefficient. Past agreement does not appear to have a significant effect for the IMF either. Years under does have a significant negative effect (at the

[23] Similarly, Simmons (2000) argues that government compliance with IMF Article VIII – which requires governments to "keep their current account free from restriction" – increases as the number of other countries in the world and in the region also comply with Article VIII.

90% level), so the IMF may prefer to avoid countries with extensive histories of IMF agreements. The Election variable also has an interesting effect for the IMF – it is negative. These interesting results, however, do not appear to be robust (see Models 9 and 10).

What does remain robust is the effect of veto players. It remains positive and significant (at the 90% level) for the executive and negative and significant (at the 95% level) for the IMF.

Only in Model 10 does the standard error for the effect of veto players on the executive's decision increase so much that we can say with only 85% confidence that increasing the number of veto players increases the probability that the executive will want an IMF arrangement. This occurs when Foreign reserves, Debt service, Investment, and Budget are introduced for the IMF. Note that none of these variables have significant effects for the IMF. The coefficients are relatively small with large standard errors. Thus, the increased standard error on veto players for the executive seems to be due to the inclusion of irrelevant variables.

The specification in Model 10 demands a lot of the variable "Interact BOP and Size." This is the only variable that distinguishes the set of variables assigned to the executive and the set of variables assigned to the IMF. All other variables are in common between the two actors. From a mathematical point of view, it is sufficient to have just one variable between the two vectors of variables for the model to be identified. But from a theoretical point of view, we may want to have at least one variable that is assigned to each actor, which distinguishes it from the other actor.

Thus, in Model 11, I assign Election only to the executive, on the assumption that the actor that typically cares about elections is the executive, while the actor that typically cares about the absolute size of the balance of payments deficit is the IMF. All other variables are in common between the two actors. (Similar results are obtained using SIZE for the IMF – see

Appendix 3.)

The main substantive findings about veto players are strengthened in this specification. The positive effect of this variable for the executive is significant at the 90% level, and the negative effect of this variable for the IMF is also significant at the 90% level. And again the effect is dramatic: Holding all other variables to their means and increasing the number of veto players from 1 to 2 increases the probability that the executive wants to enter from 0.30 to 0.52. It decreases the probability that the IMF wants to enter from 0.38 to 0.23.

The effects of other variables in this specification lend weight to the interpretation that the positive effect veto players belongs to the executive and the negative effect of veto players belongs to the IMF: The actor who is more likely to enter into agreements following elections, when the budget deficit is high, and when the number of other countries participating is high (the executive) is the actor more likely to enter when there are more veto players. The actor who is likely to enter into agreements with countries with large absolute balance of payments deficits but is less likely to enter agreements when many other countries are participating because it faces a budget constraint (the IMF) is the actor less likely to enter into agreements when there are more veto players. For both actors, agreements are more likely when investment is low. None of the other variables are significant for either actor in this specification.

Table 4: Further specifications of IMF participation – *Results for the Executive*

Variables assigned to executive	**Model 8**	**Model 9**	**Model 10**	**Model 11**
Constant	-2.47	-1.79	-2.12	-3.04
	(1.01)	(0.95)	(1.08)	(1.36)
Log (number of veto players)	**0.70**	**0.60**	**0.58**	**0.82**
	(0.40)	**(0.35)**	**(0.38)**	**(0.49)**
Foreign reserves	-2.96	-2.34	-1.71	-2.49
	(1.50)	(1.28)	(1.71)	(2.03)
Debt service	0.80	0.97	1.24	0.87
	(0.68)	(0.60)	(0.96)	(1.30)
Investment	-6.71	-6.80	-6.80	-7.06
	(3.48)	(2.77)	(3.03)	(3.44)
Budget	-0.71	-0.55	-0.83	-1.12
	(0.35)	(0.26)	(0.41)	(0.58)
GDP per capita	-1.60	-2.08	-2.31	-3.17
	(1.98)	(1.26)	(1.32)	(2.06)
Current account	0.04	-0.04	0.01	-0.03
	(0.29)	(0.24)	(0.27)	(0.36)
Inflation	-0.47	-0.34	-0.24	-0.52
	(0.72)	(0.73)	(0.88)	(1.13)
Latin America	-0.29	0.30	0.17	0.25
	(0.54)	(0.71)	(0.85)	(1.01)
Past agreement	0.52	0.18	0.21	0.20
	(0.43)	(0.48)	(0.53)	(0.63)
Number under	0.91	0.46	0.43	0.90
	(0.26)	(0.23)	(0.25)	(0.46)
Election	0.79	1.58	1.78	1.58
	(0.47)	(0.56)	(0.66)	(0.69)
Years under	0.32	0.91	0.90	0.91
	(0.46)	(0.56)	(0.67)	(0.79)
Correlation of error terms	-0.79	-0.66	Not significant	Not significant
	(0.42)	(0.46)		
Number of obs	437	437	437	437
Observations correctly predicted	59%	66%	66%	62%
Log likelihood function	-129.75	-124.23	-122.43	-123.54
Restricted likelihood function	-185.50	-185.50	-185.50	-185.50
		(Standard errors in parentheses.)		
The effect of the number of veto players holding other variables to their means	Pr(Gov)	Pr(Gov)	Pr(Gov)	Pr(Gov)
1 veto player	0.37	0.22	0.23	0.30
2 veto players	0.56	0.37	0.37	0.52
3 veto players	0.67	0.46	0.46	0.65

