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Ball, Richard
Rausser, Gordon C.

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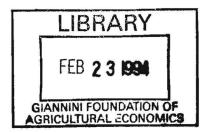1993-12-01

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GOVERNANCE STRUCTURES AND
THE DURABILITY OF ECONOMIC REFORMS;
EVIDENCE FROM INFLATION STABILIZATIONS

by

Richard Ball and Gordon C. Rausser[*]

[*]Assistant Professor, Department of Economics, University of Haverford, an
Robert Gordon Sproul Distinguished Professor, Department of Agricultural an
Resource Economics, University of California at Berkeley, respectively.

GOVERNANCE STRUCTURES AND

THE DURABILITY OF ECONOMIC REFORMS:

EVIDENCE FROM INFLATION STABILIZATIONS

Richard Ball
Assistant Professor
Department of Economics
Haverford College

Gordon Rausser
Robert Gordon Sproul Distinguished Professor
Department of Agricultural and Resource Economics
University of California, Berkeley

Please address correspondence to:
Richard Ball
Department of Economics
Haverford College
Haverford, PA 19041
USA

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Abstract

This paper investigates the relationship between a country's political-economic and institutional environment, and its ability to implement sustainable economic reform programs. The policy issue on which the study focuses is inflation stabilization. It consists principally of econometric estimations of the relationship between the success of stabilizations in a large sample of countries and several political and economic explanatory variables. The hypotheses tested are drawn both from the recent macroeconomic literature on policy credibility and from political science. The major findings include the following: (1) Despite the "conventional wisdom" to the contrary, political repression does not appear to be an effective means for implementing sustainable stabilization policies. Durable economic reforms and political freedoms appear to be complementary. (2) As has been previously argued theoretically and demonstrated empirically, political instability is detrimental to policy reform. (3) The political will and popular consensus for stabilization policies are enhanced during a severe economic crisis. (4) There is weak evidence that intervention by the IMF, rather than supporting reform programs, can undermine their credibility.

GOVERNANCE STRUCTURES AND
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1. Introduction

This paper investigates the relationship between a country's political-economic environment and its ability to implement sustainable economic reform programs. The particular policy issue on which the study is focused is inflation stabilization. The political economy of stabilization has long been the subject of a rich literature generated largely by political scientists, but in the last ten years there has also been an explosion of research among economists on the political economy macroeconomic policy. Much of this research, however, has been theoretical[1]; the purpose of this paper is to test some of this theory's implications empirically.

The analysis focuses on four issues that have been debated both in political science and in the recent literature on the credibility of macroeconomic policy. First, there has been considerable controversy over the proposition that, since stabilization policies are often politically unpopular, they are unlikely to be implemented in the absence of authoritarian political institutions capable of withstanding popular pressure. Our results suggest that although the nature of the political regime does have important implications for the outcomes of stabilization programs, this "conventional wisdom" is too simple and does not provide a good description of recent experiences with stabilization. Second, as has been predicted in theoretical models and demonstrated in previous empirical studies, political instability is shown to be detrimental to the implementation of sustainable reforms. Third, evidence is

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[1]See section 2 for some notable exceptions.

presented in support of the proposition that a severe economic crisis, by mobilizing political will and popular consensus, can enhance the prospects of stabilization efforts. Finally, there are conflicting views in the literature over whether assistance from international financial institutions such as the IMF effectively supports stabilization programs, or whether such assistance might actually undermine the credibility of the reforms. We investigate this issue, but our results are not conclusive.

An important feature of the analysis is that it considers the effects of a country's political-economic environment over different time horizons, ranging from one to four years following the onset of an episode of very high inflation. This temporal dimension turns out to be particularly important in relation to the question of whether an authoritarian government is necessary for the successful implementation of stabilization measures. Our empirical model reveals a positive and significant relationship between inflation reduction and repressive governments in the short run of one or two years. However, if a slightly longer time horizon of three or four years is adopted, then countries that allow greater political rights are most successful. A central conclusion of the paper is thus that although an authoritarian government may be able to rely on repressive measures to implement unpopular stabilization policies in the short run, such measures are difficult to sustain. Greater political openness and participation is required to build the consensus necessary for the implementation of durable inflation reduction policies.

The methodology of study is simple. We construct a sample of "inflation episodes," each of which represents a date at which a country experienced a sharp increase in its inflation rate. The sample includes episodes from countries from all regions of the world that experienced extraordinarily high inflation at some time (or times) between the first OPEC shock in the early 1970s and the present. For each of the "inflation episodes" in the sample, the endogenous variable to be explained is the extent to which policy-makers

succeeded in implementing and sustaining measures to reduce inflation. This variable is measured simply as the percentage reduction in inflation observed following the onset of the high inflation. A system of four equations is estimated, where the dependent variables are the observed reductions in inflation one, two, three and four years following the initial year of the episode. A variety of exogenous variables are used to explain the realized changes in inflation. Per capita GDP, growth in GDP and changes in oil prices are incorporated to control for economic conditions. Of greatest interest, however, is a set of political and institutional variables chosen to reflect the four broad issues identified above: the degree of political openness or repression in the country, political stability, the severity of the economic crisis, and the involvement of the IMF in the implementation of stabilization measures.[2]

While most of the modern literature on the political economy of macroeconomic policy has been theoretical, several recent papers have investigated these issues empirically. The general approach of these papers has been to perform time-series/cross-section or simply cross-section regressions of mmacroeconomic indicators, such as budget deficits and inflation rates, against a variety of political explanatory variables. Roubini and Sachs (1989), in a study of industrial democracies, find that fractionalized governments, such as

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[2]In the interest of keeping the analysis focused and of a manageable scope, we leave aside related questions that deserve study in their own right. We do not, for instance, ask what factors lead certain countries to get into trouble with inflation in the first place. Rather, the starting point of the study is a sample of episodes in which, for whatever reasons, countries experienced very high inflation at some time in the 1970s or 1980s; the focus is then on why some countries managed to restore stability while others fell into deepening crises. Moreover, the focus is on the problem of macroeconomic stabilization, rather than on issues relating to longer term structural reform. This certainly implies no presumption that the latter type of reforms are somehow of second order importance. On the contrary, there is growing recognition that successful, sustainable stabilization is often dependent on simultaneous microeconomic adjustment. Macroeconomic stabilization, however, can be viewed as a necessary, if not sufficient, step toward restoring equilibrium and sustainable growth, and as such merits particular scrutiny.

coalition governments with many partners or minority parliament governments, have a great deal of difficulty managing budget deficits. Grilli *et al.* (1991) perform a closely related analysis for 18 OECD countries, and find that high budget deficits are correlated with rapid turnover of governments. Political instability is also a key factor in a study by Cukierman *et al.*(1992), who investigate why countries differ in the proportion of government revenue that they raise through seignorage. The findings of these studies are broadly consistent with one of the results of this paper: greater political instability is associated with greater macroeconomic instability. The present research, however, goes farther in several ways. Our sample includes a larger and more diverse set of countries, and we do not restrict our attention to industrial democracies or OECD countries.[3] In addition, while political instability is one important issue investigated in this paper, we also consider the additional factors of regime type (authoritarian or open), the severity of the economic crisis, and intervention by the IMF.

