

IMF Program Implementation, Institutional and Political Environment, and Macroeconomic Outcomes

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Introduction

The major goal of this paper is to examine the relative importance of the implementation of IMF-supported programs and institutional developments in the dynamics of economic growth, inflation, fiscal and current account balances in borrowing countries. We focus our attention on 192 IMF-supported programs approved in the period 1992-2002.¹

While the issue of the IMF impact on macroeconomic variables has been investigated by many researchers, the general problem with those studies is that all of them are able only to capture “IMF program spells” but fail to properly correct for the quality and degree of implementation of the IMF programs. However, as it has been shown in Mecagni (?) and Ivanova et al (2003), over 40 percent of IMF programs suffer irreversible interruptions and thus do not succeed to in establishing the institutions and policies needed for good economic outcomes. We believe that the framework of current study allows us to properly link program implementation with macroeconomic outcomes.

We also attempt to shed some light on what type of institutions and what kind of political environment are especially important in determining the short-run dynamics of macroeconomic target variables. One of the novelties of this is that a very broad spectrum of political and institutional factors is taken into account. Moreover, unlike other authors, we not only take into account pre-program status of institutional infrastructure and political environment but also incorporate into analysis the short-run contemporaneous developments in political and institutional factors.

While most of the research papers in the field used panel data to address questions similar to ours, we base our conclusions on the results obtained from the pulled dataset where each program is treated as independent observation in the framework of short-run autoregressive and mean-reversion model. We believe that econometric methodology implemented below offers an alternative approach to the evaluation of IMF programs impact.

The major conclusion of the paper is that even when we take into account autoregressive structure of macroeconomic variables combined with various institutional and political

¹ Availability of data on political and institutional variables limits our sample size to 128 observations.

factors, we still find some evidence that IMF program implementation significantly influences variable's dynamics. This evidence is found for three (inflation, fiscal and current account ratios to GDP) out of four considered variables.

Measuring Program Implementation and Institutional Development

To investigate effects of institutional developments and IMF program implementation on the dynamics of macroeconomic outcomes in borrowing countries one would need to properly measure the quality and degree of implementation of the IMF programs as well as to have good institutional and political economy indicators.

In what follows, we use two alternative measures of the implementation of Fund-supported programs to check robustness of the results. The first is a binary variable indicating whether a program was irreversibly interrupted. This implementation measure was developed in IMMA and was updated in the framework of the present study to incorporate new programs implemented since 1998. An irreversible interruption occurs if either the last scheduled program review was not completed or all scheduled reviews were completed but the subsequent annual arrangement was not approved². This index is an important measure of program implementation since it is designed to capture the premature cancellation of an IMF facility. The second implementation measure is a ratio of disbursements to commitments. It is a continuous variable indicating what share of the available credit was drawn throughout the program duration. Since disbursements of funds are always tied to completion of program reviews and thus to fulfillment of conditionality attached to IMF credit arrangement, this indicator provides a continuous measure of the degree of the IMF program implementation³. This measure also contains some useful information about the actual duration of the program relative to the original plan.

While other program implementation indices, such as shares of quantitative and structural performance criteria accomplished during the program, are available, we choose to exclude them from the regression analysis due to their tendency to overstate the degree of the program implementation (see IMMA, 2003). Moreover, one could argue that while these

² We refer our readers to IMMA, 2003 for more details on the methodology employed in constructing the irreversible interruption index.

³ This measure would fail to capture the extent of program implementation in the case of precautionary facilities. Most of the precautionary arrangements are characterized by relatively low share of funds disbursed, which is not necessarily attached to non-fulfillment of program conditionality. To capture the different nature of such arrangements we use a dummy variable for both precautionary-upon-agreement and turned-to-be-precautionary programs.

indices treat all performance criteria equally, the relative impact of different performance criteria on an economy varies dramatically.⁴

Institutions can be thought of as a set of rules employed by the human society to structure human interaction. These rules shape economic, political, and social organizations that combined with available technology fundamentally determine economic performance via their effects on the transaction and production costs (North, 1997). To justify a role of political variables in the analysis of the economic outcomes one could argue that markets in the unstable political environment are inherently less efficient since they are subject to drastic and unexpected changes and are strongly affected by the special interest groups and lobbies.

In our search for good indicators of institutional development and political economy environment, we evaluated a variety of available measures based on their ability to capture different aspects of the governance quality while taking into account their coverage both across countries and over considered time period⁵. Based on this strategy, we concentrated our attention on the International Country Risk Guide (ICRG) indicators⁶.

It seems to be widely accepted that well-defined property rights, limited but strong government, the rule of law, fairly open trade, stable monetary regimes, mobility of capital and labor, domestic and external political stability are all part of the necessary conditions for successful economic performance. However, there is no consensus on which of these are essential. Therefore, in our analysis we exploit information from all twelve political risk sub-components of the ICRG dataset while (somewhat arbitrarily) dividing them into two groups. The first group proxies for the institutional quality, protection of property rights and contract enforcement and includes Investment Profile, Corruption in Government, Law and Order, and Bureaucracy Quality indices. Our political economy side is represented by Government Stability, Socioeconomic Conditions, Internal Conflict, External Conflict, Military in Politics, Religious Tensions, Ethnic Tensions, and Democratic Accountability. These indices are thought to provide useful information about internal and external political factors which might potentially influence both IMF program implementation and economic outcomes (see

⁴ For example, missing inflation target by couple percentage points is unlikely to have an impact as significant as not being able to accomplish privatization of a state-owned telecommunication monopoly.

⁵ A comprehensive review of different governance and institutional quality indicators is available from the World Bank webpage at <http://www1.worldbank.org/publicsector/indicators.htm>

⁶ ICRG indicators are produced by the PRS Group of Syracuse, NY for sale to subscribers with the purpose of providing information on risk factors that include political, financial, and economic risks to foreign investors in particular country.

Annex A for more details on the definition of the institutional variables). For all of the ICRG indices, higher rating values indicate lower risk in the corresponding category.

Descriptive Statistics

IMMA show that various implementation measures capture different aspects of the program implementation and are not very highly correlated with each other. In Table 1, we confirm their results by examining a larger set of 192 IMF programs approved between 1992 and 2002. In our sample, approximately 41 percent of all programs experience an irreversible interruption, which is slightly lower than 44 percent reported in IMMA. We explain this result by the fact that our sample is skewed more towards SBA arrangements that tend to have fewer interruptions. Fewer program interruptions in our sample coincide with larger proportion of committed funds disbursed. After excluding precautionary arrangements, we find that the average disbursement share is approximately 75 percent while only 71 percent was disbursed on average in the smaller sample examined by IMMA.

Table 2 reports correlation coefficients among different implementation measures. The two primary implementation indices employed in our analysis, irreversible interruption index and share of committed funds disbursed, exhibit good although not perfect correlation of -0.7. In what follows, we exploit the ability of different implementation measures to highlight different aspects of program implementation to test the robustness of the results.

Since outcome of a program depends largely on political economy and institutional factors (see Dollar and Svensson, 2000; IMMA, 2003), we report Pearson correlation coefficients between different implementation measures and all twelve ICRG political risk indices. Table 3a addresses the question of whether pre-program (or in our terminology T-1 levels) political and institutional conditions are correlated with program outcome. It appears that, on average, the risk of a program experiencing an irreversible interruption is much lower in the environment where governments have better attitude to inward investment and better ability to carry out their declared programs. Most of the remaining correlation coefficients between the irreversible interruption index and political/institutional variables while being insignificant have expected negative signs indicating that fewer interruptions occur in an environment with better institutions and more political stability.

At first sight, results on correlation of disbursement share with ICRG indices appear to be less intuitive. While general public satisfaction with the government's economic policies is associated with programs with a higher percentage of committed funds disbursed, the correlation coefficient on law and order measure and external conflict risk are significant and negative. This type of relationship could be explained, for example, by assuming that governments of the countries that face trade restrictions and embargoes have more incentives to cooperate with the IMF program conditionality hoping for the lessening of the imposed restrictions. On the other hand, in attempt to stabilize the region, IMF might be less strict in

enforcing its program conditionality for the countries facing armed threats from abroad or involved in full-scale warfare.⁷

It is also possible that better program implementation can influence political and institutional indicators in the future. We address this issue in Table 3b where we report correlation coefficients of different implementation measures with ICRG indicators' levels in period T+1. We find no evidence of this hypothesis in the data. The only exception is the investment profile that appears to be improving with better program implementation.

Table 3c sheds some light on the dynamics of institutional and political environment in relation to IMF program implementation. Without assuming any causal relationship, we note that improvement in the investment profile over a horizon of approximately two years after the beginning of a program significantly correlates with fewer irreversible interruptions. With an exception of the corruption, democratic accountability, and military involvement in politics indices, improvements in all ICRG rankings are positively correlated with better program implementation measured by the disbursement share of the committed funds.

Another way to look at the dynamics of institutional and political variables in the light of IMF program outcome is to study evolution of mean changes from the pre-program year T-1 to different time horizons. These results are presented in Figures 1-12 where a positive change in the ICRG index implies an improvement in the underlying political or institutional variable. Several interesting observations are worth mentioning. On the institutional side, countries that do not experience an irreversible interruption of the IMF program are also those countries that experience improvement in the investment profile and the quality of bureaucracy. While corruption increases in all of the countries, as reflected by negative changes in ICRG Corruption Index, the situation is particularly bad in countries where IMF programs were uninterrupted. Change in Law and Order Index has a hump shape with the height of the hump greater for the interrupted programs. On average, there is no significant change in law and order conditions for either interrupted or uninterrupted countries four years after program initiation (horizon T+3).

Turning to the political environment variables, we notice that while uninterrupted countries enjoy an improvement in the internal conflict characteristics, the countries that experience interruption of the IMF program also experience a sharp increase in political violence two years after the initiation of the program. Both subgroups of countries experience continuous increase in religious tensions combined with increasing general public dissatisfaction with the government's economic policies.

An interesting observation can be made by observing the dynamics of military involvement in politics in countries with and without program interruptions. Those countries that

⁷ This hypothesis of the IMF being global stabilizer is consistent with the fact that correlation of disbursements with internal conflict is also negative while slightly short to be significant.

experience an IMF program interruption are characterized by a sharp decrease in military involvement in politics during the first two years following program initiation and sharp increase in military involvement in the third and fourth years. On the other hand, IMF programs are implemented successfully in countries that initially experience increased influence of military in political sphere with significant reduction of military involvement in all subsequent years.

Since we are interested in effects of IMF program implementation on macroeconomic performance of participating countries, we have also constructed mean changes in different macro variables between period T-1 and five different horizons. The evolution of inflation, economic growth, fiscal balance and current account ratios to GDP are reported in Figures 13-16. On average, countries completing IMF programs appear to be more successful in reducing inflation. Those countries also tend to grow faster relative to the countries that experience an irreversible program interruption, which is especially noticeable in the first three years immediately following program initiation.

Countries with uninterrupted programs show sharp improvement in fiscal balance only for the first program year followed by gradual deterioration over subsequent years. On the other hand, countries with program interruptions start with very modest improvements in fiscal balance ratios and then catch up with others in the next year after the program approval. By the end of the five-year period, these countries, on average, outperform uninterrupted countries.

While the general dynamics of current account appear to be somewhat similar for both types of the countries, the actual values of the mean changes differ quite substantially. The average change in current account ratios remains positive for all of the considered horizons in the subset of countries without irreversible interruption. However, countries that suffer a program interruption exhibit a slight improvement in the current account in the year immediately following program initiation and then steady deterioration for the three subsequent years. These countries also appear to experience a dramatic improvement in the current account ratios for the horizon T+4, which is likely to be a result of the massive currency devaluation.

While these mean differences and correlation coefficients are suggestive, they cover up a great deal of variability in considered variables. One could argue that different countries start from different initial conditions not only in terms of state of national economy but also in terms of development of institutional and political infrastructure. Moreover, while being involved in IMF programs countries are subject to a large variety of external and internal shocks that can influence not only the macroeconomic outcome but also the program implementation itself. A more sophisticated econometric methodology is needed in order to properly take into account this broad spectrum of country specific effects.

Methodology

This paper examines the relative importance of the implementation of IMF-supported programs and institutional developments in the dynamics of macroeconomic outcomes of borrowing countries. More specifically, we investigate whether the degree of program implementation significantly influences economic growth, inflation, fiscal and current account balances once country specific effects in the form of institutional and political developments are taken into account. Additionally, we attempt to shed some light on what type of institutions and what kind of political environment are especially important in determining the dynamics of the macroeconomic target variables.

Consider $M_{i,T}$, a macroeconomic variable observed at time T in a country i . Since we only consider development in macroeconomic indicators of the countries contemporaneously involved in IMF programs, the index i can be also interpreted as a unique country-program identifier. Following methodology suggested by Atoian, Conway, Selowsky, Tsikata (ACST, 2003), we hypothesize that the evolution of $M_{i,T}$ can be represented by the following expression

$$\Delta M_{i,T} = f(X_{i,T-1}, IMPL_i, INST_{i,T-1}, \Delta INST_{i,T}) \quad (1)$$

where $X_{i,T-1}$ is a vector of non-institutional forcing variables at time T-1 that also includes a random term in time T, $IMPL_i$ is the IMF program implementation measure in a country i , $INST_{i,T-1}$ is a vector of domestic political economy and institutional initial conditions, $\Delta INST_{i,T}$ is a vector of contemporaneous changes in country i 's political and institutional environment, and $f(.)$ is the reduced-form data generation process.

To derive a specific form of equation (1), consider a simple example. It is not uncommon in economics to assume that macroeconomic variables are influenced by their own values in previous periods. This assumption can be justified, for example, by citing institutional or psychological inertia⁸. Therefore, it appears to be reasonable to model economic growth, inflation, current account and fiscal balances as AR(2) processes⁹:

$$M_{i,T} = \beta_0 + \beta_1 M_{i,T-1} + \beta_2 M_{i,T-2} + \varepsilon_{i,T}^M \quad (2)$$

⁸ Kennedy (1998, Chapter 9) provides a detailed discussion and clear derivation of autoregressive representation from the partial adjustment model setup.

⁹ AR(2) representation is chosen for the ease of illustration.

where $\varepsilon_{i,T}^M$ is a stochastic disturbance to the macroeconomic variable M . Subtracting $M_{i,T-1}$ from both sides yields

$$M_{i,T} - M_{i,T-1} = \beta_0 + \beta_1 M_{i,T-1} - (\beta_2 - \beta_2 + 1)M_{i,T-1} + \beta_2 M_{i,T-2} + \varepsilon_{i,T}^M \quad (3)$$

That can be written as

$$\Delta M_{i,T} = \gamma_0 + \gamma_1 \Delta M_{i,T-1} + \gamma_2 M_{i,T-1} + \varepsilon_{i,T}^M \quad (4)$$

where $\gamma_0 = \beta_0$, $\gamma_1 = -\beta_2$, and $\gamma_2 = (\beta_1 + \beta_2 - 1)$. In what follows, we will refer to equation (4) as the “autoregressive and mean-reversion form” as one that includes both lagged differences and lagged level as the regressors for the current first-difference of the variable.

The econometric framework of equation (4) allows us to capture the autoregressive structure of the variable by the first difference term $\Delta M_{i,T-1}$. It also permits us to evaluate the adjustment of the macroeconomic variable, in response to deviations from the “normal” historical value of the variable specific for each country, via the “mean-reversion” term $M_{i,T-1}$. For $\gamma_2 < 0$, equation (4) asserts that if macroeconomic variable had previously been larger than normal, then the change in the variable will be lower for any given values of the other explanatory variables. The magnitude of γ_2 shows what percentage of the deviation from the long-run equilibrium value of the variable will be erased per period after the deviation. Also, since $\gamma_2 = (\beta_1 + \beta_2 - 1)$, small negative values of the coefficient are consistent with high persistency in the variable.

