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What Determines the Implementation of IMF-Supported Programs?

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Abstract

This paper assesses the implementation of IMF-supported programs using measures of program interruptions, compliance with conditionality, and the share of committed funds disbursed. The econometric model allows an evaluation of the importance for program implementation of political conditions in borrowing countries, IMF effort, conditionality, as well as initial and external conditions. The paper concludes that program implementation depends primarily on borrowing countries' domestic political economy. Strong special interests, political instability, inefficient bureaucracies, lack of political cohesion, and ethno-linguistic divisions weaken program implementation. IMF effort, the extent and structure of conditionality, and initial and external conditions do not materially influence program prospects.

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Contents

I. INTRODUCTION

At the heart of the International Monetary Fund's operations are conditional lending programs that provide borrowing countries breathing space while they correct their macroeconomic and structural imbalances. These programs provide mutual assurances. On the one hand, member countries are assured that they will continue receiving IMF financing if they meet the specified conditions. On the other hand, conditionality also ensures that adjustment is undertaken in ways that are conducive to national and international prosperity. This provides assurances to the IMF that it will be repaid and that the world economy will not suffer from inefficient and destructive beggar-thy-neighbor policies.

In order for the effects of IMF-supported programs to be fully realized, however, the policies they envisage must be implemented to the fullest possible extent. Many programs are in fact interrupted amid political or economic turmoil, in circumstances in which it is not possible to agree on conditionality to underpin new or revised programs. By one measure, the implementation record of IMF-supported programs has been rather disappointing. About 44 percent of all programs approved between 1992 and 1998 were not completed, experiencing major and irreversible interruptions.

Econometric studies of IMF-supported programs have generally not considered the extent to which their effectiveness in achieving macroeconomic goals depends on the degree of program implementation. The literature has conventionally assessed the success of reform programs supported by the IMF by examining their effects on macroeconomic magnitudes, such as budget deficits, international reserves, inflation, and growth (Bird, 2002). But there is no reason to expect that programs will realize their macroeconomic goals if, as appears to be the case, implementation consistently falls short of program intentions. The purpose of this paper is to fill this gap by examining econometrically the factors affecting program implementation and taking a first pass at the link between implementation and macroeconomic impact (success or failure).

The literature offers several clues that the primary factors influencing the implementation of IMF-supported programs lie in the domestic political economy of borrowing countries. Interruptions in programs supported under the IMF's concessional facilities (the Structural Adjustment Facility (SAF) and the Enhanced Structural Adjustment Facility (ESAF)) were primarily caused by domestic political economy factors, not poor program design (Mecagni, 1999). The success of World Bank-supported adjustment programs is attributed to favorable domestic political conditions and institutions, including lack of ethnic and linguistic divisions, government stability, and democratic regimes (Dollar and Svensson, 2000). World Bank conditionality and resources allocated to program design and monitoring did not seem to matter at the margin. Case study evidence suggests that in some countries, the ambivalence of the top political leaders and resistance by senior officials and special interests were key to

failures of IMF-supported programs.[2] When lack of political commitment resulted in stop-and-go program cycles, the imposition of large numbers of prior actions had limited success, pointing to the need for greater selectivity in lending. In other countries, participatory processes that actively involved the country's top leadership were instrumental in overcoming domestic divisions and ensuring program success.

This paper investigates the econometric link between program implementation and three groups of factors, including (i) the political characteristics of borrowing countries; (ii) IMF conditionality and human and financial effort invested in programs; and (iii) internal and external economic conditions. This analysis is made possible by the availability of new data sets. First, political scientists in recent years have developed several quantitative indicators of political conditions in borrowing countries. Second, during the last decade, the IMF has improved its internal monitoring of programs and resource allocation, which allows us to develop indicators capturing program conditionality, its implementation, and the Fund's human and financial effort in program countries. In ascertaining the impact on program implementation of variables under the IMF's control, a key empirical issue is the need to properly account for the endogenous nature of IMF decisions. A second key issue, based on the findings of recent theoretical work on conditionality and program ownership, is to test for the impact on program implementation of special interests resisting reforms. We develop an index of the power of special interests in parliament and examine the impact on program implementation of parties representing religious, nationalistic, regional, and rural interests.[3]

Our main results are easily summarized. On the one hand, the implementation of IMF-supported programs is strongly influenced by recipient countries' domestic political economy. Strong special interests, lack of political cohesion, inefficient bureaucracies, and ethno-linguistic divisions are strongly associated with weak program implementation. The strong association between program implementation and political economy variables is robust across different econometric specifications. On the other hand, initial economic conditions, IMF effort and the breadth and depth of conditionality do not seem to materially influence program prospects when they are properly instrumented for. Other recent studies corroborate this finding. Program implementation is not related to the number of conditions or the number of prior actions—conditions that must be implemented before the IMF commits its financial resources (IMF, 2001c; Thomas, 2003). Structural conditionality does not influence medium-term fiscal developments (Bulíř and Moon, 2003).

The paper is organized as follows. Section II describes the sample and presents the various implementation measures and their correlation with macroeconomic outcomes. Section III describes the econometric methodology and presents and discusses the main results. Section IV concludes. The Annex contains detailed definitions of our data and describes our data sources.

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[2] See IMF (2001 a, b), Bredenkamp and Schadler (1999), IMF (1998), and Boughton and Mourmouras (2002).

[3] See Mayer and Mourmouras (2002) and Drazen (2002).

II. Characteristics of IMF-Supported Programs

A. Measuring Program Implementation

We analyzed the implementation of 170 IMF-supported programs approved between 1992 and 1998 (Table 1). The choice of the time period was determined by the availability of information on conditionality in the MONA database[4] and the difficulty in assessing programs approved after 1998, some of which are still ongoing. The largest collection of programs (about 48 percent of the total) in the sample were Stand-By Arrangements (SBAs). The second largest group of programs (38 percent) were programs under concessional facilities,[5] followed by programs under the Extended Fund Facility (EFF)(15 percent).

IMF-supported programs are complex in nature, making it difficult to arrive at a single metric of program success. In general, a program is considered to be successful if its principal macroeconomic and structural objectives are met, including the restoration of a sustainable balance of payments and a sustainable high rate of growth with low inflation. Lacking a single indicator of success for IMF-supported programs, such as the one produced by the World Bank's Operations Evaluation Department for Bank-supported programs, in this paper we focus on the narrower issue of successful implementation of program conditionality which is a prerequisite for overall program success.

Our strategy was to construct multiple measures of implementation for each program in our sample. These measures capture essential features of program performance from different angles, using information available in MONA, data from *International Financial Statistics*, and program documents.[6] Viewed from this narrower perspective, program implementation depends on the extent to which the program was completed without undue delays—whether it was interrupted—and on whether its macroeconomic and structural conditionality was met. The extent to which funds committed by the IMF under the program were disbursed is another indicator of program progress, one that is traditionally used in the literature.

Our first indicator of program implementation is a binary variable measuring program interruptions. This variable captures both major and minor interruptions and is motivated by Mecagni's work. We say that an *interruption* occurred if an SBA review was delayed by

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[4] The Monitoring of IMF Arrangements (MONA) database is maintained by the IMF's Policy Development and Review Department. MONA was started in 1992 and is missing 18 programs approved in that year.

[5] The ESAF was restructured and renamed the Poverty Reduction and Growth Facility (PRGF) in 1999.

[6] An alternative to this approach would be to construct a comprehensive indicator of implementation to reflect whether broad program objectives were reached. Dollar and Svensson (2000) used such a definition, based on the independent (but subjective) judgments of the World Bank's Operations Evaluation Department. No such measure was available to us (the IMF's Independent Evaluation Office (IEO) was only set up in 2001).

Table 1. Program* Implementation by Type of Arrangement

Type of Arrangement	Number of Programs*	Number of Programs* excluding precautionary arrangements as well as cancelled and on-going programs 8/	Share of programs having Interruptions 1/ 6/	Share of programs having Irreversible Interruptions 2/ 6/	Average Macro Implementation Index 3/ 6/ 7/	Average Structural Implementation Index 4/ 6/7/	Average Overall Implementation Index 5/ 6/7/	Average Share of Committed Funds Disbursed 8/
			(In percent)					
EFF	25	13	68	40	87.0	75.4	83.3	72.1
PRGF/ESAF	64	51	73.4	45.3	77.1	71.3	72.9	77.2
SBA	81	41	67.9	43.2	81.0	60.8	76.0	63.7
Total	170	105	70.0	43.5	80.3	67.4	75.8	71.3

* Multiyear arrangements are treated as one program. This is a sample of programs approved between 1992 and 1998 and available from MONA database (our sample is missing 16 SBAs, one ESAF, and one EFF program approved in 1992). The sample of EFF programs is quite small to make reliable conclusions regarding relative performance of EFF compared to ESAF and SBA programs.

1/ An interruption occurs if an SBA program review was delayed by more than three months or not completed at all; if a program review for ESAF/PRGF programs was delayed by more than six months or not completed at all; if there was an interval of more than six months between two subsequent years of a multiyear arrangement; or if at least one of the annual arrangements was not approved (exceptions are programs which were canceled and replaced by another program, in which case noncompleted reviews and nonapproved annual arrangements are not counted as interruptions).

2/ An irreversible interruption occurs if either: (i) the last scheduled program review was not completed (all programs); or (ii) all scheduled reviews were completed but the subsequent annual arrangement was not approved (ESAF/PRGF arrangements).

3/ The Macro Implementation Index for a given macro performance criterion is equal to 100 percent if macro performance criterion was met or met after modification and it is equal to zero if macro performance criterion was not met, not met after modification, waived, or waived after modification. The Macro Implementation Index for a program then is computed as the average of Macro Implementation Indices across all macro performance criteria for this program.

4/ The Structural Implementation Index for a given structural condition is equal to 100 percent if structural condition was met or met with small delay for structural benchmarks; it is equal to 50 percent if structural condition was partially met or delayed for performance criteria and it is equal to zero if structural condition was not met. The Structural Implementation Index for a program then is computed as the average of Structural Implementation Indices across all structural conditions for this program.

5/ The Average Overall Implementation Index for a given program is the average of Macro and Structural Implementation indices over all conditions in this program.

6/ The Macro and Structural implementation indices were computed from information available in MONA. Since MONA questionnaires are sent only for programs for which Board meetings are scheduled, implementation information is missing on many conditions for programs with noncompleted reviews. Since these were typically unsuccessful programs, the macro and structural indices may overstate program implementation. Interruption indices were constructed using additional information from country documents and other sources.

7/ Sample size for implementation indices was smaller (150 programs), which corresponds to the sample constructed for "Structural Conditionality in Fund-Supported Programs," we simply extended structural index used in this paper to macro and overall implementation indices

8/ The average share of disbursed funds was computed across the sample of programs excluding precautionary arrangements (on approval and turned into precautionary) as well as canceled and ongoing programs.

more than three months or not completed at all; if a program review for EFF/PRGFs was delayed by more than six months or not completed at all; if there was an interval of more than six months between two subsequent years of a multiyear arrangement; or if at least one of the annual arrangements was not approved.[7,8] The second indicator is a binary variable identifying irreversible program interruptions. This measure captures programs that went off track and were not revived subsequently (i.e., were either canceled or were allowed to lapse because of policy slippages). More precisely, we say that an *irreversible interruption* occurred if either: (i) the last scheduled program review was not completed (all programs); or (ii) all scheduled reviews were completed but the subsequent annual arrangement was not approved (ESAF/PRGF arrangements). Third, we constructed a quantitative indicator of implementation of IMF conditionality, the *overall implementation index*, which represents the average fraction of macro and structural conditionality implemented. This indicator is an extension of the structural conditionality index developed in the IMF's Policy Development and Review Department during the 2000-02 review of conditionality (IMF 2001c). Finally, we also computed the *ratio of disbursements to commitments*. The last two indicators are continuous variables that take values between zero and 100.

Each of our four indices captures an important dimension of program implementation. The macro and structural implementation indices provide quantitative information on implementation rates by type of condition. Their main drawback is that they overstate the degree of implementation because, as is well known, MONA fails to capture information on interrupted programs that were not subject to further Board reviews.[9] The interruption dummies, which are based on MONA data and additional information from program documents, complement the macro and structural implementation indices by capturing significant program stoppages. The share of disbursed funds provides useful information on the proportion of approved assistance actually delivered for nonprecautionary arrangements and also on the actual duration of the program compared to the scheduled one. The implementation indices and interruption dummies provide useful information about precautionary programs, canceled programs, and some unusual cases where no drawings were made despite good results.

B. Descriptive Statistics

Table 1 summarizes program implementation by type of arrangement. About 44 percent of all programs experienced an irreversible interruption, while 70 percent of all programs experienced either a major or a minor interruption. Nonetheless, approximately 71 percent of committed funds were disbursed on average (excluding precautionary arrangements,

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[7] Exceptions are programs that were canceled and replaced by other programs, in which case noncompleted reviews and nonapproved annual arrangements are not counted as interruptions.

[8] Annex I explains in detail the definitions of program implementation and the political and other variables used in the econometric work.

[9] Recent changes in MONA submissions have corrected this weakness.

cancelled and ongoing programs). The average implementation index for programs for which information is available in MONA is 76 percent. The macro implementation index is significantly higher (80 percent) than the structural implementation index (67 percent). However, implementation indices most likely overstate program performance. MONA collects data only for program test dates subject to Board approval or review. Information on later stages of some programs experiencing major interruptions is, therefore, not available. Although implementation indices do not change much over time (Figure 1), two clear peaks in irreversible interruptions are visible, corresponding to programs approved in 1994 and 1996, and two troughs in the share of disbursed funds for the same years. These are attributable to the financial crises of the mid- and late 1990s.

The four measures of program implementation are significantly mutually correlated (Table 2).[10] However, the correlation coefficients are not very high in most cases, reflecting the fact that the various implementation measures capture quite different angles of program performance. The correlation coefficient between the macro and structural implementation index is only 0.2. This is consistent with the recent finding by Bulíř and Moon that the implementation of fiscal measures in IMF-supported programs was not strongly correlated with the implementation of structural measures.

Several differences stand out between implemented and interrupted programs (Table 3). First, countries that implemented their IMF-supported reform programs were experiencing much higher inflation at the start of the program than countries whose programs were interrupted. Although the difference in inflation rates was not statistically significant in the year in which the program was approved, inflation was significantly higher in implemented programs one year before the program started. Countries that implemented their programs started with substantially smaller budget deficits (2 ½ percent of GDP on average) as compared to countries in which programs were interrupted (4 ¾ percent of GDP on average). Terms of trade shocks were stronger in countries with interrupted programs. The strength of special interests was higher, and the degree of political cohesion was lower, in countries whose programs were interrupted. Interestingly, the effort invested by the IMF and the extent and structure of conditionality are similar in interrupted and implemented programs.

C. Correlation of Implementation Measures with Macroeconomic Performance

IMF-supported programs aim to strengthen the borrowing countries' balance of payments and overall macroeconomic performance. This section presents a preliminary assessment of whether program implementation improves macroeconomic performance, both over the course of programs and after their expiration.