Table 4 continued: Further specifications of IMF participation – *Results for the IMF*

Variables assigned to the IMF	**Model 8**	**Model 9**	**Model 10**	**Model 11**
Constant	3.75	4.32	4.58	3.82
	(1.42)	(1.81)	(1.98)	(1.53)
Log (number of veto players)	**-0.59**	**-0.87**	**-0.79**	**-0.61**
	(0.33)	**(0.42)**	**(0.42)**	**(0.32)**
Interact BOP and Size	-0.77	-1.46	-1.74	-1.29
	(0.35)	(0.73)	(0.53)	(0.33)
Number under	-0.98	-0.94	-0.95	-0.95
	(0.29)	(0.35)	(0.36)	(0.32)
GDP per capita	0.59	2.20	2.00	1.43
	(1.34)	(1.78)	(1.92)	(1.68)
Current account	-0.04	0.00	-0.12	-0.13
	(0.13)	(0.17)	(0.23)	(0.17)
Inflation	0.10	0.02	-0.21	-0.11
	(0.49)	(0.68)	(0.76)	(0.62)
Latin America		-0.79	-0.75	-0.65
		(0.59)	(0.54)	(0.45)
Past agreement		0.44	0.46	0.50
		(0.64)	(0.66)	(0.52)
Election		-1.00	-0.69	
		(0.54)	(0.52)	
Years under		-0.86	-0.66	-0.35
		(0.47)	(0.44)	(0.32)
Foreign reserves			-1.72	-1.46
			(1.52)	(1.27)
Debt service			0.09	0.37
			(0.48)	(0.39)
Investment			-3.63	-4.17
			(3.48)	(2.84)
Budget			0.12	0.12
			(0.43)	(0.29)
Correlation of error terms	-0.79	-0.66	Not significant	Not significant
	(0.42)	(0.46)		
Number of obs	437	437	437	437
Observations correctly predicted	59%	66%	66%	62%
Log likelihood function	-129.75	-124.23	-122.43	-123.54
Restricted likelihood function	-185.50	-185.50	-185.50	-185.50
		(Standard errors in parentheses.)		
The effect of the number of veto players holding other variables to their means	Pr(IMF)	Pr(IMF)	Pr(IMF)	Pr(IMF)
1 veto player	0.63	0.81	0.53	0.38
2 veto players	0.47	0.61	0.32	0.23
3 veto players	0.37	0.47	0.22	0.16

4. Conclusion

The conventional wisdom of IMF programs is that countries enter into arrangements when they need a loan. The results of this paper confirm this; the importance of economic variables as determinants of participation in IMF agreements is obvious in all of the statistical tests presented above. This is consistent with what we expect: when countries enter into an economic crisis, they turn to the IMF.

What is surprising is that even after one accounts for economic factors, *political institutions also play a role*. Governments also turn to the IMF when they want specific IMF conditions to be imposed upon them because they require political assistance to push policy change past actors with veto power over economic policy. When there are too many "veto players" in the political system, however, not enough change is possible to win IMF approval. Hence, the effect of increasing the number of veto players in a political system first increases the probability of IMF participation, and then decreases the probability. This finding holds for different statistical models – standard probit, fixed effects logit, duration models, and bivariate probit – and holds controlling for a battery of economic and political variables.