Equation (4) will hold for all T and all i , and should also be valid when the IMF program is introduced. However, as it was shown above, the extent of the IMF program implementation varies substantially across the programs. Since one of the main objectives of IMF programs is improving macroeconomic target variables, it is reasonable to assume that the success of program implementation (or, in our terminology, the implementation measure) should have a significant impact on the dynamics of the macroeconomic variables, and its impact needs to be incorporated into the model.

Recent economic literature devotes considerable attention to studying the impact of institutional quality and political environment on economic outcomes. However, equation (4) excludes the effects of political economy and institutional variables on the macroeconomic dynamics. Therefore, to better model changes in macroeconomic aggregates one would have to incorporate into the model not only initial conditions for institutional development and political environment but also their evolution over the considered period of time. While, in principle, it is possible to the model evolution of institutional and political environment variables over time, we choose to incorporate them as exogenous forcing variables. One potential criticism of that might be that most frequently IMF program conditionality involves structural reforms that are directly targeted to improve institutional quality in program

participating countries. Thus, the implementation measure might be simultaneously determined with changes in the institutional variables. However, we would argue that the effects of microeconomic reforms are uncertain and hard to quantify, as they are subject to long and variable lags, and partial or complete reversals. This latter conjecture is supported by the fact that, as evident from the first two columns of Table 3b, we find very little correlation between different implementation measures employed and developments in institutional variables.

Introducing effects of the IMF program implementation measures and institutional forcing variables into the autoregressive and mean-reversion framework of the equation (4) yields

$$\Delta M_{i,T} = \gamma_0 + \gamma_1 \Delta M_{i,T-1} + \gamma_2 M_{i,T-1} + \gamma_3 IMPL_i + \gamma_4 INST_{i,T-1} + \gamma_5 \Delta INST_{i,T} + \varepsilon_{i,T}^M \quad (5)$$

where γ_3 , γ_4 , and γ_5 are vectors of coefficients.¹⁰

Since we consider several macroeconomic outcomes, we have a system of the following equations

$$\begin{aligned} \Delta INFL_{i,T} &= \gamma_0^I + \gamma_1^I \Delta INFL_{i,T-1} + \gamma_2^I INFL_{i,T-1} + \gamma_3^I IMPL_i + \gamma_4^I INST_{i,T-1} + \gamma_5^I \Delta INST_{i,T} + \varepsilon_{i,T}^I \\ \Delta GROWTH_{i,T} &= \gamma_0^G + \gamma_1^G \Delta GROWTH_{i,T-1} + \gamma_2^G GROWTH_{i,T-1} + \gamma_3^G IMPL_i + \gamma_4^G INST_{i,T-1} + \gamma_5^G \Delta INST_{i,T} + \varepsilon_{i,T}^G \\ \Delta BB_{i,T} &= \gamma_0^B + \gamma_1^B \Delta BB_{i,T-1} + \gamma_2^B BB_{i,T-1} + \gamma_3^B IMPL_i + \gamma_4^B INST_{i,T-1} + \gamma_5^B \Delta INST_{i,T} + \varepsilon_{i,T}^B \\ \Delta CA_{i,T} &= \gamma_0^C + \gamma_1^C \Delta CA_{i,T-1} + \gamma_2^C CA_{i,T-1} + \gamma_3^C IMPL_i + \gamma_4^C INST_{i,T-1} + \gamma_5^C \Delta INST_{i,T} + \varepsilon_{i,T}^C \end{aligned} \quad (5')$$

This system is complemented by an equation that relates observed measures of implementation to the underlying factors that determine the probability of IMF program success:

$$IMPL_i = \theta_0 + \theta_1 INST_{i,T-1} + \theta_2 INITIAL_i + \theta_3 FUND_i + \varepsilon_i^{IMPL} \quad (6)$$

where $INITIAL_i$ is a vector of initial conditions represented by the pre-program values of the real per capita GDP, inflation, growth rate, current account, and fiscal balance. $FUND_i$ is a vector of program specific variables that are thought to be important in determining the program outcome and that are either directly under control of the Fund or provide some information about the nature of the country-Fund relationship. Finally, θ 's are the coefficient vectors. Our regression approach in (6) is somewhat similar to the one used in Ivanova et al

¹⁰ In the context of equation (5), vector of non-institutional forcing variables, $X_{i,T-1}$, is simply the lagged variables $M_{i,T-1}$ and $M_{i,T-2}$.

(IMMA, 2002) to evaluate the success or failure of a large number of Fund-supported programs.¹¹

Since we are interested in several macroeconomic indicators that could potentially gravitate toward a long-run equilibrium relationship, one could argue that a vector error-correction model (VECM) augmented by introducing IMF program implementation and institutional factors should be employed. In the context of the equation (5) that would imply that M would represent a (4x1) vector of variables in consideration: inflation, growth rate, fiscal balance and current account. In the preliminary exercise we investigated this option by estimating this augmented version of VECM and comparing results with the ones obtained from estimation of system (5'). While estimation results suggested that the long-run relationship between some of the considered variables exists, the marginal benefit of incorporating this information in our analysis of relative importance of IMF program implementation and institutional factors for macroeconomic outcomes is very small.¹² More specifically, coefficients' magnitudes and the significance levels change only marginally relative to estimates obtained when only variable's own autoregressive and mean reversion terms are included into regression (as it is stated in (5')). Therefore, to simplify results presentation and to economize on degrees of freedom, we decided not to use VECM as our primary estimation methodology.

The character of the OLS estimator in the context of the system (5') depends on whether or not the explanatory variables are distributed independently of the disturbance term. However, one could argue that a shock that affects the macroeconomic outcome is also very likely to affect the outcome of the IMF program¹³. In other words, $Corr(IMPL_t, \varepsilon_{i,T}^M) \neq 0$. As a consequence, the OLS estimator is biased, even asymptotically, so that an alternative estimator is usually necessary.

¹¹ Results of the RESET test suggest that there should be no non-linearities (e.g. higher degree polynomials or interaction terms) added to this model.

¹² We found that coefficient on lagged level of fiscal balance is significant in inflation equation. Lagged first difference and lagged level of inflation are significant in growth equation. Finally, lagged first difference and lagged level of fiscal balance significantly influence dynamics of the current account.

¹³ For example, a severe draught causes a decline in agricultural production that is reflected in a reduction of the tax revenues. Given the circumstances, the Fund decides to waive some of the performance criteria and continue disbursements of the funds even though some of the conditionality is bridged and the program should have been interrupted otherwise. On the other hand, strict enforcement of the agreed upon conditionality would result in negative correlation between the implementation measure and the error term.

However, we do not discard the OLS estimator from the analysis but rather use it intensively in the model selection process because of the following reasons. Firstly, although the OLS estimator is biased, in small samples so are all alternative estimators. Secondly, the properties of the OLS estimator are less sensitive than the alternative estimators to the presence of such estimation problems as multicollinearity, errors in variables or misspecifications, particularly in small samples. Therefore, we believe that OLS can be useful as a preliminary or explanatory estimator. After choosing an appropriate model specification using OLS estimator, we compare its predictions with predictions from the same model estimated by alternative means.

To correct for potential endogeneity bias we employ two related instrumental variable estimation techniques. One is the 2SLS procedure where we first regress implementation measure on the set of the exogenous variables of the system and instrumental variables, $FUND_i$, that are correlated with the implementation measure but not directly related to the error terms in (5'). At the second stage, we estimate the system of equations (5') by OLS using predicted values of the implementation measures instead of actual values.

It is, in general, very difficult to find instrumental variables that would be important for the IMF program implementation outcome but would not systematically affect country's economic performance. However, we believe that variables describing the nature of the relationship between IMF member countries and the Fund itself are good candidates for the instrumental variables. More specifically, to correct for the endogeneity bias we use the following variables as instruments: the country's IMF quota; the number of months spent in IMF programs since 1980; the amount approved as a fraction of country's quota; and the average annual dollar cost of the IMF program including six months prior to program approval.¹⁴

A quite plausible assumption of the error terms in (5') having non-zero correlations justifies the selection of our other IV technique as 3SLS since this additional information efficiently incorporated into the estimation procedure may help us to sharpen the parameter estimates.¹⁵

To obtain the 3SLS estimates, we first calculate the 2SLS estimates, then use the 2SLS estimates to obtain the estimate of the contemporaneous variance-covariance matrix of the errors in (5'). Finally, applying GLS to the transformed single-equation representation of the

¹⁴ Overidentifying restrictions test is used to check validity of the instruments. The null of overidentified restrictions could not be rejected for either implementation measure.

¹⁵ Indeed, it is hard to believe that, for example, a shock that affects growth rates in the economy would leave inflation rates, fiscal deficit, or current account unaffected.

system yields 3SLS estimates of the model parameters.¹⁶ The 3SLS procedure is consistent and, in general, is asymptotically more efficient than the 2SLS estimator. If the disturbance terms in different equations in (5') are uncorrelated, so that the contemporaneous variance-covariance matrix of the disturbances is diagonal, 3SLS reduces to 2SLS.

Box. List of Instrumental Variables

IMF program outcome is endogenously determined. Hence, a list of appropriate IV's must be employed in order to obtain unbiased estimates of the IMF program impact on the economic performance of participating countries. These instruments must be correlated with the program implementation measures (irreversible interruption index and share of committed funds disbursed) and not be direct determinants of the economic policy outcomes (inflation, economic growth, fiscal balance, and current account).

IMF quota (log). The quota determines the member's voting power in the IMF. One could hypothesize that countries with larger quotas might have larger bargaining power and thus can enjoy "softer" conditionality of the IMF programs. If this hypothesis were to be supported by the data, we would expect to have a positive coefficient on this variable in the implementation measure regressions. On the other hand, size of the quota also reflects the relative importance of the country in the world economy and its access to international capital markets. Therefore, governments of large countries might be less cooperative with IMF conditionality if the political cost of following it perceived to be too high. In that case, the parameter estimate would have a negative sign.

Number of months spent in IMF programs since 1980. This variable should be able to capture country's experience with IMF programs. The length of the country's history with the Fund is expected to be positively correlated with IMF staff experience and knowledge of country specific factors resulting in better program design and higher implementation rates.

Amount approved as a fraction of the quota. This variable is expected to capture the importance of the particular program. Large values would be positively correlated with the severity of the crisis situation in each particular country reflecting the determination of the country's officials on reform implementation.

Fund effort per program year including six months prior to program approval. This is a direct measure of the dollar cost of IMF programs. It is computed based on Budget Reporting System data on hours spent by staff on program implementation and estimated average salaries of the staff by grade. More efforts invested in program implementation are expected to be positively correlated with the program implementation outcome.

¹⁶ To obtain single equation representation of the system, one multiplies all of the equations in (5') by the transpose of the matrix of observations on all the exogenous variables in the system and then stacks one on top of the other.

Model Specification

While economic theory combined with previous research stresses the importance of institutions and political economy in the determination of macroeconomic performance, there is no agreement on exactly what aspect of the institutional and political environment are particularly crucial for the four macroeconomic variables in question. Since many of the ICRG indices used in our analysis as proxies for institutional and political variables are correlated with each other, including all of them in the regression analysis simultaneously would result in a colinearity problem and an associated increase in the variance of the parameter estimates. On the other hand, omitting relevant institutional and political variables would give us parameter estimates that are biased.

This trade-off poses a need for a parsimonious approach to model specification. This section outlines model selection methodology. It uses changes in macroeconomic variables over a one-year horizon immediately following the approval of the program as a testing horizon. By doing this, we implicitly assume that if a certain type of institution or some political economy aspect is important in the high-frequency dynamics of a macro variable, it will also be influential over longer horizons. Since our model specification results are robust to whether the irreversible interruption index or disbursement share were used as program implementation measures, we report only our findings associated with the disbursement share.

Table 4 summarizes results of our implementation of the “testing down” approach. We start with a general, unrestricted model that includes all of the ICRG indices as regressors and then simplify it in light of sample evidence.¹⁷ More specifically, we estimate each of the equations in (5') separately while systematically dropping regressors with low t-statistics.¹⁸ The adjusted R^2 is used as an additional factor in the determination of whether a dropped institutional variable helps to reduce unexplained variation in the dependent variable.¹⁹

Our results indicate that inflation dynamics are considerably influenced by such institutional factors as law and order conditions, bureaucracy quality, and investment profile. On the

¹⁷ For the purpose of model selection, we use OLS regression due to the reasons outlined in previous section.

¹⁸ We keep institutional variable in the model if either lagged level or contemporaneous change in it appears to be important in determination of macroeconomic variable.

¹⁹ An alternative approach frequently used in the literature is to try to aggregate available political and institutional indicators into some aggregated indices (i.e., weighted sum of ICRG indices) and then use those aggregates in the regression analysis. However, we believe that aggregating ICRG indices which are already aggregates of wide variety of factors may yield results that would be hard to interpret.

political side, only variations in ethnic tensions and internal conflict appear to matter. Economic growth is affected by investment profile, government stability, and initial socioeconomic conditions.²⁰ Corruption in the political system, democratic accountability, ethnic tensions, external conflicts, and military involvement in politics are important for evolution of fiscal balance ratios over time. Finally, corruption, risk of ethnic tensions and external conflicts, government stability, the investment climate, and military participation in the country's political life have significant impacts on the dynamics of current account ratios.

Main Findings

A. Factors Determining Program Outcome.

The results of Table 5 summarize the coefficient estimates from the first stage regressions of the implementation measures on the country's initial economic conditions, the set of ICRG variables reflecting institutional and political conditions in the country in the year preceding the IMF program approval, and the vector of instrumental variables describing the nature of the country-Fund relationship. While using complete model specification (columns 1 and 3) to obtain the predicted values of the outcome used in the second stage regressions, for the discussion of this section we use the second and fourth columns of Table 5 where we drop some of the ICRG indices appearing to be insignificant to overcome the colinearity problem discussed above.

When the share of the committed funds disbursed is used as a measure of the IMF program implementation, none of the variables reflecting initial economic conditions is significantly different from zero. This result is consistent with the hypothesis that IMF programs are well tailored to the country's specifics such that the outcome of the program is independent from the initial economic conditions in the participating country.

Coefficients on ICRG ratings of ethnic tensions and government stability in the year preceding IMF program approval are positive and significant. That is, IMF programs tend to be more successful, as reflected by larger proportion of funds disbursed, in countries where racial and ethnic tensions are minimal. Better IMF program implementation is also positively correlated with the general public's perception of government's ability to carry out its declared programs. The magnitude of approximately 0.08 for the coefficients on both indices suggests that, *ceteris paribus*, a one point increase in either rating is translated into approximately 8 percent more of funds being disbursed.

²⁰ Contemporaneous change in socioeconomic conditions is excluded from the analysis to avoid problems of having dependent variable on the right side of the equation since inflation, taxation, and unemployment are all part of this index.

Somewhat unexpectedly, the coefficient on the initial level of internal conflict index is negative and significant at the 1 percent significance level. The magnitude of the effect is also rather large – a one point rating increase would result in almost 6 percent smaller disbursements, keeping all other determinants constant. Moreover, the coefficient on the initial level of law and order rating is also negative and significant at 90 percent confidence level. We interpret this result as the IMF being involved in countries recovering from civil wars or trying to fight situations where acts of violence are carried out for a political objective. That would also be the countries where popular observance of the law is not very good. Programs in those countries might be less demanding in terms of both structural and quantitative performance criteria and thus tend to disburse more funds. It is possible to assume that IMF enforcement of conditionality might be less strict and that more conditions get waived resulting in higher access to the financial resources for those countries.

There is some evidence that disbursements tend to be larger and programs are being implemented better for countries that initially have fewer military people involved in politics. The coefficient on the corresponding ICRG index is positive and significant at the 10 percent significance level.

Turning to the Fund related variables, we observe which countries that have an extended history of IMF programs tend to implement programs more successfully. Every additional month spent in IMF programs translates into 0.2 percent more funds disbursed. This probably reflects better program design on the part of the IMF staff.