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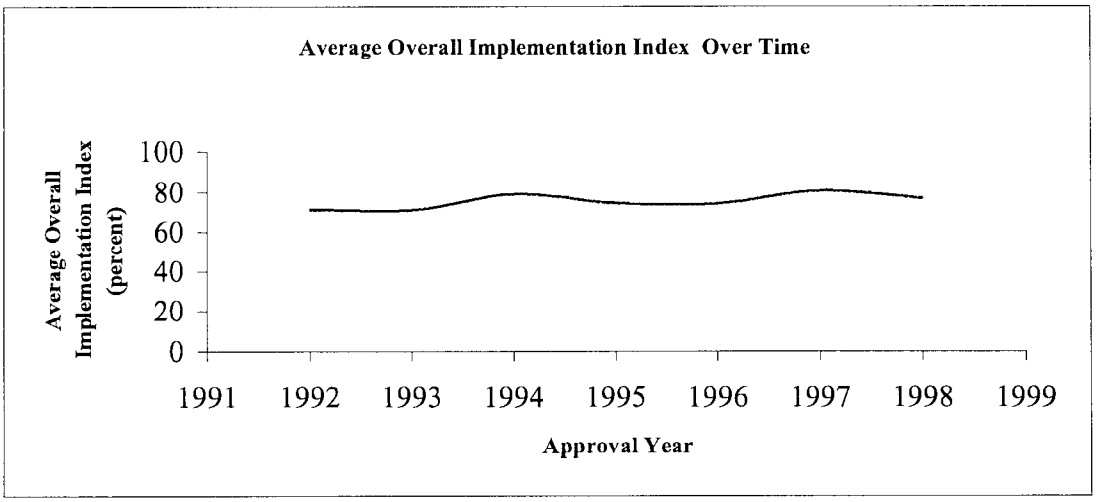
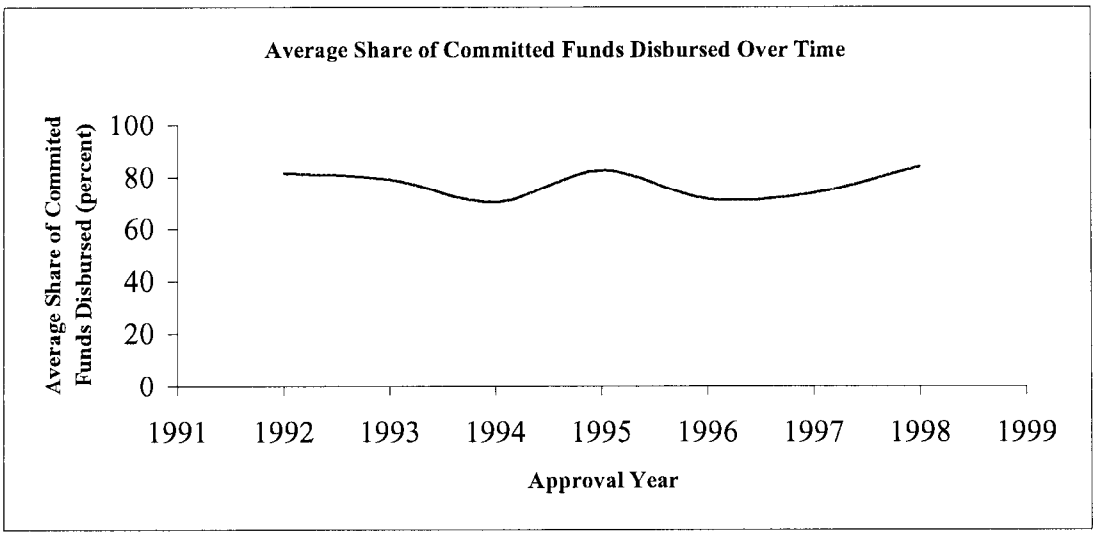
[10] The only exception was the reversible-interruption indicator, which is not significantly correlated with the structural implementation index. Since the reversible interruption dummy captures "small" policy slippages that were subsequently corrected, we decided not to include this measure in our econometric analysis.

Figure 1. Implementation of Fund Programs over Time





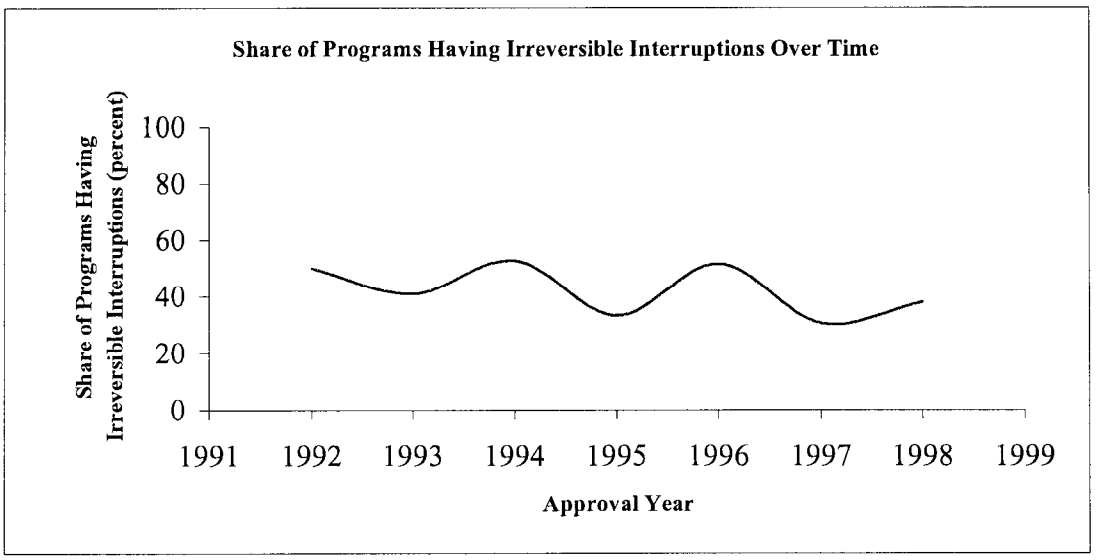


Table 2. Correlations of Implementation Indices (excluding arrangements precautionary on approval)*

Pearson Correlation	Average Macro Implementation Index 1/4/	Average Structural Implementation Index 2/4/	Average Overall Implementation Index 3/4/	Interruption Index 5/	Irreversible Interruption Index 6/	Average Share of Committed Funds Disbursed
Average Macro Implementation Index 1/4/	1.000					
Average Structural Implementation Index 2/4/	**0.211** (0.01)	1.000				
Average Overall Implementation Index 3/4/	**0.782** (0.00)	**0.653** (0.00)	1.00			
Interruption Index 5/	**-0.286** (0.00)	-0.050 (0.56)	**-0.30** (0.00)	1.00		
Irreversible Interruption Index 6/	**-0.263** (0.00)	**-0.279** (0.00)	**-0.39** (0.00)	**0.55** (0.00)	1.00	
Average Share of Committed Funds Disbursed	**0.211** (0.01)	**0.346** (0.00)	**0.38** (0.00)	**-0.42** (0.00)	**-0.75** (0.00)	1.00

Note: In brackets is 2-tailed significance level. Significant at 0.05 level are in bold.

*Multiyear arrangements are treated as one program. These programs were approved between 1992 and 1998 and are taken from the MONA database.

1/ The Macro Implementation Index is equal to 100 percent if macro performance criteria were met or were met after modification and it is equal to zero if macro performance criteria were not met, not met after modification, waived, or waived after modification.

2/ The Structural Implementation Index is equal to 100 percent if structural criteria were met or met with small delay for structural benchmarks; it is equal to 50 percent if structural criteria were partially met or delayed for performance criteria and it is equal to zero if structural criteria were not met.

3/ The Average Overall Implementation Index is the average of macro and structural implementation indices over all conditions for a given program.

4/ The Macro and Structural implementation indices were computed from information available in MONA. Since MONA questionnaires are sent only for programs for which IMF Executive Board meetings are scheduled, implementation information is missing on many conditions for programs with noncompleted reviews. Since these were typically unsuccessful programs, the macro and structural indices may overstate program implementation. Interruption indices were constructed using additional information from country documents and other sources.

5/ An interruption occurs if an SBA program review was delayed by more than three months or not completed at all; if a program review for ESAF/PRGF programs was delayed by more than six months or not completed at all; if there was an interval of more than 6 months between two subsequent years of a multiyear arrangement; or if at least one of the annual arrangements was not approved (exceptions are programs which were cancelled and replaced by another program, in which case noncompleted reviews and nonapproved annual arrangements are not counted as interruptions).

6/ An irreversible interruption occurs if either: (i) the last scheduled program review was not completed (all programs); or (ii) all scheduled reviews were completed but the subsequent annual arrangement was not approved (ESAF/PRGF arrangements).

Table 3. Features of Successful and Failed Fund programs

	Successful		Failed		t-test for the equality of means*	
Political Economy Characteristics	Average	Number of Programs	Average	Number of Programs	t-statistics	p-value
Ethnic Fractionalization	46	58	51	50	-0.86	0.39
Political Instability 1/	4.75	67	5.68	57	-1.16	0.25
Executive Index of Electoral Competitiveness (in percent) 2/	62	86	56	66	0.69	0.49
Time in Power (years)	5.73	86	4.52	66	1.00	0.32
Strength of Special Interests 3/	16	66	25	54	**-1.74**	0.04
Index of Political Cohesion 4/	2.36	85	2.06	66	**2.45**	0.01
Quality of Bureaucracy 5/	1.72	67	1.81	57	-0.68	0.50
Change in Chief Executive (=1 if there was change in chief executive in the course of the program)	18.18	99	28.38	74	-1.59	0.11
Variables under Fund Control						
Fund Effort per Program Year (in millions of US$) 6/	1.01	99	1.03	68	0.13	0.90
Total Number of Conditions per Program Year	40	95	38	65	0.48	0.63
Share of Quantitative PCs Waived (percent)	8.33	99	7.22	73	0.60	0.55
Share of Structural Conditions (percent)	37	95	40	68	-0.74	0.46
Loan Size (agreed amount in millions of SDRs)	620	95	526	69	0.30	0.76
Macro Characteristics						
Initial GDP per capita per year (US dollars)	1494	98	1291	74	0.81	0.42
Initial Debt to the Fund (actual holdings as percent quota)	177	99	159	74	1.16	0.25
Initial Central Government balance (in percent of GDP)	-2.50	88	-4.74	68	**3.70**	0.00
Reserve holdings (as percent of imports) 7/	36.72	81	32.98	68	0.85	0.40
Initial Inflation (percent per annum)	80	98	53	74	0.89**	0.37
Initial Current Account Balance (in percent of GDP)	-5.32	98	-5.87	74	0.42	0.67
Terms of Trade Shock (growth rate during the program period in percent) 8/	-90	98	-15	74	***-1.30***	0.10

Note: Bold figures indicate significance at the 5 percent level, bold and italic figures indicate significance at 10 percent level.

* The null hypothesis is stated as follows: Ho: mean(successful) - mean(failed)=0. The alternative hypothesis was different for different cases. In case when the means were significantly different we report t-statistics for the relevant one-sided alternative hypothesis (for example, for the index of political cohesion we report t-statistics for the null hypothesis as specified above versus alternative that the degree of political cohesion is higher for successful than for failed programs, which in fact, can not be rejected at 5 percent significance level) , otherwise we report t-statistics for alternative hypothesis that the difference in means is not equal to zero.

** Although the average inflation rate in approval year was not significantly different for successful and failed programs in the year preceding approval year average inflation rate for successful programs was significantly higher than for unsuccessful ones

1/ This index is computed based on the index of internal conflict provided by the ICRG on a scale from 0 to 12. Higher values of the index correspond to more internal political instability. We replaced the value of this variable by its maximum score (12) if there was a change in chief executive in the course of Fund program.

2/ Dummy variable which equals one 1 if the executive index of electoral competitiveness is equal to 7 and zero otherwise. The executive index of electoral competitiveness is from the Database of Political Institutions at the World Bank. It ranges from 1 to 7, with higher values corresponding to more competitive elections.

3/ Computed as the maximum share of seats in the parliament held by parties representing special interests (Political Institutions Database, World Bank). Four special interest groups are identified : religious, nationalistic, regional and rural.

4/ The index of political cohesion is defined as follows: in presidential systems a high degree of political cohesion is said to exist if the same party is in control of the executive and legislature; in parliamentary systems a high degree of political cohesion means a one-party majority government. See Annex I for a more detailed definition.

5/ Bureaucracy quality (ICRG) measures the quality of a country's bureaucracy on a 4 point scale. See Annex I for a more detailed definition. We interacted this variable with the dummy indicating that there was a change in chief executive (Political Institutions Database and CIA World Fact Book for most recent years).

6/ Fund effort is estimated dollar cost of Fund programs computed based on BRS data on hours spend by the staff on program implementation (it includes both preparation and supervision of the program) and estimated average salaries of the staff by grade. We also made use of the dollar costs of resident representatives provided by OPM.

7/ Reserves here do not include gold.

8/ Average growth rate of dollar export prices multiplied by the initial share of exports in GDP minus average growth rate of dollar import prices multiplied by the initial share of imports in GDP over the course of the program

Figures 2-4 show how the main macroeconomic magnitudes evolved in uninterrupted and interrupted programs from the year at which the program was approved until three years after the program ended. The variables plotted are the average changes in inflation, the ratio of reserves to imports, and real GDP growth. The eye-ball test (Figure 2) indicates that inflation for both implemented and interrupted programs continued to decline after the program ended, but the reduction in inflation (compared to the approval year) was greater for implemented than for interrupted programs. Uninterrupted programs started with significantly higher inflation as measured one year before the approval year. However this difference was significant only for the end year of the program as indicated by solid dots on the graph. The average level of inflation itself in the end year was also significantly lower for uninterrupted than for interrupted programs but was not significantly different in later years. The high variability of inflation in the data contributed to the differences in the changes in inflation being indistinguishable for implemented and interrupted programs in later years.

Completed programs were associated with better performance, at least as far as the evolution of the reserve coverage of imports (Figure 3). Reserves in relation to imports experienced significantly higher growth in uninterrupted programs than in interrupted ones when the year after the program ended is compared with the year in which the program was approved. Changes in the reserve cover of imports were also significantly and positively correlated with the share of disbursed funds and, in one case, with the noninterruption dummy. However, the correlation of the reserves-to-import ratio with the overall implementation index took the "wrong" sign (it was negative) although insignificant in almost all cases.

Countries that completed their IMF-supported programs started with deeper recessions (more negative GDP growth rates) but grew faster than countries where programs were interrupted, both right after the programs expired and for a couple of years after that (Figure 4). However, these differences in growth rates were not statistically significant. Once initial GDP and inflation are controlled for, only the overall implementation index was significantly positively correlated with growth in the program's end year.

What, then, is the association between program implementation and macroeconomic performance? Although not especially strong in our sample, these results provide some evidence that countries that complete their IMF-supported programs also manage, on average, to reduce inflation, increase their relative reserve holdings, gain export competitiveness, and accelerate growth by more than countries where programs are interrupted. These results are generally consistent with those of the literature: program implementation helps countries strengthen their current account, external reserves, and balance of payments.[11] Economic growth, which is depressed in the short run as program reforms begin to "bite," also improves eventually. One noteworthy difference with previous

[11] The authoritative survey of the empirical literature is Khan and Ul Haque (1998). See also Schadler et al. (1995a, b), Conway (1994, 1998), and Joyce (2002).

