Institutional determinants of IMF agreements

James Raymond Vreeland
Yale University
Department of Political Science
New Haven, CT 06520
james.vreeland@yale.edu

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Abstract

Are IMF agreements more likely to be signed under particular institutional arrangements? Governments may enter into IMF agreements to push through unpopular policies of economic reform because rejection of these policies by opponents becomes more costly when the policies are tied to IMF conditionality. While such a strategy is available to all sorts of governments, it is most likely to be pursued when there is greater institutional resistance to policy change – when there are more “veto players” with power to block economic reform. The argument is tested empirically using data from 179 countries from 1975 to 1996.
1. Introduction

In Putnam’s (1988) seminal piece on two-level games, he draws attention to the “Schelling conjecture”: by tying its hands domestically, a government may gain bargaining leverage in international negotiations (Pahre and Papayoanou 1997, 9). Scholars who have studied this phenomenon have found that domestic constraints can influence negotiations at the international level (see Mo 1995, Iida 1993 and 1996, Milner and Rosendorff 1997, Pahre 1997, Martin 2000).

But what about the flipside of the two-level game? Just as domestic constraints increase bargaining leverage at the international level, international constraints can increase bargaining leverage at the domestic level. Constraints imposed by the International Monetary Fund (IMF), for example, may increase a government’s ability to bargain for desired goals within their own countries. Putnam (1988, 457) addresses this reverse phenomenon as well. He notes that “International negotiations sometimes enable government leaders to do what they privately wish to do, but are powerless to do domestically… this pattern characterizes many stabilization programs that are (misleadingly) said to be ‘imposed’ by the IMF.” An executive may enter into IMF agreements to push through unpopular domestic policies – a phenomenon Gourevitch (1986) calls “the second image reversed.”

One can think of an IMF arrangement as composed of two parts: a “loan”\(^1\) and a set of “conditions” imposed by the IMF in return for the loan. When an executive of a country enters into an IMF arrangement, the Fund sets aside a certain amount of hard currency. The country can draw upon the currency 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. While the executive can enter into the IMF agreement unilaterally, changing policy to comply with IMF conditions may require the approval of other actors with veto power.

By tying policy to IMF conditionality, a reform-oriented executive makes rejection of these policy changes more costly (Spaventa 1983, Vaubel 1986, Remmer 1986, Putnam 1988, Kiondo 1992, Stein 1992, Edwards and Santaella 1993, Bjork 1995, Dixit 1996). Rejecting the IMF is costly – to the executive as well as the potential veto players – because it limits access to IMF credit and sends negative signals to creditors (Callaghy 1997, 2001) and investors (Edwards 2000). The country as a whole may suffer. To avoid these costs, opponents with veto power may be willing to accept more economic reform than they would if they were not facing the costs of rejecting the IMF.

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

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1 Technically, the “loan” is really a “purchase” of foreign currency.
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 the lead of Tsebelis (1995) 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 IMF serves as an outside ally in the face of potential veto player opposition to economic reform. Because rejecting the IMF is costly to them, opponents will accept more reform than they would without the threat of the IMF.

I further conjecture that the number of veto players may operate differently under presidential and parliamentary systems. Under both systems, the executive can enter into an IMF agreement unilaterally. Policy change may require the approval of veto players, but not the signing of the IMF agreement. Under a presidential system, a veto player is likely to be the legislature, not a player who can directly affect the origin and survival of the executive. Under a parliamentary system, however, the veto player is likely to be a coalition partner that can influence the survival of the executive. If the coalition partners in the government are strongly enough opposed to the IMF, they may immediately cause the downfall of the government. Thus, parliamentary governments may be more reluctant to attempt the strategy. The effect of the number of veto players should be stronger under presidential systems than under parliamentary systems.

Using veto player data from the Database of Political Institutions (Beck et al. 1999) and data on regime type from the World Political/Economic Database (Przeworski et al. 2000), I test these conjectures and find that executives prefer to enter into IMF agreements when the number of veto players is high. This effect is strongest in presidential systems.

After briefly presenting some examples (Section 2), I lay out the logic of bringing in the IMF to push through unpopular policies (Section 3). In Section 4, I present empirical tests of my argument. In Section 5, I propose a statistical approach to cutting through the prism of the two-level game from both the domestic → international and international → domestic directions. A brief conclusion follows.

2. Cases

Putnam (1988, 457) cites IMF negotiations with Italy in 1974 and 1977 as instances where “domestic conservative forces exploited the IMF pressure to facilitate policy moves that were otherwise infeasible internally.” He follows the work of Spaventa (1983) who argues that even “the unions and the Communists actually favored the austerity measures, but found the IMF demands helpful in dealing with their own internal [domestic] constituents” (Putnam 1988, 454). Bjork (1995) makes a similar observation about Poland. He contends “that most of the macroeconomic program imputed to IMF conditionality can be more accurately traced to economic imperatives or to domestic Polish political factors” (1995, 89). Pauly (1997, 163-164) tells the story of a finance
minister in Pakistan\(^2\) who “specifically requested the managing director of the IMF to include in the routine surveillance report on his country a reference to the need to cut military expenditures… [T]he ruse apparently achieved its objective of adding weight to the views of the minister.” The strategy has also been employed in Tanzania. The reform-oriented government of President Ali Hassan Mwinyi, for example, used an IMF agreement in 1986 to put pressure on socialist leadership in the Chama Cha Mapinduzi revolutionary party that dominated Tanzanian politics to increase interest rates and cut public spending (Kiondo 1992, 24-28, 35).

Another example is 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). These reforms involved a significant restructuring of government revenue and consumption, and certain segments of society were clearly hurt in the short-run. 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.

And then there is the case of Uruguay. Balance of payments problems and low foreign reserves precede most agreements with the IMF, but not the agreement with Uruguay in 1990. Out of all countries to sign agreements, Uruguay 1990 had the strongest reserves of any country ever to enter with both the balance of payments and the current account in surplus. Uruguay did not need an IMF loan. Why did the executive enter into the 1990 agreement? I argue the president signed not for the loan but for the conditions attached to the loan.

The newly elected president of Uruguay, Luis Alberto Lacalle, supported a program of economic reform consistent with the conditions that the IMF agreement demanded. The executive faced such opposition that eventually his coalition party and even his own party abandoned him. Lacalle had virtually no domestic allies for his reform program. Nevertheless, Lacalle was able to push unpopular policies through the legislature. By raising taxes and cutting spending, the government built on its 1990 budget surplus, increasing it to 0.91 percent of GDP for 1991, the highest surplus recorded in Uruguay’s history. Lacalle even won the approval of Congress for a measure so unpopular that it was defeated in a national plebiscite by more than seventy percent of the electorate. These policy changes would have been extremely unlikely without the added pressure of the IMF agreement.

\(^2\) Personal communication with Louis Pauly, 2 September 2001.
These anecdotes suggest that sometimes governments bring in the IMF not only because they need a loan but also because they require its political pressure to push through unpopular reforms. Are these but idiosyncratic examples or are they indicative of a broader pattern? Dixit (1996, 85) suggests that the phenomenon may be general:

most countries, particularly less developed ones, in need of fiscal and monetary restraint are able to make a commitment by using international organizations such as the World Bank or the International Monetary Fund as ‘delegates’ for this purpose. When their domestic constituents press for protection, subsidies, or inflationary finance, the treasuries can point to the conditions imposed by these bodies in return for much needed project loans or foreign currency.

How exactly can an IMF agreement help to push through unpopular reforms? And is this strategy employed generally? In the next section I lay out a logic behind bringing in the IMF to push through reforms. The empirical implications of this argument are then tested using a cross-national data set.