Another voluminous empirical literature uses cross-country regressions to investigate the relationship between GDP growth and institutional factors. Scully (1988, p. 661) presents evidence that "Politically open societies, which bind themselves to the rule of law, to private property, and to the market allocation of resources, grow at three times...the rate [of]...societies in which these freedoms are circumscribed or proscribed." Barro (1991) finds (among other results concerning the role of human capital and levels of GDP) that growth in GDP is negatively related to political instability, and also presents weak evidence that socialist countries grow more slowly than free enterprise or mixed economies. Levine and Renelt (1992) and Przeworski and Limongi (1993) present critical reviews of this literature on cross-country growth regressions.

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[3]Of the work cited in the previous paragaph, Cukierman *et al.* use the most diverse sample, consisting of 79 countries from throughout the world.

What distinguishes this study from this previous empirical work is that we focus not on levels of macroeconomic indicators--growth, deficits, or inflation--but on the process of *reform* following the onset of a crisis. Rather than basing our data set on a broad time series and/or cross-section of countries and asking how political and institutional factors affect average performance, we began by constructing a set of *episodes* in which there was a clear need for stabilization, and asked how such factors affect the success of reforms aimed at reducing inflation. In this respect, our approach is most closely related to a paper by Edwards and Santaella (1991), which analyzes the determinants of success of a number of exchange rate reforms. They divide a sample of 35 attempted devaluations into those which succeeded and those which failed, and use a probit analysis to assess the effects of a variety of political explanatory variables in the determination of this success or failure. The policy issue--exchange rate devaluation--is different, but the main conclusion (p. 32) is familiar: " 'failure' countries indeed appear to have a more unstable political structure."

The paper is organized as follows. Section 2 contains a review of the literature on the political economy of stabilization. This review draws on literature both from political science and from the recent work on macroeconomic policy credibility, and highlights the issues to be investigated empirically. Section 3 describes the method by which the sample of "inflation episodes" used in the empirical analysis was constructed. The principal criterion used to define an episode is that a country's inflation rate in a certain year jumped dramatically relative to its own recent experiences with inflation. The selected explanatory variables are defined in section 4, and the econometric estimations and their results are presented in section 5. Concluding remarks are offered in section 6.

2. Major Themes in the Literature

This section discusses several recurring themes that have appeared in the enormous literature on the political economy of stabilization. The issues identified here motivate the empirical tests that follow.

Political Rights vs. Political Repression

Recent reports in the popular press implicitly take the view that too much democracy can lead to the reversal of reforms. This has been true, for instance, in reporting on the process of democratization and liberalization underway in Eastern Europe. An article in the *New York Times* (July 7, 1991, p. 1) stated that:

> Even as economic changes bear their first fruit in Czechoslovakia, Poland and Hungary, strikes and protests are increasing pressure on governments. Political leaders find themselves walking a tightrope, wanting to carry out economic transitions as fast as possible but worried that public dismay with the pain could throw them out of office...Now, with an eye to the ballot box, some government officials want to relax their radical programs...

The *Economist* (September 21, 1991, pp. 29-30 of the survey of *Business in Eastern Europe*) has similarly suggested that a democratic government may not be able to withstand popular opposition to reforms:

> It may be too much to expect democratically elected politicians not to listen to such opposition. But Eastern Europe's only hope of achieving the prosperity and stability of the industrialized world depends on how deaf, and determined, the region's reformers will be over the next year or two.

Among political scientists, the relationship between governance structures and the prospects for economic reform has been the subject of extensive debates and a voluminous literature. Haggard and Kaufman (1989, p. 270) have gone so far as to say that "The major debate on stabilization among political scientists concerns whether authoritarian or elected governments are more 'successful' at stabilization." Nelson (1990, p. 22) gives a concise account of a prevalent view:

> At least since the 1970s, the assumption has been widespread that authoritarian governments are more likely than democracies to decide upon and enforce unpopular economic stabilization and adjustment measures. Authoritarian governments, it was hypothesized, are better able to make long-run plans than are governments tied to electoral cycles...Further, authoritarian regimes have less need to respond to either broad popular pressures or vested interests; they can more readily base their decisions on criteria of economic rationality. And, authoritarian governments are better able than democratic governments to forestall protest through anticipated repression and to suppress protest if it occurs.

An important school of thought in the political science research on this topic is the literature on "bureaucratic-authoritarianism," which originated in the 1970s and concentrated primarily on the experiences of the countries of Latin America[4]. Collier (1979, p. 3) provides a concise statement of one of the major propositions debated in this literature: "Since austerity programs had often been vigorously opposed by the popular sector, in part through such channels as labor organizations and elections, the controls over these forms of

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[4]See O'Donnell (1973) for a seminal reference.

political expression appeared essential to the effort to sustain the new economic policies and to achieve economic growth."

One influential study in this literature was carried out by Skidmore (1977). In a study of ten major stabilization programs undertaken in Argentina, Brazil and Mexico between 1945 and 1973, Skidmore analyzed the question of whether "authoritarian regimes [have] been better able to withstand the political opposition generated by the kind of stabilization programs attempted." The frequently cited conclusions of his study (p. 181) were that

(1) governments in competitive political systems find it *extremely* difficult to reduce inflation...and they have paid very high political costs for their efforts;

(2) no such government has proved able to pursue a successful...anti-inflation effort;

(3) all the cases of successful stabilization have been carried out by authoritarian (or one-party) governments;

(4) even authoritarian governments must have a high degree of internal consensus to carry through a successful stabilization.

