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PROMISES MADE, PROMISES BROKEN: A MODEL OF IMF PROGRAM IMPLEMENTATION

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This paper presents a model of the implementation of IMF programs, which is empirically tested with data from the period 1975–1999. The IMF and the borrowing country are shown to have asymmetric evaluations of a program's discounted benefits, due to differences in the measurement of the benefits, the relevant time frame and appropriate discount rate. The model also distinguishes between a government that seeks to maximize national welfare and an autocracy that seeks only to benefit the ruling group. The results of the empirical analysis demonstrate that program implementation is affected by a country's trade openness, the ideological cohesion of the government, the duration of the political regime, and the degree of political openness.

Promises and pie-crust are made to be broken.
(Jonathan Swift, *Polite Conversation*)

1. INTRODUCTION

THE LENDING programs of the International Monetary Fund have drawn a great deal of notice and criticism in recent years.[1] One focus of attention has been the implementation of Fund programs. The disbursement of funds to the governments that enroll in these programs is linked through a procedure known as "conditionality" to their implementation of policies specified in advance. The scope and nature of these policies have expanded in recent years, and analysts such as Goldstein (2003) have examined the consequences of this extension.

Incomplete compliance can limit the improvement in a country's economic performance, adversely affect its reputation in the international capital markets, and leave it with a need for further assistance and more programs.[2] In recent years the Fund has sought to foster the concept of a country's "ownership" of a program in order to increase the government's sense of responsibility for the program's completion and success (see, for example,

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[1]See, for example, the reports of the Council on Foreign Relations (1999) and the International Financial Institution Advisory Commission (2000).

[2]See Bird (2002) for an analysis of these issues.

Khan and Sharma, 2003; Boughton and Mourmouras, 2004). The IMF's former Managing Director Horst Köhler stated that, "... The Fund is streamlining conditionality with the objective of promoting greater ownership and strengthening the implementation of programs" (IMF, 2001c, p. 5).

While the consequences of program non-compliance are widely recognized, there has been less agreement on its causes. The IMF has traditionally attributed incomplete implementation to a lack of political commitment to the program by the borrowing governments. However, this assertion does not explain why such a commitment may be lacking, or why governments enter into these agreements. It also neglects the role of the IMF itself in designing the programs.

This paper presents and tests a model of the implementation of IMF programs. The next section summarizes the record of IMF program completion, and the literature that has dealt with this issue. Section 3 presents the model, which attributes incomplete compliance to asymmetries between the Fund and borrowing countries in their evaluations of the benefits of a program. The following section explains the data used in the empirical tests. Section 5 offers an empirical analysis of the determinants of program completion, using a sample of programs in place between 1975 and 1999. The results indicate that economic and political openness, ideological cohesion and the duration of a regime affect program completion. The last section summarizes the results and draws some policy inferences.

2. IMF PROGRAM CONDITIONALITY

2.1 IMF Programs

The purposes of the IMF appear in the IMF's Articles of Agreement, and include international monetary cooperation, the growth of international trade, exchange stability, and the establishment of a multilateral system of payments as goals. More recently, Guitián (1992, p. 4) declared that the "... fundamental purpose of the institution would be to foster, and monitor the observance of, a code of conduct in international exchange and financial affairs on the part of member countries." Fischer (2000, p. 2) stated that the IMF sought to "... make the system work better by helping countries improve their domestic policies because those spill over into the behavior of the international system." The IMF, therefore, seeks to advance international welfare through its activities, including its lending programs.

The IMF provides financial assistance to its members through a variety of facilities. A Stand-By Arrangement (SBA) is designed for countries with balance of payments problems that can be addressed in the short-term (i.e. one to two years). Countries with external deficits due to structural problems can obtain assistance over a medium-term period (three years) through the Extended Fund Facility (EFF). The Fund instituted the Supplemental

Reserve Facility (SRF) in 1997 to provide assistance for exceptional balance of payments difficulties due to financial market crises.

In 1986 the IMF established the Structural Adjustment Facility (SAF) to provide resources on a concessional basis to low-income countries. It was succeeded by the Enhanced Structural Adjustment Facility (ESAF) in 1987, which in turn was renamed the Poverty Reduction and Growth Facility in 1999. Loans granted under this facility are disbursed over a three-year period to support policies of economic reform designed to remedy structural imbalances and promote growth.

Conditionality is the mechanism that allows the IMF to monitor a government's behavior and provide incentives for compliance with the policies that are part of its programs. The actual provision of IMF assistance is linked to the implementation of a program of specific policies. The conditions are specified in a "Letter of Intent" signed at the initiation of a program.[3] The Fund utilizes performance criteria to ascertain whether a country has complied with a program's macroeconomic policies and structural measures.

The macroeconomic criteria usually involve the management of aggregate demand, while structural conditions seek to increase the efficient use of resources. Structural conditions have often dealt with public finance issues, such as tax reform, and the regulation of the financial sector. Structural conditionality has been an integral part of the concessionary programs, but such conditions also appear in SBAs and EFFs.

The IMF monitors adherence to the policy conditions on a quarterly or semi-annual basis. In addition, prior actions that require policy changes before an arrangement is initiated can be stipulated. The IMF does grant waivers if non-compliance is due to factors outside the control of a borrowing country. The IMF can modify an existing program in response to changes in external conditions, or cancel an existing program and replace it with a new one.

While the record of compliance with IMF program conditionality has been evaluated many times, there is no one metric utilized for assessing the relative implementation or completion of a program. Reichmann and Stillson (1978) analyzed 79 programs that were in effect between 1963 and 1972 and their impact on policies and objectives. They reported that the principal purposes of the programs were successfully achieved in 76% of these programs.

Later analyses investigated the extent of compliance with specific types of conditions. Beveridge and Kelly (1980) examined 105 programs that took place between 1969 and 1978, and reported that fiscal performance

[3]See Mussa and Savastano (2000) for a description of how Fund-supported programs are negotiated, and IMF (2001a, 2001b) for explanations of how programs are monitored.

provisions were met in 54% of the programs that contained them and bank credit ceilings in 55%. Edwards (1989) investigated the conditions utilized in 34 programs in place during the years 1983–1985. Polak (1991) summarized those findings as showing that fiscal targets were attained in 36% of the programs and credit ceiling targets in 44%. Polak (1991) also updated this record to include programs in place between 1988 and 1989, and reported compliance figures for the fiscal and credit targets of 40% for the 17 SAF programs and 60% for the five ESAF programs.