Figure 2. Inflation Dynamics for Successful and Unsuccessful Fund programs after the Program End

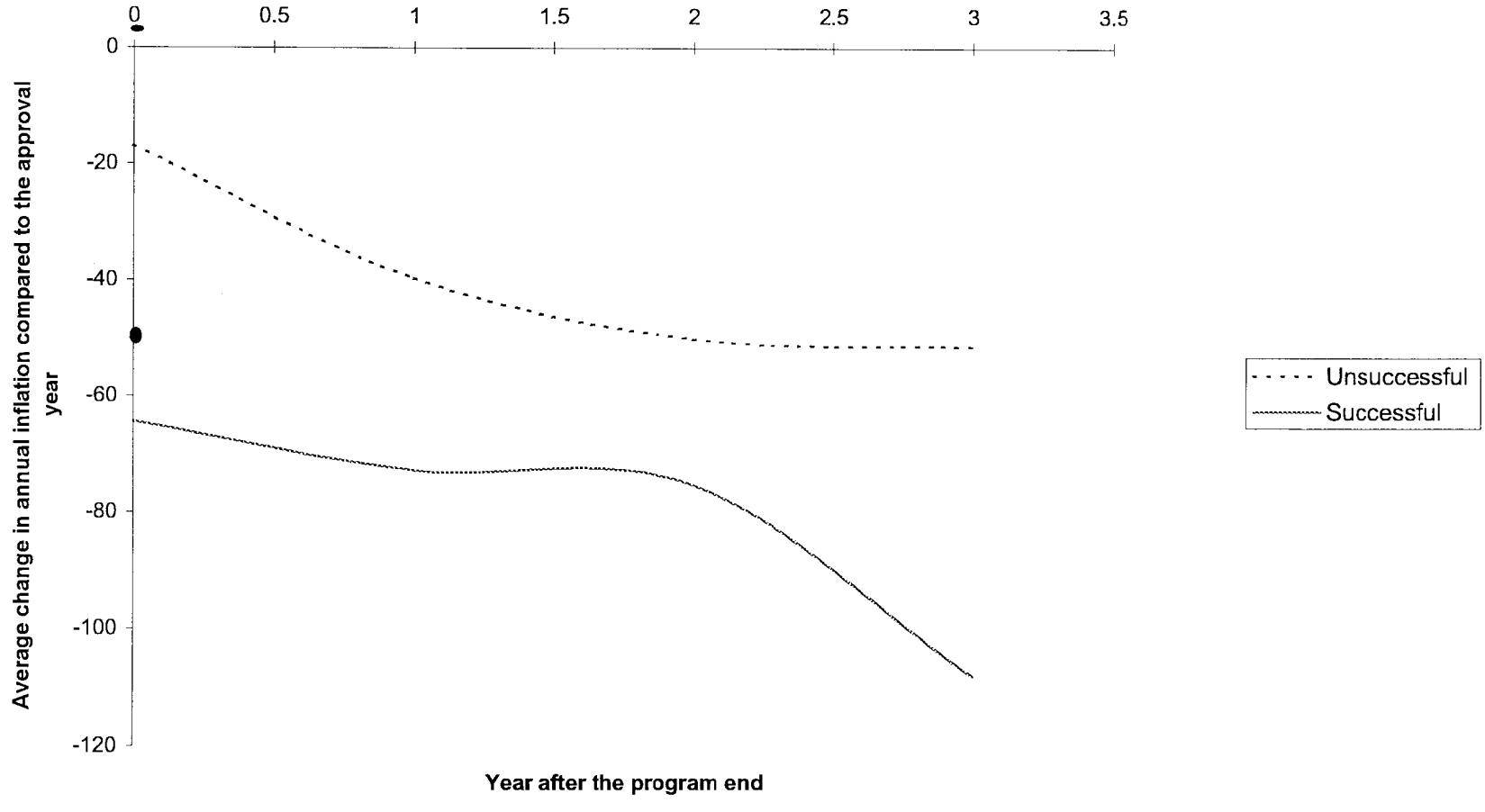


Figure 3. Reserves to Imports Dynamics for Successful and Unsuccessful Fund Programs after the Program End

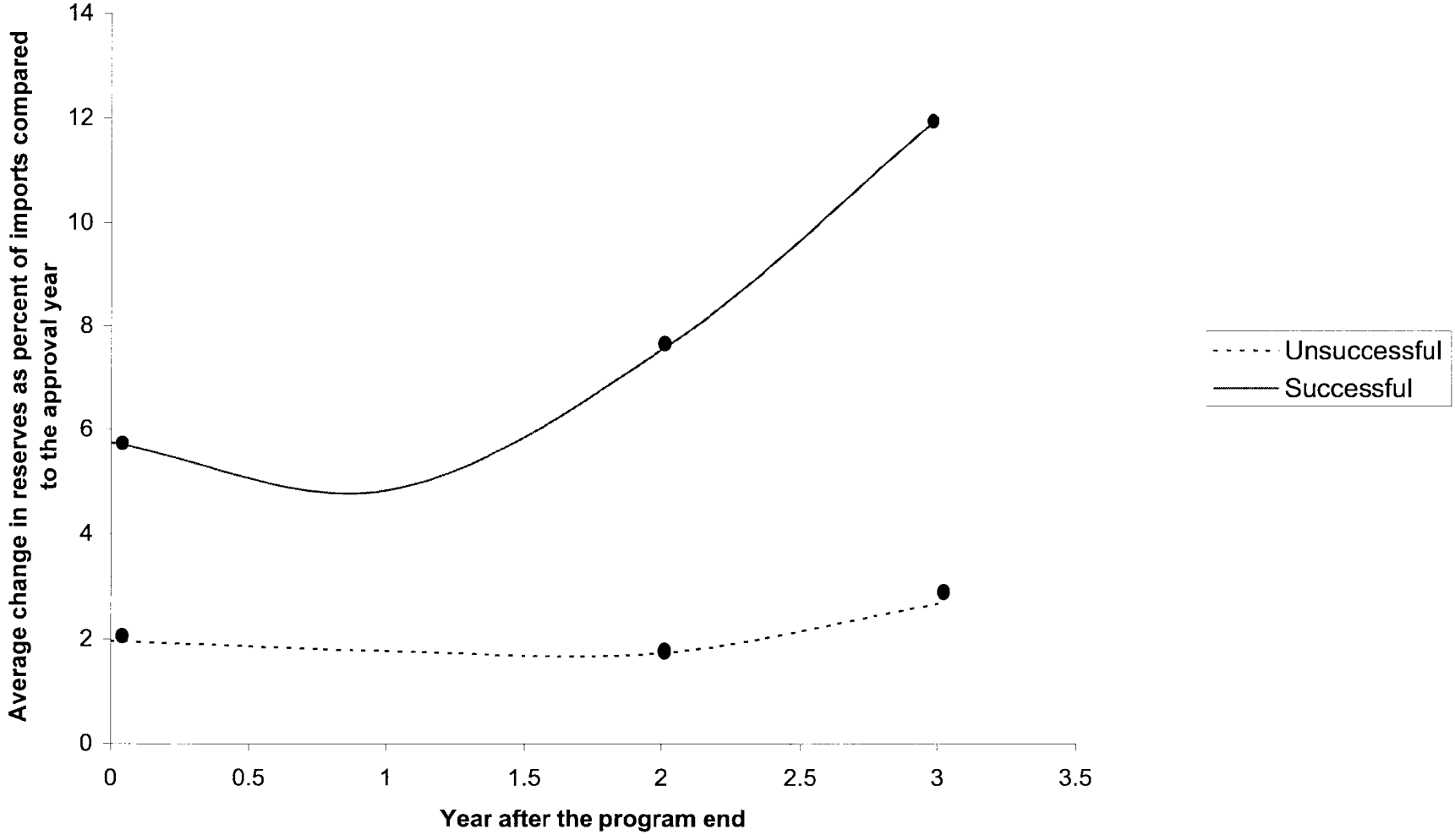
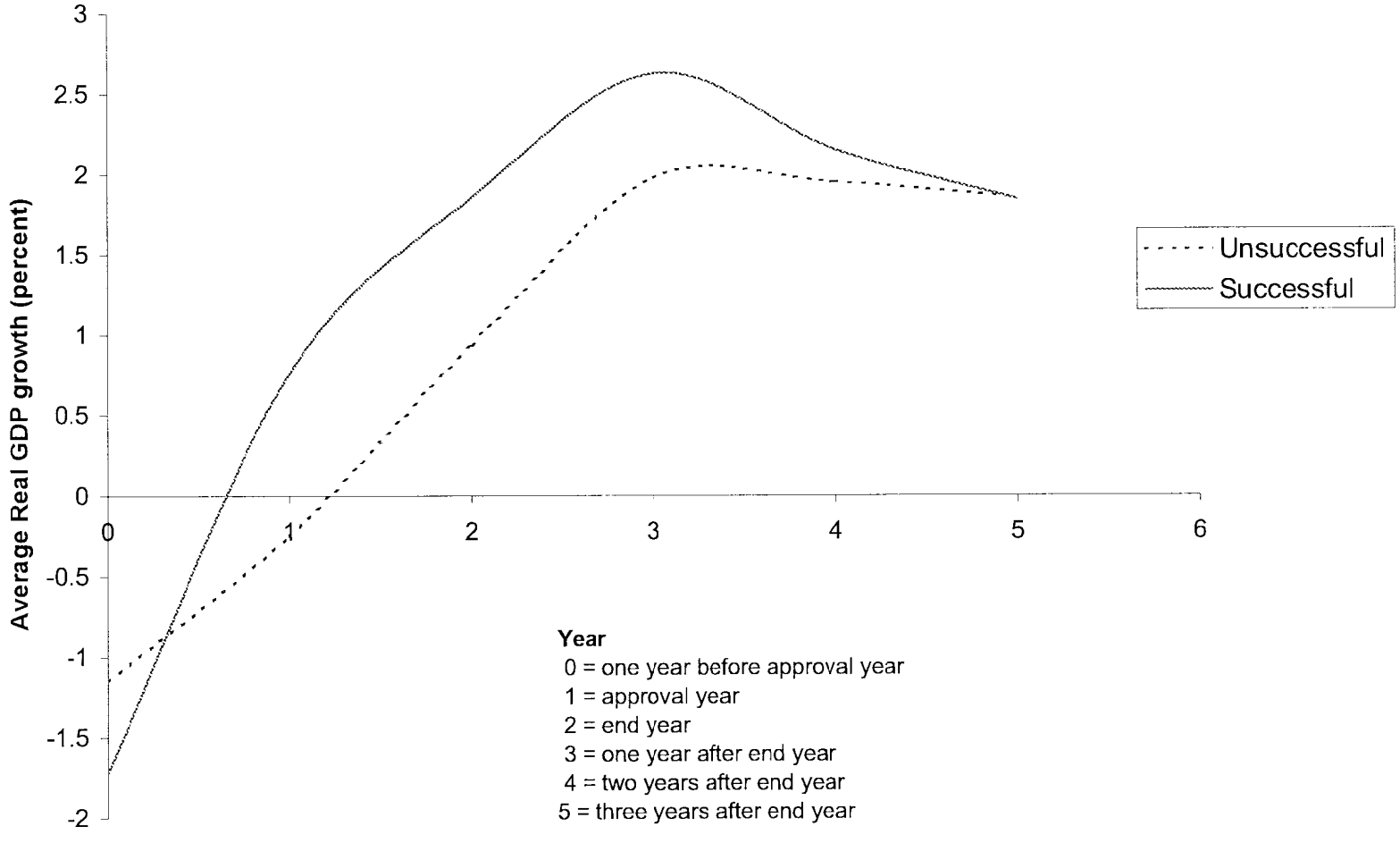


Figure 4. Real GDP Growth Dynamics for Successful and Unsuccessful Fund Programs



studies concerns inflation performance. Whereas previous studies generally have been inconclusive regarding the impact of IMF-supported programs on inflation, inflation performance improves with program implementation in our sample.[12]

III. Econometric Analysis

A. Model Specification

We identify three major groups of factors that might affect the prospects of successful implementation of IMF-supported programs. These are political economy variables, variables describing the IMF's behavior, and initial and external conditions.

On the political economy side, we collected data from various sources, namely, the Political Institutions Database at the World Bank (Beck et al., 2001), the International Country Risk Guide (ICRG), the Polity IV dataset and the CIA World Factbook. The main hypothesis that emerges from the theoretical model presented in a companion paper (Mayer and Mourmouras 2002) is that the implementation of reforms is affected by the strength of special interest groups in countries using IMF resources. In practice, it is difficult to identify and measure the strength of organized lobbies. To develop a suitable measure of the strength of special interests, we relied on the observation that in many countries political parties represented in government or the legislature (or both) sometimes represent specific interests. Legislatures are crucial players in policymaking: legislative approval is required for successful implementation of almost all key reforms.[13] While many different organized interest groups can and do block reforms, special interest groups in parliament seem a natural candidate.

The Political Institutions Database (Beck et al., 2001) identifies four groups of parties in parliament that represent nationalistic, rural, regional, and religious special interests. Key components of the platforms of these parties are the creation or defense of a national or ethnic identity and of rural, regional, or religious issues. Sometimes, nationalistic special interests have persecuted minorities (nationalist special interests), with disastrous consequences for economic development. In any event, special interests in parliament influence government policy choices through the exercise of their political power and, perhaps, through monetary exchanges.

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[12] Studying fully the relationship between success in IMF-programs and improvement in macroeconomic performance requires a more elaborate econometric framework than presented in this paper. In particular, one needs to take into account the dynamic structure of participation in IMF programs. Conway (2000) presents such a framework.

[13] Hence, this test is also related to the theory of veto players. See Drazen (2002) and Tsebelis (2001).

An important question is whether the interests of the political parties representing these interest groups run counter to the reform objectives of IMF-supported programs. While the motives of each of these four types of parliamentary groups are different, each is clearly committed to promoting the interests of only a segment of the population. As such, these parties are likely to support policies favored by the groups they represent even if they harm aggregate welfare. In short, special interests in the parliament serve as our proxy for special interest groups in the theoretical model. To test whether the presence of influential lobbies lowers the probability of successful program implementation we use the maximum share of seats in parliament held by parties that represent nationalistic, religious, rural, and regional interest groups as a measure of the strength of special interests.

Regarding the remaining political economy variables, we include political instability, ethnic fractionalization and ethnic fractionalization squared, political cohesion, and the interaction term of the quality of bureaucracy and the change in chief executive (see the Annex for more details on the definitions of the political variables and their sources). Program implementation might be jeopardized by political instability, which measures the degree of internal conflict and the extent of drastic political change, such as the installation of a new chief executive. Ethnic fractionalization may lead to tensions in society and is, therefore, a potential threat to reforms. Political cohesion emphasizes the heterogeneous nature of the government and the legislature. In countries with poor bureaucracies, changes in government tend to be traumatic as they are often accompanied by disruptions in policy formulation and day-to-day administrative functions, which can have a negative impact on program implementation. A high-quality bureaucracy has the strength and expertise to govern without drastic changes in policies and, therefore, can act as a shock absorber to reduce policy deviations from program goals when governments change. Since the importance of bureaucracy is more sharply felt in times of government change, we included only a term that interacts the strength of the bureaucracy with the dummy variable indicating a change in chief executive.[14]

To test how factors under the IMF's control affect program implementation we included three major groups of factors in our regressions: (1) measures of IMF effort, (2) the extent of IMF financing, and (3) measures of the extent and structure of conditionality.

To test the hypothesis that more support from the IMF improves the prospects of programs we constructed three variables: (1) IMF effort, measured by the dollar cost of each program. This is based on (a) internal IMF data on staff hours allocated to Use of Fund Resources (UFR) work, which is program-related, and staff hours devoted to technical assistance and support tasks in member countries; (b) information on average staff salaries by grade; and (c) the costs of running the IMF's resident representative offices in member countries with

[14] When we included the quality of bureaucracy itself in the regression, the coefficient on that term was insignificant.

programs (data were provided by the IMF's Office of Budget and Planning); (2) the number of IMF staff missions; and (3) the number of missions days.[15]

It has also been argued that the size of IMF loans may not be large enough to induce substantial changes in domestic policies. To test how the extent of IMF financing influences program implementation we included loan size as percent of quota in our regressions.

To analyze the impact of conditionality on program implementation we employed the following measures: (1) the number of conditions per program year, which measures the extent of overall conditionality; (2) the share of quantitative performance criteria waived, which measures the strength of enforcement and associated flexibility of conditionality; and (3) the share of structural conditions in the total number of conditions, which measures the weight programs put on structural reforms. As an alternative to the last measure we also included the number of structural conditions per program year in the regressions, to capture the extent of structural conditionality. As the results were unaffected, they are not reported separately.

Variables under the IMF's control are endogenously determined. Hence, a list of appropriate instrumental variables (IVs) must be employed in order to glean the impact of IMF variables on the probability of successful implementation of IMF-supported programs. These instruments must be correlated with variables under the IMF's control, be uncorrelated with the shocks hitting programs and not be direct determinants of program implementation. The choice of instruments is described in more detail in the box.