Another significant result is that amount of funds committed relative to a country's quota appears to be important in determining the program outcome. The positive coefficient of 0.025 implies that programs with larger approved-to-quota ratios tend to be implemented to a larger extent. This finding is not surprising since those programs would normally be anti-crisis emergency arrangements and would be implemented in an environment where the governments are highly dependent on financial assistance. Thus, they are more cooperative in terms of reform implementation attached to the IMF arrangement.

Fund efforts invested into program design and implementation are only marginally significant. The positive sign of the coefficient suggests that more effort on the Fund's side are positively correlated with higher degree of program implementation.

Finally, the coefficient on the country's IMF quota, although insignificant at any conventional confidence level, is negative. This can be interpreted along the lines that larger countries might be less dependent on IMF financial assistance because they have better access to the alternative sources of financial resources from international markets.

Somewhat different results are obtained when the irreversible interruption index is used as a program implementation measure. Almost all of the variables describing the initial economic conditions of participating countries have insignificant coefficients. The only exception is the lagged level of a country's growth rate which has a significant coefficient of 0.056. This

can be interpreted as evidence that countries growing relatively fast prior to the initiation of an IMF program are less likely to have an irreversible interruption of the program.²¹

The coefficient on pre-program level of corruption in government is positive and significant suggesting that a higher ICRG corruption rating, and thus less corruption in a country's government, tends to increase the probability of successful program implementation. The magnitude of the effect is quite striking. On average, a one point improvement in the ICRG index coincides with 35.8 percent better chance of having no interruption in program implementation keeping all other determinants of program success constant.

As in the case of disbursement share, the coefficient on initial level of internal conflict is negative and significant. This suggests a negative correlation between pre-program level of political violence in a country and the probability of a program being interrupted. One point improvement in rating is associated with 21.7 percent higher chance of having irreversible interruption.

With an exception of the coefficient on the number of months spent in Fund programs, all of the variables characterizing the country-Fund relationship enter the regression with the expected signs. However, none of the coefficients is significantly different from zero. We interpret this result as evidence of the implementation outcome being largely determined by the country's political environment and Fund related variables having only marginal impact on program outcome.

B. Program Implementation vs. Institutional and Political Environment.

Tables 6-9 summarize results of regressions describing the post-program evolution of the four macroeconomic variables of interest: inflation, economic growth, ratio of fiscal balance to GDP, and ratio of current account to GDP. To capture different aspects of program implementation we estimate models using two different implementation measures – share of committed funds disbursed during the program and non-interruption dummy (opposite of the irreversible interruption index). For all regressions, the dependent variable is the change observed in the macroeconomic variable between period T-1 (just before the program began) and the end of the time horizon. Three different time horizons are considered: one, two, and three years after the program approval (coded as horizon T, T+1, and T+2 respectively).

Each program is treated as an independent observation in what follows, however, the database includes numerous programs for many participating countries. These programs may overlap for a given country, in the sense that the initial year of one program may coincide with an advanced year of another program in the same country.

²¹ Positive signs of the coefficients in columns 3 and 4 of Table 5 should be interpreted as improving the probability of the successful program implementation (no interruption).

Finally, each table contains results for three different estimation techniques: OLS, 2SLS, and 3SLS. As was discussed above, while based on a slightly larger sample, OLS estimates are subject to the endogeneity bias since program implementation is potentially endogenously determined.²² The 2SLS and 3SLS techniques allow us to obtain parameter estimates presumably free of the endogeneity bias, while 3SLS also incorporates additional information from the contemporaneous correlation of error terms from different equations in (5') to sharpen the estimates. In what follows, we will refer to the results obtained using the 3SLS procedure unless otherwise is specified.

Several observations can be made from Tables 6a and 6b which summarize our results for the inflation dynamics.

Using disbursement share:

- Coefficients on the lagged inflation level are highly significant for all horizons regardless of which estimation technique was used. The magnitude of the coefficients on this variable suggest that for an average country, a deviation from its long-run “normal” inflation level will lead to an adjustment of 74 percent in the first year. The deviation effects are erased almost completely (that is, $\gamma_2 \rightarrow 1$) when longer horizons are considered.
- After correcting for the endogeneity bias, coefficients on disbursement share have negative signs for all three horizons suggesting that better IMF program implementation is associated with lower inflation in a country in the first two years following program initiation. The magnitude of the coefficient decreases with the length of the horizon.²³ However, only the result for horizon T is statistically significant.
- Good quality bureaucracy prior to the program and its improvement during the program significantly reduce inflation. The coefficients are negative and significant for most of the considered horizons. It appears to be that shock observing function of bureaucracy is especially important during the first year after program initiation (which is likely to be a crisis year) and gradually reduces over time as reflected by smaller values of the estimated coefficients.

²² Even though Hausman test rejects endogeneity of implementation measures in our sample, the economic intuition strongly suggests to take endogeneity bias into account.

²³ This pattern of inflation rate dynamics in IMF participating countries is similar to Conway (1994). Killick et al (1995) finds reduction in inflation to be significant. Barro and Lee (2002) have similar in signs but insignificant coefficients on the contemporaneous and lagged IMF loans.

- Favorable changes in the legal system and popular observance of the law significantly reduce inflation in the first program year. A one point increase in ICRG Law and Order index is associated, *ceteris paribus*, with approximately 85 percent lower inflation rates. However, a high level of law and order in the pre-program year and contemporaneous improvement in it are correlated with slightly higher inflation in horizon T+2.
- One interesting result is that increased political violence over horizons T and T+1 translate into lower inflation rates, reflected by significant positive coefficients on change in ICRG Internal Conflict ratings. One interpretation of this result can be that increased political violence reduces consumer confidence and thus depresses aggregate demand resulting in lower inflation.

Using non-interruption dummy:

- Coefficients on the non-interruption dummy are negative for horizon T and positive for horizons T+1 and T+2 suggesting that the absence of program interruption correlates with higher inflation rates over longer horizons. However, only the coefficient from the 2SLS regression for T+2 horizon is significantly different from zero.
- All of our earlier findings regarding the impact of institutional and political variables are robust to the use of the irreversible interruption index as an implementation measure. Significance levels and magnitudes of the impacts are quite close to the ones reported in Table 5a.

Tables 7a and 7b report estimation results for the growth equation using alternative implementation measures.

Using disbursement share:

- The current first-difference responds negatively and significantly to shocks in the own value in the previous periods. For a unit shock to the first lagged difference in growth rates, there is, other things equal, a 0.210 decrease in the next period first-difference.
- There is strong evidence of growth rates being persistent as evidenced by significant coefficients on the mean-reversion terms. The coefficient magnitudes are all roughly negative 0.9 for horizon T+2 regardless of the estimation technique or implementation measure. This suggests that approximately 90 percent of any deviation of growth rates from the country's "normal" growth pattern are made up within a three year period. The largest adjustment of 83-84 percent apparently happens within first year after the deviation (horizon T).
- While OLS results find significant evidence of higher disbursements, and thus better IMF program implementation, significantly correlating with higher growth rates, the 2SLS and 3SLS results, presumably free of endogeneity bias, offer quite different conclusions. While all of the coefficient are still positive, none of the estimated

parameters is significantly different from zero. The magnitude of the coefficient is noticeably smaller for the horizon T+1.²⁴

- Improvements in government's ability to stay in office, influenced by the cohesion of the government and governing parties and by popular approval of government policies, appear to have significant positive impact on growth rates particularly during the first year following program approval.
- The most important institutional factor influencing growth rates over all three considered horizons appears to be the contemporaneous change in the investment profile. That is, other things equal, a reduction in the risk to foreign business operation in the country, combined with lower risk of repatriation, on average, coincides with higher economic growth rates. While the magnitude of the effect is not very large (around 1 percent increase in growth rate for every point increase in ICRG Investment Profile rating), the result is very robust to the length of horizon and the estimation technique employed.

Using non-interruption dummy:

- Non-interruption dummy coefficients are positive when potential endogeneity bias is ignored but change signs to negative when IV techniques are employed. However, none of the coefficients is significant.
- Again, we are able to confirm all of our previous observations regarding the impact of institutional variables on growth rates in program participating countries when the non-interruption dummy is used to proxy for the extent of model implementation.

Results of the fiscal surplus equation estimation are summarized in Tables 8a and 8b.

Using disbursement share:

- Estimation results provide strong evidence for the autoregressive structure of fiscal balance ratios to GDP. An interesting observation is that the coefficient on the first difference term is positive and significant suggesting that, other things equal, the transmitted shock to the lagged first difference is positive over one year horizon. At the same time, the coefficient flips sign to negative and is still significant for the two-year horizon. We would observe such pattern if the government was required to balance the budget over a horizon of four years.
- The mean-reversion term is also highly significant. For example, studying the 3SLS estimates we observe that the coefficient of -0.451 on the EC-term suggests that

²⁴ Recovering of the growth rates from the initial drop was reported by Conway (1994). Khan (1990) and Przeworski and Vreeland (2000) find significantly negative effects of IMF program participation on economic growth. At the same time, Killick et al (1995), Bagci and Perraudin (1997), and Dicks-Mireaux et al (2000) report positive and significant effects.

approximately 45 percent of any deviation of the fiscal ratio from a country's long-run "normal" value would be erased within a single year. The speed of adjustment is much slower than what we have observed for inflation and growth rates.

- All of the coefficients on the IMF program implementation measure obtained using IV estimation techniques enter regressions with negative signs as opposed to the OLS estimates that are positive and significant. Moreover, coefficients derived using 2SLS and 3SLS are significant for horizon T+1 witnessing that, keeping all other determinants of the fiscal balance constant, more successful IMF program implementation is correlated with larger fiscal deficits. Judging by the size of the coefficient from the T+1 horizon, complete disbursement of the committed funds is associated with approximately 4 percent larger deficit when compared to the zero percent disbursement scenario.²⁵
- Somewhat unexpectedly, there is some evidence that a lower initial level of corruption, as reflected by higher values of the ICRG Corruption in Government index, influences fiscal balance dynamics negatively and significantly. However, the construction of the index might offer some explanation to this puzzle. In constructing this measure, ICRG experts pay particular attention to the corruption in the form of excessive patronage and close ties between politics and business. One of the major indicators of such corruption is believed to be the length of the government's continuous presence in power. Thus, the effect we capture in our regressions might come from the fact that "younger" elected governments tend to run larger deficits since they do not face election pressure in the near future.
- Another interesting result is that contemporaneous improvements in government's responsiveness to its people measured by changes in ICRG Democratic Accountability index correlate with larger fiscal deficits. We find negative significant coefficients for horizons T and T+1. This result makes intuitive sense. It might be easier to enforce fiscal discipline (associated with cuts in social payments and increased tax burden) for an autocratic government rather than for one democratically elected that is more responsive to public opinion about its actions.
- There is some support that fewer military people in politics in the pre-program year is positively associated with better fiscal balance outcomes.
- Reducing risk of external conflict, ranging from trade restrictions to full-scale warfare, is positively and (for horizon T) significantly associated with lower fiscal deficit to GDP ratios.

²⁵ Conway (1994) finds significant fiscal deficit reduction. Schadler et al (1993) find some evidence of negative effects of IMF lending on the fiscal balance.

- Another puzzling result is that on average a decrease in the degree of ethnic tensions is contemporaneously correlated with increased fiscal balances. The coefficient on change in ICRG Ethnic Tensions rating is negative and significant for one-year horizon.

Using non-interruption dummy:

- The coefficient on the non-interruption dummy changes its sign from negative to positive once the endogeneity bias is taken into account. Moreover, in the T+2 horizon of 2SLS and 3SLS regressions these coefficients are significantly different from zero. The size of coefficients suggests that countries where IMF programs were completed fully tend to have 3.2-3.5 percent larger fiscal deficits relative to the countries where programs were interrupted. The magnitude of the impact is reasonably similar to 4.7 percent that was observed when the disbursement ratio was used to proxy for the extent of implementation.
- All of the findings in the domain of institutional and political variables remain valid.

Finally, Tables 9a and 9b report parameter estimates for the change in current account ratios to GDP.

Using disbursement share:

- The lagged first-difference term has a significant effect on the current first-difference for most of the considered horizons when instrumental variable techniques were used.
- Coefficients on lagged level of the current account to GDP ratio are negative and significant. However, unlike other macroeconomic aggregates considered in our study, the current account exhibits greater amount of persistence as reflected by much lower values of coefficients on the mean-reversion term. Using 3SLS estimate for illustration purposes, one could conclude that approximately 10 percent of deviation from country's "normal" ratio is erased within one-year period.
- There is some statistical evidence that countries that implement IMF programs to a higher extent experience deterioration of current account in the first two years following program approval. This is followed by sharp improvement in the trade balance for the third sequential year.²⁶ Judging by the coefficients from the 3SLS, disbursement of 100 percent of committed funds correlates with a 8 percent

²⁶ Conway (1994) finds some evidence of improvements in the current account in IMF participating countries. Estimation results of Barro and Lee (2002) might be interpreted as having similar to ours dynamics of the current account.

deterioration of current account in the first year, which is followed by 2 percent improvement in the current account in the third year after the program initiation.²⁷

- The coefficient on change in ICRG External Conflict index is negative and highly significant for horizon T+2. Improvements in the index are associated with elimination of embargos and trade restrictions imposed by the international community and appear to be correlated with a worsening of the current account holding all other determinants constant. One point increase in rating is correlated with 1.2 percent deterioration of the current account over the time period of three years. This is probably caused by the sharp increase in imports combined with only moderate (if any) increase in export volumes.
- Governments that are more stable in the year preceding the program approval tend to have better current account positions as evidenced by significant positive coefficients on T-1 ICRG Government Stability rating.
- Both initial investment climate and changes in investment profile throughout the considered period are highly significant and enter regressions with negative signs. This suggests that the better a government's attitude toward inward investment, the larger the deterioration in the current account over considered time span.
- Higher values of ICRG Military in Politics ratings, given to the countries with lower extent of military involvement in politics, prior to the program initiation are positively correlated with current account improvements. For every point increase in the index, on average 0.9 percent improvement in current account is observed relative to the T-1 year.

Using non-interruption dummy:

- Coefficients on the non-interruption dummy match the sign of coefficients obtained using disbursement share as implementation index. However, none of the coefficients is significantly different from zero.
- All of our conclusions regarding the impact of political economy and institutional variables are robust to the use of different IMF program implementation measure.

²⁷ Percentage changes reported here are relative to the pre-program year.

Conclusion

The preceding results suggest that institutional and political factors contribute to IMF program outcomes. Countries that can be characterized by less ethnic tensions, more government stability, less corruption in government, and less military involvement in politics prior to IMF program approval tend to have programs that are implemented to greater extent (more funds disbursed and fewer interruptions). At the same time, countries that can be characterized by high levels of internal conflict and poor law and order conditions prior to IMF program approval tend to have more funds disbursed and fewer interruptions.

A wide spectrum of Fund related factors also appear to be important in the determination of IMF program outcome. For example, more time spent by a country in previous IMF programs is positively associated with probability of successful program implementation. Amount of funds approved in the framework of an IMF program as a fraction of country's quota is also positively associated with better implementation rates.

Our findings also indicate that implementation of IMF program significantly influences dynamics of macroeconomic variables. We find some evidence that better IMF program implementation is associated with lower inflation, lower fiscal balances, initially larger and then decreasing current account deficits. Results on economic growth are statistically insignificant and lack robustness to the choice of implementation measure.

Our analysis allows us to identify institutional and political factors that are important in determining dynamics of each of our four macroeconomic variables. More specifically, we find that improvements in bureaucracy quality and better law and order conditions help to reduce inflation. While more of internal conflict is also associated with lower inflation. Contemporaneous improvements in government stability and investment profile are associated with higher growth rates. Decreases in external conflicts are associated with larger fiscal balances, while improvements in government's democratic accountability and reduction of ethnic tensions are correlated with larger fiscal deficits. Countries with less involvement of military in politics prior to program initiation tend to have larger fiscal balances. Finally, less government corruption prior to IMF program initiation, decreasing pressure of ethnic tension, and improvements in investment profile are correlated with lower current account balances. However, countries that can be characterized by government stability and by lower influence of military in politics in the year preceding the approval of IMF program tend to have larger current account ratios to GDP.