Killick (1995) undertook an examination of 305 programs that took place between 1979 and 1993. He used the proportion of credit actually disbursed by the end of a program relative to the amount initially committed as a standard to measure program completion, and defined a successful program as one in which at least 80% or more of the credit was disbursed by the end of the program. By that criterion, only 47% of all the programs were successfully completed.

In a comprehensive study of the IMF's programs, Mussa and Savastano (2000) reported the proportions of drawn credit by quartiles for 615 programs over the period 1973–1997. They reported that half or more of the committed funds were disbursed in 63% of the programs. They agreed that partial disbursement of less than half of the committed funds could represent a deviation in a country's policies from those that the government had agreed to undertake. However, they also pointed out that programs might not be fully implemented because of external shocks. In such cases the original agreement is often canceled and replaced by a new program, and the partial implementation of the first program should not be interpreted as evidence of a lack of commitment.

Other criteria have also been utilized as measurements of compliance. Mecagni (1999) used the incidence of program interruptions, defined as a period over six months between arrangements or delays in completing a program review, in his study of SAF/ESAF program implementation. He found that there were program interruptions in 28 of the 36 countries studied. Similarly, Edwards (1999) utilized the occurrence of program suspension as a criterion for measuring implementation. He reported that the governments were eligible to receive all the drawings stipulated in the original letter of intent in 208 of 347 programs initiated between 1979 and 1995, a compliance rate of 60%.

Recently the IMF has begun to track program compliance through its Database for Monitoring Fund Arrangements (MONA). It includes information on Fund programs approved since 1993, including the conditions for their disbursement, and is used to calculate two indexes, the Structural Benchmark Index and the Index of Fund Program Implementation (IFI). The former measures compliance with the structural benchmarks for each program, and the latter compliance with the performance criteria. Mercer-Blackman and Unigovskaya (2004) report that the IFI ratings for 24 trans-

ition economies over the period of 1993–1997 ranged from 50 for Bulgaria to 100 in Estonia, with a mean rating of 84.

2.2 Models of Program Compliance

The use of conditionality by the international financial institutions has been the subject of a number of theoretical studies. Mosley (1987, 1992), for example, analyzed conditionality in the context of a two-party game between the lenders and the borrowing countries. The degree of program compliance depended on the borrowing country's need for external assistance and its ability to implement the conditions of the loan. White and Morrissey (1997) extended this analysis to allow alternative assumptions regarding donor and recipient preferences as regards the granting of aid and policy reform.

Bird (1998) considered policy conditionality within the framework of the political economy of policy reform. He pointed out that a government that seeks to retain power will only implement a program after comparing its benefits and costs. Poor compliance may reflect changes in the benefits or costs after the program is initiated.

Killick (1996, 1997, 1998) analyzed conditionality within the context of a principal–agent model. In a principal–agent relationship, the agent agrees to undertake a set of activities that are desired by the principal in return for compensation. Problems can occur when there are differences in the utility functions of the two parties and/or incomplete information regarding whether the agent is fulfilling the agreement.

In this case, the international financial institutions such as the IMF are the principals representing the member governments, and they seek to influence the behavior of borrowing countries. Killick indicates that there are points of conflict between the international agencies and the borrowing countries, since they have different constituencies and goals. Consequently, compliance is hindered as countries exercise their national sovereignty in policymaking, and the problem is exacerbated by resentment of foreign intervention.

Mayer and Mourmouras (2004) presented a model of program implementation in which special interests play a key role. In their model, special-interest groups that oppose welfare-enhancing reforms contribute funds to the government to ensure the continuance of such distortions. Assistance from an international agency enables the government to pursue less distortionary policies. Drazen (2002) offered a similar analysis of the circumstances that would justify the use of conditionality in a lending program. In his model, conditionality can enhance welfare if the program's assistance directly benefits the special-interest groups that oppose reform, or if the domestic government is unable to control the agenda with these groups.

2.3 *Empirical Analyses of Program Compliance*

The record of compliance (or non-compliance) with IMF program conditionality has been the subject of a number of empirical studies. Edwards (1989) and Polak (1991) attributed the decline in compliance during the 1980s to negative external shocks. Killick (1995) found that program completion rates were positively linked to the amount of credit committed relative to a country's current account deficit. Bird (2001b) and Goldstein (2003) have both suggested that the decline in compliance over time may be inversely linked to the increase in the number of conditions, particularly structural. The IMF (2001b), however, has disputed the existence of a link between the number of measures included in a program and the rate of implementation.

Studies from the Fund itself of its programs have pointed to the importance of political factors in implementation. Schadler et al. (1995), for example, in a review of the record of SBAs and EFFs pointed out that there was a large variation among the countries in their commitment to carrying out reform measures, while Mecagni (1999) attributed a major proportion of the interruptions in SAFs and ESAFs to political changes and civil instability. The IMF's (2001a) own study of the literature on program implementation concluded that:

> This diverse body of work surveyed strongly suggests that national commitment to reform programs – a factor largely outside the control of the Fund or the [World] Bank – is critical in the success or failure of Bank or Fund-supported adjustment programs.
>
> (IMF, 2001a, p. 52)

Ivanova et al. (2006) have undertaken an empirical analysis of program completion based on the model of Mayer and Mourmouras (2004). Their results indicated that the strength of special interests in a country's legislature adversely affects the probability that a program will be successfully implemented, as the model suggests. A high degree of cohesion within a government increases the probability of successful program implementation, while political instability lowers it. Nsouli et al. (2006) reported that program implementation is higher when there is government stability, as well as less ethnic tension, internal conflict, and corruption.