3. The logic of bringing in the IMF

Suppose a reform oriented executive faces opposition. By entering into an IMF agreement, an executive ties its preferred policies of economic reform to the conditions of the IMF. For opponents of economic reform, this move raises the costs of rejecting the executive’s proposals, because a rejection is no longer the mere rejection of an executive but also of the IMF. A total rejection of the IMF not only limits the credit that the IMF will extend to the country but it sends out costly negative signals to creditors and investors. So politically, the IMF is brought in to “tip the balance” (Bird 2001).

Note that these costs are imposed on the country as a whole, and they may even be higher for the executive than for the opponents of economic reform. Thus, the strategy may be risky. But as long as there is some positive cost that the opponents of economic reform face as well, the strategy may be effective. The executive can push through more of its reform program with the additional bargaining leverage that an IMF agreement brings.

The role of rejection costs is obviously pivotal for this argument. It must be true that failure to comply with an IMF agreement is costly to the veto players opposing reform. This does not mean that enforcement of conditions must be one hundred percent. In fact, it is not. 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. On the other hand, noncompliance is often sanctioned:

(1) The most obvious sanction imposed on a country is the restriction of access to the IMF loan. In a study of 59 IMF agreements from 1988 to 1992, Schadler (1995) found
that the IMF restricted access to the agreement loan 35 times (cited in Edwards 1999). This is a direct cost that a country risks when it does not comply with an IMF agreement.

(2) One indirect sanction for rejecting IMF conditions involves creditors. As Callaghy (1997, 2001) notes, organizations such as the Paris Club, an informal group of creditor countries that reschedules country debt, almost always require that countries be in good standing under an IMF agreement if any debt negotiations are to take place. Rejecting IMF conditions may, therefore, preclude debt rescheduling desperately needed in many developing countries.

(3) A third form of sanction for noncompliance may come through investors. Edwards (2000) finds that while increased investment is not associated with compliance with an IMF agreement, decreased investment is associated with a failed IMF arrangement. Investors do not rally to countries in compliance with an IMF agreement, but they do withhold support from a country with a failed IMF arrangement. When an IMF agreement is cancelled due to noncompliance, investment is hurt.

It can, therefore, be costly in several ways for countries to reject the policies imposed by the IMF. Facing the trade-off between rejection costs and policy changes, opponents of economic reform may prefer the latter.

To make the argument more concrete, suppose that IMF agreements are negotiated over only one dimension – the budget deficit – and that the budget deficit can be set anywhere on the interval [0,1]. Suppose that a relevant opponent of the executive’s program of economic reform – call him a “veto player” – has standard Euclidean preferences over the single dimension of deficit and has an ideal point at 1. The logic of the argument below holds for any Euclidean preferences. To make the algebra as simple as possible, assume the actor has a linear “tent-shaped” utility function so that the utility is measured as the negative of the distance from the actor’s ideal point.

Let the level of deficit in the IMF agreement (set by the executive and the IMF) be \( a \), and let \( r \) denote the cost of rejecting the IMF to the veto player. Obviously, the decision making context is more complicated than I lay out in this simple model – there is some uncertainty about whether the IMF will impose rejection costs or not. But one can think of \( r \) as the expected cost of rejecting the IMF, provided there is some positive probability of punishment that can negatively affect the veto players or their constituents.

Suppose the status quo deficit is 1 – the veto player’s ideal point. Rejecting the IMF agreement will give the veto player a payoff of \( -r \). Accepting the IMF agreement level of deficit will give the veto player a payoff of \( -|1-a| = a-1 \). The veto player will prefer the agreement level of deficit to the status quo provided \( a > 1 - r \). If the executive can convince the IMF to set the agreement level of deficit to \( a \geq 1-r \), the veto player
will approve and the deficit will be reduced. Without the IMF, the veto player will veto any deviation from the status quo.

Figure 1 illustrates the decision making context for the veto player:

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3 The other root, $a \leq 1 + r$, lies outside of the interval $[0,1]$. At any rate, it is assumed that the IMF imposes conditions that reduce the deficit.

4 Recall that the executive itself will also suffer if the IMF is rejected. The country as a whole suffers, and the executive may even pay a higher price than other veto players. This may make the strategy of bringing in the IMF more risky for the executive, but as long as the veto players also suffer from rejecting the IMF, the winset will increase in the direction of more economic reform.
Without the IMF agreement, the veto player will always reject the executive’s proposal because $a < 1$.

If the executive signs an IMF agreement, the veto player will accept the executive’s proposal when rejection costs are high enough: $r > 1 - a$.

The argument holds under less restrictive assumptions about the preferences and number of veto players. Suppose the IMF is willing to provide political help to any executive that requests it to reduce the country’s budget deficit. Let the status quo level of budget deficit ($q$) be uniformly distributed on the interval: $q \sim U(0,1]$. And let the ideal point of the executive’s Euclidean utility ($g^*$) be uniformly distributed, but less than the status quo: $g^* \sim U[0,q)$.

Start with one veto player with Euclidean utility. Let his ideal point ($v^*$) be randomly drawn from a uniform distribution along the policy space: $v^* \sim U[0,1]$. If the veto player prefers a low enough deficit, the IMF agreement will not be necessary.
Formally, if \( v^* < g^* + \left( \frac{q-g^*}{2} \right) \), then even the executive’s ideal point is in the winset of outcomes that are preferred by the executive and the veto player over the status quo, so the imposition of IMF rejection costs \( r \) may not be helpful:

**Figure 2: An IMF agreement is not needed if veto players prefer low deficit**

Suppose, however, that the veto player does not prefer a very low deficit. Suppose that \( g^* + \left( \frac{q-g^*}{2} \right) < v^* < q \). If \( v^* \) is in this range, the lowest deficit the veto player will accept without the IMF agreement is \( qv - v^* \). If an IMF agreement is introduced into this situation, then rejecting the proposed deficit entails the rejection cost, \( r \). The utility to the veto player from accepting the status quo is no longer \( -v^* - q = v^* - q \). Rather it is \( v^* - q - r \). The veto player will be indifferent between vetoing the IMF agreement (maintaining the status quo) and accepting the IMF agreement level of deficit \( a \) when:

\[
-a = v^* - q - r
\]

Thus, introducing the IMF agreement expands the winset. The veto player will accept any agreement level of deficit such that \( a > 2v^* - q - r \). And given that the
executive’s ideal point is \( g^* \), the executive will be better off bringing in the IMF for any value of \( a \in (2g^* - q, q) \).

**Figure 3: Introducing the IMF agreement expands the winset**

If \( g^* + \left( \frac{q - g^*}{2} \right) < v^* < q \)

The lowest deficit acceptable to the veto player without the IMF agreement is \( 2v^* - q \).

Entering the IMF agreement (introducing \( r \)) expands the winset down to \( 2v^* - q - r \).

The situation is similar if \( v^* > q \). Without an IMF agreement, the veto player will veto any proposed deficit less than the status quo. If an IMF agreement is introduced, then the utility the veto player gets from insisting upon maintaining the status quo is no longer \( v^* - q \) but \( v^* - q - r \). As before, the veto player is willing to accept a new level deficit as low as \( a = 2v^* - q - r \) in order to avoid having \( r \) imposed for rejecting the IMF agreement.