Finally, results of empirical decomposition of the mean changes in macroeconomic variables reported in Annex B suggest that the marginal impact of political and institutional factors and of IMF program implementation on the dynamics of macroeconomic variables varies over time. IMF program implementation is the driving factor of inflation dynamics in the first and second years following program initiation while institutional factors are important for the two year horizon. Both institutional factors and IMF program implementation are important in the determination of growth rates over one and three year horizons with institutional effects having the greatest impact. Institutional factors are particularly important in determination of

fiscal balance dynamics over one and three year horizons while IMF program implementation is very important over the two year horizon. IMF program implementation is the major determining factor for the current account over the first program year. While having strong impact on current account dynamic over all horizons, the relative importance of the institutional factors increases with the length of the horizon.

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Figure 1

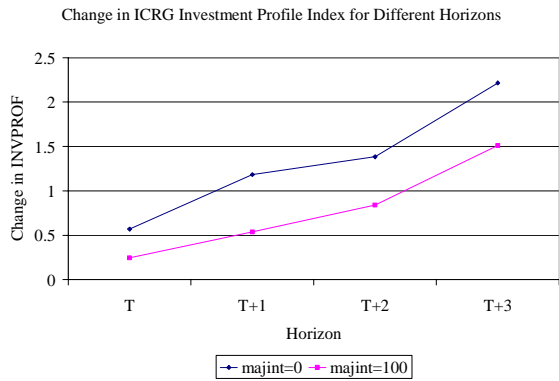


Figure 2

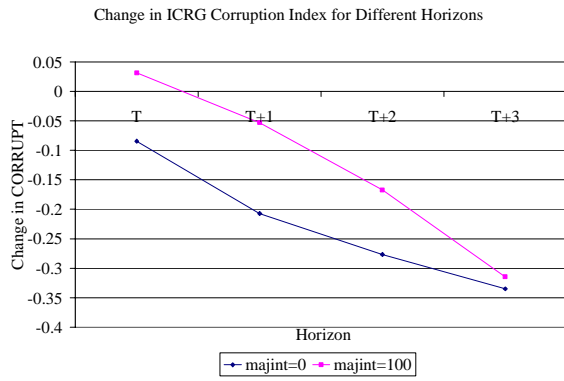


Figure 3

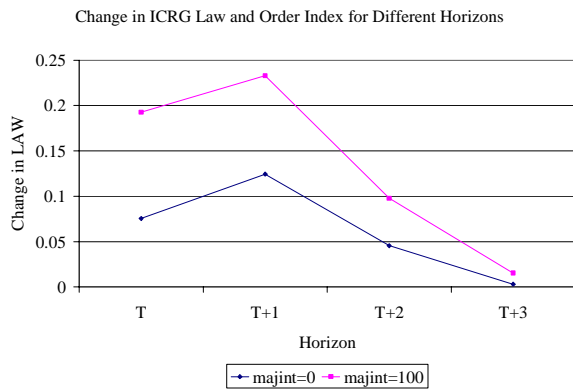


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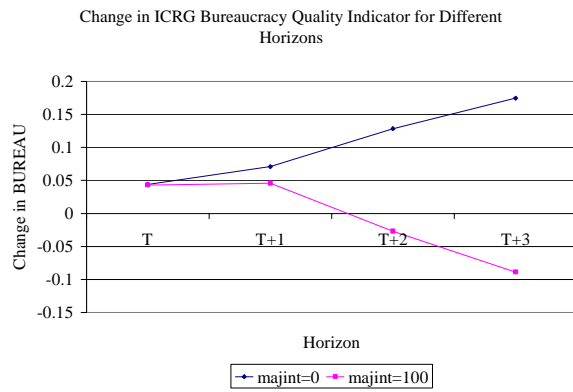


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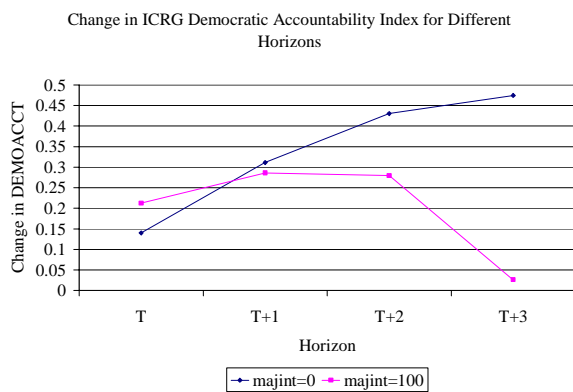


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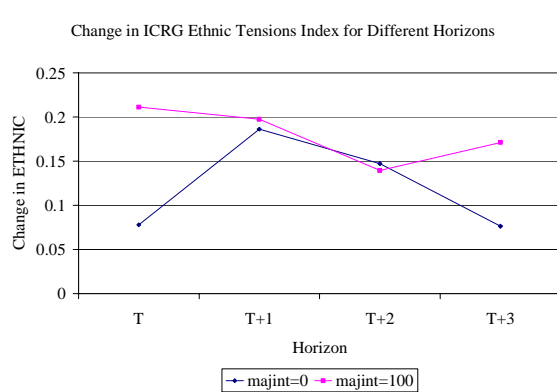


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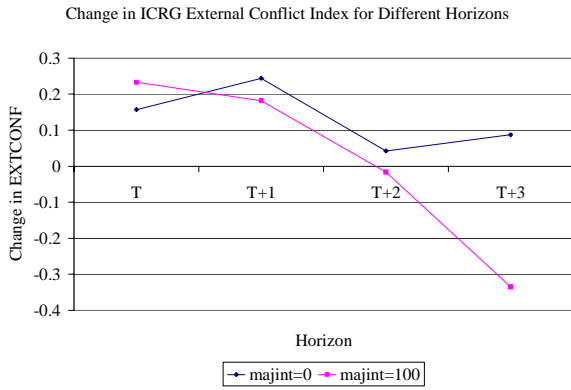


Figure 8

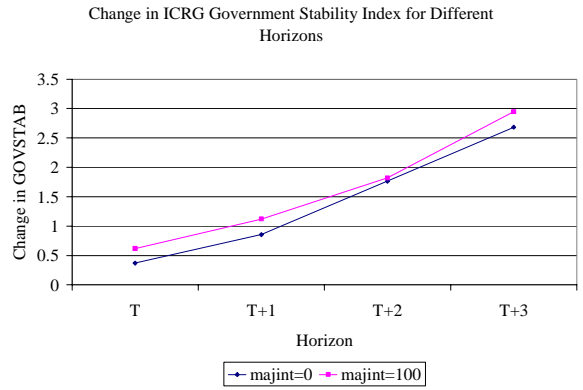


Figure 9

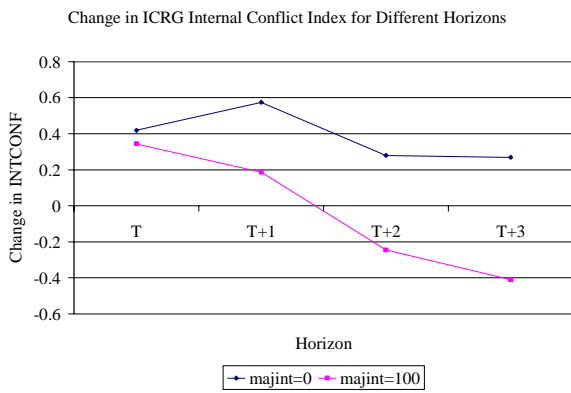


Figure 10

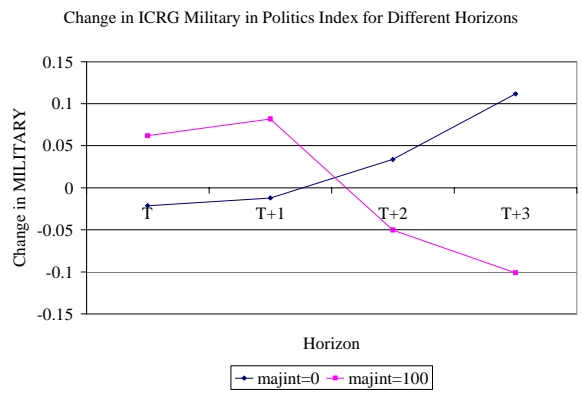


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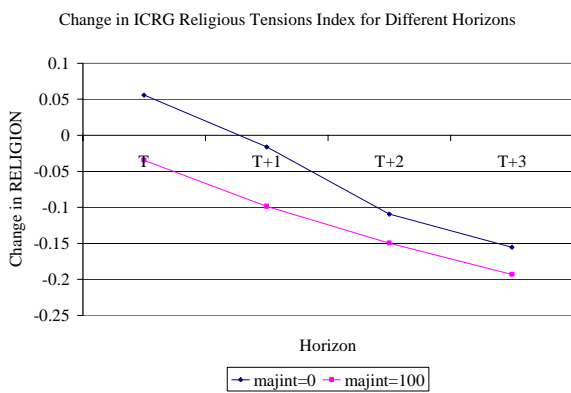


Figure 12

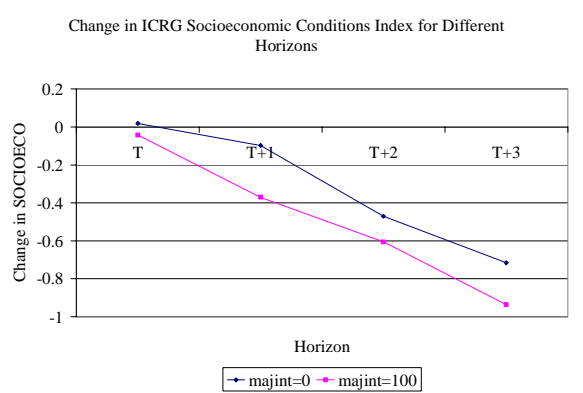


Figure 13

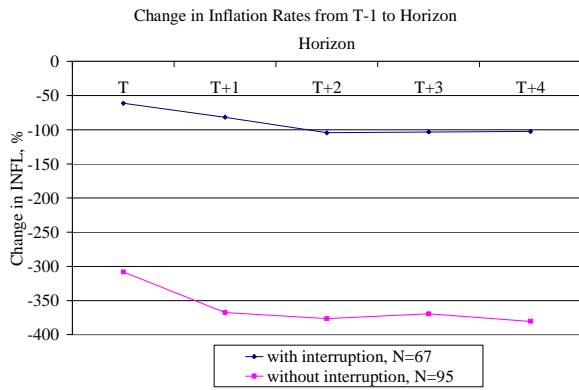


Figure 14

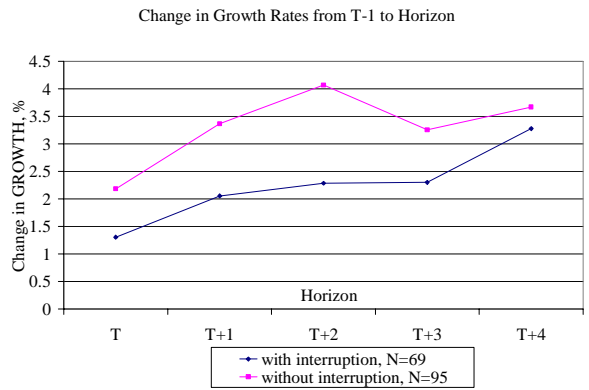


Figure 15

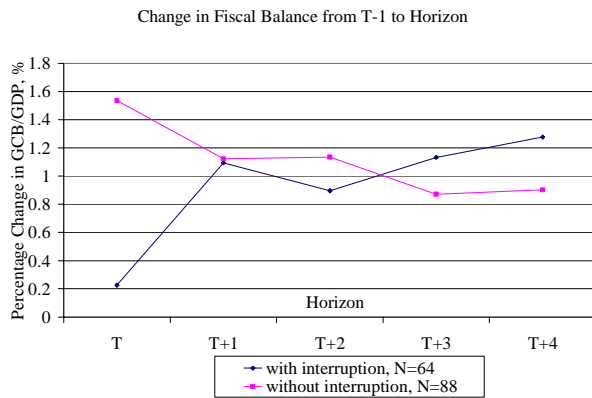


Figure 16

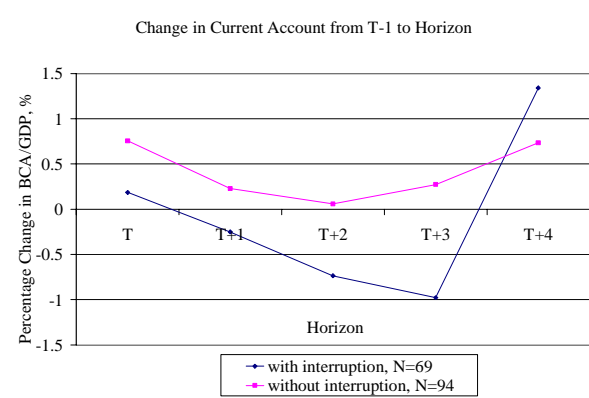


Table 1*. Program Implementation by Type of Arrangement

	Including Precautionary Arrangements				Excluding Precautionary Arrangements			
	All	EFF	ESAF/PRGF	SBA	All	EFF	ESAF/PRGF	SBA
Programs having irreversible interruptions 1/	41.12	40.00	45.31	38.89	42.77	34.78	45.31	43.06
Nobs:	197	25	64	108	159	23	64	72
Quantitative Implementation Index 2/	79.18	87.21	77.09	78.52	79.36	86.95	77.09	78.85
Nobs:	182	24	62	96	151	23	62	66
Structural Implementation Index 3/	66.37	73.98	70.97	60.54	68.41	76.54	70.97	62.44
Nobs:	168	24	63	81	142	22	63	57
Overall Implementation Index 4/	74.29	83.27	72.91	72.81	74.81	83.71	72.91	73.45
Nobs:	166	23	62	81	141	22	62	57
Share of Committed Funds Disbursed 1/	62.05	72.56	80.02	48.47	74.54	78.87	80.02	68.02
Nobs:	193	25	64	104	156	23	64	69

* This table is an updated version of Table 1 in IMMA, 2003. Multiyear arrangements are treated as one program. Each cell contains average percentage value of the implementation index that is based on a sample of programs approved between 1992 and 2002 and available from MONA database.

1/ Irreversible Interruption Index and Share of Committed Funds Disbursed were computed as defined in text.

2/ The Quantitative 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 Quantitative Implementation Index for a program is then computed as the average of those indices across all macro performance criteria for this program.

3/ 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 is then computed as the average of those indices across all structural conditions for this program.