Dreher (2003) examined the impact of elections on IMF program interruptions. He found that programs were more likely to break down before elections, but the rise in program interruptions is less likely in democratic countries. Edwards (2001) reported evidence that the IMF was more likely to suspend programs in democratic states with proportional representation electoral systems or highly fractionalized legislatures. Sturm et al. (2005), in their study of IMF lending, found that some political factors have a role in

the signing of a program agreement, but the decision to actually disburse credit is based mainly on economic considerations.

Edwards (1999) studied the effect of variables representing international power and influence on the suspension of IMF programs. He found that the Fund was less likely to suspend a program in countries with larger quotas, and offers two interpretations of this result. The IMF may treat larger states differently because of their impact on world economic activity; alternatively, the IMF may keep lending to larger states in order to maximize its own expenditures and attain some bureaucratic goal.

In Stone's (2002) analysis of the IMF's lending credibility, countries that have the backing of foreign supporters such as the US deviate from program conditions more frequently and have more inflationary policies but are subject to shorter periods of program suspension. He tested this model with data from the transition economies and found that strategic importance, as measured by the receipt of US aid, does affect the duration of program suspension. He also reported that the number of coalition partners in a government increases the probability that a program will be interrupted.

3. MODEL OF POLICY IMPLEMENTATION

A basic model of program implementation is first introduced. This model is then extended by introducing a distinction between the evaluations of a program's benefits by the IMF and the borrowing country. A third iteration of the model differentiates between the evaluations of democratic and autocratic governments. Finally, it is shown that discontinuities in the benefits that accrue to the country implementing a program can result in dual equilibria in the implementation rates.

3.1 Basic Model

When a government evaluates a program it compares its benefits (B) and costs (C). The benefits are based on the level of program compliance (P), which ranges continuously from zero to full completion (P^F). The benefits derive from the financial assistance provided by the Fund, the decline in the external sector imbalance as the country undertakes the program's policies, and the outcome of any reform measures that are part of a program. The program's marginal benefit (MB) declines as the rate of implementation increases and the country moves closer to a sustainable external sector position.

$$B = B(P), \tag{1}$$

$$MB = B_P > 0, B_{PP} < 0. \tag{2}$$

The costs of a program's implementation also vary in response to the degree of program completion. Stabilization policies, for example, may

lower employment and output due to nominal rigidities. Similarly, structural policies that seek to increase competition threaten the welfare of special-interest groups. The marginal cost (MC) of a program increases as the country implements additional policy conditions. The impact of macroeconomic policies designed to lower inflation may rise as a country moves from hyperinflation to lower inflation rates. The effect on domestic interest groups increases as trade liberalization proceeds or institutional changes are undertaken.[4]

$$C = C(P), \tag{3}$$

$$MC = C_P > 0, C_{PP} > 0. \tag{4}$$

As the disbursement of funds is phased over time, a country can evaluate the MB and MC of each stage. To achieve the greatest net gain from a program, a country fulfills a program's conditions up to that level, P^*, where the MB of a program is equal to its MC:

$$MB = MC. \tag{5}$$

There is no a priori reason to assume that P^* is equal to the full implementation rate, P^F.

3.2 Asymmetries in Evaluations of Benefits

This basic model can be extended to illustrate differences between the goals of the government of the borrowing country – the "nationalists" – and the IMF – the "globalists." The domestic government wants to maximize national economic welfare in order to increase the standard of living and/or as a means to remain in office. The IMF is concerned with the welfare of all its members, as well as the stability of the international economic system. This divergence in goals leads to different evaluations of the optimal level of program compliance.

The MB of a program that a domestic government evaluates consists of the national benefits discounted over time:

$$MB^N = \sum_{i=1}^{m} \frac{MB^N_{t+i}}{(1+j)^i}. \tag{6}$$

The IMF, on the other hand, evaluates the discounted global benefits:

$$MB^G = \sum_{i=1}^{n} \frac{MB^G_{t+i}}{(1+k)^i}. \tag{7}$$

There are (at least) three sources of discrepancy between the borrowing country's evaluation of the benefits and the IMF's. First, the IMF takes into

[4]See Naim (1995) on the different stages and levels of difficulty of economic reform.

account both the national and international benefits of a program. Consequently, it will perceive more benefits coming from a program than does the national government, i.e. $MB^N < MB^G$. Second, a domestic government will have a shorter time horizon than the Fund ($m < n$), since it wants to avoid removal from power through elections or other means, and its survival is based in part on economic performance during its current term of office. The Fund, on the other hand, can employ a longer view of the impact of policies.[5] Finally, the government will have a higher discount rate ($j > k$) than does the Fund, since it prefers more immediate results in order to deter potential political opposition. Consequently, the Fund systematically evaluates the benefits from a program as higher than does the borrowing country.[6]

This divergence in the MB schedules is the basis of the difference between the design and the implementation of a program.[7] The IMF's evaluation of the situation establishes the program's goals. Countries are usually in a state of crisis with no alternative private suppliers of funds when they approach the Fund, and consequently the IMF can effectively control the size and terms of the program. Moreover, as there appears to be little direct penalty for incomplete compliance besides the non-disbursal of the remaining funds, there is no reason for a government not to agree to the largest available amount.[8] Once a program is initiated, however, the government decides on how much of the available credit it actually wants to draw. As it sees fewer benefits accruing from the program than does the IMF, it does not implement the entire program, but only the portion where the domestic benefits outweigh the costs.

This situation is shown in Figure 1. The IMF's schedule, MB^G, exceeds the MC schedule, and full program compliance is optimal at P^F. On the other hand, for the domestic government with its MB schedule, MB^N, partial program completion at P^N is most advantageous.

The domestic government's assessment of the benefits that accrue from a program depends on its own goals. A government that seeks to integrate its economy with the global economy will have a perspective that is similar to the Fund's, and a higher program implementation rate. A government's willingness to undertake comprehensive stabilization and reform policies is also constrained by its own domestic political position. A government divided among competing factions or political beliefs will be less able to

[5]This condition does not rule out a desire by the IMF for short-term results as well.

[6]A referee has pointed out that another source of divergence between the IMF and the domestic government could be their different estimates of the national benefits. These could reflect the IMF's overly optimistic forecasts; see, for example, Artis (1996) and US General Accounting Office (2003).