Another key issue is the impact of initial and external conditions and shocks on the implementation of IMF-supported programs. One possibility is that countries that start with unfavorable initial conditions or are hit by unfavorable shocks have a harder time meeting program targets. Alternatively, these countries could face stronger incentives to reform and might be more successful in implementing IMF-supported programs. A third possibility is that programs are designed and negotiated optimally, taking into consideration all the relevant factors, including initial conditions and the frequency, intensity and nature of economic and other shocks. If programs are tailored to the circumstances of each member country, differences in initial or external conditions and in exposure to shocks may not play a

[15] For all IMF effort variables we had to make a decision on how to attribute the data on hours/missions available by countries and months to specific programs. We used approval dates and actual end dates of programs. Recognizing that we might be losing a significant part of IMF effort invested in program preparation, we also constructed alternative measures of these variables, taking into account IMF effort in the country three and six months before program approval. Econometric results for alternative measures were essentially the same and are not reported here but are available upon request.

Box. List of Instrumental Variables

Variables under the IMF's control are endogenously determined. Hence, a list of appropriate IVs must be employed in order to glean the impact of IMF variables on the probability of successful program implementation. These instruments must be correlated with variables under the IMF's control, be uncorrelated with the shocks hitting programs, and not be direct determinants of program implementation. It is difficult to find instruments for all endogenous variables simultaneously. Out of all IMF variables, the share of structural conditions in the total number of conditions seems the least subject to later revisions in the course of the program, so we treat this variable as exogenous. For the remaining IMF variables we use the following IVs (Table 5, first-stage regressions). F-statistics on the IV set for all endogenous variables were significant.

The average share of bilateral aid provided to the country by the G-7 before the start of the program. 1/ This variable is positively correlated with the loan size in relation to quota and with the share of quantitative PCs waived although these correlations are not significant even at 10 percent significance level.

Approval year. Since the number of conditions per program year has been increasing over time, it is positively correlated with the approval year and we can use the latter as an IV.

Expected program duration. A program's expected duration is positively correlated with the loan size in relation to quota and negatively correlated with the share of quantitative PCs waived. The longer the program the larger the loan and the more time the IMF has to adjust its conditionality.

IMF quota (log). The quotas of members with IMF-supported programs are significantly positively correlated with the IMF's effort per program year and with the share of quantitative PCs waived. A higher quota is associated with greater IMF effort in a program and a higher share of quantitative PCs waived for two main reasons. First, the quota determines the size of the IMF's loan to a member and the amount "at stake" for the IMF. Second, the quota also determines the member's voting power in the IMF.

GDP per capita (log). This variable is negatively correlated with IMF effort per program year. Richer countries require less IMF effort, get higher loans as percent of quota, receive fewer waivers, and get fewer conditions per program year (this coefficient is significant at 10 percent significance level only). This is the only initial condition included in the IV set. 2/

Regional dummies. IMF effort per program year is higher in Latin America and the Caribbean as compared to Europe and the Middle East. Compared to the other regions, loan size in relation to quota is higher in Latin America and the Caribbean, sub-Saharan Africa, and East Asia. The share of quantitative PCs waived is higher in East Asia (significant at 10 percent significance level only).

Population (log). This variable is negatively correlated with the share of quantitative PCs waived and positively correlated with the loan size as percent of quota.

1/ Since G-7 members comprise 45 percent of the IMF's voting power, this variable could be related to the "weight" the IMF puts on particular borrowers. See Mayer and Mourmouras (2002) for details.
2/ This variable was not significantly correlated with program success when we included it in the original regression.

big role in program implementation.[16] It turns out that it is not possible to distinguish empirically between these three possibilities. All we can say is that the data are consistent with the notion that initial and external conditions do not represent a major stumbling block for program implementation.

Variables included as initial conditions in our regressions were: the central government fiscal balance in relation to GDP; the current account balance in relation to GDP; the level of gross reserves at the start of the program; initial inflation; initial GDP per capita; and initial debt to the IMF in relation to a member's IMF quota. To control for external conditions, we use the terms of trade shock, namely the difference between the growth rate of dollar export prices times the share of exports in GDP and the growth rate of dollar import prices times the share of imports in GDP.

B. Econometric Methodology

Our strategy is to relate the various indicators of implementation, either in isolation or in a pooled sample, to various right-hand side variables. These "explanatory" variables include observable characteristics of borrowing countries, such as initial conditions and features of their domestic political economy, and variables under the IMF's control, as described in the previous section.

Our choice of econometric technique was guided by the need to make efficient use of the information contained in our implementation indicators and by data availability. One complication is that one of our indicators is a binary variable while the other two vary continuously, which makes it difficult to combine all three in a single model. Limited availability of political economy data is an additional consideration. Even though implementation measures are available for 170 programs, political economy variables are only available for about 60 programs. Crucially, some of the political economy data were not available for all former centrally planned economies.[17] The limited sample also forced us to set aside problems of prolonged use of IMF resources. As some of the countries in the complete sample had multiple programs with the IMF, there is strong cross-sectional

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[16] Tailoring programs to members' circumstances is a key principle underlying the IMF's 2002 conditionality guidelines (IMF, 2002). On flexibility in the design of IMF-supported programs also see Mussa and Savastano (1999) and Boughton and Mourmouras (2002).

[17] This is unfortunate, as economies in transition are good "candidates" for testing the negative impact of special interest groups on the implementation of IMF-supported programs. Rent-seeking behavior and state capture in transition economies are well documented in the literature: see Hellman and Kaufmann (2001), Åslund (2001), Odling-Smee (2001), Havrylyshn and Odling-Smee (2000); and the discussion in the conference version of this paper, which is available on the IMF's web site (http://www.imf.org/external/pubs/ft/staffp/2001/00-00/pdf/aiwmgaam.pdf).

correlation between observations in the entire sample. As 56 percent of our working sample comprised countries with only one program, and only eight percent of countries in the sample had three or more programs (Table 4), it was not possible to apply a fixed effects model to our data.

Due to the small sample size, we estimate several specifications to check the robustness of our conclusions. Our approach is to first apply the Multiple Indicators and Multiple Causes (MIMIC)[18] model (see Joreskog and Goldberger, 1975), which combines three implementation measures in one econometric model. We then reestimate models that feature each implementation measure separately using proper econometric techniques. Amemiya's IV probit method is employed to estimate regressions where the left-hand side variable is a binary indicator. Amemiya's IV tobit is used in regressions of the share of disbursed funds and the overall implementation index.

Formally, our model can be described as follows. If y_i^* is the unobservable probability of successful program implementation, then

$$y_i^* = \alpha_y + \gamma_y' P_i + \beta_y' F_i + \varepsilon_{yi} \tag{1}$$

where P_i is a vector of country *i* political economy variables, F_i is a vector of variables under the IMF's control, α_y, γ_y, and β_y are vectors of coefficients, and ε_{yi} is a stochastic disturbance term. The variables controlled by the IMF are given by

$$F_i = \alpha_F + \gamma_F' P_i + \lambda_F' Z_i + \varepsilon_{Fi}, \tag{2}$$

where α_F, γ_F and λ_F are vectors of coefficients, ε_{Fi} is another error term, and Z_i is a vector of exogenous variables that are correlated with donor behavior but do not systematically influence the probability of success. Since the IMF responds to shocks hitting programs by adjusting its effort and conditionality, ε_{yi} and ε_{Fi} are correlated. We use IV techniques to obtain consistent estimates of the coefficients in equation (1).

Since we do not observe y_i^* we cannot estimate equation (1) directly. However we have three indicators of success, which are correlated with y_i^*. We can relate our observed measures of implementation to the unobserved probability of success as follows:

$$y_{i1} = \delta_1 y_i^* + U_{i1} \tag{3}$$

[18] The MIMIC model is a special case of covariance structure model (LISREL), which is a generalization of the factor analysis model.

Table 4. Distribution of Countries by the Number of Programs

Number of programs	In the Original* Sample			In the Working** Sample		
	Number of countries	Percent of countries	Number of observations	Number of countries	Percent of countries	Number of observations
1	32	36.36	32	22	56.41	22
2	41	46.59	82	14	35.9	28
3	8	9.09	24	2	5.13	6
4	5	5.68	20	0	0.00	0
6	2	2.27	12	1	2.56	6
Total	88	100	170	39	100	62

*/ Original sample contained programs approved between 1992 and 1998 and available from MONA database; it is missing 16 SBAs, one ESAF and one EFF program approved in 1992.

**/ Working sample comprised all list-wise nonmissing observations after we included our choice of political economy variables in the regression of noninterruption dummy (see Table 13).

$$y_{i2} = \delta_2 y_i^* + U_{i2} \tag{4}$$
$$y_{i3} = \delta_3 y_i^* + U_{i3}, \tag{5}$$

where y_{i1}, y_{i2}, and y_{i3} are our three implementation measures, and U_{i1}, U_{i2},and U_{i3} are measurement errors which are possibly mutually correlated. Equations (1)-(5) represent a special case of MIMIC model analyzed in Joreskog and Goldberger (1975). In order to estimate this model, we first substitute equation (2) into (1) and (1) into (3)-(5) to obtain a system of equations which can be treated as seemingly unrelated regressions. This system can be estimated to obtain reduced form coefficients which we can use to recover the parameters γ_y and β_y. To calculate the variance of γ_y and β_y we employ the delta method. This approach requires normalization of one of the coefficients δ to one. Since the model is overidentified we also had to impose nonlinear constraints to obtain unique parameter estimates. Because of computational complexity we estimate the general form of the MIMIC model (1)-(5) including only one variable under the IMF's control, namely, the IMF effort (Table 7).

A computationally convenient version of this model arises if the coefficients δ are all unity. In this case, substituting (1) into (3)-(5) and setting the δ 's to one we have:

$$y_{i1} = \alpha_y + \gamma_y P_i + \beta_y^{'} F_i + \varepsilon_{yi} + U_{i1} \tag{3'}$$
$$y_{i2} = \alpha_y + \gamma_y P_i + \beta_y^{'} F_i + \varepsilon_{yi} + U_{i2} \tag{4'}$$
$$y_{i3} = \alpha_y + \gamma_y P_i + \beta_y^{'} F_i + \varepsilon_{yi} + U_{i3} \tag{5'}$$

The system (3')-(5') is a random effects model with random effect ε_{yi}. If IMF effort were not simultaneously determined with the success probability, then the random effect ε_{yi} would be uncorrelated with the set of regressors in F_i and be P_i. We could then obtain consistent estimates of this model by pooling the three implementation measures in one variable and regressing it on the same set of political economy and IMF effort variables for a particular program using the random effects estimator. However, since IMF effort is simultaneously determined with the probability of success, we apply the random effects IV estimator to obtain consistent estimates of the coefficients on political economy and IMF effort variables.

To summarize, we proceed as follows: we first estimate linear-in-probability and tobit regressions that combine three implementation measures in one model employing the random effects estimator (equations (3')-(5')). Two variants are examined, one that ignores the endogeneity of variables under the IMF's control (Table 6) and another dealing with this endogeneity through IV techniques (Table 7). The set of IVs employed is specified in Table 5. Table 7 also reports a third, more general, version of the MIMIC model. This is specification (1)-(5) with only one endogenous variable, namely, IMF effort per program

Table 5. First-Stage Regressions*

Dependent variable:	Fund Effort per Program Year (log) 5/	Loan Size as Percent of Quota (log)	Number of Conditions per Program Year (log)	Share of Quantitative PCs Waived (percent)
Number of observations	57	57	57	57
Ethnic Fractionalization	-0.021	0.006	0.008	0.031
	-(1.56)	(0.58)	(0.84)	(0.12)
Ethnic Fractionalization (squared)	0.000	0.000	0.000	-0.002
	(1.39)	-(0.51)	(0.620)	-(0.57)
Political Instability 1/	-0.034	0.008	-0.012	0.316
	-(0.66)	(0.20)	-(0.34)	(0.34)
Other political economy variables				
Strength of Special Interests 2/	0.391	-0.05	-0.042	-9.424
	(1.15)	-(0.20)	-(0.18)	-(1.51)
Index of Political Cohesion 3/	-0.008	-0.092	-0.093	-0.060
	-(0.06)	-(0.86)	-(0.98)	-(0.02)
Bureaucracy Quality Interacted with Change in Chief Executive 4/	0.007	0.009	0.055	0.391
	(0.02)	(0.04)	(0.29)	(0.08)
Variables under Fund control				
Share of Structural Conditions (percent)	-0.003	0.007	0.009	0.064
	-(0.30)	(1.11)	(1.59)	(0.42)
Instruments				
Average Share of Bilateral Aid by G-7 to the Country Before the Program Start	0.060	0.153	-0.038	3.009
	(0.49)	(1.60)	-(0.45)	(1.35)
Approval Year	0.119	0.052	**0.110**	-0.199
	(1.55)	(0.86)	(2.04)	-(0.14)
Expected Program Duration	0.123	**0.251**	0.059	**-5.512**
	(0.93)	(2.40)	(0.63)	-(2.27)
Fund Quota (log)	**0.469**	-0.128	0.219	**17.421**
	(2.01)	-(0.70)	(1.33)	(4.06)
Dummy for ESAF/PRGF	0.306	0.167	**-1.063**	**16.555**
	(0.80)	(0.56)	-(3.95)	(2.37)
GDP per capita (log)	**-0.442**	**0.418**	***-0.218***	**-8.443**
	-(2.45)	(2.93)	-(1.71)	-(2.55)
Latin America and Caribbean	**1.095**	**0.784**	0.313	0.303
	(2.29)	(2.08)	(0.93)	(0.03)
Sub-Saharan Africa	0.222	**0.968**	-0.046	13.041
	(0.40)	(2.24)	-(0.12)	(1.30)
East Asia	0.724	**1.609**	-0.005	***18.280***
	(1.31)	(3.70)	-(0.01)	(1.81)
Population (log)	-0.020	**0.291**	-0.121	**-10.740**
	-(0.11)	(2.02)	-(0.94)	-(3.21)
R^2	0.56	0.75	0.57	0.549
F-statistic on Instruments	**3.37**	**9.48**	**3.55**	**2.94**
(p-value)	0.00	0.00	0.00	0.01

*/ Estimated by OLS with robust standard errors. Regression also included constant term, which is omitted in the table. Bold figures indicate significance at the 5 percent level, bold and italic figures indicate significance at 10percent level

1/ This index is computed based on the index of internal conflict provided by the ICRG on a scale from 0 to 12. Higher values of the index correspond to more internal political instability. We replaced the value of this variable by its maximum score (12) if there was a change in chief executive in the course of Fund program.

2/ Computed as the maximum share of seats in the parliament held by parties representing special interests (Political Institutions Database, World Bank). Four special interest groups are identified : religious, nationalistic, regional and rural.

3/ The index of political cohesion is defined as follows: in presidential systems a high degree of political cohesion is said to exist if the same party is in control of the executive and legislature; in parliamentary systems a high degree of political cohesion means a one-party majority government. See Annex I for a more detailed definition.

4/ Bureaucracy quality (ICRG) measures the quality of a country's bureaucracy on a 4 point scale. See Annex I for a more detailed definition. We interacted this variable with the dummy indicating that there was a change in chief executive (Political Institutions Database and CIA World Fact Book for most recent years).

5/ Fund effort is estimated dollar cost of Fund programs computed based on BRS data on hours spend by the staff on program implementation (it includes both preparation and supervision of the program) and estimated average salaries of the staff by grade. We also made use of the dollar costs of resident representatives provided by OPM.