Thus, the IMF agreement can help an executive who seeks to reduce the deficit if there is at least one veto player with an ideal point \( v^* > g^* + \left( \frac{q - g^*}{2} \right) \). Note that if \( v^* \sim U[0,1] \), then the probability that the IMF agreement can help the executive is

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5 The IMF may insist upon setting \( a \) such that \( a < 2g^* - q \). In this case the executive, of course, will prefer the status quo and will perhaps not want to enter into the IMF agreement.
If there are 2 veto players whose ideal points are uncorrelated, then the probability that at least one of them has an ideal point in the range where an IMF agreement would be helpful to the executive is
\[ 1 - \left[ g^* + \left( \frac{q - g^*}{2} \right) \right]^2. \]
If there are \( n \) veto players, the probability that the IMF agreement will help the executive reduce the deficit is
\[ 1 - \left[ g^* + \left( \frac{q - g^*}{2} \right) \right]^n. \]
As the number of veto players \( (n) \) increases, the probability that a executive will find the imposition of IMF conditionality useful monotonically increases.

**Figure 4: The probability that the IMF agreement is useful to the executive**

Note that the ideal points of veto players may be correlated. If they are, then the probability that an IMF agreement will help the executive will still increase as the number of veto players increases, but at a slower rate. There will be diminishing returns from additional veto players. One way to capture the diminishing returns is to measure the natural logarithm of the number of veto players. I test alternatively the effect of the number of veto players and of the natural logarithm of the number of veto players in the empirical work below.

The versions of the game presented so far most accurately illustrate how this strategy may operate under a presidential system. As noted in the introduction, under a presidential system, a veto player is likely to be the legislature, not a player who can directly affect the origin and survival of the executive. But under a parliamentary

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6 The distinction between presidential and parliamentary systems by the origin and survival of the executive comes from Lijphart (1984, 1992).
system, the veto player is likely to be a coalition partner that does have direct control over the executive’s survival. If the coalition partners in the government are strongly enough opposed to the IMF, they may immediately cause the downfall of the government after the executive or finance minister indicates that IMF negotiations are under way. This does not mean that bringing in the IMF to push through policy is not a strategy available under parliamentary systems, but it does indicate that parliamentary governments may be more reluctant to attempt the strategy.

Figure 5 illustrates how the decision making setting may be different in a parliamentary system. The game depicted here follows directly from Figure 1, where the status quo deficit and the veto player’s ideal point are both 1. As previously described, the IMF negotiates only with the head of government (or his representative) and enters into agreements that are not ratified by veto players. But under a parliamentary system, veto players who are coalition members in the government have the option of precluding IMF negotiations. In Figure 5, the veto player can withdraw support of the government, preventing the conclusion of an IMF agreement. In this case, new elections are held, returning a payoff of “e” to the veto player, the expected payoff of new elections.
As in Figure 1, without the IMF agreement, the veto player will always reject the executive’s proposal because $a < 1$.

As in Figure 1, if the executive concludes an IMF agreement, the veto player will accept the executive’s proposal when rejection costs are high enough: $r > 1 - a$.

But IMF negotiations may not get this far. If $e > a - 1$, the veto player may opt for new elections before an IMF agreement can be concluded. Anticipating this, the executive may avoid bringing in the IMF.

As in Figure 1, if IMF negotiations are concluded and a new deficit level, $a$, is proposed with the support of the IMF, the veto player will accept $a$ is $r > 1 - a$. But the IMF negotiations may not get this far. If the veto player prefers new elections to the outcome under an IMF agreement, if $e > a - 1 > -r$, the veto player may opt for new elections before an IMF agreement can be concluded. The veto player thus prevents the
IMF agreement. Indeed, if the executive anticipates this and prefers the status quo over new elections, the executive will avoid IMF negotiations entirely.

Under parliamentarism, therefore, there is an added condition that must hold in order for the strategy of bringing in the IMF to be feasible: \( a - 1 > e \). The executive can only use the IMF to push policy past an opposed veto player if the veto player prefers the IMF outcome to new elections. This added condition does not preclude the strategy of bringing in the IMF, but it does make it less likely under a parliamentary system.

Hence, I conjecture the following:

(1) As the number of veto players in a political system increases, the probability that an executive will find an IMF agreement useful increases.

(2) If the ideal points of veto players are correlated, the relationship will exhibit diminishing returns. Thus, I expect the relationship between IMF agreements and the natural logarithm of the number of veto players to be stronger than between IMF agreements and the number of veto players.

(3) The relationship should be strongest under presidential systems.

4. Empirical tests

The veto players argument draws on the work of Tsebelis (1995). Tsebelis classifies political systems according to their “capacity for policy change” as measured by the number of veto players in the system. Tsebelis defines veto players as “individual or collective actors whose agreement (by majority rule for collective actors) is required for a change of the status quo” (1995, 289). Veto players, for example, may be each chamber in a legislature under a presidential system, or may be each coalition party whose approval is required to govern under a parliamentary system. Tsebelis shows that the “winset” of policies that are preferred by all relevant political actors to the status quo becomes smaller when there are larger numbers of veto players. When the winset is smaller, there is smaller capacity for policy change. I argue that the introduction of rejection costs, \( r \), through an IMF agreement effectively enlarges the winset in the direction of economic reform. The IMF agreement, thus, makes greater economic reform possible.

To test whether political systems with more veto players are more likely to turn to the IMF, I use Beck et al.’s (1999) measure of the number of veto players in a political system. Beck et al. count the number of veto players as the sum of the following: 1 for the executive, 1 if multiple parties are legal and compete in executive elections, 1 for each legislative chamber, and – if multiple parties are legal and compete in legislative elections – 1 for every veto player whose political orientation is closer to that of the first opposition party than to the party of the executive (for presidential systems, the veto
player is the first government party; for parliamentary systems the veto players are the 3 largest government parties).\textsuperscript{7}

First, consider what is observed. My data include 3,016 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.\textsuperscript{8} The average number of veto players in the entire sample is 2.11. The average number of veto players in country-years observed participating in IMF agreements is 2.04. And the average number of veto players in country-years observed not participating is 2.15. The correlation between these two variables is $-0.04$.

This obviously does not confirm my conjecture, however, there may be other determinants of participation in IMF agreements for which one must control. Consider Table 1, which presents the results of a simple probit with IMF participation as the dependent variable, and the number of veto players and GDP per capita as explanatory variables:

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\textsuperscript{7} I use this measure for veto players, “Check2a” in the \textit{Database of Political Institutions}, because it is “recommended” by Beck et al. 1999. All of the empirical findings below, however, also held when I used “Check1a,” which is defined as the sum of the number of legislative chambers for presidential systems (if multiple parties compete in legislative elections) and the sum of the number parties in the government for parliamentary systems.

\textsuperscript{8} See Appendix 1 for a detailed description of all variables used.
Table 1: The effect of veto players on IMF participation controlling for GDP per capita

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>S.E.</th>
<th>Variable</th>
<th>Coefficient</th>
<th>S.E.</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.28**</td>
<td>0.06</td>
<td>Constant</td>
<td>0.31**</td>
<td>0.052</td>
<td>1.00</td>
</tr>
<tr>
<td># of veto players</td>
<td>0.09**</td>
<td>0.02</td>
<td>Log (# of veto players)</td>
<td>0.299**</td>
<td>0.058</td>
<td>2.29</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>-0.0002**</td>
<td>0.00001</td>
<td>GDP per capita</td>
<td>-0.0002**</td>
<td>0.00001</td>
<td>4993</td>
</tr>
</tbody>
</table>

Estimated probability by number of veto players (holding GDP per capita to mean):

<table>
<thead>
<tr>
<th>Estimated probability of IMF program</th>
<th>Estimated probability of IMF program</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 veto player</td>
<td>0.28</td>
</tr>
<tr>
<td>2 veto players</td>
<td>0.31</td>
</tr>
<tr>
<td>3 veto players</td>
<td>0.34</td>
</tr>
<tr>
<td>4 veto players</td>
<td>0.37</td>
</tr>
<tr>
<td>5 veto players</td>
<td>0.41</td>
</tr>
</tbody>
</table>

| 1 veto player                       | 0.25                                |
| 2 veto players                      | 0.28                                |
| 3 veto players                      | 0.30                                |
| 4 veto players                      | 0.31                                |
| 5 veto players                      | 0.32                                |

Table 1 shows 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. Once one controls for GDP per capita, the number of veto players turns out to have a positive significant effect on the probability of an IMF agreement. To ensure that this finding is not merely driven by outlying countries participating in IMF agreements with particularly high numbers of veto players, I also include the natural logarithm of the number of veto players to dampen the effects of extreme values the variable may take. As noted in Section 2, this is actually a better variable to use if the ideal points of veto players are correlated. If ideal points of veto players are correlated then the probability that an IMF agreement will be useful to an executive will increase as the number of veto players increases, but at a slower rate. The results on the right hand side of Table 1 are from a probit using the natural logarithm of veto players to explain participation in IMF agreements. As expected, the coefficient on the log of the number of veto players is more strongly significant than the coefficient on the number of veto players, although the overall impact on the probability of an IMF agreement is less dramatic.