[7]While there may be some spillover effects on other countries arising from the impact of stabilization policies, the costs are assumed to be manifested primarily in the domestic country.

[8]However, Edwards (2005) has reported that foreign investors withdraw their funds from countries following the suspension of Fund programs. Incomplete implementation could affect the incidence of moral hazard. See Lane and Phillips (2000), Dreher and Vaubel (2004), and Kamin (2004) on recent evidence on moral hazard and Fund lending.

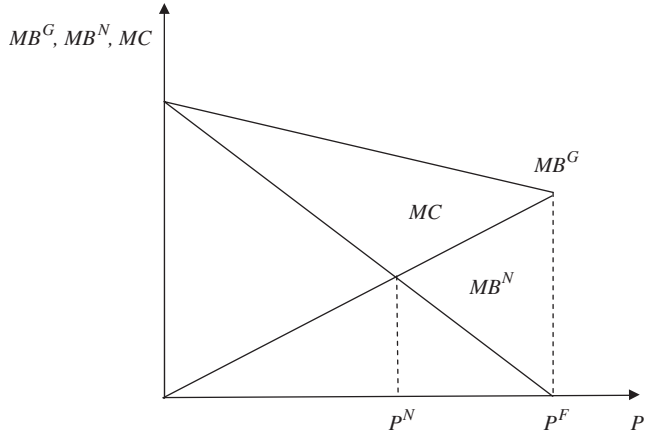

Figure 1. Program implementation with national and global marginal benefits.

formulate a consensus on enacting reform measures. While the executive may be prepared to adopt a program, for example, the legislature may not be willing to pass the necessary legislation. This reluctance may represent the existence of special interests or polarization along ideological lines. Similarly, officials who face re-election in the near future may be reluctant to undertake new initiatives that require time to have an effect and could hinder their chances of retaining power.

3.3 Democrats and Autocrats

The model can also be used to differentiate between democratic governments that seek to maximize national welfare and autocratic regimes that function solely for the benefit of those who hold power and their supporters.[9] In the latter cases, the borrowing government is only interested in the credit made available by the IMF that is used to finance consumption and maintain its control of the country. These governments can also be characterized as "kleptocracies,"[10] and include such regimes as those of Marcos in the Philippines, Mobutu in Zaire (Democratic Republic of the Congo), and the Duvaliers in Haiti. These governments also evaluate the benefits of a program:

$$MB^A = \sum_{i=1}^{p} \frac{MB^A}{(1+r)^i}. \tag{8}$$

[9]See Olson (1991) and McGuire and Olson (1996) for analyses of the different incentives that democratic and autocratic regimes face, and the implications for economic welfare. Przeworski and Limongi (1993) review the literature on the impact of different political regimes on growth.

[10]The *American Heritage® Dictionary of the English Language* (2000) defines a kleptocracy as a government characterized by rampant greed and corruption. It is possible to identify autocracies that are committed to economic liberalization (Pinochet in Chile), but such cases are rare.

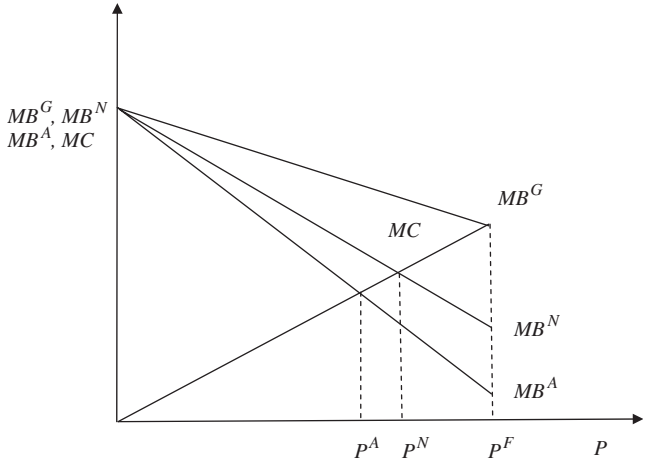

Figure 2. Program implementation with national, autocratic, and global benefits.

The financial benefit of an IMF program to an autocracy is less than the economic and social improvements that are part of the domestic national benefits, $MB^A < MB^N$. However, the autocratic government may have a longer time horizon than a more representative government, since it does not face the constraint of regularly scheduled elections. Therefore, it is not clear whether the planning horizon (p) of the autocrat is greater or less than that of the representative government (m). The relationship of the autocrat's discount rate (r) to that of an elected government (j) is also ambiguous. Democratic governments may feel the need to show quick results in order to deter potential opposition, while the autocratic ruler may feel more secure in his grasp of power. Consequently, it is not clear a priori whether an autocratic government would have a lower program completion rate than that of a democratic regime.

Figure 2 shows the situation where the autocratic government's MB schedule (MB^A) falls below that of a representative government (MB^N), and as a result the program completion rate is lower ($P^A < P^N$); however, it is possible that MB^A could fall between MB^N and MB^G, as would the completion rate ($P^A > P^N$). In either case, however, the IMF's evaluation of the benefits of a program would be greater than the domestic evaluation.[11]

3.4 Dual Equilibria

If there are discontinuities in the MB schedule, then it is possible that there may be more than one optimal implementation rate. Such threshold effects

[11]Another source of indeterminacy would arise if the autocrat considered only the costs that he directly experienced if he implemented the program, MC^A, which would be less than the national MC schedule.

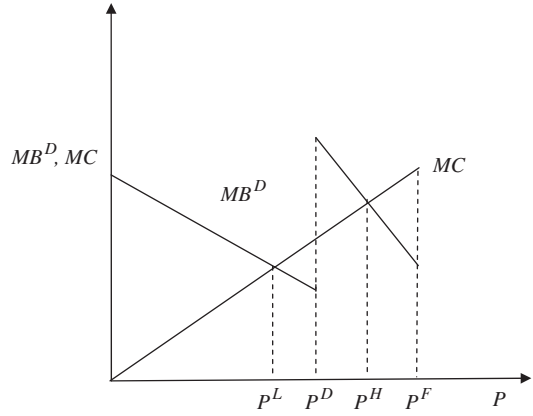

Figure 3. Program implementation with discontinuous marginal benefit schedule.

can take place if some benefits are realized only after the country fulfills some base level of conditionality, P^D. Mody and Saravia (2003), for example, have shown that an IMF program will have a positive catalytic effect on private capital flows only if the program leads to policy reform.