In a more recent study, however, Remmer (1986, p. 1) challenges the "conventional wisdom" that "stabilization policies pose such unacceptably high political risks for democratic governments in Latin America that authoritarianism is virtually a prerequisite for successful adjustment." Remmer's sample includes 114 IMF stand-by arrangements entered into by nine different Latin American countries between 1954 and 1984. She classifies the government in power at the time of each of these programs as democratic or authoritarian, and asks two questions: (1) Are democratic governments more likely than authoritarian ones to be removed from power following the implementation of an IMF program? and (2) Do authoritarian governments implement tougher stabilization policies (in

terms of deficit reduction, spending restraint, and limitations of credit expansion) than democratic governments? She finds the performance of democratic and authoritarian regimes with respect to these two criteria to be virtually indistinguishable.

In the empirical tests in this paper, we push this debate farther by introducing a temporal dimension, and asking whether the relative success of stabilizations in authoritarian and democratic governments depends upon the time horizon that is considered.

Political Instability and Government Time Horizon

Several recent empirical and theoretical studies have found evidence that political instability is often translated into macroeconomic instability. In particular, it has been argued that when governments turn over rapidly, so that any regime in power expects that it might not remain there for long, it is likely that economically destabilizing policies will be pursued. Roubini and Sachs (1989), for instance, carried out an empirical study of budget deficits in a sample of industrial democracies. In pooled cross-section time-series regressions of budget deficits against political explanatory variables, they come to the conclusion that "multi-party coalition governments, especially those with a short expected tenure, are poor at reducing budget deficits" (p. 922). Their interpretation of this result is that "To the extent that the rapid turnover of governments reduces the time horizon for the repeated play among coalition members, their incentives to cooperate are reduced" (p. 925). In a similar study of OECD countries, Grilli *et al.* (1991) find that "Governments with short horizons act myopically and never quite tackle the hard choices" (p.341).

Several recent theoretical papers have offered explanations for this observed regularity. An important class of models turns on the idea that if a government expects that it may be removed from power and replaced by another regime with conflicting policy priorities, then it will have an incentive to choose current policies that will constrain the set of feasible

policies of its successor. Alesina and Tabellini (1990) develop such a model to explain why governments might run larger than optimal budget deficits. In their model, the current government's choice of fiscal policy is governed not only by a static optimization problem, but also by considerations of how current policy will affect future policy should the opposition regime take power. By running a deficit today, the government increases its successor's marginal cost of raising revenue, and so constrains its ability to pursue its preferred investment policy. Among their comparative static results are the findings (p. 404) that "the equilibrium level of public debt will be larger: (i) the larger is the degree of polarization between alternating governments; (ii) the more likely it is that the current government will not be reappointed." Persson and Svensson (1989) construct a closely related model of fiscal policy in which budget deficits act as a "state variable that gives the current government an instrument to control the future government" (p. 326). In these models, it is the combination of a positive probability of being removed from power, and the likelihood of being replaced by a regime with conflicting policy preferences that lead to this destabilizing behavior of "tying your successor's hands". The logic applies both to countries in which regime changes occur through elections, as well as to those in which power is frequently transferred through military force.

Crises

Another idea explored in the macro political economy literature is the proposition that reforms may be more likely to succeed when they are initiated during an acute economic crisis. Drazen and Grilli (1993), for instance, construct a model in which two groups in society cannot agree upon who will bear the burden of increased taxation necessary to eliminate a budget deficit. The government consequently resorts to inflationary money creation to finance the deficit, and the situation persists until one group agrees to bear a

disproportionate share of the tax burden required to balance the budget. A principal result of the paper is that since high inflation increases the cost of postponing a stabilization, it leads the groups to come to a speedier resolution of the stalemate. The empirical implication is that "countries may have to suffer some serious inflation if they are to adopt fiscal policies consistent with a long-run low inflation path" (p. 16).

Dornbusch *et al.* (1990) present two sides to the debate over whether crises should enhance or undermine economic reforms. On the one hand, extreme inflation may be hard to eliminate because of "hysteresis": "During a hyperinflation, tax administration and compliance erode, financial institutions adapt [through indexing, for instance], and pricing shifts to a short horizon. Stabilization may not reverse these changes for some time" (p. 49). On the other hand, Dornbusch *et al.* also present reasons for why crises may be beneficial for stabilization. Their argument closely parallels the logic behind the model of Drazen and Grilli:

> It may be, however, that while sound economic arguments can be made for early stabilization, political considerations outweigh them. A cure to the inflation problem requires political consensus for, and a commitment to, balancing the budget. When inflation is moderate to high, budget balancing is viewed as a negative sum game. Too many participants feel that stabilization is costly to *them* and too few perceive that the reduction in resource waste will more than cover their costs. Party politics will dominate, coalitions for disinflation will be blocked, and inflation stabilization will not often succeed.

> According to this view, it is better to let inflation escalate all the way. In a hyperinflation, the disruption of normal economic life and the extravagant cost of carrying on business that are caused by extreme inflation create the political basis for

a national unity government or emergency powers, which would be the basis of a forceful and lasting stabilization.

In the political science literature, on the other hand, weak evidence has been found indicating that inflation is *harder* to control once it has reached a very high level. Haggard and Kaufman (1992) studied fifty-five inflation episodes in seventeen Latin American and Asian countries between 1960 and 1986, and find that "inflations were increasingly difficult to control as they moved toward higher levels" (p. 299): two thirds of moderate inflations were reduced, but only about half of the high or very high cases were reduced. Although Haggard and Kaufman advise caution in generalizing these results based on their limited sample, they present a counterpoint to the views of Drazen and Grilli and of Dornbusch *et al.*, suggesting that further empirical investigations are warranted.

The Role of International Financial Institutions

International financial institutions such as the IMF and the World Bank frequently support stabilization efforts with loans and policy advice (the former often being conditional on faithful adherence to the latter). There is some debate over how such intervention by international financial institutions affects the outcome of stabilization programs.

Dornbusch *et al.* (1990) cite two ways in which external support can enhance credibility. First, it can provide an oversight role, most directly by making loan disbursements conditional on the implementation of prescribed policy reforms. They cite an historical example (p. 56) of how

> external parties can monitor programs when credit is linked to performance. Austria and Hungary in the 1920s had such an arrangement with the League of Nations. Resident commissars reinforced discipline and watched the budget daily. Tax

reform was a precondition for stabilization loans, and the commissar could deny approval of spending projects.