The IMF is paying increasing attention to domestic politics and the effects of political institutions (see IMF 2001). The results of this study indicate that domestic politics – in particular, political institutions – play an important role in who turns to the Fund and who gets loans. Increased awareness of this is a good sign for the new direction of the IMF. When it comes to participation in IMF agreements, political institutions matter in systematic ways.

APPENDIX 1: Definitions of variables
(Data are available at http://pantheon.yale.edu/~jrv9**)**

Dependent variable

Participation in IMF programs: Dummy variable coded 1 for the country-years when there was a conditioned IMF agreement in force, 0 otherwise.

Control variables

GDP per capita: "Level" of economic development measured as real GDP per capita in 1985 international prices, chain index.

Foreign reserves: Gross international reserves expressed in terms of the number of months of imports.

Debt service: Total debt service as a percentage of GNP.

Investment: Real gross domestic investment (private and public) as a percentage of GDP.

Budget: Overall budget surplus as a percentage of GDP.

Current account: Current account balance as a percentage of GDP.

BOP: Overall balance of payments as a proportion of GDP.

Size: GDP in millions of constant 1987 dollars.

Number under: Total number of *other* countries in the world under IMF agreement.

Inflation: Annual change in the consumer price index.

Latin America: Dummy variable coded 1 for Latin American countries and 0 otherwise.

Past agreement: Dummy variable coded 1 if a country has participated in an IMF agreement in the past and 0 otherwise.

Election: Dummy variable coded 1 if legislative elections were held.

Years under: Cumulative number of years a country has been under IMF agreements.

APPENDIX 2: 3,018 country-year observations of 179 countries (1975-1996)

Afghanistan: 1991-1996
Albania: 1991-1996
Algeria: 1975-1996
Angola: 1976-1986,1991-1996
Argentina: 1975-1996
Armenia: 1991-1996
Australia: 1975-1996
Austria: 1975-1996
Azerbaijan: 1992-1996
Bahamas: 1978-1987, 1991-1996
Bahrain: 1991-1996
Bangladesh: 1975-1996
Barbados: 1975-1989, 1991-1996
Belarus: 1992-1996
Belgium: 1975-1996
Belize: 1982-1996
Benin: 1975-1996
Bhutan: 1991-1996
Bolivia: 1975-1996
Bosnia-Herzegovina: 1995-1996
Botswana: 1975-1989,1991-1996
Brazil: 1975-1996
Brunei: 1991-1996
Bulgaria: 1981-1996
Burkina Faso: 1975-1996
Burundi: 1975-1996
Cambodia: 1991-1996
Cameroon: 1975-1996
Canada: 1975-1996
Cape Verde: 1975-1996
Cent African Rep: 1975-1996
Chad: 1975-1996
Chile: 1975-1996
China: 1975-1996
Colombia: 1975-1996
Comoros: 1975-1996
Congo: 1975-1996
Costa Rica: 1975-1996
Cote d'Ivoire: 1975-1996
Croatia: 1993-1996
Cuba: 1991-1996
Czech Republic: 1993-1996
Czechoslovakia: 1975-1992
Denmark: 1975-1996
Djibouti: 1978-1987, 1991-1996
Dominican Republic: 1975-1996
Ecuador: 1975-1996
Egypt, Arab Rep.: 1975-1996
El Salvador: 1975-1996
Equatorial Guinea: 1991-1996
Eritrea: 1994-1996
Estonia: 1993-1996
Ethiopia: 1975-1986, 1991-1992
Fiji: 1975-1996
Finland: 1975-1996
France: 1975-1996
Gabon: 1975-1996
Gambia, The: 1975-1994
Georgia: 1995-1996
Germany, East: 1975-1988
Germany, West: 1975-1989
Germany: 1991-1996
Ghana: 1975-1996
Greece: 1975-1996
Greek Cyprus: 1991-1996
Grenada: 1985-1996
Guatemala: 1975-1996
Guinea: 1975-1996
Guinea-Bissau: 1975-1996
Guyana: 1975-1996
Haiti: 1975-1989, 1991-1996
Honduras: 1975-1996
Hungary: 1975-1996
Iceland: 1975-1996
India: 1975-1996
Indonesia: 1975-1996
Iran: 1975-1996
Iraq: 1975-1987, 1991-1996
Ireland: 1975-1996
Israel: 1975-1996
Italy: 1975-1996
Jamaica: 1975-1996
Japan: 1975-1996
Jordan: 1975-1996
Kazakhstan: 1992-1996
Kenya: 1975-1996
Korea, Dem. Rep.: 1975-1996
Korea, North: 1991-1996
Kuwait: 1991-1996
Kyrgyz Republic: 1992-1996
Lao PDR: 1985-1996
Latvia: 1992-1996
Lebanon: 1991-1996
Lesotho: 1975-1996
Liberia: 1975-1986, 1991-1996
Lithuania: 1992-1996
Luxembourg: 1975-1996
Macedonia: 1992-1996
Madagascar: 1975-1996
Malawi: 1975-1996
Malaysia: 1975-1996
Maldives: 1991-1996
Mali: 1975-1996
Malta: 1975-1989, 1991-1996
Mauritania: 1975-1996