The MB schedule that the country faces in these circumstances, MB^D, would have a "kink" at P^D, as shown in Figure 3.[12] The MC schedule intersects it at two places, yielding two optimal implementation rates, P^L and P^H. If there is imperfect information, a government may select P^L, not aware that greater benefits accrue if the country implements more of the program.

3.5 Hypotheses

Table 1 summarizes the differences in the parameters of the evaluations of a program's benefits. The model yields a number of testable hypotheses:

- First, program completion will be higher in countries that are more open.
- Second, program completion will be lower when governments are internally divided among different factions or parties.
- Third, program completion will be lower when a government has held office for an extended period of time.
- Finally, the type of government in power, i.e. democracy vs. autocracy, may affect the degree of completion, but the nature of the relationship is ambiguous.

4. DATA

Data on 92 developing countries that had begun and finished IMF programs during the years 1975–1999 were collected for the empirical analysis. The

[12]The IMF's "global" MB schedule is not included here to simplify the exposition.

TABLE 1 DIFFERENCES IN ASSESSMENTS OF IMF PROGRAM'S BENEFITS

	Autocrats		Nationalists		IMF
Marginal benefits	MB^A	$<$	MB^N	$<$	MB^G
Time frame	p	?	n	$<$	m
Discount rate	r	?	j	$>$	k

sample included a wide range of countries, diversified by income, geography, and other criteria. Small countries with populations below one million and several countries with missing data were excluded. The choice of dates for the sample period was guided by data availability.

The regular credit programs, the SBAs and the EFF programs, as well as the concessional facilities for low-income countries, the SAFs and the ESAFs, were included in the sample.[13] However, precautionary programs and those programs that were cancelled were excluded from the sample, since their inclusion would bias downwards the measurement of implementation. Precautionary programs are not intended to be enacted; if they are initiated because of a change in circumstances, it is not evident that the government will want to draw down all the credit. Mussa and Savastano (2000) state that programs that are cancelled and immediately replaced represent situations where it is impossible to achieve the original goals of a program due to a change in circumstances, but a new plan can be put into place. Programs may also be cancelled for reasons that do not reflect an unwillingness of the government to implement its conditions.

After deleting observations with missing data, there were 352 programs in the final sample: 251 SBAs, 25 EFFs, 24 SAFs, and 52 ESAFs. The countries in the sample are reported in the Appendix, as are the definitions of the variables and their sources. The *Annual Reports* of the IMF were consulted for program commitments signed by these countries during this period, and the disbursal rates of the programs, which were obtained from the Fund's *Annual Reports*, were used as the measurement of program implementation, *COMP*. This variable (or dummies constructed from it) has been used as an indicator of IMF program implementation in previous studies, such as those of Killick (1995), Dreher (2003), and Hutchison and Noy (2003), while Mussa and Savastano (2000) utilized it in their description of IMF programs (see above). Ivanova et al. (2006) used several indicators of program implementation including the disbursal rate, and reported that all the measures

[13]The IMF's lending facilities share many objectives, and the conditionality provisions also have similarities, including the use of structural policies. Many poorer countries utilize both concessionary and non-concessionary programs. Knight and Santaella (1997), Vreeland (2003), and Ivanova et al. (2006) did not differentiate between the types of arrangements in their empirical analyses.

were correlated. The average disbursal rate in our sample was 73%, which lies between the 71% reported by Ivanova et al. (2006) and the 75% reported by Nsouli et al. (2006).[14]

5. EMPIRICAL RESULTS

In the empirical analysis, the hypotheses outlined in subsection 3.5 were tested with different proxy variables. As including all the relevant variables for one hypothesis in one equation could lead to collinearity, the variables for a hypothesis were used in different estimating equations.[15] The results across the equations for each hypothesis, however, will be discussed together. The estimations included time and geographic dummy variables to account for external shocks.[16] As the dependent variable, *COMP*, is truncated at zero and 100%, the Tobit model was used for the empirical analysis. The results are reported in Table 2.[17]

The first set of variables tests the impact of a country's integration with the global economy on program implementation. The values of these variables were entered on a lagged basis to avoid reverse causality. In equation (2.1), the relevant variable is *TRAD1*, the sum of exports and imports divided by GDP. The coefficient on *TRAD1* is positive and significant, indicating that a country's trade openness does affect its ability to complete a Fund program. The same result occurred when the variable was used in equation (2.5) with different right-hand regressors. A country entering a program with a relatively open economy may receive considerable benefits from measures intended to increase its competitiveness. This result is consistent with that reported by Pitlik and Wirth (2003), who found that trade openness had a positive and significant impact on economic liberalization.

The trade openness variable was replaced in equation (2.2) by *KCON1*, a binary variable that indicates whether a country has restrictions on capital account transactions, which is obtained from the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions* (*AREAR*). In equation (2.3), another measurement of capital account openness is utilized, *CHNIT1*. This indicator was developed by Chinn and Hito (2005a, 2005b), who used the data reported in the IMF's *AREAR* to construct an index of financial openness which ranges from −2.5 in the case of a closed capital account to 2.5 in the case of complete liberalization.

[14]Sturm et al. (2005) utilized a dummy variable based on the disbursal of IMF credit in their study.

[15]The correlations of the different sets of variables are reported in the Appendix.

[16]The estimated values of the constant and the time and geographic dummy variables are not included in the tables, but are available from the author.

[17]The low pseudo-R^2's are consistent with the low explanatory values reported in studies of the determinants of IMF program selection. See Bird (2001a) for a survey of these studies.