They go on to argue (pp. 56-57) that, in addition,

external support can provide the foreign exchange that is essential for exchange rate stabilization. The availability of foreign exchange reserves raises that backing of domestic money, thus improving confidence...foreign financial support helps to mobilize confidence and to encourage repatriation of capital.

On the other hand, it has also been argued that IMF assistance can undermine the credibility of reform measures. Nelson (1984, pp. 1000-01), for instance, has stated that[5]

If external assistance is generous enough to ease the imminent threat of financial crisis, by that very fact it will also remove the main incentive for reluctant politicians to agree and follow through on needed but painful reforms, at least in the short run.

Rodrik (1989) develops a theoretical model suggesting that conditional assistance from an international financial institution can undermine the credibility of stabilization policies. He assumes some uncertainty on the part of the public about the "type" of the government—whether it truly wants to reform, or whether it is, in fact, motivated by redistributional goals[6]. In this situation, foreign assistance provided conditional upon the initiation of

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[5]Nelson goes on to argue that, on the other hand, "if external assistance is not generous enough, the same leaders will conclude that the game is not worth the candle: the meager and short-lived foreign exchange relief being offered is not sufficient to counterbalance the political risks incurred by undertaking a formal stabilization program." Too much assistance can be damaging, but so can too little.

[6]The analysis is couched in terms of trade policy reform, but he argues that its results are general.

reforms can lead the public to be skeptical about whether the government is undertaking the program because it really cares about reform, or simply in order to receive the associated financial aid. Rodrik (p. 758) argues that

> Consequently, governmental assurances that the reform will not be reversed in the future are taken with a reasonable grain of salt. Notice that foreign aid results in a hidden cost: by skewing the incentives of the 'redistributive' government, it makes is more difficult for the 'liberalising' government to reveal its true type.

When the public is unsure about the government's true commitment to sustaining economic reforms, therefore, external financial assistance provided conditional on the implementation of these reforms can further muddy the waters and reduce the program's credibility.

This section has discussed several key issues and debates in the political economy of economic reform that motivate the empirical tests carried out in this paper. To implement these tests, we needed first to construct a sample of episodes in which countries were confronted with extreme inflation that necessitated the adoption of stabilization measures. The criteria by which this sample was selected are explained in the following section.

3. Sample Selection

This study focuses on the experiences of a sample of countries that were faced with episodes of high inflation that required stabilization measures at some time between the first

oil shock of 1973 and the mid 1980s.[7] The initial universe of countries considered were the 138 countries for which data is available in the Summers and Heston (1991) Penn World Table data set. Broadly stated, the main criterion for including a particular country and year in the sample was that the country experienced a level of current inflation that was very high relative to the country's recent historical experience with inflation. The precise criterion used was that the current annual rate of inflation had to be at least twice the country's trend inflation, where trend inflation is defined simply as the average of the rates of inflation in the three previous years. Considering inflation relative to past inflation, rather than relative to some absolute standard used across all countries, follows the observation of Haggard and Kaufman (1992, p. 281) that "in selecting and analyzing cases, it is essential to be attentive to the rates of change of inflation as well as inflation itself. An increase in the rate of inflation from 5 to 10 percent may be as explosive for a society accustomed to stable prices as a change from 50 percent to 100 percent in a country that has lived with rapid price increases for long periods of time."

The initial sample of countries/dates yielded by this broad selection criterion needed to be refined in several ways. First, for some countries, current inflation exceeded trend inflation by a factor of two for several consecutive years, or for a number of years within a short interval. It was not clear in these situations how to define the starting point of any particular episode. This problem was resolved by imposing the additional requirement that inflation spikes be separated by at least five years to be counted as distinct episodes. A second problem was that the initial criterion picks up several cases of countries with persistently low inflation that clearly do not belong in a study of stabilization. In West

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[7]Cases later than 1986 or 1987 cannot be included in the sample because we need four years of data from *after* the onset of the crisis to observe the extent to which inflation was successfully controlled.

Germany, for instance, average inflation between 1968 and 1970 was 2.3%. The 1971 rate of 5.2% was more than twice this three year average, but hardly constitutes a stabilization crisis. To eliminate such spurious episodes, all cases in which current inflation was less than 10 percent were deleted from the sample.[8] Conversely, in some countries trend inflation was so high that even extreme current inflation did not represent a doubling of that trend. Despite the severe instability faced by these countries, the initial selection criterion did not place them in the sample. An additional criterion by which a country could be selected for the sample was therefore introduced to capture such cases. Any case in which both current inflation and the three year average exceeded 100 percent was added to the sample. This criterion picked up the additional observation of Brazil 1983.

The resulting sample, consisting of 135 episodes in 95 countries, is presented in Table 1.

4. Variable Definitions

The Dependent Variable: Observed Inflation Stabilization

The empirical tests conducted in this paper examine the success with which inflation was stabilized in each of the episodes in the sample. The success of a country's stabilization efforts was measured simply as the percentage by which inflation actually fell following the jump in inflation marking the onset of the episode. These changes in inflation were measured one, two, three and four years following the beginning of the episode, and

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[8]The threshold of 10% is high enough to eliminate cases such as West Germany, yet low enough not to exclude some interesting cases, such as the U.S. and the U.K. after the first OPEC oil shock.

separate equations were estimated with each of these specifications of the dependent variable. For country i, these variables are denoted $CHNGINF_{is}$, s=1, 2, 3, 4.

Explanatory Variables: Political-Economic and Institutional Factors

Among the explanatory variables specified in the model, of greatest interest are a set of political-economic and institutional explanatory variables corresponding to the four broad themes discussed in the section 2. These include ratings of the repressiveness of the regime or the political rights of the people of each country, a measure of the degree of political instability of the countries in the sample, and indicators of whether the inflation was severe enough to be considered a crisis and whether the country's stabilization efforts were supported with loans from the IMF.