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

Table 2*. Correlations of Implementation Indices (excluding precautionary arrangements)					
	Programs having irreversible interruptions	Quantitative Implementation Index	Structural Implementation Index	Overall Implementation Index	Share of Committed Funds Disbursed
Programs having irreversible interruptions	1 159				
Quantitative Implementation Index	-0.312 <.0001 151	1 151			
Structural Implementation Index	-0.286 0.0006 142	0.293 0.0004 141	1 142		
Overall Implementation Index	-0.403 <.0001 141	0.823 <.0001 141	0.682 <.0001 141	1 141	
Share of Committed Funds Disbursed	-0.699 <.0001 156	0.303 0.0002 151	0.350 <.0001 142	0.416 <.0001 141	1 156

* Multiyear arrangements are treated as one program. This is a sample of programs approved between 1992 and 2002 and available from MONA database. Each cell contains: Pearson Correlation Coefficient, Prob > |r| under H0: Rho=0, and Number of Observations

Table 3a. Correlation of Implementation Indices with the Initial Conditions measured by T-1 ICRG Risk Ratings

ICRG Risk Category	Pearson Correlation Coefficients				
	Irreversible Interruption Index	Share of Committed Funds Disbursed (excl. precaut.)	Quantitative Implementation Index	Structural Implementation Index	Overall Implementation Index
Bureaucracy Quality	-0.026	-0.127	0.128	-0.055	0.126
Corruption	-0.090	0.027	0.102	0.015	0.157
Democratic Accountability	-0.045	-0.089	0.026	-0.091	0.025
Ethnic Tensions	-0.004	0.050	-0.030	-0.088	-0.065
External Conflict	0.047	-0.183*	-0.109	-0.044	-0.054
Government Stability	-0.191**	-0.033	-0.211**	-0.012	-0.167*
Internal Conflict	0.093	-0.160	-0.146	-0.077	-0.131
Investment Profile	-0.199**	0.045	-0.144	-0.046	-0.136
Law and Order	-0.025	-0.167*	-0.040	-0.113	-0.043
Military in Politics	-0.065	-0.059	-0.085	-0.211**	-0.121
Religious Tensions	-0.090	0.028	-0.037	-0.081	-0.093
Socioeconomic Conditions	-0.032	0.162*	0.135	0.051	0.163*

Table 3b. Correlation of Implementation Indices with the Initial Conditions measured by T-1 ICRG Risk Ratings

ICRG Risk Category	Pearson Correlation Coefficients				
	Irreversible Interruption Index	Share of Committed Funds Disbursed (excl. precaut.)	Quantitative Implementation Index	Structural Implementation Index	Overall Implementation Index
Bureaucracy Quality	-0.016	-0.072	0.143	-0.125	0.080
Corruption	-0.006	-0.028	0.231**	-0.016	0.210**
Democratic Accountability	-0.038	-0.062	0.081	-0.096	0.067
Ethnic Tensions	-0.024	0.101	0.089	-0.038	0.041
External Conflict	0.025	-0.032	-0.011	-0.038	-0.018
Government Stability	-0.067	0.011	-0.081	0.102	-0.062
Internal Conflict	0.025	0.006	0.089	-0.053	0.006
Investment Profile	-0.274***	0.167*	0.008	0.081	0.012
Law and Order	0.034	-0.054	0.127	-0.085	0.065
Military in Politics	-0.019	-0.035	-0.048	-0.237**	-0.140
Religious Tensions	-0.115	0.097	0.030	-0.057	-0.040
Socioeconomic Conditions	-0.124	0.187	0.301***	0.015	0.239**

Table 3c. Correlation of Implementation Indices with the Change in ICRG Risk Ratings from T-1 to T+1

ICRG Risk Category	Pearson Correlation Coefficients				
	Irreversible Interruption Index	Share of Committed Funds Disbursed (excl. precaut.)	Quantitative Implementation Index	Structural Implementation Index	Overall Implementation Index
Bureaucracy Quality	-0.026	0.042	-0.009	-0.075	-0.059
Corruption	0.119	-0.078	0.167*	-0.013	0.094
Democratic Accountability	-0.014	-0.034	0.052	0.002	0.062
Ethnic Tensions	0.008	0.038	0.201**	0.122	0.205**
External Conflict	-0.020	0.143	0.084	0.042	0.048
Government Stability	0.076	0.008	0.198**	0.155	0.181*
Internal Conflict	-0.098	0.142	0.208**	0.078	0.162*
Investment Profile	-0.185**	0.058	0.149	0.174*	0.171*
Law and Order	0.072	0.102	0.165*	0.069	0.131
Military in Politics	0.067	-0.047	-0.023	0.012	-0.052
Religious Tensions	-0.068	0.102	0.114	0.022	0.077
Socioeconomic Conditions	-0.093	0.049	0.169*	-0.007	0.114

*** - significantly different from zero at 99 percent confidence level

** - significantly different from zero at 95 percent confidence level

* - significantly different from zero at 90 percent confidence level

Table 4. Model specification regressions 1/

Dependent Variable Regression #	ΔINFL_T		ΔGROWTH_T		ΔBB_T		ΔCA_T	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	125.947 (0.70)	94.075 (0.69)	4.096 (0.51)	5.930 (0.90)	-0.084* (-1.69)	-0.069* (-1.86)	0.007 (0.09)	0.031 (0.42)
Disbursement Share	19.778 (0.50)	8.417 (0.24)	2.017 (1.20)	2.761* (1.88)	0.030*** (2.84)	0.025** (2.48)	0.019 (1.07)	0.011 (0.70)
Initial Per Capita Real GDP	-8.151** (-1.97)	-8.783** (-2.45)	0.290 (1.58)	0.204 (1.35)	0.003** (1.96)	0.002** (1.99)	-0.001 (-0.53)	-0.001 (0.65)
Change in Dependent Variable from T-2 to T-1	-0.168 (-1.22)	-0.194* (1.65)	-0.222* (-1.88)	-0.235** (-2.36)	0.052 (0.51)	0.123 (1.39)	-2.264** (-2.32)	-0.202** (-1.98)
Change in Dependent Variable from T-3 to T-2	0.010 (0.86)	0.008 (0.81)	-0.036 (-0.32)	-0.051 (-0.53)	-0.054 (-0.63)	-0.069 (-0.86)	-0.220** (-2.03)	-0.198** (-1.99)
INFL at T-1	-0.750*** (-5.22)	-0.703*** (-5.76)	-0.857*** (-6.58)	-0.832*** (-7.77)	-0.562*** (-5.46)	-0.598*** (6.71)	-0.087 (-1.13)	-0.098 (-1.36)
ICRG Bureaucracy Quality Rating at T-1	-30.275* (-1.92)	-26.797** (-1.98)	-0.258 (-0.36)		-0.003 (-0.71)		0.008 (1.03)	
Change in Bureaucracy Quality from T-1 to T	-43.621 (-1.05)	-47.430 (-1.25)	1.037 (0.56)		0.002 (0.14)		0.013 (0.69)	
ICRG Corruption Rating at T-1	13.950 (0.93)		-0.514 (-0.78)		-0.011*** (-2.68)	-0.010** (-2.56)	-0.009 (-1.30)	-0.009 (-1.30)
Change in Corruption from T-1 to T	29.766 (1.03)		-0.361 (-0.27)		-0.007 (-0.85)	-0.007 (-0.98)	-0.003 (-0.23)	0.001 (0.11)
ICRG Democratic Accountability Rating at T-1	7.467 (0.58)		0.015 (0.03)		0.0001 (0.03)	0.0008 (0.24)	0.004 (0.71)	
Change in Democratic Accountability from T-1 to T	2.728 (0.15)		-0.728 (-0.91)		-0.010* (-1.73)	-0.009* (-1.71)	0.005 (0.58)	
ICRG Ethnic Tensions Rating at T-1	-19.793 (-1.53)	-14.833 (-1.35)	0.455 (0.83)		-0.002 (-0.55)	0.001 (0.22)	-0.010* (-1.71)	-0.009** (-2.07)
Change in Ethnic Tensions from T-1 to T	-4.793 (-0.18)	-4.916 (0.22)	0.437 (0.37)		-0.014* (-1.70)	-0.015** (-2.23)	-0.003 (-0.24)	-0.010 (-0.94)
ICRG External Conflict Rating at T-1	-0.771 (-0.10)		-0.351 (-1.05)		0.003 (1.39)	0.003 (1.63)	0.0004 (0.11)	0.002 (0.58)
Change in External Conflict from T-1 to T	0.102		0.358		0.010***	0.009***	0.008	0.008

Table 4 (continued)

Regression #	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	(0.01)		(0.64)		(3.00)	(2.71)	(1.49)	(1.60)
ICRG Government Stability Rating at T-1	-14.240		0.644	0.475	0.004		0.014**	0.014**
	(1.04)		(0.99)	(0.99)	(1.00)		(2.30)	(2.62)
Change in Government Stability from T-1 to T	-2.722		1.176*	1.167**	-0.001		-0.002	-0.005
	(-0.19)		(1.82)	(2.17)	(-0.30)		(-0.35)	(-0.76)
ICRG Internal Conflict Rating at T-1	13.928	12.495*	-0.010		0.002		0.002	
	(1.63)	(1.93)	(-0.03)		(0.74)		(0.44)	
Change in Internal Conflict from T-1 to T	19.336	17.557*	-0.099		-0.003		-0.006	
	(1.56)	(1.70)	(-0.18)		(-0.86)		(-1.00)	
ICRG Investment Profile Rating at T-1	-6.695	-9.832	-0.453	-0.597	-0.001		-0.012**	-0.012***
	(-0.60)	(-1.22)	(-0.89)	(-1.42)	(-0.43)		(-2.20)	(-2.96)
Change in Investment Profile from T-1 to T	-21.085	-18.050	0.679	0.996**	0.003		-0.020***	-0.016***
	(1.52)	(-1.55)	(1.10)	(1.97)	(0.70)		(-3.21)	(-2.84)
ICRG Military in Politics Rating at T-1	-1.798		0.089		0.004	0.005**	0.007	0.012***
	(-0.17)		(0.18)		(1.36)	(2.11)	(1.36)	(3.46)
Change in Military in Politics from T-1 to T	-7.215		0.509		0.004	0.006	0.004	0.005
	(-0.32)		(0.54)		(0.60)	(0.98)	(0.39)	(0.60)
ICRG Religion Tensions Rating at T-1	2.877		0.465		0.001		0.005	
	(0.29)		(1.03)		(0.33)		(1.10)	
Change in Religion Tensions from T-1 to T	-15.494		-1.571		-0.010		-0.004	
	(-0.47)		(-1.02)		(-1.07)		(-0.29)	
ICRG Socioeconomic Rating at T-1	-2.652		-0.636	-0.536	-0.002		-0.006	
	(-0.22)		(-1.20)	(-1.22)	(-0.51)		(-1.24)	
ICRG Law and Order Rating at T-1	14.614	12.421	-0.128		0.002		0.00003	
	(0.95)	(0.96)	(-0.18)		(0.45)		(0.00)	
Change in Law and Order from T-1 to T	-85.967***	-88.284***	1.145		0.007		0.005	
	(-2.83)	(-3.34)	(0.82)		(0.80)		(0.36)	
Dummy for Precautionary Arrangement	27.788	23.525	2.554	3.929**	0.033**	0.027**	0.022	0.015
	(0.60)	(0.56)	(1.25)	(2.41)	(2.51)	(2.43)	(1.07)	(0.79)
Number of Observations	122	123	124	125	119	119	124	124
R ²	0.610	0.588	0.716	0.688	0.584	0.514	0.460	0.416
Adjusted R ²	0.434	0.483	0.591	0.628	0.389	0.384	0.221	0.253

1/ All regressions include year dummies

Table 5. First Stage Regressions

Dependent Variable Regression #	Disbursement Share 1/, 3/		Irreversible Interruption Index 2/, 3/	
	(1)	(2)	(3)	(4)
Intercept	0.680** (6.02)	0.848*** (14.77)	-0.397 (0.08)	-0.085 (0.01)
Initial Per Capita Real GDP	-0.012 (1.44)	-0.013 (1.62)	-0.066 (1.55)	-0.072 (2.19)
INFL at T-1	0.0002 (0.50)	0.0002 (0.69)	0.002 (0.90)	0.002 (0.92)
GCB_Y at T-1	0.116 (0.02)	0.209 (0.06)	-3.509 (0.61)	-3.230 (0.58)
BCA_Y at T-1	0.091 (0.04)	0.049 (0.01)	-0.753 (0.12)	-1.198 (0.342)
GROWTH at T-1	-0.002 (0.06)	-0.003 (0.20)	0.046 (2.15)	0.056* (3.70)
ICRG Bureaucracy Quality Rating at T-1	-0.017 (0.15)		-0.070 (0.102)	
ICRG Corruption Rating at T-1	0.006 (0.02)		0.322* (2.82)	0.358** (5.03)
ICRG Democratic Accountability Rating at T-1	-0.019 (0.27)		-0.104 (0.31)	
ICRG Ethnic Tensions Rating at T-1	0.073** (4.67)	0.076** (6.15)	0.097 (0.40)	
ICRG External Conflict Rating at T-1	0.006 (0.08)		-0.034 (0.10)	
ICRG Government Stability Rating at T-1	0.071* (3.74)	0.078** (6.22)	0.044 (0.06)	
ICRG Internal Conflict Rating at T-1	-0.061** (8.19)	-0.062*** (9.32)	-0.221* (3.44)	-0.217** (6.44)
ICRG Investment Profile Rating at T-1	0.021 (0.45)		0.090 (0.32)	
ICRG Military in Politics Rating at T-1	0.041 (1.95)	0.044* (3.57)	0.101 (0.49)	
ICRG Religion Tensions Rating at T-1	0.019 (0.53)		0.144 (1.17)	0.189 (2.57)
ICRG Socioeconomic Rating at T-1	-0.008 (0.04)		0.040 (0.05)	
ICRG Law and Order Rating at T-1	-0.066 (2.45)	-0.069* (2.93)	-0.092 (0.16)	
Fund Effort Per Program Year	0.041 (2.50)	0.043* (3.20)	0.036 (0.06)	0.050 (0.14)
Fund Quota (log)	-0.034 (0.98)	-0.046 (2.28)	0.095 (0.30)	0.052 (0.12)
Number of Months Spent in Fund Programs	0.002** (4.96)	0.002** (5.22)	-0.002 (0.22)	-0.0003 (0.01)
Amount Approved as a Fraction of Quota	0.024** (4.17)	0.025** (4.73)	0.088 (0.767)	0.094 (0.82)

Table 5 (continued)				
Dummy for Precautionary Arrangement	-1.121*** (-90.30)	-1.109*** (90.84)		
Year dummies included	yes	yes	yes	yes
Observations	115	115	115	115
Log Likelihood	-14.695	-15.676	-61.998	-63.251
Correlation coefficient / Correctly predicted (%)	0.807	0.803	75.66	75.66

1/ Results are obtained using TOBIT model: $y = \max (X'\beta + \varepsilon, 0)$.

2/ Results are obtained using PROBIT model. Parameters estimates are computed to reflect probability of no irreversible interruption: $\Pr(\text{Interruption} = 0) = F(X'\beta)$, where F is normal cumulative distribution function

3/ Number in parentheses is Chi-Square statistic

Table 6a. Inflation Regressions Using Share of Committed Funds Disbursed

Dependent Variable	Change in INFL from T-1 to Horizon									
	Regression #	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		OLS			2SLS			3SLS		
Horizon		T	T+1	T+2	T	T+1	T+2	T	T+1	T+2
Disbursement Share		13.862 (0.40)	-55.659 (-1.52)	2.778 (0.44)	-140.87 (-1.55)	-90.624 (-0.93)	-9.000 (-0.57)	-150.828* (-1.68)	-103.740 (-1.07)	-12.621 (-0.86)
Initial Per Capita Real GDP		-8.361** (-2.36)	-6.406* (-1.70)	-0.277 (-0.45)	-10.622*** (-2.89)	-7.222* (-1.75)	-0.643 (-0.99)	-10.602*** (-2.90)	-7.013* (-1.71)	-0.474 (-0.75)
First Lagged Difference in INFL		-0.158 (-1.45)	0.0003 (0.03)	-0.001 (-0.36)	-0.214** (-1.97)	-0.002 (-0.15)	-0.001 (-0.28)	-0.180* (-1.71)	-0.004 (-0.42)	-0.002 (-0.65)
INFL at T-1		-0.731*** (-6.26)	-0.958*** (-10.23)	-0.976*** (-63.01)	-0.682*** (-5.69)	-0.950*** (-9.30)	-0.977*** (-60.07)	-0.739*** (-6.36)	-0.954*** (-9.50)	-0.975*** (-72.22)
ICRG Bureaucracy Quality Rating at T-1		-26.488** (1.96)	-12.571 (-0.86)	-4.100 (-1.60)	-27.744** (-2.06)	-13.581 (-0.89)	-4.317* (-1.68)	-27.964** (-2.15)	-12.012 (-0.80)	-5.537*** (-2.61)
Change in Bureaucracy Quality from T-1 to Horizon		-46.700 (-1.24)	-11.681 (-0.51)	-2.909 (-0.95)	-73.494* (-1.86)	-14.381 (-0.58)	-4.211 (-1.35)	-74.746** (-1.96)	-14.256 (-0.59)	-3.954 (-1.52)
ICRG Ethnic Conflict Rating at T-1		-15.834 (-1.46)	-5.164 (-0.45)	-1.969 (-1.04)	-6.632 (-0.57)	-4.066 (-0.31)	-1.299 (-0.62)	-4.275 (-0.37)	-2.152 (-0.17)	-1.034 (-0.54)
Change in Ethnic Conflict from T-1 to Horizon		-5.246 (-0.24)	-12.083 (-0.65)	-3.455 (-1.32)	-11.568 (-0.51)	-12.110 (-0.60)	-4.060 (-1.50)	-12.868 (-0.58)	-12.904 (-0.65)	-4.606* (-1.82)
ICRG Internal Conflict Rating at T-1		13.151** (2.05)	7.478 (0.99)	1.033 (0.80)	6.974 (1.03)	6.149 (0.73)	0.061 (0.04)	6.605 (1.00)	7.658 (0.92)	0.330 (0.27)
Change in Internal Conflict from T-1 to Horizon		17.336* (1.68)	11.734 (1.56)	-0.425 (-0.39)	23.794** (2.22)	12.419 (1.56)	-0.154 (-0.14)	24.206** (2.34)	13.982* (1.79)	-0.461 (-0.49)
ICRG Investment Profile Rating at T-1		-9.834 (-1.22)	3.493 (0.36)	-0.809 (-0.52)	-2.854 (-0.33)	3.715 (0.36)	-0.110 (-0.07)	-2.784 (-0.33)	3.456 (0.33)	0.487 (0.36)
Change in Investment Profile from T-1 to Horizon		-17.426	-3.723	-1.623	-19.212	-7.275	-1.851	-19.558	-9.327	-1.566