In Table 2, I present results of a probit testing whether the positive and significant relationship holds when other variables that may effect IMF participation are included in the specification. I include standard variables used to predict selection into IMF programs (see Bird 1996b for a review). These variables are also important according to the model in Section 2. In order to capture how sensitive countries are to “rejection costs” 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). The model also indicates that the level of budget deficit/surplus (as a percentage of GDP) may matter.

Table 2: The effect of veto players on IMF participation controlling for GDP per capita, "rejection costs," and deficit

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>S.E.</th>
<th>Variable</th>
<th>Coefficient</th>
<th>S.E.</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.662**</td>
<td>0.164</td>
<td>Constant</td>
<td>0.661**</td>
<td>0.160</td>
<td>1.00</td>
</tr>
<tr>
<td># of veto players</td>
<td>0.060*</td>
<td>0.032</td>
<td>Log (# of veto players)</td>
<td>0.249**</td>
<td>0.078</td>
<td>2.26</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>-0.0001***</td>
<td>0.0002</td>
<td>GDP per capita</td>
<td>-0.0001***</td>
<td>0.00002</td>
<td>3035</td>
</tr>
<tr>
<td>Foreign reserves</td>
<td>-0.059**</td>
<td>0.017</td>
<td>Foreign reserves</td>
<td>-0.061**</td>
<td>0.017</td>
<td>3.49</td>
</tr>
<tr>
<td>Current account</td>
<td>0.003</td>
<td>0.007</td>
<td>Current account</td>
<td>0.004</td>
<td>0.007</td>
<td>-4.36</td>
</tr>
<tr>
<td>Debt service</td>
<td>0.053**</td>
<td>0.010</td>
<td>Debt service</td>
<td>0.054**</td>
<td>0.010</td>
<td>6.33</td>
</tr>
<tr>
<td>Investment</td>
<td>-0.025**</td>
<td>0.005</td>
<td>Investment</td>
<td>-0.025**</td>
<td>0.005</td>
<td>22.79</td>
</tr>
<tr>
<td>Budget (deficit/surplus)</td>
<td>0.010</td>
<td>0.008</td>
<td>Budget (deficit/surplus)</td>
<td>0.010</td>
<td>0.008</td>
<td>-3.97</td>
</tr>
</tbody>
</table>

Table 2 shows that the effects of the number of veto players and the natural logarithm of the number of veto players hold when other variables are considered. They are positive and significant (though the natural logarithm is of stronger significance). This is particularly important since it may be that countries with many veto players are less able to take effective action during an economic crisis. If this were the case, then political systems with more veto players might be more likely to turn to the IMF, not because the executive is trying to push through economic reform but because the country has a more dire need for an IMF loan because of its failure to react to the economic crisis. I control for this possibility by including variables such as foreign reserves, the current account balance, and

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.
debt service, investment and budget deficit. Essentially, my results indicate that for whatever values these variables may take on – “crisis” values or not – having more veto players in the political system is more likely to increase the probability of participating in an IMF agreement.

Table 2 shows that most of the control variables have the expected effects. If GDP per capita is low, a country is more likely to participate in an IMF agreement. 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. 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 and there are higher numbers of veto players.

The main finding is that as the number of veto players increases, an IMF agreement becomes more likely.

Several doubts can be raised about this finding. For example, perhaps because the number of veto players varies much more across countries than it does within a single country across time, the positive effect of veto players may simply be a spurious correlation being driven by country-specific characteristics. Controlling for country-specific effects when the dependent variable is dichotomous, as it is here, is not straightforward as it is when the dependent variable is continuous. One method – conditional logit, suggested by Chamberlain (1980) – involves estimating the probability of participating in IMF agreements conditional on the total years spent participating in IMF agreements for each country. A full description of this model can be found in Green et al. (2001). Table 3 presents results using this method to control for country specific effects.10

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>S.E.</th>
<th>Variable</th>
<th>Coefficient</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td># of veto players</td>
<td>0.276**</td>
<td>0.087</td>
<td>Log (# of veto players)</td>
<td>0.667**</td>
<td>0.193</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>-0.001**</td>
<td>0.0002</td>
<td>GDP per capita</td>
<td>-0.001**</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

Table 3: Fixed effects logit model for panel data

Due to the unbalanced nature of the panel data I use, 572 country-year observations are lost when this method is used (from 2,085 observations to 1,513 observations). Out of the 928 observations available when the full specification is used only 340 can be used with the Fixed Effects Logit Model. Using this small sample, the number of veto players has a positive but not statistically significant effect on participation in IMF programs.
Table 3 shows that even controlling for country specific effects, the number of veto players has a highly significant positive effect on the probability of participating in an IMF agreement.

Yet another question that should be raised is whether the number of veto players should have the same effect under all institutional arrangements. In particular, do veto players play the same role under presidential and parliamentary systems?

Recall from Section 1 that IMF agreements are entered into bilaterally by the executive and the IMF. Ratification by other veto players, such as a legislature or a coalition partner, is not required a priori. While changing policy to comply with IMF conditions requires the approval of veto players, the actual introduction of the IMF arrangement (and potential rejection costs) does not. As described in previous sections, veto players in presidential systems are likely to be legislatures that do not directly affect the survival of the executive. Veto players in parliamentary systems are likely to be government coalition partners that have direct control over the executive’s survival. The IMF may be willing to negotiate with a prime minister, but if the coalition partners in the government are strongly enough opposed to the IMF, they may immediately cause the downfall of the government. Parliamentary governments may be more reluctant to attempt the strategy of bringing in the IMF.

To test this conjecture, I interact the veto players variable with two dummy variables, the first coded one if the country has a presidential system and zero otherwise, and the other coded one if the country has a parliamentary system and zero otherwise. The default category – the non-presidential/non-parliamentary category – includes country-years in which the political system does not have binding, competitive elections (dictatorships) (Przeworski et al. 2000). Table 4 presents the results of including these variables with the variables used above in a probit model. The presidential and parliamentary data are derived from the variable INST from the Przeworski et al. (2000). The variable is described in Appendix 1.

The units for GDP per capita in this specification are 1000s of PPP dollars.

---

11 The presidential and parliamentary data are derived from the variable INST from the Przeworski et al. (2000). The variable is described in Appendix 1.