The measures of the repressiveness of the political regime or citizens' political rights are based on Gastil's (1988) rating of political rights. This indicator, which he has constructed for a cross-section of 168 countries for the years 1973 to 1988, considers, for example, whether the chief executive comes to power through regular, free and fair, multi-party elections, whether the military has excessive influence over the civil government, whether foreign influence plays a dominant role in domestic policy, whether there is decentralization of decision making authority to several levels throughout the country, and whether groups in society who do not formally hold power can nonetheless exercise some influence over political processes and decisions (see Gastil, 1985, pp. 5-8). On the basis of these criteria, Gastil assigns a rating of 1 to 7 to each country each year, with higher values reflecting fewer political liberties or greater repression. Two dummy variables were constructed using these ratings. The variable $GOODPOL$ takes on a value of 1 for those countries that received ratings of 1 or 2, and a value of 0 for all countries with higher ratings. The

variable *BADPOL* takes on a value of 1 for countries with a rating of 6 or 7, and a value of 0 for all countries with lower ratings.

Our indicator of political instability was taken from Taylor and Jodice (1983) *World Handbook of Political and Social Indicators*, volumes 1 and 2.[9] This data set contains annual observations, from 1948 through 1982, on the number of occurrences each year of a variety of political events in a cross-section of 164 countries. As a measure of the frequency of government turnover, we simply added up the number of times in the ten years preceding the inflation episode that attempts were made to remove the county's executive leadership from power, successfully or unsuccessfully and constitutionally or unconstitutionally. The sum of these events was recorded in the variable *TFER*. While this historical data is not a perfect measure of a government's expectations of future events, it does correspond closely to the notion of the government time horizon that is central to the literature on political instability.

To test for effects of the severity of the economic crisis being experienced in each episode, a dummy variable *CRISIS* was included in the regressions. This variable was assigned a value of one if current annual inflation exceeded 100%, and a value of zero otherwise.[10] To test for any systematic effects of IMF involvement, a dummy variable IMF_{is} was included in each equation, indicating whether country i had received either a Stand-By loan or an Extended Fund Facility loan, the two major types of assistance used by the IMF to support stabilization efforts. This variable was assigned a value of one if the

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[9]The data set contained in Taylor and Jodice (1983, volumes 1 and 2) is available in computer readable form from the Inter-University Consortium for Political and Social Research in Ann Arbor, Michigan.

[10]This threshold follows the convention, adopted for instance by Sachs and Larain (1993, p. 726), of defining inflation in excess of 100% as "very high."

country received at least one of these forms of assistance in the two years preceding the inflation episode, or in the period of *s* years following the onset of the episode.

Explanatory Variables: Economic Conditions and Regional Dummies

In addition to these variables related to political-economic factors and institutions, several purely economic variables that may influence the path of inflation and the efficacy of stabilization efforts were included as well. These economic variables included per capita GDP (*PCGDP*) and growth in GDP (*GROWTH*). To control for major supply shocks associated with changes in energy prices, the variable *OILs*, showing the drop in the price of oil *s* years following the beginning of the episode, was also included. Finally, dummy variables were introduced to represent five major geographical areas: Sub-Saharan Africa (*AFR*), Asia (*ASIA*), Latin America, Central America and the Caribbean (*LA*), North Africa and the Middle East (*NAME*), and non-industrialized Europe[11] (*EUR*). To prevent perfect collinearity by construction, the industrialized countries were not assigned a dummy variable.

5. Empirical Tests and Results

The empirical model consists of the four equations:

(1) $CHGINF_{is} = f(GOODPOL, BADPOL, IMF_{is}, CRISIS, PCGDP, GROWTH, OIL_s,$
    $AFR, ASIA, LA, NAME, EUR) + \varepsilon$ $s=1,2,3,4.$

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[11]The countries in this category included in the sample were Cyprus, Malta, Poland and Turkey.

This first set of equations was estimated for the entire sample of 135 episodes shown in Table 1. The four equations were estimated as a set of Seemingly Unrelated Regressions (SUR). To capture any systematic variation within various geographical areas, we adopted a "fixed effects" model, and included the regional dummy variables.

These initial equations did not include the political instability measure *TFER* on the right hand side because the data from which this measure is computed (Taylor and Jodice) are available only through 1982. A reduced sample, excluding all episodes later than 1982, was therefore constructed so that the political instability indicator could be included.[12] This sub-sample consisted of 111 episodes in 87 countries. Using the reduced sample and including the instability variable, we estimated equations of the form:

(2) $CHGINF_s = f(TFER, GOODPOL, BADPOL, IMF_s, CRISIS, PCGDP, GROWTH,$
$OIL_s, AFR, ASIA, LA, NAME, EUR) + \varepsilon \qquad s=1,2,3,4.$

Again, the technique used was SUR, with regional dummies controlling for fixed effects.

The results of the initial set of four equations shown in (1) are reported in Table 2. One of the most striking results of these regressions is the role played by the variables *GOODPOL* and *BADPOL*, representing the degree of political liberties enjoyed by the citizens of a country. In the first year of the episode, the sign on the coefficient of *BADPOL* is positive, and it is significant (p-value=.0111). The coefficient on *GOODPOL* is not significant, but its sign is negative. These results for year one thus suggest that more repressive regimes are more successful at stabilizing inflation over a horizon of one year.

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[12]Data for South Korea were also not available in the Taylor and Jodice data set, so the two Korean episodes had to be excluded from the reduced sample as well. The reduced sample consists of all countries shown on Table 1, except those marked by an asterisk.

This finding is consistent with the conventional wisdom that an authoritarian government may be necessary for the successful implementation of stabilization measures.

In subsequent years, however, the results change. The signs on *GOODPOL* and *BADPOL* in year 2 are the same as in year 1, but in this case neither is significant. In year three, the signs reverse: *GOODPOL* has a positive, and significant (p-value=.0610) coefficient, and the coefficient on *BADPOL*, although not significant, is negative. In year 4, the coefficient on *GOODPOL* is again positive and significant (p-value=.0813). The sign on *BADPOL* is positive, but quantitatively small, and far from statistically significant. The results of these latter two years are thus just the opposite of what was found in year 1 (and weakly in year 2), and contradict the notion that stabilization programs are more likely to succeed if civil liberties are curtailed.

What emerges from these results is a distinction between short and medium run effects. In the short run of a year or two, there does appear to be a negative relation between political rights and success in reducing inflation. When the time horizon is extended to three or four years, however, the relationship is reversed, and the countries with greater civil liberties tend to stabilize more effectively. These results suggest that repressive measures to implement stabilization policies despite popular discontent can be fruitful in the short run, but that longer term success is more likely in freer societies in which a democratic consensus can be built in support of the adjustment measures. Building this consensus may be costly in the sense that it takes time and may delay the implementation of stabilization policies, but it appears to pay off in greater sustainability of these policies.