Mauritius: 1975-1996
Mexico: 1975-1996
Moldova: 1992-1996
Mongolia: 1985-1996
Morocco: 1975-1996
Mozambique: 1975-1996
Myanmar: 1975-1989, 1991-1996
Namibia: 1991-1996
Nepal: 1975-1986, 1991-1996
Netherlands: 1975-1996
New Zealand: 1975-1996
Nicaragua: 1975-1996
Niger: 1975-1989, 1991-1996
Nigeria: 1975-1996
Norway: 1975-1996
Oman: 1991-1996
Pakistan: 1975-1996
Panama: 1975-1996
Papua New Guinea: 1975-1996
Paraguay: 1975-1996
Peru: 1975-1996
Philippines: 1975-1996
Poland: 1975-1996
Portugal: 1975-1996
Qatar: 1991-1996
Republic of Yemen: 1991-1996
Romania: 1975-1989, 1991-1996
Russia: 1992-1996
Rwanda: 1975-1996
Saint Lucia: 1991-1996
Saudi Arabia: 1991-1996
Senegal: 1975-1996
Serbia/Montenegro: 1991-1996
Sierra Leone: 1975-1996
Singapore: 1975-1996
Slovak Republic: 1993-1996
Slovenia: 1992-1996
Solomon Is: 1981-1988, 1991-1996
Somalia: 1975-1989, 1991
South Africa: 1975-1996
Spain: 1975-1996
Sri Lanka: 1975-1996
Sudan: 1975-1996
Suriname: 1975-1989, 1991-1996
Swaziland: 1975-1989, 1991-1996
Sweden: 1975-1996
Switzerland: 1975-1996
Syria: 1975-1996
Taiwan: 1975-1996
Tajikistan: 1992-1996
Tanzania: 1975-1988, 1991-1996
Thailand: 1975-1996
Togo: 1975-1996
Trinidad and Tobago: 1975-1996
Tunisia: 1975-1993
Turkey: 1975-1990, 1994-1996
Turkmenistan: 1992-1996
U.S.S.R.: 1975-1989
Uganda: 1975-1996
Ukraine: 1992-1996
United Arab Emirates: 1991-1996
United Kingdom: 1975-1996
United States: 1975-1996
Uruguay: 1975-1996
Uzbekistan: 1992-1996
Vanuatu: 1984-1996
Venezuela: 1975-1996
Vietnam: 1991-1996
Western Samoa: 1980-1996
Yemen Arab Republic: 1975-1989
Yugoslavia: 1975-1990
Zaire: 1975-1989, 1991-1996
Zambia: 1975-1996
Zimbabwe: 1975-1996