TABLE 2 IMPLEMENTATION OF IMF PROGRAMS

Variable	Equation (2.1)	Equation (2.2)	Equation (2.3)	Equation (2.4)	Equation (2.5)
TRAD1	**0.24**	–	–	–	**0.23**
	(0.12)				(0.11)
KCON1	–	−17.31	–	–	–
		(12.61)			
CHNIT1	–	–	6.39	–	–
			(4.26)		
CSGR1	–	–	–	*250.02*	–
				(128.68)	
TRANS	–	–	–	–	−15.51
					(36.39)
POLAR	**−14.74**	**−25.67**	–	–	–
	(6.85)	(8.39)			
CHECK	–	*7.10*	–	–	–
		(3.99)			
ALLHSE	–	–	0.31	–	–
			(12.15)		
EXSPEC	–	–	–	–	−0.11
					(9.52)
DUR	**−0.52**	–	–	**−0.56**	–
	(0.21)			(0.27)	
FIN	–	**−21.74**	–	–	–
		(8.20)			
YRLFT	–	–	−4.05	–	–
			(2.63)		
EXEL1	–	–	–	–	−13.20
					(9.23)
EIEC	**4.90**	–	–	–	–
	(1.94)				
POLITY	–	**2.08**	**4.01**	0.23	–
		(0.76)	(0.89)	(0.98)	
PLUR	–	–	–	–	**2.39**
					(1.12)
χ^2	**41.57**	**46.69**	**37.47**	12.53	**37.55**
Pseudo-R^2	0.02	0.02	0.03	0.02	0.02
Observations	334	318	187	121	336

Notes: Standard errors in parentheses. Bold indicates significance at 5% level, italics at 10%. The estimates of the constant and the coefficients for the time and geographic dummies are available from the author.

Both of these indicators of capital control appear in the results with insignificant coefficients. The record of the impact of capital liberalization on growth is mixed, and some analysts have blamed premature decontrol for the international financial crises of the 1990s. Liberalization of international capital is now seen as the last step in a process that includes the development of institutional and governance safeguards that mitigate the impact of volatile short-term capital flows (see, for example, Prasad et al., 2003).

In equation (2.4), the measurement of economic openness (*CSGR1*) is derived from the Globalisation Index of the Centre for the Study of Globalisation and Regionalisation at Warwick University, UK.[18] The economics sub-index, which is based on a country's international trade, foreign direct investment, and portfolio flows and foreign income, was used in the analysis. The index is not available for all countries, so its use cut down on the number of observations. However, it appeared in the estimation with a positive coefficient which is significant at the 5.5% level, thus providing additional support to the hypothesis that economic openness facilitates program completion.

Finally, in equation (2.5) a dummy variable representing the transition economies, *TRANS*, was utilized to test whether they were at a disadvantage in implementing programs. This variable was not significant in any specification of the model, including estimation without the *TRAD1* variable. There is no support for the hypothesis that these countries were systematically unable to fulfill the conditions of an IMF program.

The next set of variables includes measures of domestic political cohesion, taken from the World Bank's *Database of Political Institutions*, which could affect implementation.[19] The values of the variables in the first year of a program were utilized to lessen the probability of feedback from a program to the domestic political situation. While the implementation of a program may have political implications, these are most likely to take place over time, after a program was initiated.

In equation (2.1) the variable, *POLAR*, is calculated from an assignment of orientation values (left equals zero, center one, and right-wing two) to the government and opposition parties, and taking the absolute difference between these values. The variable has a negative coefficient that is highly significant, which indicates that severe political division impedes the execution of a government's policies. These results are consistent with Alesina and Drazen's (1991) demonstration that reform is more likely to be delayed in countries that are polarized.

The variable, *CHECKS*, which is added in equation (2.2), is the number of independent veto players within the government. The reported coefficient is positive and significant at the 10% level.[20] The results for this variable and *POLAR* suggest that the presence of different political parties need not hinder the implementation of a program, but if there is a split based on ideological grounds then it will be difficult to proceed with implementation. The *CHECKS* variable in this situation may serve as a proxy for political openness, a hypothesis that is further examined below.[21]

[18]See Lockwood and Redoano (2005) for a description of the index.

[19]See Beck et al. (2001) for a description of this database.

[20]If the equation is estimated without *POLAR*, the coefficient on *CHECK* is insignificant.

[21]The correlations of this variable with the three measurements of political openness used below range from 0.61 to 0.76.

In equation (2.3), *CHECKS* is replaced by *ALLHSE*, a dummy variable which takes the value of unity when the party of executive has an absolute majority in the legislative bodies. The reported coefficient is not significant, nor were other measures of the extent of political domination by one group. The variable, *EXSPEC*, which indicates whether the party of the executive represents special interests that may resist "global" policies, is utilized in equation (2.5), but was not found to be significant. Other indicators of special-interest variables that were used were also not significant.

The third group of variables, which were also obtained from the World Bank's *Database of Political Institutions*, tested the impact of different time frames. In the first equation the relevant variable is *DUR*, the number of years since the last regime transition (or 1900). The variable is negative and significant. The duration measurement may proxy for the growth of special-interest groups within a country over time, as Olson (1982) suggested takes place. These distributional coalitions can hinder a society's ability to undertake fundamental reforms.

In equation (2.2) the duration variable is replaced by *FIN*, a dummy variable which indicates whether there is a finite term of office for the chief executive. This variable also has a negative and significant coefficient. A fixed time horizon may lessen the willingness of officials to undertake far-ranging policy changes.

In the following equation, the relevant variable is *YRLFT*, the number of years left in the current term of the executive. The coefficient is negative but only significant at the 12.5% level. In equation (2.5), *EXEL1* is a dummy variable indicating whether or not an executive election has taken place in the year before the program commenced. The variable also has a negative coefficient significant at the 11.4% level.

These results are suggestive of an inverse link between the amount of time before the next election and the implementation of a program, but they are not significant at the conventional levels. Dreher (2003) reported that there was no change in the incidence of program interruptions after an election.[22] Indicators of an executive election in the first year of a program or legislative elections that were also used are not more significant.