12 The units for GDP per capita in this specification are 1000s of PPP dollars.
Table 4: The effect of veto players in presidential and parliamentary systems

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>S.E.</th>
<th>Variable</th>
<th>Coefficient</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.749**</td>
<td>0.173</td>
<td>Constant</td>
<td>0.661**</td>
<td>0.162</td>
</tr>
<tr>
<td>Number of veto players</td>
<td>-0.061</td>
<td>0.050</td>
<td>Log (Number of veto players)</td>
<td>0.015</td>
<td>0.115</td>
</tr>
<tr>
<td>Presidential: # veto players</td>
<td>0.211**</td>
<td>0.046</td>
<td>Pres: LOG (# veto players)</td>
<td>0.505**</td>
<td>0.132</td>
</tr>
<tr>
<td>Parliamentary: # veto players</td>
<td>0.086**</td>
<td>0.043</td>
<td>Parl: LOG (# veto players)</td>
<td>0.186</td>
<td>0.125</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>-0.117**</td>
<td>0.025</td>
<td>GDP per capita</td>
<td>-0.120**</td>
<td>0.025</td>
</tr>
<tr>
<td>Foreign reserves</td>
<td>-0.064**</td>
<td>0.018</td>
<td>Foreign reserves</td>
<td>-0.064**</td>
<td>0.018</td>
</tr>
<tr>
<td>Current account</td>
<td>0.005</td>
<td>0.007</td>
<td>Current account</td>
<td>0.005</td>
<td>0.007</td>
</tr>
<tr>
<td>Debt service</td>
<td>0.054**</td>
<td>0.010</td>
<td>Debt service</td>
<td>0.054**</td>
<td>0.010</td>
</tr>
<tr>
<td>Investment</td>
<td>-0.021**</td>
<td>0.005</td>
<td>Investment</td>
<td>-0.022**</td>
<td>0.005</td>
</tr>
<tr>
<td>Budget (deficit/surplus)</td>
<td>0.008</td>
<td>0.008</td>
<td>Budget (deficit/surplus)</td>
<td>0.008</td>
<td>0.008</td>
</tr>
</tbody>
</table>

Effect of veto players in presidential systems: 0.150** 0.043
Effect of log(veto players) in presidential systems: 0.520** 0.112
Effect of veto players in parliamentary systems: 0.025 0.036
Effect of log(veto players) in parliamentary systems: 0.201** 0.099
Effect of veto players in systems without binding, competitive elections: -0.061 0.050
Effect of log (veto players) in systems without binding, competitive elections: 0.015 0.115

Coefficients and standard errors for interaction effects calculated from numbers above.

| Number of observations | 924       | Number of observations | 924       |
| Correctly predicted not participating | 57%       | Correctly predicted not participating | 58%       |
| Correctly predicted participating   | 70%       | Correctly predicted participating   | 69%       |
| Log likelihood function             | -579.74   | Log likelihood function             | -579.95   |
| Restricted log likelihood           | -640.10   | Restricted log likelihood           | -640.10   |
| Chi-squared                         | 120.72    | Chi-squared                         | 120.30    |

The results presented in Table 4 confirm that the general effect of the number of veto players holds under both presidential and parliamentary systems, but the effects are much weaker in parliamentary systems. When the logarithm of the number of veto players is used, the effect of veto players is positive and significant for both presidential and parliamentary systems, but the effect is more than twice as strong under presidential systems than it is under parliamentary systems. When the log of the number of veto players is not used then the effect is much weaker for parliamentary systems. It is positive but not statistically significant from zero. For presidential systems, however, the effect is positive and highly significant. This further confirms that executives that turn to the IMF are politically motivated. Note the effect of the number of veto players in political systems without binding...
competitive elections (dictatorships, following Przeworski et al. 2000): the effect is not significantly different from zero. So while veto players play the strongest role in presidential systems and a weaker role in parliamentary systems, in dictatorships they play no significant role.

Given the preponderance of presidential systems in Latin America, and the extensive involvement of the IMF in Latin America, one may wonder if the above results are simply being driven by observations of Latin American countries. To test this, I include a dummy variable coded 1 if an observation comes from a Latin American country and 0 otherwise:
Table 4a: The effect of veto players in presidential and parliamentary systems (controlling for Latin America)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>S.E.</th>
<th>Variable</th>
<th>Coefficient</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.759**</td>
<td>0.174</td>
<td>Constant</td>
<td>0.673**</td>
<td>0.163</td>
</tr>
<tr>
<td>Number of veto players</td>
<td>-0.062</td>
<td>0.051</td>
<td>Log (Number of veto players)</td>
<td>0.005</td>
<td>0.116</td>
</tr>
<tr>
<td>Presidential: # veto players</td>
<td>0.157**</td>
<td>0.054</td>
<td>Pres: LOG (# veto players)</td>
<td>0.340**</td>
<td>0.152</td>
</tr>
<tr>
<td>Parliamentary: # veto players</td>
<td>0.101**</td>
<td>0.045</td>
<td>Parl: LOG (# veto players)</td>
<td>0.244*</td>
<td>0.129</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>-0.138**</td>
<td>0.028</td>
<td>GDP per capita</td>
<td>-0.143**</td>
<td>0.028</td>
</tr>
<tr>
<td>Foreign reserves</td>
<td>-0.068**</td>
<td>0.018</td>
<td>Foreign reserves</td>
<td>-0.069**</td>
<td>0.018</td>
</tr>
<tr>
<td>Current account</td>
<td>0.008</td>
<td>0.007</td>
<td>Current account</td>
<td>0.008</td>
<td>0.007</td>
</tr>
<tr>
<td>Debt service</td>
<td>0.053**</td>
<td>0.010</td>
<td>Debt service</td>
<td>0.052**</td>
<td>0.010</td>
</tr>
<tr>
<td>Investment</td>
<td>-0.020**</td>
<td>0.005</td>
<td>Investment</td>
<td>-0.020**</td>
<td>0.005</td>
</tr>
<tr>
<td>Budget (deficit/surplus)</td>
<td>0.007</td>
<td>0.008</td>
<td>Budget (deficit/surplus)</td>
<td>0.007</td>
<td>0.008</td>
</tr>
<tr>
<td>Latin America</td>
<td>0.309**</td>
<td>0.157</td>
<td>Latin America</td>
<td>0.340**</td>
<td>0.157</td>
</tr>
</tbody>
</table>

| Effect of veto players in presidential systems: | 0.095** | 0.051 |
| Effect of log(veto players) in presidential systems: | 0.344** | 0.138 |
| Effect of veto players in parliamentary systems: | 0.039   | 0.036 |
| Effect of log(veto players) in parliamentary systems: | 0.249** | 0.101 |
| Effect of veto players in systems without binding, competitive elections: | -0.062 | 0.051 |
| Effect of log (veto players) in systems without binding, competitive elections: | 0.005   | 0.116 |

Coefficients and standard errors for interaction effects calculated from numbers above.

Table 4a shows that indeed Latin American countries are more likely to turn to the IMF than non-Latin American countries. The coefficient on the dummy variable to control for Latin American countries is positive and significant in both specifications. Yet, the effects of the number of veto players under presidential and parliamentary systems remains. As the number of veto players increases, executives in both types of regimes are more likely to turn to the IMF – although the effect is much stronger under presidential regimes. In dictatorships (as classified by Przeworski et al. 2000), veto players play no significant role.
5. A truly two level approach

Early research following Putnam’s two-level approach to international relations explored how domestic constraints influence politics at the international level, but ignored how international constraints can influence politics at the domestic level. The simple model presented in Section 3 was intended to address this latter concern. It illustrates how international agreements may influence domestic politics. It does not address, however, the way domestic politics influence international agreements. In particular, it ignores how domestic institutional constraints on the executive may influence the negotiations with the IMF.

How might the number of veto players affect the decision of the IMF to enter into agreements with countries? Recall that the model in Section 3 indicates that increasing the number of veto players increases the probability that an IMF agreement will be useful to an executive. The model also indicates, however, that increasing the number of veto players also increases the expected lowest deficit that will be accepted by all veto players. If the IMF has a limited budget, it must choose which countries to give preference to. And if the IMF prefers countries that reduce their deficit the most, then the IMF may prefer to sign agreements with countries that have fewer numbers of veto players.