Table 6a (continued)

Regression #	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	(-1.50)	(-0.44)	(-1.38)	(-1.55)	(-0.78)	(-1.51)	(-1.60)	(-1.00)	(-1.49)
ICRG Law and Order Rating at T-1	12.738	5.862	5.700**	14.470	8.730	7.348***	12.342	5.639	6.603***
	(0.98)	(0.41)	(2.27)	(1.08)	(0.55)	(2.73)	(0.95)	(0.36)	(2.91)
Change in Law and Order from T-1 to Horizon	-87.059***	-34.277	1.43	-86.529***	-30.469	2.516	-84.579***	-22.859	4.800*
	(-3.13)	(-1.51)	(0.50)	(-3.26)	(-1.21)	(0.79)	(-3.30)	(-0.92)	(1.81)
Dummy for Precautionary Arrangement	28.111	-52.327	3.459	-91.169	-78.257	-5.359	-102.715	-90.626	-9.017
	(0.68)	(-1.19)	(0.46)	(-1.17)	(-0.91)	(-0.39)	(-1.34)	(-1.06)	(-0.70)
Intercept and Year Dummies included	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	123	122	116	115	115	109	115	115	109
R squared	0.586	0.596	0.982	0.626	0.592	0.983	0.625	0.590	0.983
Adjusted R squared	0.485	0.502	0.977	0.532	0.489	0.979	0.530	0.487	0.978

Table 6b. Inflation Regressions Using Irreversible Interruption Index

Dependent Variable	Change in INFL from T-1 to Horizon									
	Regression #	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		OLS			2SLS			3SLS		
Horizon		T	T+1	T+2	T	T+1	T+2	T	T+1	T+2
Non-Interruption Dummy		1.364 (0.07)	-18.019 (-0.92)	3.400 (1.05)	-38.409 (-0.68)	28.532 (0.46)	16.575* (1.67)	-32.152 (-0.58)	29.726 (0.48)	13.730 (1.47)
Initial Per Capita Real GDP		-7.688** (-2.31)	-6.026* (-1.65)	-0.262 (-0.43)	-10.512*** (-2.77)	-6.447 (-1.54)	-0.329 (-0.51)	-10.182*** (-2.70)	-6.241 (-1.50)	-0.195 (-0.31)
First Lagged Difference in INFL		-0.165 (-1.54)	-0.002 (-0.17)	-0.001 (-0.30)	-0.207* (-1.87)	-0.001 (-0.04)	0.001 (0.20)	-0.172 (-1.61)	-0.003 (-0.30)	-0.001 (-0.32)
INFL at T-1		-0.724*** (-6.35)	-0.957*** (-10.29)	-0.977*** (-63.74)	-0.706*** (-5.68)	-0.986*** (-9.43)	-0.991*** (-59.88)	-0.769*** (-6.37)	-0.992*** (-9.65)	-0.984*** (-70.02)
ICRG Bureaucracy Quality Rating at T-1		-25.676** (-1.97)	-14.196 (-0.99)	-4.103 (-1.62)	-25.351* (-1.90)	-13.776 (-0.91)	-4.125* (-1.65)	-25.928** (-2.01)	-12.195 (-0.82)	-5.463** (-2.60)
Change in Bureaucracy Quality from T-1 to Horizon		-38.449 (-1.08)	-13.225 (-0.59)	-2.957 (-0.98)	-63.094* (-1.65)	-13.866 (-0.57)	-3.911 (-1.28)	-66.295* (-1.80)	-14.974 (-0.62)	-4.020 (-1.57)
ICRG Ethnic Conflict Rating at T-1		-12.467 (-1.31)	-8.963 (-0.88)	-1.694 (-1.01)	-10.522 (-1.06)	-11.185 (-1.03)	-2.043 (-1.22)	-7.869 (-0.81)	-10.586 (-0.99)	-2.102 (-1.36)
Change in Ethnic Conflict from T-1 to Horizon		-5.445 (-0.25)	-12.690 (-0.70)	-3.344 (-1.31)	-7.393 (-0.33)	-10.723 (-0.54)	-3.092 (-1.18)	-8.472 (-0.38)	-12.180 (-0.62)	-3.885 (-1.59)
ICRG Internal Conflict Rating at T-1		12.615** (2.02)	8.928 (1.20)	1.082 (0.85)	8.375 (1.19)	10.639 (1.25)	1.211 (0.87)	8.677 (1.27)	12.822 (1.53)	1.279 (1.06)
Change in Internal Conflict from T-1 to Horizon		17.151* (1.73)	12.357* (1.67)	-0.481 (-0.45)	19.309* (1.86)	12.131 (1.56)	-0.501 (-0.46)	20.607** (2.06)	14.480* (1.90)	-0.637 (-0.69)

Table 6b (continued)

ICRG Investment Profile Rating at T-1	-8.569 (-1.15)	1.037 (0.12)	-0.842 (-0.58)	-4.825 (-0.58)	-1.951 (-0.19)	-1.231 (-0.80)	-6.345 (-0.78)	-2.885 (-0.29)	-0.315 (-0.23)
Change in Investment Profile from T-1 to Horizon	-16.780 (-1.48)	-4.559 (-0.54)	-1.737 (-1.51)	-17.045 (-1.38)	-7.490 (-0.81)	-1.706 (-1.46)	-18.050 (-1.48)	-9.764 (-1.07)	-1.355 (-1.34)
ICRG Law and Order Rating at T-1	11.033 (0.88)	8.005 (0.56)	2.480** (2.23)	18.171 (1.38)	9.767 (0.62)	6.592** (2.48)	15.386 (1.21)	6.772 (0.44)	6.285*** (2.79)
Change in Law and Order from T-1 to Horizon	-85.731*** (-3.32)	-36.979 (-1.64)	1.589 (0.560)	-83.905*** (-3.16)	-34.745 (-1.40)	2.187 (0.71)	-82.277*** (-3.21)	-28.345 (-1.17)	4.010 (1.53)
Intercept and Year Dummies included	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	126	123	116	115	115	109	115	115	109
R squared	0.582	0.589	0.982	0.617	0.589	0.984	0.614	0.587	0.983
Adjusted R squared	0.489	0.500	0.978	0.525	0.491	0.980	0.522	0.488	0.979

Table 7a. Growth Regressions Using Share of Committed Funds Disbursed

Dependent Variable	Change in GROWTH from T-1 to Horizon									
	Regression #	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		OLS			2SLS			3SLS		
Horizon	T	T+1	T+2	T	T+1	T+2	T	T+1	T+2	
Disbursement Share	2.814*	2.331*	1.412	2.607	0.484	2.921	2.579	0.639	2.309	
	(1.93)	(1.79)	(0.88)	(0.84)	(0.18)	(0.85)	(0.84)	(0.24)	(0.67)	
Initial Per Capita Real GDP	0.209	0.169	0.551***	0.277*	0.077	0.515***	0.266*	0.072	0.534***	
	(1.39)	(1.27)	(3.49)	(1.73)	(0.55)	(3.14)	(1.67)	(0.51)	(3.04)	
First Lagged Difference in GROWTH	-0.205**	-0.203***	-0.017	-0.249***	-0.248***	-0.023	-0.210***	-0.212***	-0.033	
	(-2.51)	(-2.67)	(-0.19)	(-2.94)	(-3.18)	(-0.25)	(-2.61)	(-2.79)	(-0.37)	
GROWTH at T-1	-0.850***	-0.785***	-0.946***	-0.829***	-0.758***	-0.931***	-0.840***	-0.753***	-0.896***	
	(-8.37)	(-9.01)	(-8.63)	(-7.83)	(-8.60)	(-8.10)	(-8.33)	(-8.77)	(-8.22)	
ICRG Government Stability Rating at T-1	0.471	0.463	0.049	0.163	0.369	0.097	-0.025	0.299	-0.076	
	(0.99)	(1.07)	(0.09)	(0.33)	(0.83)	(0.16)	(-0.05)	(0.69)	(-0.13)	
Change in Government Stability from T-1 to Horizon	1.185**	0.364	0.025	1.022*	0.339	0.062	1.117**	0.305	-0.250	
	(2.21)	(1.03)	(0.06)	(1.84)	(0.92)	(0.13)	(2.12)	(0.85)	(-0.56)	
ICRG Investment Profile Rating at T-1	-0.578	0.216	0.634	-0.623	-0.049	0.463	-0.568	-0.042	0.462	
	(-1.39)	(0.55)	(1.36)	(-1.42)	(0.31)	(0.91)	(-1.35)	(-0.11)	(0.94)	
Change in Investment Profile from T-1 to Horizon	0.963*	1.079***	0.841***	1.228**	0.764**	0.849**	1.029**	0.678**	0.857**	
	(1.93)	(3.64)	(2.80)	(2.29)	(2.45)	(2.50)	(2.00)	(2.21)	(2.62)	
ICRG Socioeconomic Rating at T-1	-0.536	-0.607	-0.013	-0.525	-0.467	0.019	-0.420	-0.529	-0.036	
	(-1.23)	(-1.61)	(-0.03)	(-1.16)	(-1.23)	(0.04)	(-0.98)	(-1.43)	(-0.07)	
Dummy for Precautionary Arrangement	4.053**	0.395	-1.085	4.184	-0.727	0.353	4.234	-0.460	-0.121	
	(2.52)	(0.27)	(-0.60)	(1.59)	(-0.31)	(0.12)	(1.61)	(-0.20)	(-0.04)	
Intercept and Year Dummies included	yes	yes	yes	yes	yes	yes	yes	yes	yes	
Observations	125	124	118	115	115	109	115	115	109	
R squared	0.687	0.744	0.660	0.704	0.744	0.641	0.701	0.743	0.638	
Adjusted R squared	0.631	0.701	0.603	0.648	0.696	0.573	0.646	0.694	0.570	

Table 7b. Growth Regressions Using Irreversible Interruption Index

Regression #	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS			2SLS			3SLS		
Horizon	T	T+1	T+2	T	T+1	T+2	T	T+1	T+2
Non-Interruption Dummy	0.555 (0.67)	0.825 (1.13)	0.195 (0.22)	-0.443 (-0.20)	-0.388 (-0.21)	-0.321 (-0.13)	-0.544 (-0.25)	-0.529 (-0.28)	-0.268 (-0.11)
Initial Per Capita Real GDP	0.144 (1.01)	0.177 (1.37)	0.566*** (3.56)	0.204 (1.25)	0.081 (0.57)	0.536*** (3.02)	0.190 (1.17)	0.070 (0.50)	0.525*** (2.98)
First Lagged Difference in GROWTH	-0.199** (-2.43)	-0.208*** (-2.77)	-0.039 (-0.43)	-0.250*** (-2.90)	-0.242*** (-3.14)	-0.035 (-0.37)	-0.211** (-2.59)	-0.208*** (-2.78)	-0.050 (-0.56)
GROWTH at T-1	-0.857*** (-8.26)	-0.789*** (-9.04)	-0.931*** (-8.42)	-0.829*** (-7.67)	-0.757*** (-8.56)	-0.920*** (-7.96)	-0.842*** (-8.19)	-0.759*** (-8.80)	-0.898*** (-8.21)
ICRG Government Stability Rating at T-1	0.354 (0.74)	0.483 (1.11)	0.095 (0.17)	0.094 (0.19)	0.369 (0.83)	0.091 (0.15)	-0.103 (-0.22)	0.300 (0.69)	-0.058 (-0.10)
Change in Government Stability from T-1 to Horizon	0.894* (1.79)	0.400 (1.16)	0.080 (0.18)	0.873 (1.56)	0.350 (0.95)	0.063 (0.14)	0.992* (1.88)	0.326 (0.91)	-0.210 (-0.48)
ICRG Investment Profile Rating at T-1	-0.378 (-0.98)	0.137 (0.37)	0.480 (1.08)	-0.335 (-0.78)	-0.127 (-0.32)	0.374 (0.75)	-0.306 (-0.74)	-0.085 (-0.22)	0.334 (0.70)
Change in Investment Profile from T-1 to Horizon	1.120** (2.29)	1.013*** (3.48)	0.784*** (2.67)	1.372** (2.57)	0.700** (2.30)	0.736** (2.22)	1.143** (2.23)	0.620** (2.07)	0.738** (2.30)
ICRG Socioeconomic Rating at T-1	-0.398 (-0.93)	-0.639* (-1.69)	-0.078 (-0.16)	-0.481 (-1.06)	-0.494 (-1.30)	-0.049 (-0.10)	-0.370 (-0.86)	-0.543 (-1.47)	-0.107 (-0.22)
Intercept and Year Dummies included	yes	yes	yes	yes	yes	Yes	yes	yes	yes
Observations	128	125	118	115	115	109	115	115	109
R squared	0.677	0.736	0.649	0.692	0.742	0.631	0.690	0.740	0.629
Adjusted R squared	0.624	0.694	0.594	0.638	0.696	0.567	0.635	0.695	0.565

Table 8a. Fiscal Balance Ratio to GDP Regressions Using Share of Committed Funds Disbursed