Finally, measurements of the openness of the political regime were added. The variable in equation (2.1) is *EIEC*, an index of executive competitiveness from the World Bank's *Database of Political Institutions* that ranges from one to seven with higher values indicating more competitive elections. This variable's coefficient is positive and significant at the 5% level. This political regime variable was replaced in equation (2.2) with *POLITY*, an indicator of relative political openness reported by the *Polity IV Project* which ranges in

[22]Sturm et al. (2005) report that the occurrence of an election is linked to the signing of an agreement with the IMF. Dreher (2004) provides an analysis of the influence of IMF programs on the re-election of governments that borrow from it.

value from +10 (high democracy) to −10 (high autocracy). This estimated coefficient is also positive and significant at the 5% level, as well as in equation (2.3). The decline in significance in equation (2.4) can be attributed to the decline in the number of observations. Finally, *PLUR*, a composite indicator of political pluralism based on measurements of the effectiveness of the legislature and reported in *Cross-National Time Series*, was used in equation (2.5). The coefficient on this variable is also positive and significant at the 5% level.

These results, therefore, consistently demonstrate that governments that are politically open have better records in implementing the policies associated with an IMF program. This finding differs from the results of Ivanova et al. (2006), who reported that electoral competitiveness was not significant in predicting program success.[23] Dreher (2003) found that program interruptions are more likely to occur in pre-election years, but this effect is less likely to occur in democratic countries, which he attributes to IMF leniency with democratic governments. Dollar and Svensson (2000) found that the presence of a democratically elected government raises the probability of the successful completion of a World Bank program.

Our results are consistent with other studies that have linked democracy to economic policies and performance. De Haan and Sturm (2003), for example, report evidence of a positive linkage between economic and political freedom in a sample of developing countries, while Pitlik and Wirth (2003) find that democracies are more likely to engage in economic liberalization. Satyanath and Subramanian (2004) show that democracies are more stable, a result that is robust to alternative measures of democracy and instability. Leblang (2003) has found that democracies are more likely to choose international economic policies that reduce the chances of a currency crisis.

There are several channels that could explain this connection between the type of political regime and economic stabilization and reform. Democratic governments, for example, may be more willing to make sacrifices and implement policies with long-term benefits than autocracies would be. This is consistent with Olson's (1991) suggestion that elected governments have a broad "encompassing" interest in a country's prosperity that dictators do not. In addition, Rivera-Batiz (2002) presents evidence that democratic regimes have a positive impact on governance. Identifying the nature of the linkages between democracy and successful reform merits further research.

In addition to the determinants of policy implementation suggested by the model, the completion of a Fund-sponsored program may also be sensitive to macroeconomic policies undertaken before the beginning of the program

[23]Ivanova et al. (2003) transformed the *Database of Political Institutions*' measurement of executive competitiveness to a binary variable, which equaled one if the index was equal to seven and zero otherwise.

Table 3 Implementation of IMF Programs with Lagged Policy Variables

Variable	Equation (3.1)	Equation (3.2)	Equation (3.3)	Equation (3.4)	Equation (3.5)
TRAD1	*0.26*	–	–	–	*0.26*
	(0.15)				(0.15)
KCON1	–	−13.91	–	–	–
		(13.00)			
CHNIT1	–	–	5.58	–	–
			(4.35)		
CSGR1	–	–	–	213.43	–
				(135.83)	
TRANS	–	–	–	–	−11.29
					(38.21)
POLAR	*−12.98*	**−23.51**	–	–	–
	(7.11)	(8.63)			
CHECK	–	*7.06*	–	–	–
		(4.19)			
ALLHSE	–	–	−1.07	–	–
			(12.29)		
EXSPEC	–	–	–	–	9.17
					(10.20)
DUR	**−0.51**	–	–	**−0.59**	–
	(0.22)			(0.28)	
FIN	–	**−25.60**	–	–	–
		(8.43)			
YRLFT	–	–	−4.13	–	–
			(2.67)		
EXEL1	–	–	–	–	−10.61
					(9.74)
EIEC	*3.86*	–	–	–	–
	(2.01)				
POLITY	–	**2.01**	**3.80**	−0.16	–
		(0.82)	(0.91)	(1.04)	
PLUR	–	–	–	–	*1.96*
					(1.16)
MGR1	−0.005	−0.003	−0.004	−0.005	−0.002
	(0.006)	(0.005)	(0.006)	(0.007)	(0.006)
GCONY1	0.16	0.46	0.33	1.30	0.11
	(0.74)	(0.62)	(0.91)	(1.39)	(0.74)
χ^2	**38.54**	**46.00**	**35.87**	15.45	**36.81**
Pseudo-R^2	0.02	0.03	0.03	0.02	0.02
Observations	304	290	183	118	304

Note: See Table 2.

or other conditions. Table 3 reports the results of the analysis when *MGR1* (lagged monetary growth) and *GCONY1* (lagged government consumption expenditures relative to GDP) were added to the models. The number of observations decreases, so the results are not strictly comparable with those

reported in Table 2. Nonetheless, all the variables which were statistically significant in the first set of estimations are significant again, with the exception of *CSGR1*.[24]

On the other hand, the policy variables themselves were not significant. It may be that while policy variables affect the decision to adopt a Fund program, there is a structural break in the policy regime once a program is introduced. Other possible control variables, such as per capita GDP, the rate of inflation, the change in the terms of trade, the reserve coverage of imports, the current account balance relative to GDP, and foreign aid per capita, yielded similar results. Ivanova et al. (2006) also found that the coefficients on the initial economic conditions in their analysis of IMF program completion were insignificant. Dreher (2003), on the other hand, reported that program interruptions were affected by the initial levels of government consumption, debt, and GDP per capita, but not monetary growth.

Differences in the number and nature of the conditions of the concessionary programs (SAF, ESAF, PRGF) and non-concessionary programs (SBA, EFF) could affect the completion of Fund programs. A dummy variable was utilized to determine whether concessionary programs were more or less likely to be completed, but the coefficient was not significant in any specification. The IMF (2001b) has examined whether the number of conditions attached to a program affect its completion, and found no evidence of such an effect.

6. SUMMARY

The model presented and tested in this paper is a response to Drazen's (2002, p. 41) insight that "... it is basically impossible to justify conditionality in the absence of a conflict of interests of sorts." The conflict of interests in this case is based on discrepancies between the borrowing country and the IMF over the assessment of the benefits that flow from IMF programs. The IMF will always take a broader view of the nature and scope of these benefits, and therefore will seek more extensive changes than a country would want to implement. Blaming incomplete completion on a lack of political resolve misses the reasons for its absence.