Appendix 3: Robustness tests using "Size" instead of "BOP X SIZE" for the IMF

Exec. Vars.	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**
Constant	-0.10	-0.14	-0.53	-1.17	-0.98	-1.35	-1.16
	(0.34)	(0.34)	(0.38)	(0.61)	(0.64)	(0.65)	(0.58)
Log (# veto players)	0.54	0.60	0.62	0.67	0.42	0.42	0.61
	(0.25)	(0.26)	(0.27)	(0.29)	(0.27)	(0.28)	(0.27)
Foreign reserves	-2.33	-2.27	-2.49	-2.84	-2.88	-2.81	-2.06
	(0.63)	(0.64)	(0.70)	(0.94)	(0.89)	(1.01)	(0.86)
Debt service	0.92	0.99	1.10	1.18	0.99	1.09	1.18
	(0.34)	(0.37)	(0.41)	(0.48)	(0.47)	(0.64)	(0.42)
Investment	-5.37	-5.25	-5.64	-6.63	-6.82	-7.57	-5.47
	(1.66)	(1.69)	(1.83)	(2.07)	(2.09)	(2.10)	(2.25)
Budget	-0.46	-0.43	-0.44	-0.49	-0.58	-0.87	-0.63
	(0.19)	(0.19)	(0.20)	(0.21)	(0.21)	(0.28)	(0.24)
GDP per capita	-1.22	-1.23	-0.84	-1.39	-0.96	-1.06	-0.55
	(0.73)	(0.74)	(0.90)	(1.26)	(1.03)	(1.01)	(1.22)
Current account	0.07	0.07	-0.01	0.00	0.06	0.04	0.02
	(0.16)	(0.16)	(0.17)	(0.20)	(0.18)	(0.19)	(0.17)
Inflation	0.36	0.43	0.29	0.21	0.13	-0.06	0.19
	(0.47)	(0.49)	(0.47)	(0.48)	(0.47)	(0.45)	(0.39)
Latin America		-0.19	-0.43	-0.28	-0.29	-0.23	-0.44
		(0.27)	(0.31)	(0.42)	(0.41)	(0.46)	(0.38)
Past agreement			0.62	0.76	0.51	0.52	0.99
			(0.24)	(0.34)	(0.35)	(0.36)	(0.38)
Number under				0.21	0.13	0.19	0.04
				(0.18)	(0.17)	(0.16)	(0.13)
Election				0.75	1.05	1.17	0.63
				(0.28)	(0.32)	(0.34)	(0.26)
Years under				-0.11	0.29	0.25	-0.41
				(0.30)	(0.34)	(0.36)	(0.32)
IMF Vars.							
Constant	9.46	9.55	9.22	7.89	11.33	4.89	16.37
	(5.07)	(5.10)	(4.12)	(3.40)	(5.81)	(2.61)	(11.20)
Log (# veto players)	-2.13	-2.21	-1.86	-1.47	-1.36	-0.67	-3.78
	(1.24)	(1.30)	(0.88)	(0.71)	(0.89)	(0.47)	(2.73)
SIZE	1.84	1.86	1.76	1.64	0.86	0.85	4.00
	(1.36)	(1.40)	(1.14)	(0.99)	(0.84)	(0.59)	(3.03)
Number under	-2.22	-2.24	-2.15	-1.92	-2.49	-1.11	-2.69
	(1.15)	(1.16)	(0.89)	(0.74)	(1.05)	(0.57)	(1.71)
GDP per capita	4.44	4.44	2.69	2.29	2.28	1.24	3.25
	(5.41)	(5.42)	(3.05)	(2.51)	(3.41)	(1.71)	(6.10)
Current account	-0.44	-0.46	-0.37	-0.31	-0.35	-0.35	-1.18
	(0.37)	(0.38)	(0.28)	(0.24)	(0.38)	(0.28)	(0.83)
Inflation	0.39	0.37	0.29	0.37	0.52	0.16	-0.77
	(1.14)	(1.14)	(0.95)	(0.80)	(0.94)	(0.71)	(2.13)
Latin America					0.40	0.22	3.14
					(0.68)	(0.50)	(2.65)
Past agreement					0.06	0.07	-2.95
					(1.45)	(0.63)	(2.79)
Election					-1.06	-0.07	
					(0.97)	(0.48)	
Years under					-0.88	-0.32	2.63
					(0.62)	(0.38)	(1.84)
Foreign reserves						-2.82	-3.83
						(1.78)	(5.65)
Debt service						0.17	-0.99
						(0.43)	(1.26)
Investment						-3.67	-12.31
						(4.26)	(14.03)
Budget						0.25	1.76
						(0.45)	(1.27)
Corr. of error terms	Not Signif.	Not Signif.	Not Signif.	Not Signif.	Not Signif.	0.997	Not Signif.
						(0.12)	
Number of obs.	437	437	437	437	437	437	437
Obs correctly predicted	81%	81%	79%	76%	79%	78%	78%
Log likelihood function	-143.05	-142.78	-139.32	-133.52	-130.89	-129.58	-126.27
Restricted likelihood fcn	-185.50	-185.50	-185.50	-185.50	-185.50	-185.50	-185.50

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