The regressions also suggest that a state of severe economic crisis may improve the prospects of a stabilization program, and again an interesting temporal pattern is observed. In years 1 and 2, the coefficient on the dummy variable *CRISIS*, indicating those countries in which the annual rate of inflation exceeded 100 per cent, was insignificant. In both years

3 and 4, however, the coefficient is positive and significant (maximum p-value=.0721). These results support the argument of Drazen and Grilli (1993) that the high social costs of extreme inflation can break the stalemate among competing groups and help muster the political will to see through the policies necessary to stabilize prices. Again, though, this process takes time, and the benefits of the crisis do not become apparent until three or four years from the beginning of the episode.

The empirical results shed no definitive light on the question of whether IMF assistance enhances or undermines a stabilization program's credibility and ultimate success. The coefficient on the variable IMF_s was significant only in year 3. In this case the coefficient was negative (p-value=.0834), suggesting that countries receiving IMF support tend to have greater difficulty stabilizing than do countries that do not receive such support. This finding tends to support the proposition of Rodrik (1989) that IMF assistance can undermine the credibility of reform measures. The evidence, however, is weak: just one significant coefficient in four years.[13]

The economic conditioning variable OIL_s has precisely the anticipated effect. When the price of oil is falling (when the variable OIL_s takes on a large value), countries tend to experience large reductions in inflation. The relationship is positive in every year, and significant in three of the four years.

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[13] A confounding factor not considered here is that IMF loans may not be randomly distributed among countries in the sample. If it were the case that the IMF tended to intervene more frequently in countries in which instability appeared chronic and intractible, then the fact that countries receiving IMF loans do almost as well as countries not receiving such assistance would be evidence that the IMF programs were in fact helping countries stabilize. If, on the other hand, the IMF only extended support to countries whose prospects for stabilization were relatively favorable, then the fact that these countries did not do much better on average than those without IMF programs would lend support to the hypothesis that this external assistance was undermining the credibility of reforms.

Per capita GDP appears not to be related to stabilization performance. No correlation between how rich or poor a country is and how well it does at reducing inflation is evident in our data. In all years, the coefficient on *PCGDP* is quantitatively small and statistically insignificant.

How rapidly GDP is growing, however, does appear to have an important effect. In all four years, the coefficient on *GROWTH* was negative, and in three of the four years it is statistically significant. This negative relationship indicates that rapid growth may not be compatible with inflation stabilization. This may reflect the simple fact that many growth-promoting macro policies, such as reducing interest rates and expanding the money supply, also fuel inflation. This result thus supports the idea that stabilization usually comes about only with some austerity measures and some (at least short to medium term) sacrifice of economic growth.

Finally, no striking patterns emerge from the regional dummy variables. The only significant coefficient appears in year 3 on the variable *ASIA* (p-value=.0716); this coefficient is positive. Other than this, there appears to be no correlation between geographical region and successful stabilization. To the extent that different regions have had systematically different experiences with stabilization, therefore, those differences are already captured by the other variables in the regressions.

The results of the estimations of equations (2), which added the political instability indicator to the right-hand-side and excluded the pre-1982 observations for which data are not available, are shown in Table 3. The results show that the effects of the regime type dummies *GOODPOL* and *BADPOL*, and the variables *CRISIS* and IMF_s are qualitatively the same as they were in the original estimation of (1), although in some cases the significance levels are lower. What turns out to be most significant in this set of equations is the additional variable *TFER* representing the frequency of government turnover. In

every year, the coefficient on *TFER* is negative, and in three of the four years it is significant. This result supports the theoretical arguments of Alesina and Tabellini (1990) and Persson and Svensson (1989). Political instability appears to be strongly detrimental to the success of stabilization programs.

6. Conclusions

This paper has tested empirically some of the implications of both the recent literature on the credibility of macroeconomic policy and of the political science literature on the politics of economic stabilization. Among the most striking of the paper's results are those concerning the implications of the openness or repressiveness of the political regime of a country undertaking reforms. These results suggest that the debate over the relationship between governance structures and the success of stabilizations needs to be refined, in particular to take into account different temporal aspects of this relationship. Our main finding is that in the short run of one or two years, the "conventional wisdom" that painful economic reforms require an authoritarian government able to suppress popular resistance, is borne out by the data: countries with higher (more repressive) political rights rankings do better in the short run at reducing inflation. If one takes a slightly longer time horizon of three or four years, however, the result is just the opposite: countries with greater political freedoms are more successful at stabilizing inflation. This pattern suggests that in societies that allow greater political participation, it may take time to build the consensus necessary to implement inflation reduction policies, but once such consensus has been achieved the stabilization is more durable than in countries in which reforms were pushed through despite popular resistance. Previous studies [Remmer (1986), Haggard (1985)] that have rejected the hypothesis that repressive government regimes are necessary for the implementation of

stabilization policies have shown *no* relation between regime type and stabilization success. This study has gone one step further, and shown that, when we explicitly consider a time horizon beyond the short run of one or two years, there is in fact a *positive* relationship between political openness and successful stabilization.

A second important result concerns the effects of political instability. The particular form of instability on which we focused was the frequency of changes in executive power, which was meant to provide an indicator of the current government's expectation of how likely it was to be removed from office. Alesina and Tabellini (1990) and Persson and Svensson (1989) both argued theoretically that governments with short time horizons may pursue destabilizing policies (in particular, run large deficits) as a way of tying the hands of an ideologically opposed successor. Our results, like the previous empirical studies of discussed in section 6, suggest that these effects may in fact be very important.

Evidence was also found in support of the hypothesis that severe economic crises can be beneficial for the implementation of reforms. This result supports the view expressed, for instance, by Dornbusch *et al.* (1990, p. 49), that "the disruption of normal economic life and carrying on business that are caused by extreme inflation create the political basis for...a forceful and lasting stabilization." It is also lends empirical support to the theoretical analysis of Drazen and Grilli (1993) in which severe inflation leads to a quicker resolution of the war of attrition over which social classes will bear the burden of stabilization measures.