Countries with many veto players also make for tougher negotiation partners for the IMF. As Schelling (1960, 28) notes, comparing democracies to dictatorships, “the ability of a democratic government to get itself tied by public opinion may be different from the ability of a totalitarian government to incur such a commitment.” 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.” When negotiating the conditions for an IMF loan, democracies can plead, “I’d like to accept your proposal, but I could never get it accepted at home” (Putnam 1988, 440). Because countries with fewer veto players are less constrained, they make easier negotiation partners and are preferred by the Fund. This conjecture is born out by statistical evidence. Przeworski and Vreeland (2000) find that the IMF is more likely to enter into agreements with dictatorships than with democracies.\footnote{Historical approaches have led to the same conclusion. Bandow (1992, 26) argues, “the IMF has rarely met a dictatorship that it didn’t like.”}

Thus, while increasing the number of veto players increases the probability that an executive will find an IMF agreement useful, it may decrease the probability that the IMF will want to expend resources negotiating with the constrained executive. The number of veto players may have a positive effect on the decision of the executive to enter and a negative effect on the decision of the IMF to enter into an agreement.
As a final statistical test, I use a more theoretically informed statistical model. The decision to participate in IMF agreements is joint: both the executive and the IMF must agree. And the decision to enter into an IMF agreement may have different determinants than the decision to continue IMF agreements. I use a statistical model of bilateral cooperation to test the effects of variables on all four of these decisions: (1) the decision of the government to enter into an IMF agreement, (2) the decision of the government to continue participation, (3) the decision of the IMF to enter into an agreement, and (4) the decision of the IMF to continue. Appendix 3 describes the statistical model formally.\textsuperscript{14}

An advantage of using the statistical model of bilateral cooperation is that it allows one to include the same variable for different actors. Whereas standard probit models the probability of an IMF agreement as a function of one vector of variables, bivariate probit (with partial observability) models the probability of an IMF agreement as a function of two vectors of variables. Of course, if one includes the exact same set of variables for both actors, the model will not be identified. One must have prior beliefs about the variables that matter to the government and those that matter to the IMF. And 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 the mandate of the IMF includes maintaining global financial stability. The IMF may give special attention to countries with large balance of payments problems in absolute terms, while governments care about the relative size of a foreign exchange crisis.

Table 5 presents the results using this statistical model.\textsuperscript{15} For the executive, I include the rejection cost variables described in the previous section as well as the budget deficit variable.\textsuperscript{16} For the IMF, I include a variable to capture its mandate to maintain world economic stability, as noted in the above paragraph. I use the overall balance of payments as a proportion of GDP weighted by the size or importance of the country in terms of GDP. 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 the IMF keeps such information secret. I include the number of veto players for both actors:

\textsuperscript{14} A more detailed description of this model can be found in Przeworski and Vreeland (2002).

\textsuperscript{15} The data for Table 5 come from Przeworski and Vreeland (2000). The specification also closely follows theirs.

\textsuperscript{16} I leave out current account since it is not significant in any of the above specifications. When included in this specification, it is not significant, but the standard errors of other coefficients increases. I also do not include GDP per capita here. It turns out not to be significant when included in this specification. These results are available from the author upon request.
Table 5: A statistical model of bilateral cooperation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient Government</th>
<th>Coefficient IMF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S.E.</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-0.405</td>
<td>0.444</td>
</tr>
<tr>
<td>Number of veto players</td>
<td>0.397**</td>
<td>0.186</td>
</tr>
<tr>
<td>Foreign reserves</td>
<td>-2.182**</td>
<td>0.811</td>
</tr>
<tr>
<td>Debt service</td>
<td>1.625**</td>
<td>0.577</td>
</tr>
<tr>
<td>Investment</td>
<td>-7.631**</td>
<td>2.401</td>
</tr>
<tr>
<td>Budget (deficit/surplus)</td>
<td>-0.506**</td>
<td>0.204</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>2.232*</td>
<td>1.152</td>
</tr>
<tr>
<td>Number of veto players</td>
<td>-0.419**</td>
<td>0.185</td>
</tr>
<tr>
<td>Interact BOP and Size</td>
<td>-1.185**</td>
<td>0.436</td>
</tr>
<tr>
<td>Number under</td>
<td>-0.463**</td>
<td>0.198</td>
</tr>
</tbody>
</table>

Regarding the "Determinants of entering," Table 5 shows that 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. Thus, the table shows that as the number of veto players increases, the probability that the
executive wants to enter the IMF agreement increases, but the probability that the IMF wants to enter decreases. The joint probability of entering increases, consistent with the results from previous tables.

All of the other variables for the executive that were presented in previous specifications have the same qualitative effects, with the exception of the budget deficit variable. In this model, the budget deficit has a significant effect as predicted: when the deficit is high (i.e., when the surplus is small), executives are more likely to turn to the IMF. The variables included for the IMF have expected effects on the decision of the IMF to enter into agreements. The IMF is more likely to enter into agreements with countries with large absolute balance of payments deficits. The effect of the number of other countries under IMF agreements ("Number under") is negative. The IMF is less likely to enter into agreements when it already has many other countries participating in agreements.

As for “identifying” the IMF as the actor with the negative coefficient for the number of veto players variable, I tried other specifications with the identifying variable, the absolute size of balance of payments deficit (Interact BOP and Size). One specification, for example, included the same set of variables for both actors (Number of veto players, Foreign Reserves, Debt service, Investment, Budget deficit/surplus) except I included “Interact BOP and Size” for only one actor (the IMF). Although this model does not perform as well as the one presented in Table 5, this specification exhibits the same pattern regarding the Number of veto players variable: negative for the actor that cares about the absolute size of balance of payments problems (the IMF) and positive for the other actor (the government).

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.” The continuation of IMF agreements appears to be largely stochastic. It is interesting, however, that the coefficients for the number of veto players are negative for the decisions of both the government and the IMF to continue agreements. While these findings are not significant, the signs are not surprising. Under IMF programs, the target level of economic reform is often expected to be surpassed from year to year. When there are many veto players in a system, it is likely that the reforms will progress to a point beyond one or more veto player’s indifference between accepting more reform and risking the costs of rejecting the IMF. This is yet another reason why the IMF may be skeptical of entering into agreements with countries that have higher numbers of veto players. Given the preponderance of evidence presented in this section, however, it obviously does not deter executives from turning to the IMF.

Table 5a shows that these results hold when the logarithm of the number of veto players is used.