Table 6. Random Effects Model: Linear in Probability and Tobit Regressions */

Regression Number	(1)		(2)		(3)		(4)	
Dependent Variable: Program Success	Linear in probability	Tobit	Linear in probability	Tobit	Linear in probability	Tobit	Linear in probability	Tobit
Number of Observations	240	240	170	170	179	179	167	167
D&S variables								
Ethnic Fractionalization	0.12	0.31	**1.07**	**1.99**	**1.16**	**2.14**	**1.31**	**2.45**
	(0.25)	(0.34)	(2.07)	(2.34)	(2.46)	(2.64)	(2.70)	(2.94)
Ethnic Fractionalization	0.00	0.00	-0.01	***-0.02***	**-0.01**	**-0.02**	**-0.01**	**-0.02**
(squared)	-(0.17)	-(0.39)	-(1.34)	-(1.76)	-(2.03)	-(2.30)	-(2.38)	-(2.59)
Political Instability 1/	-0.39	-1.31	-1.49	-5.47	***-2.85***	**-5.87**	**-3.11**	**-5.54**
	-(0.41)	-(0.75)	-(0.69)	-(1.53)	-(1.87)	-(2.23)	-(2.03)	-(2.15)
Executive Index of Electoral	9.64	15.18	8.23	18.85	12.69	22.36	***13.25***	***23.33***
competitiveness 2/	(1.27)	(1.11)	(0.88)	(1.28)	(1.57)	(1.64)	(1.67)	(1.79)
Time in Power	0.34	1.90	1.32	3.70	1.22	3.54	2.24	***4.88***
	(0.30)	(0.91)	(0.73)	(1.29)	(0.78)	(1.33)	(1.46)	(1.90)
Time in Power (squared)	0.00	-0.04	-0.07	***-0.18***	-0.07	***-0.16***	***-0.10***	**-0.20**
	-(0.08)	-(0.80)	-(1.21)	-(1.92)	-(1.29)	-(1.84)	-(1.93)	-(2.35)
Other Political Economy								
Strength of Special Interests 3/			**-31.72**	**-69.73**	**-34.46**	**-68.41**	**-36.39**	**-70.49**
			-(2.14)	-(2.87)	-(3.08)	-(3.53)	-(3.19)	-(3.62)
Index of Political Cohesion 4/			**9.66**	**19.52**	**11.49**	**20.58**	**13.22**	**22.85**
			(1.98)	(2.50)	(2.95)	(3.11)	(3.20)	(3.32)
Quality of Bureaucracy			12.82	***33.25***	***16.25***	**31.30**	**20.77**	**36.82**
Interacted with Change in Chief Executive 5/			(1.19)	(1.85)	(1.92)	(2.13)	(2.52)	(2.63)
Initial conditions								
Central Government Balance			0.93	0.98				
(in percent of GDP)			(0.76)	(0.50)				
Level of Reserves			0.00	0.00				
			(0.46)	(0.72)				
Inflation			0.00	-0.27				
			(0.01)	-(0.97)				
Current Account Balance (in			-95	-123				
percent of GDP)			-(1.26)	-(1.02)				
GDP per capita (log)			5.39	4.75				
			(0.81)	(0.44)				
Debt to the Fund			4.62	13.21				
(percent of Fund Quota)			(0.37)	(0.63)				
External Conditions								
Terms of Trade Shock 6/			-0.01	-0.01				
			-(1.15)	-(0.34)				
Variables under the Fund Control								
Fund Effort per Program Year							3.81	11.91
(log) 7/							(0.78)	(1.48)
Loan Size as Percent of Quota							7.01	11.45
(log)							(1.63)	(1.55)
Number of Conditions per							-6.43	-13.80
Program Year (log)							-(0.99)	-(1.29)
Share of Quantitative PCs							***-0.49***	**-1.05**
Waived (percent)							-(1.98)	-(2.56)
Share of Structural Conditions							0.16	0.21
(percent)							(0.98)	(0.77)
Wald Chi2 statistics	2.95	5.00	34.29	42.63	33.32	38.31	45.86	48.33
p-value	0.81	0.54	0.01	0.00	0.00	0.00	0.00	0.00

Note: Bold figures indicate significance at the 5 percent level, bold and italic figures indicate significance at 10 percent level

*/ This model was estimated on a pooled sample of three implementation measures as left-hand side variables, ignoring the endogeneity of variables under the Fund's control. The measures of program success used are: (1) a binary variable indicating no irreversible program interruption; (2) the share of funds committed by the Fund under an arrangement disbursed (we excluded the measure of committed funds disbursed for arrangements precautionary on approval; cancelled programs that did not have irreversible interruption and arrangements that turned precautionary were treated as fully disbursed (100%)); and (3) the average share of conditions implemented. Regression also included constant term, which is omitted in the table.

1/ This index is computed based on the index of internal conflict provided by the ICRG on a scale from 0 to 12. Higher values of the index correspond to more internal political instability. We replaced the value of this variable by its maximum score (12) if there was a change in chief executive in the course of Fund program.

2/ Dummy variable which equals one 1 if the executive index of electoral competitiveness is equal to 7 and zero otherwise. The executive index of electoral competitiveness is from the Database of Political Institutions at the World Bank. It ranges from 1 to 7, with higher values corresponding to more competitive elections.

3/ Computed as the maximum share of seats in the parliament held by parties representing special interests (Political Institutions Database, World Bank). Four special interest groups are identified : religious, nationalistic, regional and rural.

4/ The index of political cohesion is defined as follows: in presidential systems a high degree of political cohesion is said to exist if the same party is in control of the executive and legislature; in parliamentary systems a high degree of political cohesion means a one-party majority government. See Annex I for a more detailed definition.

5/ Bureaucracy quality (ICRG) measures the quality of a country's bureaucracy on a 4 point scale. See Annex I for a more detailed definition. We interacted this variable with the dummy indicating that there was a change in chief executive (Political Institutions Database and CIA World Fact Book for most recent years).

6/ Average growth rate of dollar export prices multiplied by the initial share of exports in GDP minus average growth rate of dollar import prices multiplied by the initial share of imports in GDP over the course of the program

7/ Fund effort is estimated dollar cost of Fund programs computed based on BRS data on hours spend by the staff on program implementation (it includes both preparation and supervision of the program) and estimated average salaries of the staff by grade. We also made use of the dollar costs of resident representatives provided by OPM.

Table 7. Random Effects (IV) */ and MIMIC **/ Models: Linear in Probability Regressions

	Random effects IV regressions */					MIMIC model**/
Regression number	(1)	(2)	(3)	(4)	(5)	(6)
Observations	165	165	165	165	165	165
D&S variables						
Ethnic Fractionalization	**1.08**	***0.91***	***0.94***	**1.25**	**0.99**	**2.50**
	(2.09)	(1.70)	(1.75)	(2.44)	(2.05)	(3.55)
Ethnic Fractionalization (squared)	***-0.01***	-0.01	-0.01	**-0.01**	***-0.01***	**-0.03**
	-(1.76)	-(1.42)	-(1.48)	-(2.07)	-(1.68)	-(3.53)
Political Instability 1/	**-3.91**	**-3.82**	**-3.93**	**-4.58**	**-4.48**	**-4.23**
	-(2.49)	-(2.43)	-(2.50)	-(2.90)	-(2.82)	-(2.20)
Other Political Economy Variables						
Strength of Special Interests 2/	**-39.78**	**-33.86**	**-34.01**	**-45.47**	**-37.38**	**-38.69**
	-(3.57)	-(2.80)	-(2.81)	-(3.99)	-(3.24)	-(2.48)
Index of Political Cohesion 3/	**10.03**	**10.55**	**8.78**	**9.86**	**9.69**	**14.02**
	(2.74)	(2.87)	(2.17)	(2.43)	(2.39)	(2.86)
Bureaucracy Quality Interacted with Change in Chief Executive 4/	**21.39**	**21.36**	**22.02**	**24.97**	**24.50**	**21.05**
	(2.68)	(2.68)	(2.75)	(3.11)	(3.02)	(2.16)
Variables under the Fund control						
Fund Effort per Program Year (log) 5/6/	1.54	-2.14	-0.49	7.06		-9.29
	(0.23)	-(0.29)	-(0.07)	(0.99)		-(1.06)
Loan Size as Percent of Quota (log) 6/		6.89	7.35		6.58	
		(1.26)	(1.33)		(1.30)	
Number of Conditions per Program Year (log) 6/			-9.87	-15.77	-13.70	
			-(1.05)	-(1.55)	-(1.43)	
Share of Quantitative PCs Waived (percent) 6/				-0.67	-0.47	
				-(1.59)	-(1.17)	
Share of Structural Conditions (percent)	0.14	0.11	0.06	0.16	0.14	
	(0.83)	(0.62)	(0.32)	(0.92)	(0.77)	
Wald Chi2 statistics	26.92	28.50	29.57	31.62	31.93	
p-value	0.00	0.00	0.00	0.00	0.00	
Over-identifying restrictions test	12.67	10.42	8.83	8.04	6.91	
(degrees of freedom)	9	8	7	7	7	
(p-value)	0.18	0.24	0.27	0.33	0.44	
Hausman Test	0.38	0.92	1.04	0.84	0.83	
(p-value)	0.54	0.63	0.79	0.84	0.84	

Note: Bold figures indicate significance at the 5 percent level, bold and italic figures indicate significance at 10 percent level

*/ This model was estimated on a pooled sample of three implementation measures as left-hand side variables, using random effects IV estimator with the set of instruments as specified in Table 9. The measures of program success used are: (1) a binary variable indicating no irreversible program interruption; (2) the share of funds committed by the Fund under an arrangement disbursed (we excluded the measure of committed funds disbursed for arrangements precautionary on approval; cancelled programs that did not have irreversible interruption and arrangements that turned precautionary were treated as fully disbursed (100percent)); and (3) the average share of conditions implemented. Regression also included constant term, which is omitted in the table.

**/ This model comprises equations (1)-(5) in the text and is essentially a system of seemingly unrelated regressions, which can be estimated to obtain reduced form parameters (since the model is overidentified we had to impose nonlinear contraints to obtain unique estimates of coefficients). Then the structural parameters were computed using estimates of reduced form parameters and their variance was estimated using delta-method. (More detailed information is available from authors upon request).

1/ This index is computed based on the index of internal conflict provided by the ICRG on a scale from 0 to 12. Higher values of the index correspond to more internal political instability. We replaced the value of this variable by its maximum score (12) if there was a change in chief executive in the course of Fund program.

2/ Computed as the maximum share of seats in the parliament held by parties representing special interests (Political Institutions Database, World Bank). Four special interest groups are identified : religious, nationalistic, regional,and rural.

3/ The index of political cohesion is defined as follows: in presidential systems a high degree of political cohesion is said to exist if the same party is in control of the executive and legislature; in parliamentary systems a high degree of political cohesion means a one-party majority government. See the Annex for a more detailed definition.

4/ Bureaucracy quality (ICRG) measures the quality of a country's bureaucracy on a 4-point scale. See Annex I for a more detailed definition. We interacted this variable with the dummy indicating that there was a change in chief executive (Political Institutions Database and CIA World Fact Book for most recent years).

5/ Fund effort is estimated dollar cost of Fund programs computed based on BRS data on hours spend by the staff on program implementation (it includes both preparation and supervision of the program) and estimated average salaries of the staff by grade. We also made use of the dollar costs of resident representatives provided by OPM.

6/ Treated as endogenous variable in this regression.

year (column 1, Table 7).[19] We then reestimate our chosen specification of political economy variables with each of the implementation indices in isolation, not taking into account endogeneity of the variables under the IMF control (Table 8) and instrumenting for these variables (Tables 9-11).[20]

IV. RESULTS

A. Main findings

Program prospects depend on the domestic political economy. In particular, strong vested interests in parliament, lack of political cohesion, poor quality of bureaucracy, and ethnic divisions significantly undermine program implementation. We first estimated random effects regressions on a pooled sample, both for linear-in-probability and tobit specifications (Table 6, Column 2). The coefficient on the strength of special interests is negative and significant at the five percent significance level. The strong empirical evidence of the adverse role of special interests on reforms is reassuring, as it comes from a sample that excludes some transition economies. The coefficients on the index of political cohesion as well as on the interaction term of the quality of bureaucracy and the change in chief executive is positive and significant. Interestingly, once we added in the regression three more political economy variables[21] which might affect the probability of program success, the coefficients on ethnic fractionalization and ethnic fractionalization squared became significant. The impact of ethnic fractionalization on program performance is nonlinear. Large and small ethnic divisions are both bad for program implementation.[22] The results remain essentially the same when we reestimate the model using the more general MIMIC specification given by equations 1-5 (Table 7) and when each of the implementation measures were considered in isolation (Tables 8-11).[23]

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[19] The reason for testing the hypothesis about the importance of IMF effort only in this model is that computing standard errors using delta-method with more than one endogenous variable in the MIMIC model is cumbersome.

[20] We estimate IV regressions on each of the implementation measures separately using Amemiya's GLS IV probit/tobit estimators.

[21] Column (1) of Table 6 regresses our implementation variables on the political economy variables used by Dollar and Svensson. The coefficients in our regression are insignificant, both individually and jointly.

[22] The turning point varies between 44 and 55 on a 0-100 scale (Tables 6-8). This is close to the range estimate (44-49) obtained by Dollar and Svensson in their study of World Bank programs.

[23] In this model, $\delta=1$ only in the equation relating the probability of successful implementation and irreversible interruption dummy while allowing the other two δs to vary.

Table 8. Linear in Probability and Probit/Tobit Regressions on Three Implementation Measures Separately Ignoring Endogeneity of Variables under the Fund's Control

	Our Specification of Political Economy Variables + Variables under the Fund's Control					
Dependent variable	Non-Interruption Dummy		Share of Committed Funds Disbursed*		Average Overall Implementation Index	
Model	Linear in probability	Probit	Linear in probability	Tobit	Linear in probability	Tobit
Observations	57	57	53	53	55	55
D&S variables						
Ethnic Fractionalization	1.50	0.05	**1.13**	**1.98**	**0.61**	**0.66**
	(1.58)	(1.43)	(2.28)	(2.24)	(2.47)	(2.91)
Ethnic Fractionalization (squared)	-0.01	0.00	**-0.01**	**-0.02**	**-0.01**	**-0.01**
	-(1.18)	-(1.06)	-(2.05)	*-(1.91)*	-(2.34)	-(2.84)
Political Instability 1/	**-8.13**	**-0.31**	**-3.79**	**-6.31**	-0.37	-0.30
	-(3.22)	-(2.52)	-(2.10)	-(2.51)	-(0.41)	-(0.44)
Other political economy variables						
Strength of Special Interests 2/	**-73.98**	**-2.83**	**-32.17**	**-60.48**	**-17.07**	**-17.25**
	-(3.92)	-(3.03)	-(2.92)	-(3.02)	-(2.96)	-(3.37)
Index of Political Cohesion 3/	**20.52**	**0.83**	**11.67**	**16.35**	-0.83	-1.17
	(3.26)	(2.50)	(3.00)	(2.70)	-(0.50)	-(0.65)
Bureaucracy Quality Interacted with Change in Chief Executive 4/	**45.85**	**1.83**	**17.28**	**28.47**	4.36	4.28
	(4.16)	(2.51)	(2.29)	(2.20)	(0.97)	(1.21)
Variables under the Fund control						
Fund Effort per Program Year (log) 5/	***16.93***	***0.65***	-0.88	6.37	2.42	2.88
	(1.79)	(1.85)	-(0.17)	(0.77)	(1.29)	(1.30)
Loan Size as Percent of Quota (log) 6/	4.92	0.15	3.29	3.10	2.28	2.34
	(0.54)	(0.56)	(0.64)	(0.42)	(1.63)	(1.19)
Number of Conditions per Program Year (log)	-10.71	-0.49	-7.53	-13.18	**-11.44**	**-12.93**
	-(0.93)	-(0.97)	-(1.08)	-(1.28)	-(4.57)	-(4.14)
Share of Quantitative PCs Waived (percent)	-0.87	**-0.03**	0.09	-0.21	**-0.56**	**-0.58**
	-(1.45)	-(2.02)	(0.41)	-(0.48)	-(6.21)	-(5.12)
Share of Structural Conditions (percent)	0.22	0.01	0.15	0.28	-0.12	***-0.14***
	(0.73)	(0.86)	(0.98)	(1.00)	-(1.60)	-(1.78)
R^2	0.41		0.46		0.58	
Predictive ability of the model (percent) 6/		75.44				

Note: Bold figures indicate significance at the 5 percent level, bold and italic figures indicate significance at 10 percent level

*/ For the regression of the share of committed funds disbursed we excluded arrangements precautionary on approval. Canceled programs that did not have irreversible interruption and arrangements that turned precautionary were treated as fully disbursed (100percent)

1/ This index is computed based on the index of internal conflict provided by the ICRG on a scale from 0 to 12. Higher values of the index correspond to more internal political instability. We replaced the value of this variable by its maximum score (12) if there was a change in chief executive in the course of Fund program.