The evidence on the influence of IMF assistance on the sustainability of reforms was not conclusive. The results suggest only weakly a negative effect of IMF stabilization loans for inflation reduction. The hypothesis presented in Rodrik (1989), that IMF financial assistance can undermine the credibility of reforms by obscuring the true motivations of policy-makers, is at best weakly supported by the results of this study. On the other hand,

the argument of Dornbusch *et al.* (1990), that conditionality and exchange rate stabilization associated with external financial assistance tend to improve the prospects for a successful stabilization, is not supported by the data. As discussed above in footnote 12, however, these conclusions would have to be revised if it were shown that IMF loans were given to countries whose prospects for successful stabilizations were either more or less favorable than average.

Changes in the price of oil, one of the major exogenous shocks affecting the path of inflation, proved to be an important economic factor influencing the outcome of stabilization efforts. Stabilizations undertaken during a period of falling oil prices generally proved more successful than those undertaken as oil prices were rising. GDP growth was another statistically significant economic factor affecting inflation reduction. The regressions show a negative relationship between growth and stabilization. This may reflect a hard fact that macroeconomic stability, at least in the short to medium run, may come at the cost of some economic growth. The *level* of per capita GDP, however, did not appear to have any effect on the analysis: no systematic differences between the performance of rich and poor countries were detected.

The principal results, concerning the temporal pattern of the effects of political rights on the sustainability of stabilization programs, echo previous research on the relationship between political institutions and economic performance. McMillan, Rausser and Johnson (1991) investigated the relationship between reforms of political institutions and economic growth, and they found a positive relationship between improvements in political rights and civil liberties and economic growth. This relationship, however, was observed only after a lag: in the first few years after reforms, growth was negative on average; it was not until five years after the changes in the political regime that GDP began to expand. This result is analogous the finding of this paper that in the short run political rights are negatively

correlated with successful stabilization, but that in the medium run it is the politically more open countries that tend to do better controlling inflation. Although the issues examined in the two studies are distinct--McMillan *et al.* studied growth as a function of political reforms, whereas this paper considers the results of stabilization programs as a function of political institutions--they suggest a common interpretation. Political freedoms may be costly in the short run, either in terms of growth or of economic stabilization. If we consider a time frame of just a few years, the conventional wisdom that authoritarian governments, because they need not bow to popular pressure when choosing policies, may have some merit. If we take a slightly longer term perspective, however, just the opposite result emerges: countries in which the population enjoys greater political and civil liberties perform better. Building a democratic consensus may be costly in the short run, but can also provide the basis for sustainable economic growth and stability.

TABLE I: The Sample

Country	Year	Current Inflation	Trend Inflation/ Current Inflation
BURKINA FASO	1975	18.8	4.21
BURUNDI	1974	15.7	3.44
BURUNDI	1979	36.5	2.91
CAMEROON	1974	17.2	2.29
CONGO	1975	17.4	2.79
EGYPT	1974	10.0	2.91
ETHIOPIA	1976	28.5	3.55
ETHIOPIA*	1985	19.1	4.21
GABON	1974	12.1	2.67
GAMBIA	1975	25.9	3.13
GAMBIA*	1984	22.1	2.42
GHANA	1973	17.7	2.34
IVORY COAST	1973	11.1	4.06
KENYA	1974	17.8	2.82
LIBERIA	1973	19.6	12.51
LIBERIA	1982	20.4	2.58
MADAGASCAR	1974	22.1	3.88
MADAGASCAR	1979	14.1	2.90
MAURITIUS	1973	13.5	5.55
MAURITIUS	1980	42.0	3.91
MOROCCO	1974	17.6	4.36
NIGER	1973	11.8	2.34
NIGER	1981	22.9	2.48
NIGERIA*	1984	39.6	2.30
RWANDA	1974	31.1	7.18
SENEGAL	1973	11.3	2.63
SENEGAL	1982	17.4	2.15
SIERRA LEONE	1974	14.4	4.36
SIERRA LEONE*	1983	68.5	3.25
SOMALIA	1974	18.2	18.83
SOMALIA	1979	24.3	20.90
SOMALIA*	1984	91.2	2.63
SUDAN	1972	13.6	2.28
SUDAN	1979	31.1	2.45
SWAZILAND	1973	11.5	5.31
TANZANIA	1974	19.2	2.53
TANZANIA	1980	30.3	2.48
TOGO	1974	12.8	2.16
TOGO	1981	19.7	2.93
UGANDA*	1985	132.4	3.42
ZAIRE	1972	15.8	2.37
ZAMBIA	1976	18.8	2.28
ZAMBIA*	1985	37.3	2.10
ZIMBABWE	1975	10.0	2.40
ZIMBABWE*	1983	23.1	2.37
BAHAMAS	1974	13.1	2.32
BARBADOS	1974	38.9	3.21
CANADA	1974	10.9	2.15
COSTA RICA	1973	15.2	3.68

Table I continued

Country	Year	Current Inflation	Trend Inflation/ Current Inflation
COSTA RICA	1980	18.1	2.80
DOMINICAN REP.	1973	15.1	2.83
DOMINICAN REP*	1984	27.0	4.07
EL SALVADOR	1974	16.9	6.11
EL SALVADOR*	1986	31.9	2.03
GUATEMALA	1973	13.8	18.00
GUATEMALA*	1985	18.7	6.84
HAITI	1973	22.7	4.86
HAITI	1979	13.1	3.64
HONDURAS	1974	12.8	3.49
HONDURAS	1980	18.1	2.07
JAMAICA	1973	17.7	2.09
JAMAICA	1978	34.9	2.72
JAMAICA*	1984	27.8	2.71
MEXICO	1973	12.0	2.32
MEXICO	1982	58.9	2.44
NICARAGUA	1979	48.2	7.69
PANAMA	1974	16.3	3.52
PANAMA	1980	13.8	2.46
TRINIDAD&TOB.	1973	14.8	2.90
U.S.A.	1974	11.0	2.39
ARGENTINA	1976	444.0	4.98
ARGENTINA*	1983	343.8	2.79
BOLIVIA	1974	13.1	2.50
BOLIVIA	1979	19.7	2.57
BOLIVIA*	1984	1281.4	8.92
BRAZIL*	1983	142.1	1.49
CHILE	1972	74.8	2.71
COLOMBIA	1973	20.8	2.13
ECUADOR	1974	23.3	2.39
ECUADOR*	1983	48.4	3.18
GUYANA	1974	17.4	3.87
PARAGUAY	1973	12.5	2.76
PARAGUAY	1979	28.3	3.46
PERU	1974	16.9	2.16
SURINAME	1973	12.9	6.45
URUGUAY	1972	76.5	3.74
VENEZUELA	1975	10.3	2.03
VENEZUELA	1980	21.5	2.36
AFGHANISTAN*	1985	112.3	44.92
BAHRAIN	1973	14.3	3.43
BANGLADESH	1972	40.7	16.28
BANGLADESH	1979	14.7	3.56
BURMA(Myanmar)	1973	25.2	13.26
CHINA*	1985	11.9	5.41
INDIA	1973	16.9	3.45
INDONESIA	1973	31.0	4.01
IRAN	1974	14.2	2.09