Dependent Variable	Change in GCB_Y from T-1 to Horizon									
	Regression #	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		OLS			2SLS			3SLS		
Horizon		T	T+1	T+2	T	T+1	T+2	T	T+1	T+2
Disbursement Share		0.024** (2.46)	0.020** (2.00)	0.013 (0.89)	-0.013 (-0.59)	-0.039** (-1.98)	-0.021 (-0.80)	-0.024 (-1.08)	-0.038* (-1.92)	-0.019 (-0.71)
Initial Per Capita Real GDP		0.002** (2.23)	0.0003 (0.28)	-0.0006 (-0.40)	0.002** (2.05)	-0.001 (-0.96)	-0.001 (-0.55)	0.002* (1.76)	-0.001 (-1.03)	-0.001 (-0.55)
First Lagged Difference in GCB_Y		0.156* (1.95)	-0.349*** (-4.61)	-0.131 (-1.53)	0.161** (1.99)	-0.323*** (-4.85)	-0.096 (-1.30)	0.100 (1.42)	-0.321*** (-5.04)	-0.059 (-0.95)
GCB_Y at T-1		-0.623*** (-7.43)	-0.523*** (-5.49)	-0.434*** (-3.45)	-0.651*** (-7.21)	-0.497*** (-5.67)	-0.527*** (-4.68)	-0.451*** (-5.85)	-0.472*** (-5.64)	-0.558*** (-5.91)
ICRG Corruption Rating at T-1		-0.010*** (-2.62)	-0.005 (-1.18)	-0.006 (-1.03)	-0.009** (-2.30)	-0.006 (-1.55)	-0.006 (-1.17)	-0.006* (-1.71)	-0.006* (-1.83)	-0.006 (-1.33)
Change in Corruption from T-1 to Horizon		-0.008 (-1.13)	0.005 (0.81)	0.002 (0.29)	-0.008 (-1.02)	0.003 (0.65)	0.003 (0.45)	-0.003 (-0.36)	0.002 (0.39)	-0.001 (-0.10)
ICRG Democratic Accountability Rating at T-1		0.001 (0.34)	0.002 (0.65)	0.007 (1.32)	0.002 (0.69)	-0.003 (-0.83)	-0.001 (-0.10)	-0.002 (-0.61)	-0.002 (-0.51)	0.002 (0.49)
Change in Democratic Accountability from T-1 to Horizon		-0.008 (-1.58)	-0.007* (-1.79)	0.0007 (0.12)	-0.009* (-1.69)	-0.008** (-2.25)	-0.004 (-0.77)	-0.008* (-1.80)	-0.008** (-2.47)	0.0004 (0.11)
ICRG Ethnic Conflict Rating at T-1		0.001 (0.37)	-0.005* (-1.66)	-0.004 (-0.97)	0.001 (0.45)	-0.002 (-0.79)	-0.001 (-0.33)	0.001 (0.26)	-0.002 (-0.87)	-0.002 (-0.50)
Change in Ethnic Conflict from T-1 to Horizon		-0.015** (-2.25)	0.0006 (0.10)	-0.005 (-0.79)	-0.016** (-2.40)	-0.003 (-0.68)	-0.006 (-0.99)	-0.015** (-2.43)	-0.004 (-0.80)	-0.007 (-1.22)
ICRG External Conflict Rating at T-1		0.004* (1.76)	0.005* (1.91)	0.004 (1.19)	0.002 (1.02)	0.003 (1.21)	0.003 (0.81)	0.003 (1.44)	0.003 (1.30)	0.004 (1.33)
Change in External Conflict from T-1 to Horizon		0.009*** (2.70)	0.004 (1.44)	0.005 (1.29)	0.006* (1.95)	0.002 (0.85)	0.001 (0.23)	0.006** (1.96)	0.003 (1.03)	0.003 (1.13)
ICRG Military in Politics Rating at T-1		0.004**	0.003	0.002	0.003	0.005**	0.003	0.003	0.004*	0.003

	(1.98)	(1.27)	(0.54)	(1.15)	(2.11)	(1.05)	(1.57)	(1.91)	(0.90)
Change in Military in Politics from T-1 to Horizon	0.006	0.0007	-0.005	0.008	-0.001	-0.006	0.001	-0.001	-0.005
	(1.00)	(0.14)	(-0.81)	(1.30)	(-0.27)	(-1.07)	(0.25)	(-0.25)	(-1.11)
Dummy for Precautionary Arrangement	0.027**	0.016	0.009	0.004	-0.028*	-0.014	-0.006	-0.027	-0.013
	(2.48)	(1.33)	(0.50)	(0.21)	(-1.65)	(-0.61)	(-0.33)	(-1.61)	(-0.57)
Intercept and Year Dummies included	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	119	118	112	115	115	109	115	115	109
R squared	0.510	0.603	0.392	0.505	0.639	0.456	0.472	0.637	0.443
Adjusted R squared	0.386	0.507	0.243	0.379	0.407	0.316	0.338	0.545	0.300

Table 8b. Fiscal Balance Ratio to GDP Regressions Using Irreversible Interruption Index

Dependent Variable	Change in GCB_Y from T-1 to Horizon									
	Regression #	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		OLS			2SLS			3SLS		
Horizon		T	T+1	T+2	T	T+1	T+2	T	T+1	T+2
Non-Interruption Dummy		0.016*** (2.72)	0.014** (2.37)	0.008 (0.94)	-0.010 (-0.63)	-0.023 (-1.58)	-0.035* (-1.81)	-0.022 (-1.36)	-0.020 (-1.40)	-0.032* (-1.70)
Initial Per Capita Real GDP		0.002* (1.88)	0.001 (0.50)	-0.001 (-0.37)	0.002* (1.81)	-0.001 (-1.07)	-0.001 (-0.96)	0.002 (1.37)	-0.001 (-1.06)	-0.001 (-0.87)
First Lagged Difference in GCB_Y		0.190** (2.38)	-0.354*** (-4.80)	-0.141 (-1.64)	0.168** (2.08)	-0.308*** (-4.65)	-0.089 (-1.22)	0.099 (1.40)	-0.310*** (-4.91)	-0.057 (-0.92)
GCB_Y at T-1		-0.576*** (-7.40)	-0.534*** (-5.80)	-0.433*** (-3.51)	-0.632*** (-7.10)	-0.508*** (-5.97)	-0.522*** (-4.82)	-0.436*** (-5.76)	-0.484*** (-5.95)	-0.558*** (-6.02)
ICRG Corruption Rating at T-1		-0.012*** (-2.90)	-0.007* (-1.78)	-0.007 (-1.25)	-0.008* (-1.82)	-0.003 (-0.77)	-0.002 (-0.34)	-0.004 (-1.06)	-0.004 (-1.13)	-0.004 (-0.75)
Change in Corruption from T-1 to Horizon		-0.008 (-1.18)	0.003 (0.57)	0.001 (0.21)	-0.007 (-0.88)	0.003 (0.57)	0.004 (0.56)	-0.002 (-0.35)	0.001 (0.28)	-0.0003 (-0.05)
ICRG Democratic Accountability Rating at T-1		0.002 (0.55)	0.003 (0.87)	0.007 (1.38)	0.002 (0.60)	-0.003 (-0.82)	-0.002 (-0.41)	-0.002 (-0.77)	-0.002 (-0.47)	0.002 (0.39)
Change in Democratic Accountability from T-1 to Horizon		-0.006 (-1.27)	-0.008* (-1.94)	0.0002 (0.04)	-0.008 (-1.63)	-0.008** (-2.14)	-0.003 (-0.74)	-0.007* (-1.72)	-0.008** (-2.42)	0.00003 (0.01)
ICRG Ethnic Conflict Rating at T-1		0.002 (0.80)	-0.004 (-1.50)	-0.004 (-0.96)	0.002 (0.93)	-0.003 (-1.23)	-0.002 (-0.49)	0.001 (0.35)	-0.003 (-1.28)	-0.002 (-0.59)
Change in Ethnic Conflict from T-1 to Horizon		-0.014** (-2.25)	0.001 (0.11)	-0.005 (-0.79)	-0.016** (-2.38)	-0.004 (-0.74)	-0.006 (-1.15)	-0.015** (-2.37)	-0.004 (-0.78)	-0.007 (-1.31)
ICRG External Conflict Rating at T-1		0.003* (1.70)	0.005** (2.02)	0.005 (1.24)	0.002 (1.10)	0.003 (1.35)	0.002 (0.71)	0.003 (1.49)	0.003 (1.48)	0.004 (1.47)
Change in External Conflict from T-1 to Horizon		0.008*** (2.67)	0.005* (1.66)	0.005 (1.42)	0.007** (2.32)	0.002 (0.94)	0.001 (0.28)	0.007** (2.21)	0.003 (1.13)	0.003 (1.30)
ICRG Military in Politics Rating at T-1		0.005**	0.003	0.002	0.003	0.004**	0.003	0.004*	0.004*	0.002

	(2.09)	(1.40)	(0.59)	(1.25)	(1.98)	(1.05)	(1.71)	(1.85)	(0.69)
Change in Military in Politics from T-1 to Horizon	0.008	0.003	-0.004	0.008	-0.002	-0.006	0.001	-0.001	-0.005
	(1.38)	(0.58)	(-0.70)	(1.25)	(-0.35)	(-1.19)	(0.15)	(-0.24)	(-1.17)
Intercept and Year Dummies included	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	122	119	112	115	115	109	115	115	109
R squared	0.499	0.609	0.392	0.492	0.634	0.471	0.458	0.631	0.459
Adjusted R squared	0.383	0.520	0.252	0.371	0.546	0.344	0.329	0.543	0.329

Table 9a. Current Account Ratio to GDP Regressions Using Share of Committed Funds Disbursed

Dependent Variable	Change in BCA_Y from T-1 to Horizon									
	Regression #	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		OLS			2SLS			3SLS		
Horizon		T	T+1	T+2	T	T+1	T+2	T	T+1	T+2
Disbursement Share		0.008 (0.50)	0.022 (1.12)	0.060*** (2.92)	-0.082** (-2.43)	-0.039 (-1.06)	0.024 (0.58)	-0.080** (-2.40)	-0.038 (-1.02)	0.020 (0.48)
Initial Per Capita Real GDP		-0.0008 (-0.45)	-0.001 (-0.56)	0.0006 (0.27)	-0.002 (-1.03)	-0.003 (-1.33)	-0.0001 (-0.04)	-0.002 (-1.16)	-0.003 (-1.39)	-0.0001 (-0.04)
First Lagged Difference in BCA_Y		-0.145 (-1.46)	-0.172* (-1.67)	-0.118 (-1.23)	-0.215** (-2.20)	-0.195* (-1.88)	-0.155 (-1.38)	-0.160* (-1.82)	-0.190* (-1.89)	-0.157 (-1.43)
BCA_Y at T-1		-0.157** (-2.36)	-0.217** (-2.42)	-0.371*** (-4.35)	-0.149** (-2.21)	-0.125 (-1.50)	-0.394*** (-4.65)	-0.114* (-1.90)	-0.143* (-1.77)	-0.435*** (-5.26)
ICRG Corruption Rating at T-1		-0.011 (-1.59)	-0.005 (-0.65)	-0.014* (-1.76)	-0.007 (-1.21)	-0.002 (-0.24)	-0.016** (-2.13)	-0.006 (-0.98)	-0.002 (-0.32)	-0.017** (-2.27)
Change in Corruption from T-1 to Horizon		-0.002 (-0.19)	-0.005 (-0.51)	0.009 (0.97)	0.002 (0.19)	-0.001 (-0.13)	-0.002 (-0.21)	0.002 (-0.22)	-0.003 (-0.33)	-0.002 (-0.19)
ICRG Ethnic Conflict Rating at T-1		-0.008* (-1.80)	-0.008 (-1.40)	-0.002 (-0.41)	-0.006 (-1.40)	-0.007 (-1.43)	0.001 (0.10)	-0.006 (-1.36)	-0.007 (-1.42)	0.001 (0.15)
Change in Ethnic Conflict from T-1 to Horizon		-0.010 (-0.97)	-0.002 (-0.24)	-0.008 (-0.92)	-0.016* (-1.70)	-0.016* (-1.73)	-0.006 (-0.75)	-0.016* (-1.75)	-0.015 (-1.60)	-0.006 (-0.73)
ICRG External Conflict Rating at T-1		0.003 (0.85)	0.0001 (0.02)	-0.0001 (-0.02)	0.001 (0.25)	-0.003 (-0.68)	-0.003 (-0.63)	0.001 (0.17)	-0.002 (-0.56)	-0.003 (-0.74)
Change in External Conflict from T-1 to Horizon		0.008 (1.58)	-0.0008 (-0.16)	-0.005 (-1.15)	0.003 (0.64)	-0.002 (-0.39)	-0.010** (-2.15)	0.004 (0.85)	-0.002 (-0.42)	-0.012** (-2.45)
ICRG Government Stability Rating at T-1		0.014*** (2.64)	0.013* (1.93)	0.010 (1.44)	0.009* (1.93)	0.010 (1.60)	0.002 (0.29)	0.008* (1.87)	0.010 (1.61)	0.002 (0.82)
Change in Government Stability from T-1 to Horizon		-0.004 (-0.72)	0.005 (0.97)	-0.002 (-0.36)	-0.005 (-0.96)	0.005 (0.85)	-0.007 (-1.23)	-0.003 (-0.57)	0.004 (0.81)	-0.007 (-1.29)
ICRG Investment Profile Rating at T-1		-0.014*** (-3.30)	-0.013** (-2.38)	-0.009* (-1.63)	-0.009** (-2.17)	-0.010* (-1.89)	-0.006 (-1.19)	-0.008** (-2.29)	-0.011** (-2.14)	-0.006** (-1.16)

Change in Investment Profile from T-1 to Horizon	-0.016*** (-2.89)	-0.018*** (-3.91)	-0.007* (-1.71)	-0.016*** (-2.94)	-0.015*** (-3.40)	-0.003 (-0.79)	-0.019*** (-4.10)	-0.016*** (-3.77)	-0.003 (-0.82)
ICRG Military in Politics Rating at T-1	0.011*** (3.21)	0.012*** (2.79)	0.010** (2.24)	0.007** (1.97)	0.010** (2.53)	0.008* (1.85)	0.007** (2.08)	0.010** (2.54)	0.008* (1.85)
Change in Military in Politics from T-1 to Horizon	0.004 (0.48)	0.003 (0.36)	-0.002 (-0.30)	0.006 (0.67)	0.003 (0.43)	-0.001 (-0.13)	0.005 (0.63)	0.004 (0.55)	-0.001 (-0.10)
Dummy for Precautionary Arrangement	0.017 (0.93)	0.036 (1.54)	0.061** (2.51)	-0.048 (-1.62)	-0.011 (-0.34)	0.039 (1.07)	-0.047 (-1.63)	-0.008 (-0.25)	0.038 (1.04)
Intercept and Year Dummies included	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	124	123	117	115	115	109	115	115	109
R squared	0.392	0.379	0.443	0.460	0.407	0.451	0.460	0.406	0.449
Adjusted R squared	0.230	0.220	0.300	0.309	0.241	0.295	0.309	0.238	0.291

Table 9b. Current Account Ratio to GDP Regressions Using Irreversible Interruption Index

Dependent Variable	Change in BCA_Y from T-1 to Horizon									
	Regression #	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		OLS			2SLS			3SLS		
Horizon		T	T+1	T+2	T	T+1	T+2	T	T+1	T+2
Non-Interruption Dummy		0.002 (0.25)	0.010 (0.87)	0.024** (2.11)	-0.037 (-1.50)	-0.024 (-0.90)	0.032 (1.11)	-0.032 (-1.34)	-0.024 (-0.88)	0.030 (1.07)
Initial Per Capita Real GDP		-0.001 (-0.61)	-0.001 (-0.53)	0.0008 (0.36)	-0.002 (-0.92)	-0.003 (-1.32)	0.001 (0.28)	-0.002 (-1.02)	-0.003 (-1.39)	0.001 (0.26)
First Lagged Difference in BCA_Y		-0.133 (-1.35)	-0.172* (-1.71)	-0.105 (-1.11)	-0.235** (-2.36)	-0.197* (-1.90)	-0.180 (-1.63)	-0.173* (-1.93)	-0.192* (-1.90)	-0.180* (-1.66)
BCA_Y at T-1		-0.158** (-2.42)	-0.208** (-2.35)	-0.366*** (-4.28)	-0.136** (-2.00)	-0.115 (-1.39)	-0.365*** (-4.41)	-0.105* (-1.73)	-0.135* (-1.67)	-0.399*** (-4.91)
ICRG Corruption Rating at T-1		-0.012* (-1.81)	-0.007 (-0.92)	-0.019** (-2.30)	-0.004 (-0.61)	0.0004 (0.05)	-0.019** (-2.40)	-0.003 (-0.50)	-0.0001 (-0.01)	-0.020** (-2.46)
Change in Corruption from T-1 to Horizon		0.0002 (0.02)	-0.005 (-0.51)	0.007 (0.74)	0.0004 (0.04)	-0.0004 (-0.04)	0.0001 (0.01)	-0.0005 (-0.05)	-0.002 (-0.19)	0.0002 (0.02)
ICRG Ethnic Conflict Rating at T-1		-0.006 (-1.54)	-0.005 (-0.96)	0.002 (0.28)	-0.006 (-1.62)	-0.006 (-1.35)	0.003 (0.66)	-0.006* (-1.66)	-0.006 (-1.31)	0.003 (0.68)
Change in Ethnic Conflict from T-1 to Horizon		-0.011 (-1.14)	-0.002 (-0.22)	-0.007 (-0.84)	-0.015 (-1.57)	-0.016* (-1.69)	-0.004 (-0.49)	-0.015 (-1.56)	-0.014 (-1.55)	-0.004 (-0.45)
ICRG External Conflict Rating at T-1		0.003 (0.86)	0.0003 (0.07)	0.0006 (0.13)	0.002 (0.62)	-0.002 (-0.54)	-0.002 (-0.41)	0.002 (0.60)	-0.002 (-0.45)	-0.002 (-0.48)
Change in External Conflict from T-1 to Horizon		0.008* (1.72)	0.0004 (0.08)	-0.003 (-0.69)	0.005 (1.07)	-0.001 (-0.17)	-0.009** (-1.97)	0.006 (1.30)	-0.001 (-0.21)	-0.010** (-2.16)
ICRG Government Stability Rating at T-1		0.013** (2.60)	0.014** (1.99)	0.010 (1.31)	0.009* (1.85)	0.010 (1.62)	0.001 (0.20)	0.008* (1.90)	0.010 (1.62)	0.001 (0.15)
Change in Government Stability from T-1 to Horizon		-0.003 (-0.63)	0.006 (1.16)	-0.003 (-0.44)	-0.006 (-0.99)	0.005 (0.95)	-0.007 (-1.40)	-0.003 (-0.51)	0.005 (0.87)	-0.008 (-1.57)
ICRG Investment Profile Rating at T-1		-0.011*** (-3.01)	-0.011** (-2.09)	-0.005 (-0.99)	-0.009** (-2.29)	-0.008* (-1.67)	-0.005 (-0.98)	-0.009*** (-2.70)	-0.009* (-1.88)	-0.005 (-1.03)