2/ Computed as the maximum share of seats in the parliament held by parties representing special interests (Political Institutions Database, World Bank). Four special interest groups are identified : religious, nationalistic, regional and rural.

3/ The index of political cohesion is defined as follows: in presidential systems a high degree of political cohesion is said to exist if the same party is in control of the executive and legislature; in parliamentary systems a high degree of political cohesion means a one-party majority government. See the Annex for a more detailed definition.

4/ Bureaucracy quality (ICRG) measures the quality of a country's bureaucracy on a 4 point scale. See Annex I for a more detailed definition. We interacted this variable with the dummy indicating that there was a change in chief executive (Political Institutions Database and CIA World Fact Book for most recent years).

5/ Fund effort is estimated dollar cost of Fund programs computed based on BRS data on hours spend by the staff on program implementation (it includes both preparation and supervision of the program) and estimated average salaries of the staff by grade. We also made use of the dollar costs of resident representatives provided by OPM.

6/ Predictive ability of the model is computed as follows: if predicted value from probit regression was higher or equal to 0.5 we count this prediction as no interruption, otherwise we count this prediction as interruption, then we compare the actual outcome with predicted outcome and compute the share of correct predictions

Table 9. IV regressions* for Non-Interruption Dummy Taking into Account Endogeneity of Variables under the Fund's Control**

Dependent variable	Non-Interruption Dummy			
Regression #	(1)	(2)	(3)	(4)
Observations	61	61	61	61
D&S variables				
Ethnic Fractionalization	0.042	***0.033***	0.027	0.037
	(1.32)	(1.09)	(0.86)	(1.17)
Ethnic Fractionalization (squared)	0.000	0.000	0.000	0.000
	-(1.03)	-(0.70)	-(0.49)	-(0.72)
Political Instability 1/	**-0.256**	**-0.251**	**-0.255**	**-0.318**
	-(2.40)	-(2.31)	-(2.31)	-(2.42)
Other political economy variables				
Strength of Special Interests 2/	**-2.329**	**-1.887**	**-1.974**	**-2.479**
	-(2.95)	-(2.51)	-(2.50)	-(2.97)
Index of Political Cohesion 3/	**0.636**	**0.632**	0.484	**0.856**
	(2.33)	(2.33)	(1.54)	(2.44)
Bureaucracy Quality Interacted with Change in Chief Executive 4/	**1.355**	**1.435**	**1.345**	**1.656**
	(2.12)	(2.36)	(2.16)	(2.14)
Variables under the Fund control				
Fund Effort per Program Year (log) 5/7/	0.271			
	(0.57)			
Loan Size as Percent of Quota (log) 7/		0.464		
		(1.34)		
Number of Conditions per Program Year (log) 7/			-0.356	
			-(0.52)	
Share of Quantitative PCs Waived (percent) 7/				-0.045
				-(1.34)
Predictive ability of the model 6/	70.49	72.41	66.67	63.93

Note: Bold figures indicate significance at the 5 percent level, bold and italic figures indicate significance at 10 percent level

*/ For IV estimation on each of the implementation measures separately we use the following shorter sets of IVs:
For Fund Effort per Program Year (log): Expected Program Duration, Quota (log) and GDP per capita (log)
For Loan Size as Percent of Quota (log): Expected Program Duration, GDP per capita (log) and population (log)
For Number of Conditions per Program Year (log): Approval Year, Dummy for ESAF/PRGF and GDP per capita (log)
For Share of Quantitative PCs Waived (percent): Quota (log), GDP per capita (log) and Population (log)

**/ IV regression for non-interruption dummy was estimated using two-stage Amemiya (1978) GLS procedure (IV probit)

1/ This index is computed based on the index of internal conflict provided by the ICRG on a scale from 0 to 12. Higher values of the index correspond to more internal political instability. We replaced the value of this variable by its maximum score (12) if there was a change in chief executive in the course of Fund program.

2/ Computed as the maximum share of seats in the parliament held by parties representing special interests (Political Institutions Database, World Bank). Four special interest groups are identified : religious, nationalistic, regional and rural.

3/ The index of political cohesion is defined as follows: in presidential systems a high degree of political cohesion is said to exist if the same party is in control of the executive and legislature; in parliamentary systems a high degree of political cohesion means a one-party majority government. See Annex I for a more detailed definition.

4/ Bureaucracy quality (ICRG) measures the quality of a country's bureaucracy on a 4 point scale. See Annex I for a more detailed definition. We interacted this variable with the dummy indicating that there was a change in chief executive (Political Institutions Database and CIA World Fact Book for most recent years).

5/ Fund effort is estimated dollar cost of Fund programs computed based on BRS data on hours spend by the staff on program implementation (it includes both preparation and supervision of the program) and estimated average salaries of the staff by grade. We also made use of the dollar costs of resident representatives provided by OPM.

6/ Predictive ability of the model is computed as follows: if predicted value from probit regression was higher or equal to 0.5 we count this prediction as no interruption, otherwise we count this prediction as interruption, then we compare the actual outcome with predicted outcome and compute the share of correct predictions.

7/ Treated as endogenous variable in this regression.

Table 10. IV Regressions* for the Average Share of Committed Funds Disbursed Taking into Account Endogeneity of Variables under the Fund's Control

Dependent variable	Share of Committed Funds Disbursed***			
Regression #	(1)	(2)	(3)	(4)
Observations	55	55	55	55
D&S variables				
Ethnic Fractionalization	1.234	***1.478***	***1.553***	1.165
	(1.38)	(1.88)	(1.95)	(1.45)
Ethnic Fractionalization (squared)	-0.010	-0.012	-0.013	-0.008
	-(1.03)	-(1.46)	-(1.54)	-(0.97)
Political Instability 1/	**-6.022**	**-5.351**	**-5.925**	**-6.289**
	-(2.42)	-(2.26)	-(2.45)	-(2.48)
Other political economy variables				
Strength of Special Interests 2/	**-49.287**	**-49.505**	**-51.833**	**-50.597**
	-(2.58)	-(2.80)	-(2.97)	-(2.77)
Index of Political Cohesion 3/	**16.820**	**17.807**	**13.194**	**18.703**
	(2.95)	(3.18)	(2.03)	(2.87)
Bureaucracy Quality Interacted with Change in Chief Executive 4/	**26.162**	***23.426***	***25.209***	**27.253**
	(2.00)	(1.88)	(1.99)	(2.03)
Variables under the Fund control				
Fund Effort per Program Year (log) 5/6/	-1.311			
	-(0.10)			
Loan Size as Percent of Quota (log) 7/		4.349		
		(0.49)		
Number of Conditions per Program Year (log) 6/			-22.011	
			-(1.30)	
Share of Quantitative PCs Waived (percent) 6/				-0.638
				-(0.78)

Note: Bold figures indicate significance at the 5 percent level, bold and italic figures indicate significance at 10 percent level

*/ For IV estimation on each of the implementation measures separately we use the following shorter sets of IVs:
For Fund Effort per Program Year (log) : Expected Program Duration, Quota (log) and GDP per capita (log)
For Loan Size as Percent of Quota (log) : Expected Program Duration, GDP per capita (log) and population (log)
For Number of Conditions per Program Year (log) : Approval Year, Dummy for ESAF/PRGF and GDP per capita (log)
For Share of Quantitative PCs Waived (percent) : Quota (log), GDP per capita (log) and Population (log)

**/ IV regression for the share of committed funds disbursed was estimated using two-stage Amemiya (1978) GLS procedure (IV tobit)

***/ For the regression of the share of committed funds disbursed we excluded arrangements precautionary on approval. Cancelled programs that did not have irreversible interruption and arrangements that turned precautionary were treated as fully disbursed (100 percent)

1/ This index is computed based on the index of internal conflict provided by the ICRG on a scale from 0 to 12. Higher values of the index correspond to more internal political instability. We replaced the value of this variable by its maximum score (12) if there was a change in chief executive in the course of Fund program.

2/ Computed as the maximum share of seats in the parliament held by parties representing special interests (Political Institutions Database, World Bank). Four special interest groups are identified : religious, nationalistic, regional and rural.

3/ The index of political cohesion is defined as follows: in presidential systems a high degree of political cohesion is said to exist if the same party is in control of the executive and legislature; in parliamentary systems a high degree of political cohesion means a one-party majority government. See Annex I or a more detailed definition.

4/ Bureaucracy quality (ICRG) measures the quality of a country's bureaucracy on a 4 point scale. See Annex I for a more detailed definition. We interacted this variable with the dummy indicating that there was a change in chief executive (Political Institutions Database and CIA World Fact Book for most recent years).

5/ Fund effort is estimated dollar cost of Fund programs computed based on BRS data on hours spend by the staff on program implementation (it includes both preparation and supervision of the program) and estimated average salaries of the staff by grade. We also made use of the dollar costs of resident representatives provided by OPM.

6/ Treated as endogenous variable in this regression

Table 11. IV regressions* for the Average Overall Implementation Index Taking into Account Endogeneity of Variables under the Fund's Control

Dependent variable	Average Overall Implementation Index			
Regression #	(1)	(2)	(3)	(4)
Observations	55	55	55	55
D&S variables				
Ethnic Fractionalization	0.525	**0.695**	**0.697**	**0.668**
	(1.63)	(2.49)	(2.32)	(2.69)
Ethnic Fractionalization (squared)	***-0.006***	**-0.008**	**-0.008**	**-0.007**
	-(1.74)	-(2.63)	-(2.40)	-(2.59)
Political Instability 1/	-0.329	-0.076	-0.080	-0.417
	-(0.38)	-(0.09)	-(0.09)	-(0.56)
Other political economy variables				
Strength of Special Interests 2/	**-14.183**	**-15.304**	**-16.680**	**-18.900**
	-(2.12)	-(2.41)	-(2.52)	-(3.42)
Index of Political Cohesion 3/	-1.675	-0.747	-0.911	1.143
	-(0.77)	-(0.35)	-(0.34)	(0.55)
Bureaucracy Quality Interacted with Change in Chief Executive 4/	3.457	3.375	3.069	4.369
	(0.77)	(0.77)	(0.64)	(1.11)
Variables under the Fund control				
Fund Effort per Program Year (log) 5/6/	-5.095			
	-(1.15)			
Loan Size as Percent of Quota (log) 7/		3.188		
		(1.01)		
Number of Conditions per Program Year (log) 6/			2.126	
			(0.32)	
Share of Quantitative PCs Waived (percent) 6/				**-0.600**
				-(2.51)

Note: Bold figures indicate significance at the 5 percent level, bold and italic figures indicate significance at 10 percent level

*/ For IV estimation on each of the implementation measures separately we use the following shorter sets of IVs:
For Fund Effort per Program Year (log): Expected Program Duration, Quota (log) and GDP per capita (log)
For Loan Size as Percent of Quota (log): Expected Program Duration, GDP per capita (log) and population (log)
For Number of Conditions per Program Year (log): Approval Year, Dummy for ESAF/PRGF and GDP per capita (log)
For Share of Quantitative PCs Waived (percent): Quota (log), GDP per capita (log) and Population (log)

**/ IV regression for the average overall implementation index was estimated using two-stage Amemiya (1978) GLS procedure (IV tobit)

1/ This index is computed based on the index of internal conflict provided by the ICRG on a scale from 0 to 12. Higher values of the index correspond to more internal political instability. We replaced the value of this variable by its maximum score (12) if there was a change in chief executive in the course of Fund program.

2/ Computed as the maximum share of seats in the parliament held by parties representing special interests (Political Institutions Database, World Bank). Four special interest groups are identified : religious, nationalistic, regional and rural.

3/ The index of political cohesion is defined as follows: in presidential systems a high degree of political cohesion is said to exist if the same party is in control of the executive and legislature; in parliamentary systems a high degree of political cohesion means a one-party majority government. See the Annex for a more detailed definition.

4/ Bureaucracy quality (ICRG) measures the quality of a country's bureaucracy on a 4 point scale. See the Annex for a more detailed definition. We interacted this variable with the dummy indicating that there was a change in chief executive (Political Institutions Database and CIA World Fact Book for most recent years).

5/ Fund effort is estimated dollar cost of Fund programs computed based on BRS data on hours spend by the staff on program implementation (it includes both preparation and supervision of the program) and estimated average salaries of the staff by grade. We also made use of the dollar costs of resident representatives provided by OPM.

6/ Treated as endogenous variable in this regression

Neither incumbents' democratic credentials nor their newness in office is associated with better implementation of IMF-supported programs (Table 6).[24] The coefficients on democratically elected dummy and time in power terms were insignificant in almost all specifications. Likelihood ratio tests for the tobit specification confirmed that these exclusions did not substantially worsen model performance. The first result corroborates anecdotal evidence that the implementation of IMF-supported programs does not suffer in countries with authoritarian regimes. The magnitude and even direction of impact of most reforms is ambiguous, especially at the outset, making them unpopular with policymakers and their public even as they enhance welfare in the long run. Consequently, it may be that democratic administrations in developing or transition countries have a harder time than dictators marshalling the support they need to pursue successful reforms. The absence of significant correlation between a government's length of tenure and the probability of successful program implementation is also intriguing. It suggests not to expect too much of new, reform-minded governments implementing IMF-supported reforms in countries with the adverse political economy characteristics. Perhaps the lack of correlation also reflects public sector characteristics we have not captured.

Initial and external economic conditions do not seem to influence program implementation much once political economy variables are taken into account. The coefficients on all initial and external conditions in the random effects regressions came out individually and jointly insignificant (Table 6).[25] Initial conditions were insignificant in the IV regressions as well, although we do not present these results here to save space. The coefficients on the political economy variables do not change appreciably when the estimation excludes initial conditions (Table 6, column 3). As already mentioned, the fact that initial conditions do not affect the probability of program implementation does not necessarily imply that IMF-supported programs are optimally designed. It does, however, indicate that unfavorable initial or external conditions per se do not compromise programs' prospects of being successfully implemented.

Variables controlled by the IMF, including financial and human effort and the breadth and depth of conditionality, do not affect program implementation once domestic political economy variables are taken into account. IMF effort was measured by the dollar cost of staff hours spent on UFR and on technical assistance tasks per program year and the loan size in relation to a country's IMF quota. The extent of conditionality was captured by the total number of conditions per program year, the share of quantitative performance criteria

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[24] It will be recalled that Dollar and Svensson concluded that the implementation of Bank-supported programs improves in countries with democratically elected governments.

[25] The null hypothesis that the coefficients on all these variables are jointly insignificant could not be rejected at the five percent significance level. Likelihood ratio test statistics for this test going from tobit regression in column 2 of Table 6 to tobit regression in column 3 of Table 6 was 6.98 with p-value equal to 0.43.

waived, and the share of structural conditions in conditionality.[26,27] Once their endogeneity was accounted for, IMF-related variables did not significantly affect the probability of successful program implementation (Tables 7, 9-11).[28] The overidentifying restrictions test confirmed the validity of including additional IVs in the regressions. The Hausman test verified that IV random effects regressions were not much different from the simple random effects model.

The coefficients on IMF-related variables are insignificant in many regressions when their endogeneity was ignored (column 4, Tables 6 and 8). We note two exceptions. First, the share of quantitative performance criteria waived was, in several cases, negatively correlated with the probability of successful program implementation. This partly reflects the nature of the implementation index, which is assigned a value zero if the condition was waived. Second, IMF effort was positively correlated (at the 10 percent significance level) with the index of completion of IMF-supported programs (Table 8). This correlation vanished when the endogeneity of these two variables was taken into account.

B. Illustration

It is helpful to illustrate the estimated impacts of political economy variables on the probability of program implementation. Consider the marginal effects of improved political stability, political cohesion and the quality of bureaucracy, based on the IV regression of the no-interruption dummy (Table 9, Column 1). For a country that enjoys perfect political stability and no special interests in parliament, the probability of program implementation is very high (96 percent). If political stability is only average, the chances of successful program implementation decline to 70 percent (Figure 5). If parties representing special

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[26]We also tried the number of structural conditions per program year as an alternative measure of the extent of structural conditionality. We do not report the results of this estimation in the tables as the results essentially remained the same. The only difference was that the coefficient on the number of structural conditions turned negative in many cases, although still insignificant.