17 These results are available from the author upon request.

18 For further research on the duration of IMF agreements, see Joyce (2001).
### Table 5a: A statistical model of bilateral cooperation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Government</th>
<th>IMF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>S.E.</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.016</td>
<td>0.428</td>
</tr>
<tr>
<td>Log (# of veto players)</td>
<td>0.812**</td>
<td>0.382</td>
</tr>
<tr>
<td>Foreign reserves</td>
<td>-2.223**</td>
<td>0.841</td>
</tr>
<tr>
<td>Debt service</td>
<td>1.580**</td>
<td>0.572</td>
</tr>
<tr>
<td>Investment</td>
<td>-7.322**</td>
<td>2.379</td>
</tr>
<tr>
<td>Budget (deficit/surplus)</td>
<td>-0.477**</td>
<td>0.201</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>S.E.</th>
<th>Coefficient</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.716*</td>
<td>0.943</td>
<td>0.792*</td>
<td>0.454</td>
</tr>
<tr>
<td>Log (# of veto players)</td>
<td>-0.888**</td>
<td>0.355</td>
<td>-0.089</td>
<td>0.236</td>
</tr>
<tr>
<td>Interact BOP and Size</td>
<td>-1.213**</td>
<td>0.434</td>
<td>-0.289</td>
<td>0.194</td>
</tr>
<tr>
<td>Number under</td>
<td>-0.430**</td>
<td>0.181</td>
<td>0.117</td>
<td>0.114</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Est. Pr(government wants to enter)</th>
<th>Est. Pr(IMF wants to enter)</th>
<th>Joint probability of entering into program</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 veto player</td>
<td>0.65</td>
<td>0.89</td>
</tr>
<tr>
<td>2 veto players</td>
<td>0.88</td>
<td>0.87</td>
</tr>
<tr>
<td>3 veto players</td>
<td>0.98</td>
<td>0.85</td>
</tr>
<tr>
<td>4 veto players</td>
<td>1.00</td>
<td>0.83</td>
</tr>
<tr>
<td>5 veto players</td>
<td>1.00</td>
<td>0.81</td>
</tr>
</tbody>
</table>

Number of observations 879
Correctly predicted not participating 66%
Correctly predicted participating 92%
Log likelihood function -307.78
Restricted log likelihood -608.41
Chi-squared 601.26

All variables are lagged one year.

### 6. Conclusion

The ostensible goals of IMF programs are to promote economic stability and growth. Yet for nearly twenty years, every study found that IMF programs have no effect on economic growth (Reichman and Stillson 1978, Connors 1979, Pastor 1987, Gylfason
Recent studies even show that the immediate impact on growth is negative (Conway 1994, Przeworski and Vreeland 2000). Regarding economic stability, Bird contends that “while IMF-backed packages seem to nudge countries toward better overall BOP performance, their impact is rather muted. Moreover, they generally have rather insignificant effects on inflation” (1996a, 502).

If IMF programs do not improve growth or stability, what effects do they have that would lead executives to enter into IMF agreements? Perhaps governments care about income distribution. In his 1987 study, Pastor finds that “the single most consistent effect the IMF seems to have is the redistribution of income away from workers” (1987, 89). Recently, Garuda (2000) confirmed this finding, showing that the income distribution deteriorates for most countries participating in IMF programs. Vreeland (2002) shows that even if IMF programs have overall contractionary effects, the favorable shift in income towards some groups is large enough to mitigate lower growth. The income of the owners of capital can actually increase in the short run.

If IMF programs consistently affect distribution, it should not be surprising to find that politics and political institutions play a role in the decisions of governments to bring in the IMF. Some groups stand to gain by pushing through the policies supported by the IMF, while others stand to lose. When there are more veto players, there is greater potential that at least one of them will represent the potential losers. The evidence presented in this paper suggests that where there are more of these potential opponents with veto power, a government is more likely to bring in the IMF. Governments find IMF conditionality useful where institutional resistance to policy change is high.
Appendix 1: Definitions and sources of variables

Dependent variable

Participation in IMF programs: Dummy variable coded 1 for the country-years when there was a conditioned IMF agreement (Stand-by Arrangement, Extended Fund Facility Arrangement, Structural Adjustment Facility Arrangement, or Enhanced Structural Adjustment Facility Arrangement) in force, 0 otherwise. Source: Przeworski et al. 2000 who take it from *IMF Annual Reports* and *IMF Survey*.

Explanatory variables

# of veto players: The sum of the following: 1 for the executive, 1 if multiple parties are legal and compete in executive elections, 1 for each legislative chamber, and – if multiple parties are legal and compete legislative elections – 1 for every veto player whose political orientation is closer to that of the first opposition party than to the party of the executive (for presidential systems, the veto player is the first government party; for parliamentary systems the veto players are the 3 largest government parties).

GDP per capita: Based on purchasing power parity (PPP). GDP PPP is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar in the United States. GDP measures the total output of goods and services for final use occurring within the domestic territory of a given country, regardless of the allocation to domestic and foreign claims. Gross domestic product at purchaser values (market prices) is the sum of gross value added by all resident and nonresident producers in the economy plus any taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 1987 international dollars. Source: *World Development Indicators on CD-ROM 1998*.

Foreign reserves: Gross international reserves comprise holdings of monetary gold, special drawing rights (SDRs), the reserve position of members in the International Monetary Fund (IMF), and holdings of foreign exchange under the control of monetary authorities. The gold component of these reserves is valued at year-end (December 31) London prices ($589.50 an ounce in 1980 and $369.25 an ounce in 1996). This item shows reserves expressed in terms of the number of months of imports of goods and services which could be paid for. Source: *World Development Indicators on CD-ROM 1998*.

Current account: Current account balance (% of GDP). Current account balance is the sum of net exports of goods and services, income, and current transfers. Source: *World Development Indicators on CD-ROM 1998*.

Debt service: Total debt service (% of GNP). Total debt service is the sum of principal repayments and interest actually paid in foreign currency, goods, or services on long-term
debt, interest paid on short-term debt, and repayments (repurchases and charges) to the IMF. Source: *World Development Indicators on CD-ROM 1998*.

**Investment**: Gross domestic investment (% of GDP). Gross domestic investment consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including commercial and industrial buildings, offices, schools, hospitals, and private residential dwellings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales. Source: *World Development Indicators on CD-ROM 1998*.

**Budget (deficit/surplus)**: Overall budget deficit (% of GDP) is current and capital revenue and official grants received, less total expenditure and lending minus repayments. Data are shown for central government only. Source: *World Development Indicators on CD-ROM 1998*.

**INST**: Institutions. Type of democratic executive-legislative relationship. Coded as follows: 0 for Dictatorships, 1 for Parliamentary Democracies, 2 for Mixed Democracies, 3 for Presidential Democracies. This variable was used to create Presidential: # veto players and Parliamentary: # veto players. (Mixed Democracies were coded as Parliamentary.) Source: updated Przeworski et al. 2000.


**Number under**: Total number of other countries in the world currently under IMF agreement (does not include the given country itself). Source: Przeworski et al. 2000.
<table>
<thead>
<tr>
<th></th>
<th>Particip. in IMF pgms</th>
<th># of veto players</th>
<th>GDP per capita</th>
<th>Foreign reserves</th>
<th>Current account</th>
<th>Debt service</th>
<th>Investment</th>
<th>Budget</th>
<th>Number under</th>
</tr>
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<tr>
<td><strong>Mean</strong></td>
<td>0.34</td>
<td>2.11</td>
<td>4103</td>
<td>3.23</td>
<td>-4.26</td>
<td>5.51</td>
<td>22.73</td>
<td>-4.09</td>
<td>48.49</td>
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<tr>
<td><strong>Std. Dev.</strong></td>
<td>0.47</td>
<td>1.38</td>
<td>4069</td>
<td>2.84</td>
<td>9.63</td>
<td>5.65</td>
<td>9.46</td>
<td>5.70</td>
<td>14.61</td>
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<tr>
<td><strong>Total # obs</strong></td>
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<td>3016</td>
<td>2026</td>
<td>2525</td>
<td>2474</td>
<td>2077</td>
<td>2567</td>
<td>1962</td>
<td>3016</td>
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<tr>
<td>Particip. in IMF pgms</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of veto players</td>
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<td>1.00</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP per capita</td>
<td>-0.15</td>
<td>0.23</td>
<td>1.00</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Foreign reserves</td>
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<td>0.11</td>
<td>0.39</td>
<td>1.00</td>
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<td></td>
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</tr>
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<td>0.06</td>
<td>0.28</td>
<td>0.39</td>
<td>1.00</td>
<td></td>
<td></td>
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<tr>
<td>Debt service</td>
<td>0.27</td>
<td>0.10</td>
<td>0.12</td>
<td>-0.19</td>
<td>-0.11</td>
<td>1.00</td>
<td></td>
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<tr>
<td>Investment</td>
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<td>0.22</td>
<td>0.05</td>
<td>-0.25</td>
<td>0.02</td>
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<tr>
<td>Budget</td>
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<td>0.04</td>
<td>0.20</td>
<td>0.34</td>
<td>0.49</td>
<td>-0.14</td>
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<tr>
<td>Number under</td>
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<td>0.25</td>
<td>-0.03</td>
<td>-0.01</td>
<td>1.00</td>
</tr>
</tbody>
</table>
Appendix 2:

3,016 country-year observations of 179 countries between 1975 and 1996

Algeria: 1975-1996
Argentina: 1975-1996
Australia: 1975-1996
Austria: 1975-1996
Bahrain: 1991-1996
Bangladesh: 1975-1996
Belgium: 1975-1996
Belize: 1982-1996
Benin: 1975-1996
Bolivia: 1975-1996
Bosnia-Herzegovina: 1995-1996
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
Chad: 1975-1996
Chile: 1975-1996
China: 1975-1996
Colombia: 1975-1996

Comoros: 1975-1996
Congo: 1975-1996
Cote d'Ivoire: 1975-1996
Croatia: 1993-1996
Cuba: 1991-1996
Czech Republic: 1993-1996
Czechoslovakia: 1975-1992
Denmark: 1975-1996
Dominican Republic: 1975-1996
Ecuador: 1975-1996
Egypt, Arab Rep.: 1975-1996
Eritrea: 1994-1996
Estonia: 1993-1996
Fiji: 1975-1996
Finland: 1975-1996
Gabon: 1975-1996
Georgia: 1995-1996
Germany, East: 1975-1988
Germany, West: 1975-1989
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

Honduras: 1975-1996
Hungary: 1975-1996
Iceland: 1975-1996
India: 1975-1996
Indonesia: 1975-1996
Iran: 1975-1996
Ireland: 1975-1996
Israel: 1975-1996
Italy: 1975-1996
Jamaica: 1975-1996
Japan: 1975-1996
Jordan: 1975-1996
Korea, Dem. Rep.: 1975-1996
Korea, North: 1991-1996
Kuwait: 1991-1996
Lao PDR: 1985-1996
Lebanon: 1991-1996
Lesotho: 1975-1996
Lithuania: 1992-1996
Luxembourg: 1975-1996
Macedonia: 1992-1996
Madagascar: 1975-1996
Malawi: 1975-1996
Malaysia: 1975-1996
Maldives: 1991-1996
Mali: 1975-1996
Mauritania: 1975-1996

19 The sub-samples used in the main body of the text are available from the author upon request.
Mauritius: 1975-1996
Mexico: 1975-1996
Moldova: 1992-1996
Mongolia: 1985-1996
Morocco: 1975-1996
Mozambique: 1975-1996
Netherlands: 1975-1996
New Zealand: 1975-1996
Nicaragua: 1975-1996
Nigeria: 1975-1996
Norway: 1975-1996
Pakistan: 1975-1996
Panama: 1975-1996
Paraguay: 1975-1996
Peru: 1975-1996
Philippines: 1975-1996
Poland: 1975-1996
Portugal: 1975-1996
Qatar: 1991-1996
Russia: 1992-1996
Rwanda: 1975-1996
Saint Lucia: 1991-1996
Senegal: 1975-1996
Serbia/Montenegro: 1991-1996
Sierra Leone: 1975-1996
Singapore: 1975-1996
Slovak Republic: 1993-1996
Slovenia: 1992-1996
South Africa: 1975-1996
Spain: 1975-1996
Sudan: 1975-1996
Sweden: 1975-1996
Switzerland: 1975-1996
Syria: 1975-1996
Taiwan: 1975-1996
Tajikistan: 1992-1996
Thailand: 1975-1996
Togo: 1975-1996
Trinidad and Tobago: 1975-1996
Tunisia: 1975-1993
Turkmenistan: 1992-1996
Uganda: 1975-1996
Ukraine: 1992-1996
United Kingdom: 1975-1996
United States: 1975-1996
Uruguay: 1975-1996
Uzbekistan: 1992-1996
Vanuatu: 1984-1996
Venezuela: 1975-1996
Western Samoa: 1980-1996
Yemen Arab Republic: 1975-1989
Yugoslavia: 1975-1990
Zambia: 1975-1996
Zimbabwe: 1975-1996
Appendix 3: A statistical model of bilateral cooperation

Assume participation at time $t$ depends on participation at time $t-1$ (i.e., assume the data obey a first-order Markov process). Let $d_{it}$ denote participation status in country $i$ at time $t$: $d_{it}=1$ if country $i$ is under agreement at time $t$, and $d_{it}=0$ if country $i$ is not under agreement at time $t$.

Let $p_{NU,it}$ 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 $t$). The probability that the country does not enter an arrangement at time $t$ is $p_{NN,it}=1-p_{NU,it}$. Similarly, $p_{UU,it}$ denotes the probability that country $i$ stays under at time $t$. The probability that participation ends at time $t$ (i.e., that country $i$ goes from $U_{i,t-1}$ to $N_{it}$) is $p_{UN,it}=1-p_{UU,it}$.

The probability of participation at time $t$, $p(d_{it}=1)$ is the probability of entering, $p_{NU,it}$, if country $i$ was not under at time $t-1$ ($1-d_{i,t-1}$) plus the probability of continued participation, $p_{UU,it}$, if country $i$ was already under agreement at time $t-1$ ($d_{i,t-1}$): 20

$$p(d_{it}=1|d_{i,t-1}) = p_{NU,it}(1-d_{i,t-1}) + p_{UU,it}d_{i,t-1}$$

$$= p_{NU,it} + (p_{UU,it} - p_{NU,it})d_{i,t-1}.$$ 

Let $p_{NU,it} = F(\gamma X_{i,t-1}^{ Gov })F(\mu X_{i,t-1}^{ IMF })$, where $F(\cdot)$ represents the cumulative distribution function of the standard normal distribution. $X_{i,t-1}^{ Gov }$ is the vector of variables that determine the decision of the government, and $\gamma$ is the vector of parameters that captures the effects of these variables on the decision. $X_{i,t-1}^{ IMF }$ is the vector of variables that determine the decision of the IMF, and $\mu$ is the vector of parameters that captures the effects of these variables on the decision. Let $p_{UU,it} = F([\gamma + \alpha] X_{i,t-1}^{ Gov })F([\mu + \eta] X_{i,t-1}^{ IMF })$, where the effects of the variables determining the government’s decision to continue agreements is captured by the vector $(\gamma + \alpha)$, and the effects of the variables determining the IMF’s decision to continue agreements is captured by the vector $(\mu + \eta)$. Then one can write the probability of an IMF agreement as:

$$p(d_{it}=1|d_{i,t-1}) = F(\gamma X_{i,t-1}^{ Gov } + \alpha X_{i,t-1}^{ Gov }d_{i,t-1})F(\mu X_{i,t-1}^{ IMF } + \eta X_{i,t-1}^{ IMF }d_{i,t-1}).$$

From this, one can write the likelihood function and estimate the probability of selection into IMF programs. 21 One can, of course, estimate this model relaxing the

20 This characterization comes from Amemiya (1985).

21 This model is similar to the Abowd and Farber (1982) model, which follows Poirier (1980).
assumption that the error terms of the decisions of the government and the IMF are uncorrelated. It turns out that when one estimates the specification from Table 5 with correlated error terms, the correlation is not significant and all qualitative findings hold. As noted in the main body of the text, one caveat of this model is that \( X_{Gov} \) cannot include exactly the same variables as \( X_{IMF} \).
References