Change in Investment Profile from T-1 to Horizon	-0.016*** (-2.88)	-0.018*** (-3.79)	-0.006 (-1.39)	-0.014*** (-2.67)	-0.014*** (-3.23)	-0.002 (-0.60)	-0.019*** (-3.92)	-0.015*** (-3.61)	-0.002 (-0.61)
ICRG Military in Politics Rating at T-1	0.011*** (3.28)	0.012*** (2.83)	0.010** (2.11)	0.006* (1.89)	0.010** (2.46)	0.008* (1.94)	0.007** (2.12)	0.010** (2.51)	0.008** (1.96)
Change in Military in Politics from T-1 to Horizon	0.004 (0.42)	0.005 (0.54)	0.0001 (0.01)	0.006 (0.67)	0.003 (0.43)	-0.001 (-0.07)	0.006 (0.68)	0.004 (0.54)	-0.0003 (-0.04)
Intercept and Year Dummies included	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	127	124	117	115	115	109	115	115	109
R squared	0.385	0.368	0.416	0.443	0.395	0.448	0.430	0.393	0.447
Adjusted R squared	0.235	0.217	0.273	0.294	0.234	0.299	0.279	0.231	0.297

ICRG Political Risk Rating

The aim of the ICRG Political Risk Rating is to provide a means of assessing the political stability of the countries covered by ICRG on a comparable basis. This is done by assigning risk points to a pre-set group of factors, termed political risk components. The risk ratings are produced on a monthly basis to assess the current situation for each country.²⁸ The minimum number of points that can be assigned to each component is zero, while the maximum number of points depends on the fixed weight that component is given in the overall political risk assessment. In every case the lower the risk point total, the higher the risk, and the higher the risk point total the lower the risk.

Bellow we provide a brief description of each of the components with the maximum number of points assigned.²⁹

Government Stability – 12 Points

This is a measure both of the government's ability to carry out its declared program(s), and its ability to stay in office. This will depend on the type of governance, the cohesion of the government and governing party or parties, the closeness of the next election, the government's command of the legislature, popular approval of government policies, and so on.

Socioeconomic conditions – 12 Points

This is an attempt to measure general public satisfaction, or dissatisfaction, with the government's economic policies. Socioeconomic conditions cover a broad spectrum of factors ranging from infant mortality and medical provision to housing and interest rates. Within this range different factors have different weight in different societies. Weighting is performed on the basis of the relative importance of those factors for the society in question.

Investment Profile – 12 Points

This is a measure of the government's attitude to inward investment as determined by the assessment of four sub-components: the risk to operations; taxation; repatriation; and labor costs.

Internal Conflict – 12 Points

This is an assessment of political violence in the country and its actual or potential impact on governance. The highest rating is given to those countries where there is no armed opposition to the government and the government does not indulge in arbitrary violence against its own people. The lowest rating is given to a country embroiled in an on-going civil war. The intermediate ratings are awarded on the basis of whether the threat posed is to government and business or only business (e.g. kidnapping for ransom); whether acts of violence are carried out for a political objective (i.e. terrorist

²⁸ We use simple average of monthly ratings to obtain annual ratings.

²⁹ We refer our readers to the ICRG Guide to the Rating System for more details on the rating scheme and methodology used in constructing these indices.

operations); whether such groups are composed of a few individuals with little support, or are well-organized movements operating with the tacit support; whether acts of violence are sporadic or sustained; and whether they are restricted to a particular locality or region, or are carried out nationwide.

External Conflict – 12 Points

The external conflict measure is an assessment both of the risk to the incumbent government and to inward investment. It ranges from trade restrictions and embargoes, whether imposed by a single country, a group of countries, or the international community as a whole, through geopolitical disputes, armed threats, exchanges of fire on borders, border incursions, foreign-supported insurgency, and full-scale warfare.

Corruption – 6 Points

This is a measure of corruption within the political system. It stresses actual or potential corruption in the form of excessive patronage, nepotism, job reservations, 'favor-for-favors', secret party funding, and suspiciously close ties between politics and business. Since it is difficult to assess the degree to which political corruption represents a potential risk before it suddenly erupts in a major scandal, one possible early indicator of potential corruption is the length of time a government has been in power continuously while taking into account the political structure of the country in question. Additionally, this indicator captures financial corruption in the form of demands for special payments and bribes connected with import and export licenses, exchange controls, tax assessments, police protection, or loans.

Military in Politics – 6 Points

This indicator measures involvement of military in politics. A full-scale military regime poses the greatest risk while lower risk ratings indicate a greater degree of military participation in politics and a higher level of political risk.

Religious Tensions – 6 Points

Religious Tensions index is based on several components including the domination of society and/or governance by a single religious group that seeks to replace civil law by religious law and to exclude other religions from the political and/or social process; the desire of a single religious group to dominate governance; the suppression of religious freedom; the desire of a religious group to express its own identity, separate from the country as a whole.

Law and Order – 6 Points

Law and Order are assessed separately. The Law sub-component is an assessment of the strength and impartiality of the legal system, while the Order sub-component is an assessment of popular observance of the law.

Ethnic Tensions – 6 Points

This component measures the degree of tension within a country attributable to racial, nationality, or language divisions. Lower ratings are given to countries where racial and nationality tensions are high because opposing groups are intolerant and unwilling to compromise. Higher ratings are given to countries where tensions are minimal, even though such differences may still exist.

Democratic Accountability – 6 Points

This is a measure of how responsive government is to its people, on the basis that the less responsive it is, the more likely it is that the government will fall, peacefully in a democratic society, but possibly violently in a non-democratic one.

Bureaucracy Quality – 4 Points

This indicator measures institutional strength and quality of the bureaucracy with high points are given to countries where the bureaucracy has the strength and expertise to govern without drastic changes in policy or interruptions in government services. Countries where change in government tends to be traumatic in terms of policy formulation and day-to-day administrative functions receive low points.

An Empirical Decomposition of Mean Changes in Macroeconomic Variables.

All of variables determining behavior of macroeconomic variables in our model could be separated into several potential groups: IMF program implementation effects, institutional and political factors, autoregressive and mean-reversion dynamics of the macroeconomic variable, and some other factors. The magnitude and significance of the regression coefficients reported in Tables 6-9 shed some light on the relative importance of each of the sources. To investigate this issue in more details and to get a better insight about relative contribution of each of the sources to the resulting change in macroeconomic variable, we implement the following exercise. Setting variables used in the 3SLS regressions of Tables 6a-9a to their mean values and using estimated coefficients, we compute contribution of each of the model variables to the changes in inflation, economic growth, current account and fiscal balance ratios. Using means of actual changes in those variables as anchors, we can draw some conclusions about relative contribution of IMF program implementation and institutional factors to the observed dynamics in macroeconomic variables. Table B1 summarizes results of the described experiment for the one, two, and three year horizon estimates when disbursement ratio was used as a measure of IMF program implementation.

For all four variables, autoregressive and (mostly) mean-reversion terms are responsible for a large portion of the variation in the explanatory variable regardless of the horizon length. Initial per capita real GDP is also very important for the determination of variation in macroeconomic variables but the size of this effect decreases with the length of the horizon for most of the variables (the only exception is the change in economic growth rates). The marginal impact of political and institutional factors and of IMF program implementation on the dynamics of macroeconomic variables varies over time. To investigate this issue in more details, we compute ratios of the percentage contribution of each of these groups of factors to the contribution of the autoregressive and mean-reversion terms.³⁰ Plotting these ratios for each of the considered macroeconomic variable against the time horizon (see Figures B1-B4) helps to highlight several interesting observations:

- IMF program implementation is the driving factor of inflation dynamics in the first and second years following program initiation. While working in the same direction as the variable's autoregressive and mean-reversion dynamics, the magnitude of the impact of the IMF program implementation is roughly 3.5 and 1.9 times greater for horizons T and T+1 respectively. At the same time, all institutional and political factors combined

³⁰ More specifically, Table B1 reports the following ratios:

$$\frac{\text{IMF Program Implementation Effect, \%}}{\text{Autoregressive and Error – Correction Dynamics, \%}} \text{ and } \frac{\text{Political and Institutional Effects, \%}}{\text{Autoregressive and Error – Correction Dynamics, \%}}$$

together are pushing inflation upward and are especially important for inflation dynamics over the two year horizon (approximately twice of the magnitude of the mean-reversion terms).

- While both institutional factors and IMF program implementation are important in the determination of growth rates over one and three year horizons, institutional and political conditions have quantitatively greater impact. Interestingly enough, IMF program effects are growth stimulating for all of the horizons as reflected by positive percentage contribution to the positive mean change in economic growth. On the other hand, institutional and political factors combined together tend to reduce economic growth in the short-run (as reflected by negative percentage contribution of these factors to the positive mean change in growth rates for horizon T), while working in the opposite direction in the long-run (positive percentage contribution for horizon T+2).
- Influence of institutional factors and effects of IMF program implementation are very similar in shape but have the opposite outcomes for the ratios of fiscal balance to GDP. Institutional factors are particularly important in determination of fiscal balance dynamics over one and three year horizons. IMF program implementation is very important over the two year horizon.
- IMF program implementation is the major determining factor for the current account over the first program year. The magnitude of the impact is very large and is more than seven times greater than the autoregressive and mean-reversion dynamics magnitude. It appears that IMF program implementation tends to have a deteriorating effect on current account for the short-run while improving it in the T+2 horizon. While having strong impact on current account dynamic over all horizons, the relative importance of the institutional factors increases with the length of the horizon.

Figure B1

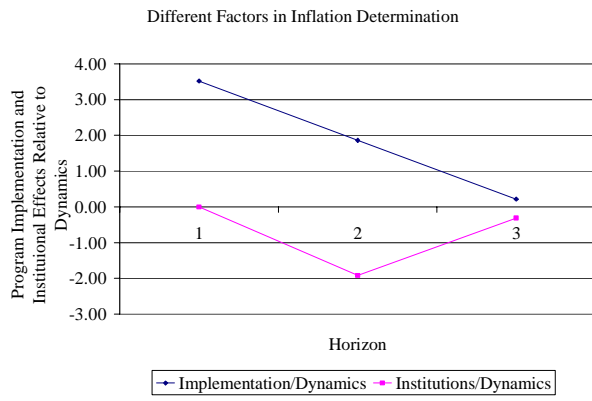


Figure B2

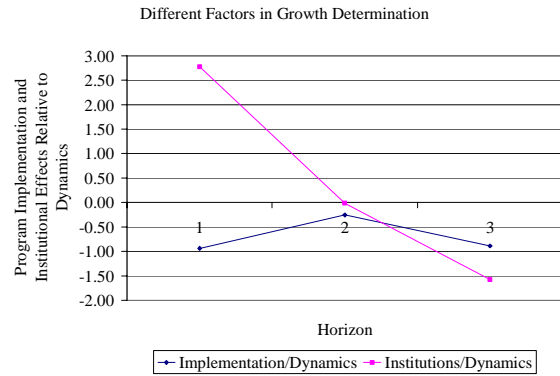


Figure B3

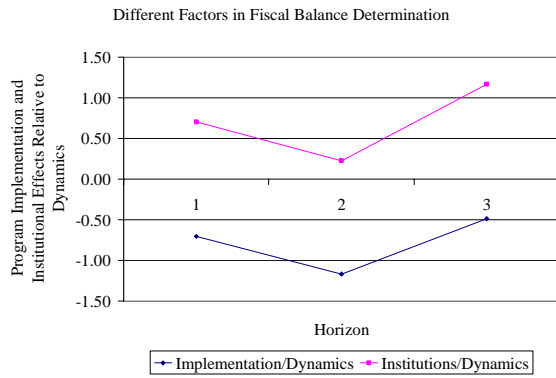


Figure B4

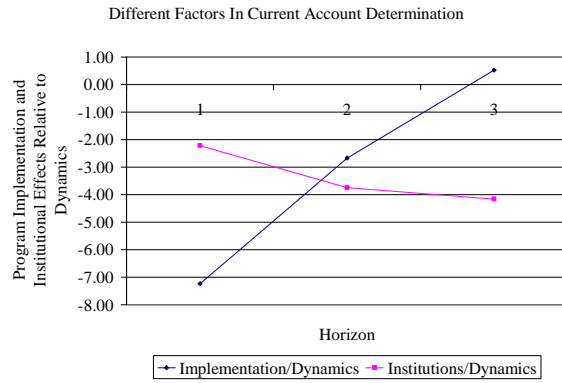


Table B1. Relative Importance of Different Factors in Macro Variables Mean Change Determination

Macroeconomic Variable:	Inflation			Growth			Fiscal Balance Ratio to GDP			Current Account Ratio to GDP			
	Horizon:	T	T+1	T+2	T	T+1	T+2	T	T+1	T+2	T	T+1	T+2
IMF Program Implementation Effect , (%)		6154	552	32	150	19	99	-121	-167	-91	-306	-164	116
Initial Per Capita Real GDP, (%)		7143	617	19	255	36	363	156	-74	-57	-117	-184	-7
Autoregressive and Mean-reversion Dynamics, (%)		1751	297	146	-160	-76	-111	172	142	186	42	61	224
Political and Institutional Effects, (%)		-11	-570	-45	-444	1	175	121	32	217	-94	-230	-934
Other Explanatory Variables, (%) 1/		-14937	-796	-51	298.73	119.78	-425.53	-227.14	165.76	-155.71	574.95	616.50	699.44
Total Effect, (%)		100	100	100	100	100	100	100	100	100	100	100	100
Actual Mean Change in Macro Variable		-1.47	-11.26	-24.94	1.03	1.97	1.46	0.012	0.014	0.013	0.016	0.014	0.011
Ratio of IMF Effect to Autoregressive and Mean-Reversion Dynamics		3.51	1.86	0.22	-0.94	-0.26	-0.89	-0.71	-1.17	-0.49	-7.23	-2.67	0.52
Ratio of Institutional and Political Effects to Autoregressive and Mean-Reversion Dynamics		-0.01	-1.92	-0.31	2.78	-0.01	-1.57	0.71	0.23	1.17	-2.22	-3.75	-4.16

1/ Other explanatory variables include constant term, dummy for precautionary arrangements, and year dummies.