[27] IMF-related variables are included in these regressions taking into account the limitations of our IV sets. See footnote 6 above and footnote */ in Tables 9 though 11 for the description of the shorter IV sets used in the regressions of the implementation measures separately.

[28] We also included the share of prior actions and conditions for completion of review in the total number of conditions in our regressions, not taking into account its endogeneity and instrumenting for this variable. In both cases the coefficient on this variable was insignificant and is not reported. More careful study on prior actions is required to analyze the impact of prior actions on program success. One consideration is that MONA does not provide information on programs not approved as a result of failing to meet certain prior actions. It is unlikely that this result will change even if the selection bias is properly accounted for.

interests occupy 20 percent of the seats in parliament, a program only has a fifty-fifty chance of implementation. Lack of political cohesion reduces the probability of program implementation by 50 percentage points (from 70 percent to 20 percent) when there are no special interests. If 20 percent of the seats in parliament are controlled by special interests, the probability of program implementation drops another 10 percentage points (Figure 6). The impact of a country's bureaucracy on program implementation is also substantial. In the absence of special interests, the probability of program implementation increases from 50 percent when the quality of the bureaucracy is low to 74 percent when the bureaucracy is of average quality (Figure 7). If, on the other hand, special interests control 20 percent of the seats in parliament, the probability of program implementation increases from 33 percent when the quality of the bureaucracy is low to 50 percent when the bureaucracy is of average quality.

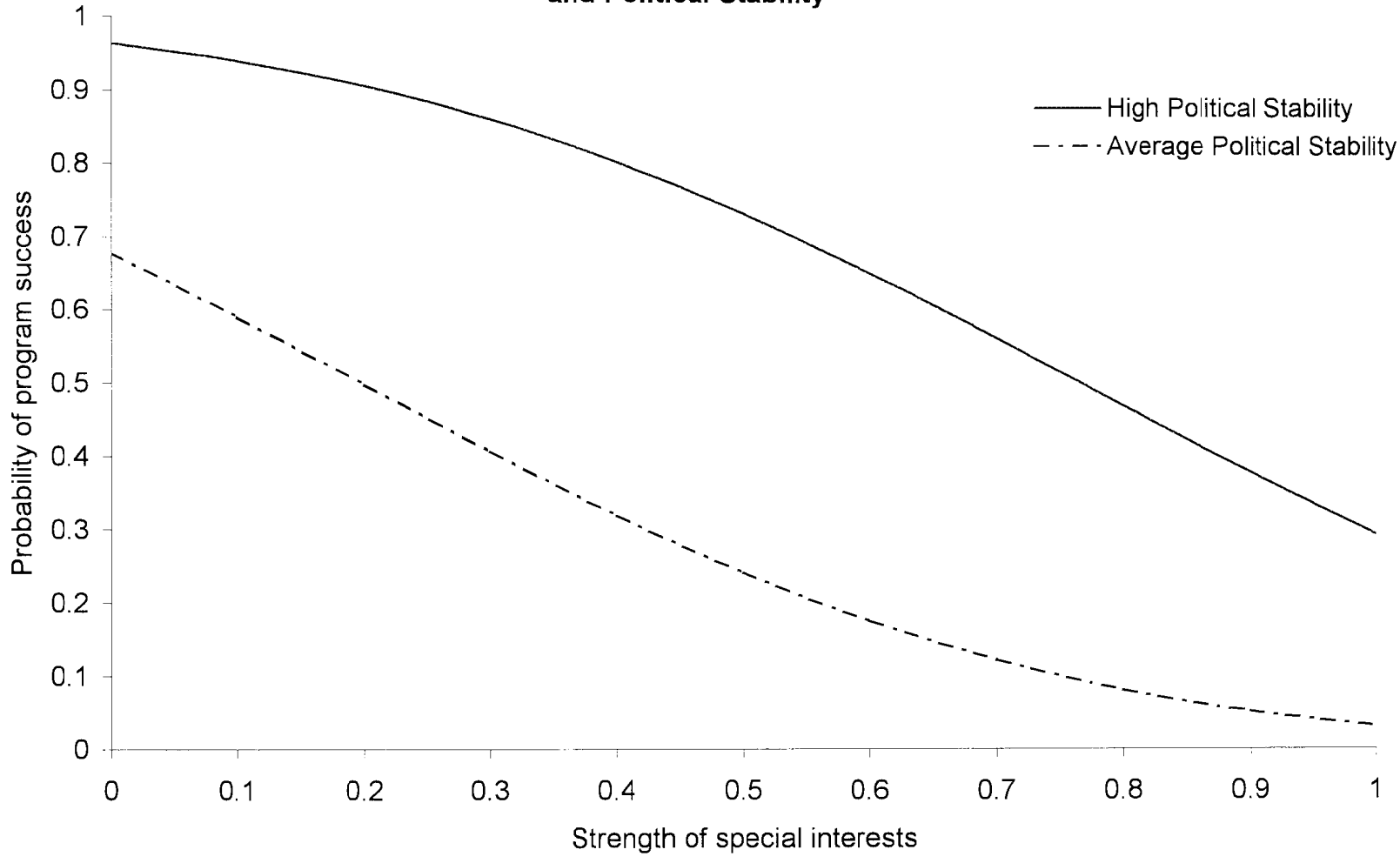
C. Robustness Checks and Limitations

Although our relatively small sample size makes it difficult to reach definitive conclusions, our findings appear to be robust to the specification of regressions, the choice of left-hand side variable and the choice of the measure of IMF effort. As already demonstrated, our main conclusions regarding the effect of political economy and IMF-related variables on program implementation are robust to the precise specification of the econometric model. Estimating random effects models on a pooled dataset and reestimations using the appropriate probit and tobit technique for each of our three implementation measures separately lead to similar conclusions.

Our basic conclusions are also robust to alternative specifications of IMF effort. We tried various alternatives to our primary IMF effort variable (the dollar cost of IMF hours invested in country work between the approval and actual end date of the program). Various other measures, such as the number of missions per program year and the number of mission days per program year, yield qualitatively similar results. Even though the number of missions and mission days are positively and strongly correlated with program implementation when their endogeneity is not accounted for, this association disappears in the proper IV regressions.[29] We also corrected for the fact that IMF effort is strongly correlated with loan size. While the IMF exerts greater effort in monitoring larger loans (as measured by staff hours per dollar lent), this does not lead to better program implementation. Finally, more IMF effort into program preparation, as measured by the dollar cost of staff hours and the number of missions or of mission days to a country three and six months before program approval, does not affect program implementation either.

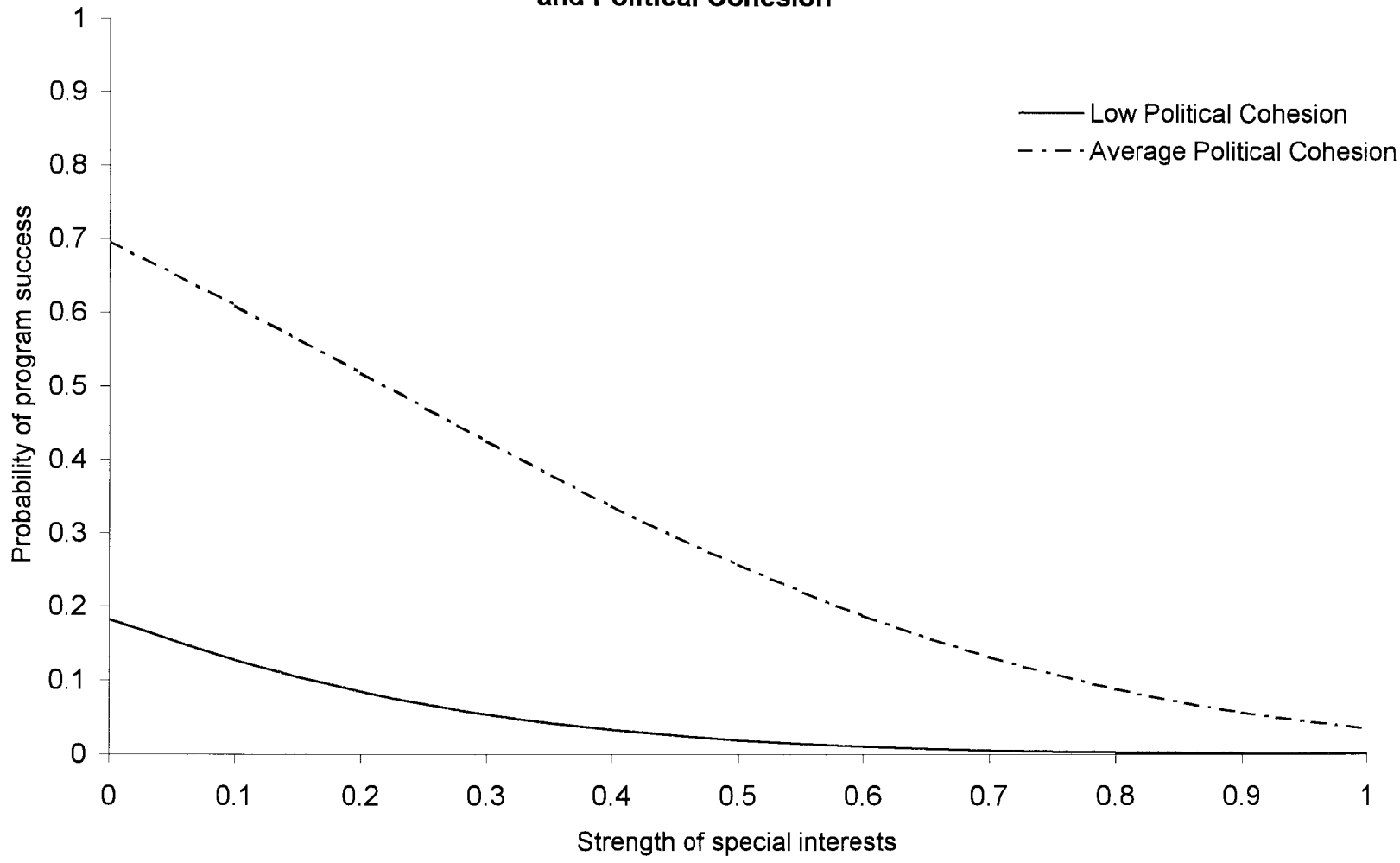
[29] It will be recalled that this linkage was not present when IMF effort was proxied by the estimated cost of IMF-supported programs.

Figure 5
Probability of Program Success, Strength of Special Interests, and Political Stability



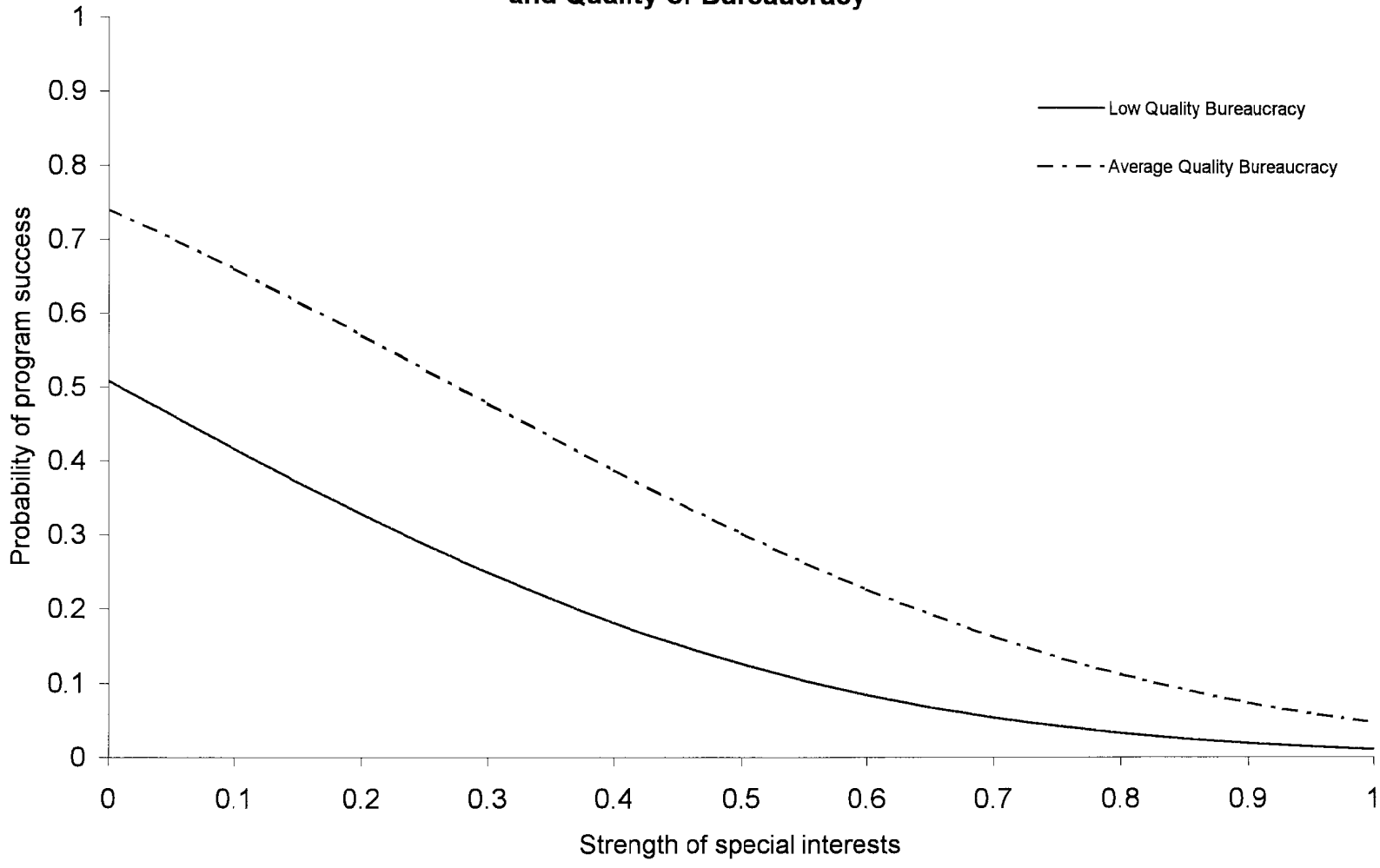
Note: probabilities are evaluated at the means of other explanatory variables

Figure 6
Probability of Program Success, Strength of Special Interests, and Political Cohesion



Note: probabilities are evaluated at the means of other explanatory variables

Figure 7
Probability of Program Success, Strength of Special Interests, and Quality of Bureaucracy



Note: probabilities are evaluated at the means of other explanatory variables

While useful, our approach is not without limitations. To begin with, the linear-in-probability specification may not be an appropriate statistical model for the irreversible interruptions indicator. Moreover, the assumption of constant variance needed to apply the random effects model is hard to justify in the linear-in-probability model. We believe that these drawbacks are outweighed by the substantial informational advantages from pooling the implementation indicators in one econometric model (see, for example, Lubotsky and Wittenberg, 2001). As additional political economy data becomes available, it should be possible to extend our data set and provide more thorough check of the robustness of our results.[30]

V. Concluding Remarks

This paper makes a start at providing an econometrically informed assessment of the factors influencing the implementation of IMF-supported programs. This approach fills a gap in a literature that, until recently, has evaluated the macroeconomic and structural impacts of these programs without making adequate distinctions between implemented and nonimplemented programs. The paper presents a variety of (new and old) statistical indicators of program implementation and the groups of factors that could affect it, including (i) quantitative measures of the political environment in borrowing countries; (ii) the conditionality and financial and human resources invested by the IMF in programs; and (iii) initial economic conditions and subsequent shocks in borrowing countries. The main findings are as follows.