Countries that have extensive trade with the world are more likely to comply with a program's conditions. The longevity of the regime in power matters, as countries with older regimes are less likely to successfully complete programs. Political openness also matters, and program completion is

[24]In three cases the level of significance is now 10% rather than 5%, but this may be due in part to the smaller number of observations.

higher in countries with democratic political regimes. A government divided across ideological grounds, however, is less likely to complete a program.

Our results can also yield insights on the circumstances that would increase a country's "ownership" of a Fund program. The divergence between the IMF's appraisal of a program's benefits and a government's will be smaller in countries with open economic and political systems, and the program therefore more likely to succeed. But if a government's ability to act is constrained by internal ideological opposition or other factors, there may be little the IMF can do to improve the chances of program implementation.

APPENDIX

TABLE A1 COUNTRIES IN IMF PROGRAMS

Albania	Guatemala	Pakistan
Algeria	Guinea	Panama
Argentina	Guinea-Bissau	Papua New Guinea
Azerbaijan	Haiti	Peru
Bangladesh	Honduras	Philippines
Belarus	Hungary	Poland
Benin	India	Romania
Bolivia	Jamaica	Russia
Brazil	Jordan	Rwanda
Bulgaria	Kazakhstan	Senegal
Burkina Faso	Kenya	Sierra Leone
Burundi	Korea	Slovak Republic
Cameroon	Kyrgyz Republic	Somalia
Central African Republic	Latvia	South Africa
Chad	Lesotho	Sri Lanka
Chile	Liberia	Sudan
Dem. Rep. of Congo (Zaire)	Lithuania	Tajikistan
Republic of Congo	Macedonia	Tanzania
Costa Rica	Madagascar	Thailand
Côte d'Ivoire	Malawi	Togo
Croatia	Mali	Trinidad and Tobago
Czech Republic	Mauritania	Tunisia
Dominican Republic	Mauritius	Turkey
Ecuador	Mexico	Uganda
Egypt	Moldova	Ukraine
El Salvador	Mongolia	Uruguay
Ethiopia	Morocco	Uzbekistan
Gabon	Mozambique	Venezuela
Gambia	Nepal	Zambia
Georgia	Nicaragua	Zimbabwe
Ghana	Niger	

TABLE A2 DEFINITION OF VARIABLES AND SOURCES OF DATA

Variable	Definition	Source
ALLHSE	Indicator of whether executive party has majority in legislature	World Bank *Database of Political Institutions 2000*
CHECK	Number of independent veto players	World Bank *Database of Political Institutions 2000*
CHNIT1	Indicator of financial openness, lagged	Chinn and Hito (2005a, 2005b)
COMP	Disbursement of credit as a proportion of committed amount	IMF *Annual Reports*
CSGR1	Economics Globalisation Sub-Index, Centre for the Study of Globalisation and Regionalisation, Warwick University	www2.warwick.ac.uk/fac/soc/csgr/index/
DUR	Number of years since last regime transition (or 1900)	*Polity IV Project*
EIEC	Executive index of electoral competitiveness, with values from zero (least competitive) to seven (most competitive)	World Bank *Database of Political Institutions 2000*
EXEL1	Indicator of election for chief executive in year before program began	World Bank *Database of Political Institutions 2000*
EXSPEC	Indicator of special interests. Equals one if executive represents nationalist, rural, regional, or religious interests	World Bank *Database of Political Institutions 2000*
FIN	Indicator of finite term in office	World Bank *Database of Political Institutions 2000*
GCONY1	Government expenditure as % of GDP, lagged	*World Development Indicators*
KCON1	Indicator of restrictions on capital account transactions, lagged	IMF *Annual Report on Exchange Arrangements and Exchange Restrictions*
MGR1	Growth rate of M2, lagged	*World Development Indicators*
PLUR	Measurement of political pluralism, based on legislative effectiveness, competitiveness of nominating process, party legitimacy, and index of seats held by largest party	*Cross-National Time Series*
POLAR	Indicator of partisan polarization in a government. Equals negative one to identify left-wing orientation, zero centrist, and one right-wing. In a presidential (parliamentary) system, it takes the value of zero if the president's (prime minister's) party has an absolute majority; otherwise, it is maximum difference between the orientation of the values of the three largest government parties and the largest opposition party	World Bank *Database of Political Institutions 2000*
POLITY	Indicator of type of regime. Ranges from −10 (high autocracy) to 10 (high democracy)	*Polity IV Project*
TRAD1	Exports and imports/GDP, lagged	*World Development Indicators*
TRANS	Indicator for transition economies	*Global Development Database*
YRLFT	Number of years left in chief executive's term	World Bank *Database of Political Institutions 2000*

TABLE A3 CORRELATIONS OF VARIABLES

	TRAD1	*KCON1*	*CHNIT1*	*CSGR1*	
Economic openness variables					
TRAD1	1.0000				
KCON1	−0.0303	1.0000			
CHNIT1	0.0300	−0.4922	1.0000		
CSGR1	0.2840	−0.2621	0.4031	1.0000	
TRANS	0.3569	0.0365	–	−0.0176	1.0000

Note: Transition economies are not included in the Chinn–Ito measurement of financial openness.

	POLAR	*CHECK*	*ALLHSE*	*EXSPEC*
Political cohesion variables				
POLAR	1.0000			
CHECK	0.6355	1.0000		
ALLHSE	−0.6120	−0.5920	1.0000	
EXSPEC	0.0075	0.0387	−0.0863	1.0000

	DUR	*FIN*	*YRLFT*	*EXEL1*
Time variables				
DUR	1.0000			
FIN	−0.0121	1.0000		
YRLFT	−0.0100	−0.0794	1.0000	
EXEL1	−0.0431	0.1766	0.4523	1.0000

	EIEC	*POLITY*	*PLUR*
Political openness variables			
EIEC	1.0000		
POLITY	0.7012	1.0000	
PLUR	0.7368	0.7849	1.0000

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