- Failures in program implementation are associated with a small number of observable political indicators in borrowing countries, including the strength of special interests in parliament; lack of political cohesion in the government; ethnic fragmentation in the broader society; and the combination of political instability and an inefficient bureaucracy.

- Indicators of the IMF's investment of financial and human effort in programs and the depth and breadth of conditionality are not good predictors of program implementation. This is an uncomfortable conclusion, although it could be partly due to imprecise measurement of the IMF's inputs into programs.

- There is no association between initial and external conditions and the probability of program implementation, indicating that program targets may incorporate realistic goals and be related effectively to a member's initial "position." Interestingly, and despite previous evidence to the contrary (see Killick, 1998), a member's initial indebtedness does not affect the outcome of IMF-supported programs.

The strong empirical link between political variables in borrowing countries and the outcomes of IMF-supported programs documented in the paper suggests some changes in the

[30] The Political Institutions database is currently being updated.

way the IMF approaches the extension of its financial support. First, the IMF could take political information and constraints in borrowing countries systematically into consideration. With the adoption of new conditionality guidelines in 2002, the IMF has streamlined its conditionality and is tailoring programs to members' circumstances. The IMF has also committed to changing its interactions with borrowing countries to put them in the driver's seat in designing and implementing reforms. Second, to make systematically informed political judgments, the IMF could methodically collect the growing numbers of political indicators made available by research in quantitative political science. Such information could be used much like economic information, as one input in forward-looking quantitative assessments of program prospects and risks in individual countries. Third, the close connection between the strength of special interests and weak program implementation documented in the paper underscores the need for programs to take measures to inform and defuse resistance to reforms. These actions are described in detail elsewhere (see Boughton and Mourmouras, 2002). Related to this, the paper's results strongly suggest that programs need to take into account more systematically than in past the way legislatures and other key domestic players affect the implementation of reforms. While this will undoubtedly make programs more complex to design and negotiate, the additional payoff in terms of improved implementation may be well worth the extra effort.

The paper's results are also relevant in addressing the issue of selectivity in IMF financing. How high should the IMF set the bar in approving (or continuing) programs if objective political indicators and other evidence (including prior IMF experience with failed programs) indicate that these programs would have a low probability of implementation, despite the IMF's anticipated best efforts? In some cases, the IMF may have no choice but to stay involved, if only because broader considerations are at work. This could be the case, for instance, in some low-income countries in which donor aid, including support under the debt initiative for Heavily Indebted Poor Countries (HIPCs), is predicated on the presence of an active IMF-supported program. In other cases, however, if the probability of implementation is judged to be below some acceptable threshold, the IMF and its membership might be both made better off if the IMF exercised greater selectivity in providing financing. The combination of more selectivity, streamlined conditionality, and enhanced ownership would enable the IMF to counter criticisms that it grants too many waivers or is otherwise lax in its enforcement of conditionality. This combination would also improve the quality of IMF-supported programs as signals and catalysts of private investment. The IMF could also become a better catalyst for change in borrowing countries that do not meet the threshold required to receive its assistance. Even though the IMF would not be providing loans to these countries, it would continue being active through surveillance, economic education and technical assistance, and encouraging open debate about policy options and trade-offs. Especially useful in this regard would be dialogue with reform-oriented groups in borrowing countries, both explaining the IMF's points of view and hearing their perspectives (see Birdsall, 2000).

Future work in this area will involve both a more systematic collection of information on IMF-supported programs and more careful econometric modeling of these programs' impacts. The top priority is establishing on a firmer basis the relation between program

implementation and macroeconomic impact. Even though this paper presented some evidence that improved program implementation was associated with strengthened economic performance, econometric research on the connection between program implementation and macroeconomic success is at an early stage. A more definitive econometric study is needed to measure the impact of improved program implementation on fiscal and balance of payments outcomes, and inflation and growth. The connection between the IMF's efforts in borrowing countries and program outcomes needs to be reassessed as well. The indicators of IMF effort need to be refined, inter alia, by examining in greater detail how missions and staff inputs are related to specific programs and their outcomes. One would hope that the IEO would follow the example of the World Bank's Operation Evaluations Department in collecting and analyzing information on lender efforts at the program design, negotiation, and implementation stages. Such disaggregated information on IMF effort would permit researchers analyzing IMF-supported programs to ascertain the effectiveness with which the IMF allocates its resources in addressing the needs of borrowing countries.

CONCEPT DEFINITIONS AND SOURCES

The Annex contains detailed definitions and data sources.

A. Program implementation

An interruption occurs if an SBA program review was delayed by more than three months or not completed at all; if a program review for ESAF/PRGF programs was delayed by more than six months or not completed at all; if there was an interval of more than six months between two subsequent years of a multiyear arrangement; or if at least one of the annual arrangements was not approved (exceptions are programs which were cancelled and replaced by another program, in which case noncompleted reviews and nonapproved annual arrangements are not counted as interruptions).

An irreversible interruption occurs if either: (i) the last scheduled program review was not completed (all programs); or (ii) all scheduled reviews were completed but the subsequent annual arrangement was not approved (ESAF/PRGF arrangements).

The Macro Implementation Index for a given macro performance criterion is equal to 100 percent if macro performance criterion was met or met after modification and it is equal to zero if the macro performance criterion was not met, not met after modification, waived, or waived after modification. The Macro Implementation Index for a program then is computed as the average of Macro Implementation Indices across all macro performance criteria for this program.

The Structural Implementation Index for a given structural condition is equal to 100 percent if structural condition was met or met with small delay for structural benchmarks; it is equal to 50 percent if structural condition was partially met or delayed for performance criteria and it is equal to zero if structural condition was not met. The Structural Implementation Index for a program then is computed as the average of Structural Implementation Indices across all structural conditions for this program.

The Average Overall Implementation Index for a given program is the average of Macro and Structural Implementation indices over all conditions in this program.

B. Political Indicators

Ethnic Fractionalization measures the probability that two randomly selected people in a country belong to different ethnolinguistic groups (in regressions this variable was scaled to range between 0 and 100). (See Easterly and Levine, 1997.)

The Political Instability index is computed based on the index of internal conflict provided by the ICRG on a scale from 0 to 12. Higher values of the index correspond to more internal

political instability. We replaced the value of this variable by its maximum score (12) if there was a change in chief executive in the course of IMF-supported program.

The Executive Index of Electoral Competitiveness is a dummy variable which equals to one if the executive index of electoral competitiveness is equal to seven and zero otherwise. The executive index of electoral competitiveness is from the Database of Political Institutions at the World Bank. It ranges from one to seven, with higher values corresponding to more competitive elections.

Time in Power is the number of years a chief executive has been in power by the approval year of the program. We assigned zero to this variable if there was a change in chief executive in the course of the program (Political Institutions Database and CIA World Factbook for most recent years).

The Strength of Special Interests is computed as the maximum share of seats in the parliament held by parties representing special interests (Political Institutions Database, World Bank). Four special interest groups are identified : religious, nationalistic, regional, and rural.

The Index of Political Cohesion is defined as follows.
(a) For presidential systems:
0 if different parties are in control of the executive and legislature (if multiple pro-presidential parties, they must not control the legislature).

1 if the same party is in control of the executive and legislature (if multiple pro-presidential parties, they must together control the legislature).

For parliamentary systems:

0 for minority government.
1 coalition government with three or more parties.
2 coalition government with two parties.
3 one-party majority government.

Bureaucracy quality (ICRG) measures the quality of a country's bureaucracy on a 4-point scale. There was a change in scale for this variable from a 6-point to a 4 point-scale in August 1997. We rescaled the older series to be measured on a 4-point basis. We interact this variable with the dummy indicating that there was a change in chief executive (Political Institutions Database and CIA World Fact Book for most recent years).

C. IMF-related variables

IMF effort is the dollar cost of IMF programs computed based on Budget Reporting System (BRS) data on hours spent by staff on program implementation (it includes program preparation and supervision) and estimated average salaries of the staff by grade. Alternative

measures of IMF effort were: *dollar costs of resident representatives* (provided by OBP); *number of missions;* and *number of mission days* (both were provided by PDR).

Number of Conditions Per Program Year is the total number of conditions (structural and quantitative) divided by the actual duration of the program (MONA).

Share of quantitative PCs waived is the number of quantitative performance criteria waived over the course of the program divided by the total number of quantitative performance criteria for this program, in percent (MONA).

Share of structural conditions is the number of structural conditions divided by the total number of conditions, in percent (MONA).

Loan size as percent of quota is the total committed amount including augmentations divided by country's quota at the IMF (IFS).

Debt to the IMF as percent of IMF quota is actual holdings as percent of quota from IFS.

Program approval year from MONA.

Expected program duration is the number of years the program was scheduled to last (MONA).

IMF Quota is from IFS.

D. Economic Conditions and Policies

Terms of Trade Shock is the average growth rate of dollar export prices multiplied by the initial share of exports in GDP minus average growth rate of dollar import prices multiplied by the initial share of imports in GDP over the course of the program, from IFS.

The following variables are from IFS*: Central Government Balance; GDP; reserves minus gold; CPI Inflation; Imports.*

The following variables are from the WEO: *Current Account Balance; Initial Population.*

GDP per capita is from WDI.

E. Other

The average share of bilateral aid given by G-7 to the country before the program start was computed as the average of the shares of gross official transfers that each of G-7 countries allocated to a particular country one year prior to the approval year of IMF program for this country.

REFERENCES

Åslund, Enders, 1999, "Why Has Russia's Economic Transformation Been So Arduous?" Carnegie Endowment for International Peace. Paper prepared for the Annual World Bank Conference on Development Economics, Washington, D.C., April 28-30, 1999.

Beck, Thorsten, George Clarke, Alberto Groff, Philip Keefer, and Patrick Walsh, 2001, "New Tools in Comparative Political Economy: The Database of Political Institutions," *World Bank Economic Review*, Vol. 15 (September) pp. 165-76 (September).

Bird, Graham, 2002, "Conditionality and Ownership: How to Improve the Implementation of IMF Programmes," Working Paper, Surrey Centre for International Economic Studies, University of Surrey, Guildford, Surrey, UK.

Birdsall, Nancy, 2000, "The World Bank of the Future: Victim, Villain, Global Credit Union?", remarks delivered at "Promoting Dialogue: Global Challenges and Global Institutions," American University, Washington, (April 13). Available on the internet http://www.odc.org/commentary/bird-au.html.

Boughton, James M., and Alex Mourmouras, 2002, "Is Policy Ownership An Operational Concept?" IMF Working Paper 02/72 (Washington: International Monetary Fund)..

Bulíř, Aleš, and Soojin Moon, 2003, "The Composition of Fiscal Adjustment and Structural Conditionality Under IMF-Supported Programs," IMF Working Paper (forthcoming).

Bredenkamp, Hugh, and Susan Schadler, eds., 1999, *Economic Adjustment and Reform in Low-Income Countries* (Washington: International Monetary Fund).

Conway, Patrick, 1994, "IMF Lending Programs: Participation and Impact," *Journal of Development Economics* 45, 365-391.

———, 1998, "Evaluating Fund Programs: Methodology and Empirical Estimates," Working Paper, University of North Carolina (May).

———, "IMF Programs and External Balance: The Crisis-Participation Dynamic," Working Paper, University of North Carolina (October).

Dollar, David, and Jakob Svensson, 2000, "What Explains the Success or Failure of Bank-Supported Adjustment Programs," *Economic Journal*, Vol. 110 (October), pp. 894-917.

Drazen, Allan, 2002, "Conditionality and Ownership in IMF Lending: A Political Economy Approach," *IMF Staff Papers*, Vol. 49, Special Issue, pp. 36-67.

Easterly, William, and Ross Levine, 1997, "Africa's Growth Tragedy: Policies and Ethnic Divisions," *Quarterly Journal of Economics,* Vol. 112, pp. 203-50.

Havrylyshyn, Oleh, and John Odling-Smee, 2000, "Political Economy of Stalled Reforms," *Finance and Development* 37 (3).

Hellman, Joel, and Daniel Kaufmann, 2001, "Confronting the Challenge of State Capture in Transition Economies," *Finance and Development* , Vol. 38, (September).

International Monetary Fund, 1998, *External Evaluation of the ESAF*: Report by a Group of Independent Experts, IMF, 1998.

———, 2001a, "Strengthening Country Ownership of Fund-Supported Programs." (December); available on the Internet at http://www.imf.org/external/np/pdr/cond/2001/eng/strength/120501.pdf.

———, 2001b, "Conditionality in IMF-Supported Programs—Policy Issues" (March); available on the Internet at http://www.imf.org/external/np/pdr/cond/2001/eng/policy/021601.pdf.

———, 2001c, "Structural Conditionality in IMF-Supported Programs" (March); available on the Internet at http://www.imf.org/external/np/pdr/cond/2001/eng/struct/cond.pdf.

———, 2002, "Guidelines on Conditionality" (September); available on the Internet at http://www.imf.org/External/np/pdr/cond/2002/eng/guid/092302.htm.

Joreskog, Karl G., and Arthur Goldberger, 1975, "Estimation of a Model with Multiple Indicators and Multiple Causes of a Single Latent Variable," *Journal of the American Statistical Association*, Vol. 70, Issue 351 (September), pp. 631-39.

Joyce, Joseph P, 2002, "Through a Glass Darkly: What We Know (and Don't Know) About IMF Programs," (unpublished: Wellesley College) paper presented at IMF Conference on Research on IMF-Supported Programs (June).

Khan, Mohsin S., and Sunil Sharma, 2001, "IMF Conditionality and Country Ownership of Programs," IMF Working Paper No. 01/142 (Washington: International Monetary Fund).

Killick, Tony, with Ramani Gunatilaka and Ana Marr, 1998, *Aid and the Political Economy of Policy Change* (London: Routledge).

Lubotsky, Darren, and Martin Wittenberg, 2001, "Interpretation of Regressions With Multiple Proxies", Working Paper, Princeton University

Mecagni Mauro, 1999, "The Causes of Program Interruptions," in *Economic Adjustment and Reform in Low-Income Countries*, ed. by Hugh Bredenkamp and Susan Schadler (Washington: International Monetary Fund).

Mayer, Wolfgang, and Alex Mourmouras, 2002, "Vested Interests in a Positive Theory of IFI Conditionality," IMF Working Paper 02/73 (Washington: International Monetary Fund)..

Mussa, Michael, and Miguel Savastano, 1999, "The IMF Approach to Economic Stabilization", IMF Working Paper 99/104 (Washington: International Monetary Fund).

Odling-Smee, John, 2001, "Belarus: Recent Experience and Challenges Ahead," Speech given at the Belarusian Academy of Management, Minsk (November 6). Available on the Internet at http://www.imf.org/external/np/speeches/2001/110601.htm.

Schadler, Susan, Adam Bennett, Maria Carkovic, Louis Dicks-Mireaux, Mauro Mecagni, James H. J. Morsink, and Miguel A. Savastano, 1995a, *IMF Conditionality: Experience Under Stand-By and Extended Arrangements, Part I: Key Issues and Findings*, IMF Occasional Paper 128 (Washington: International Monetary Fund).

Schadler, Susan, Ed, 1995b, with Adam Bennett, Maria Carkovic, Louis Dicks-Mireaux, Mauro Mecagni, James H. J. Morsink, and Miguel A. Savastano, *IMF Conditionality: Experience Under Stand-By and Extended Arrangements*, Part II: Background Papers IMF Occasional Paper 129 (Washington: International Monetary Fund).

Thomas, Alun, 2003, "Prior Actions—True Repentance? An Evaluation Based on IMF Programs Over the 1992-1999 Period," IMF Working Paper (forthcoming).

Tsebelis, George, 2001, *Veto Players: How Political Institutions Work* (Princeton, NJ: Princeton University Press and Russell Sage Foundation).

Ul Haque, Nadeem, and Mohsin S. Khan, 1998, "Do IMF-Supported Programs Work? A Survey of the Cross-Country Empirical Evidence," IMF Working Paper 98/169 (Washington: International Monetary Fund).