Table I continued

Country	Year	Current Inflation	Trend Inflation/ Current Inflation
ISRAEL	1979	78.3	2.01
ISRAEL*	1984	373.8	2.93
JAPAN	1974	23.3	3.07
JORDAN	1974	19.4	2.47
SOUTH KOREA*	1974	24.3	2.58
SOUTH KOREA*	1980	28.7	2.00
MALAYSIA	1973	10.6	4.82
NEPAL	1974	19.8	3.34
NEPAL	1980	14.7	2.12
NEPAL*	1986	19.0	2.45
PAKISTAN	1973	23.1	4.56
PHILIPPINES*	1984	50.3	4.53
SAUDI ARABIA	1973	16.5	5.50
SINGAPORE	1973	26.2	18.28
SRI LANKA	1978	12.1	3.99
SYRIA	1973	20.4	4.98
SYRIA	1980	19.3	2.71
THAILAND	1973	15.5	8.94
THAILAND	1980	19.7	2.33
NORTH YEMEN	1973	19.7	3.81
NORTH YEMEN	1980	13.7	2.23
BELGIUM	1974	12.7	2.28
CYPRUS	1975	14.1	2.21
DENMARK	1974	15.3	2.10
FINLAND	1973	11.0	2.02
FRANCE	1974	13.7	2.16
GREECE	1973	15.5	4.56
ICELAND	1973	21.0	2.14
ITALY	1973	10.8	2.08
MALTA	1980	15.7	2.16
POLAND	1981	21.2	2.60
PORTUGAL	1974	28.0	3.13
SWEDEN	1977	24.5	2.12
TURKEY	1978	45.3	2.13
U.K.	1975	24.2	2.25
YUGOSLAVIA*	1984	54.7	2.01
AUSTRALIA	1974	15.1	2.11
FIJI	1980	14.5	2.08

*Indicates that an episode is not included in the reduced sample for which data on political instaibility is available.

TABLE 2: Full Sample, Without Instabililty Data

Year 1: Dependent Variable: $CHGINF_1$

	Estimated Coefficient	t-statistic	p-value
GOODPOL	-0.14894	-0.80399	0.4214
BADPOL	0.41203	2.54060**	0.0111
IMF_1	-0.08962	-0.63604	0.5247
CRISIS	-0.10520	-0.33815	0.7353
PCGDP	-0.00003	-0.84975	0.3955
GROWTH	-1.35800	-1.88480*	0.0595
OIL_1	0.74336	3.48640***	0.0005
AFR	-0.41443	-1.13670	0.2577
ASIA	-0.11108	-0.30545	0.7600
LA	-0.45157	-1.45290	0.1463
NAME	-0.13801	-0.40488	0.6856
EUR	-0.61677	-1.51470	0.1299

$R^2 = 0.1989$

Year 2: Dependent Variable: $CHGINF_2$

	Estimated Coefficient	t-statistic	p-value
GOODPOL	-0.10628	-0.53840	0.5903
BADPOL	0.16026	0.92289	0.3561
IMF_2	-0.11597	-0.83076	0.4061
CRISIS	-0.15076	-0.45922	0.6456
PCGDP	-0.00001	-0.35732	0.7209
GROWTH	-1.74710	-2.28000**	0.0226
OIL_2	0.51913	3.51180***	0.0004
AFR	-0.20106	-0.51472	0.6068
ASIA	0.50988	1.30340	0.1924
LA	-0.01807	-0.05424	0.9567
NAME	0.04284	0.11655	0.9071
EUR	-0.51241	-1.17320	0.2407

$R^2 = 0.2028$

Table 2 continued

Year 3: Dependent Variable: $CHGINF_3$

	Estimated Coefficient	t-statistic	p-value
GOODPOL	0.40566	1.87330*	0.0610
BADPOL	-0.06450	-0.33932	0.7344
IMF_3	-0.26312	-1.73140*	0.0834
CRISIS	0.78204	2.18130**	0.0292
PCGDP	-0.00004	-1.05090	0.2933
GROWTH	-1.21500	-1.45100	0.1468
OIL_3	0.28675	1.87570*	0.0607
AFR	0.22335	0.52308	0.6009
ASIA	0.76799	1.80190*	0.0716
LA	0.24957	0.68625	0.4926
NAME	0.23458	0.58634	0.5576
EUR	0.16843	0.35561	0.7221

$R^2 = 0.2062$

Year 4: Dependent Variable: $CHGINF_4$

	Estimated Coefficient	t-statistic	p-value
GOODPOL	0.44392	1.74330*	0.0813
BADPOL	0.06202	0.27628	0.7823
IMF_4	0.06556	0.34513	0.7300
CRISIS	0.74365	1.79820*	0.0721
PCGDP	-0.00005	-1.09380	0.2740
GROWTH	-1.75480	-1.77270*	0.0763
OIL_4	0.17616	0.95216	0.3410
AFR	-0.10215	-0.20239	0.8396
ASIA	0.63238	1.25600	0.2091
LA	-0.24221	-0.56251	0.5738
NAME	0.51986	1.09800	0.2722
EUR	-0.14658	-0.26136	0.7938

$R^2 = 0.1606$

*Significant at the 10 percent level.
**Significant at the 5 percent level
***Significant at the 1 percent level

TABLE 3: Reduced Sample, With Instabililty Data

Year 1: Dependent Variable: $CHGINF_1$

	Estimated Coefficient	t-statistic	p-value
TFER	-0.01815	-1.72360*	0.0848
GOODPOL	-0.06893	-0.40230	0.6875
BADPOL	0.12621	0.80468	0.4210
IMF_1	0.04574	0.36208	0.7173
CRISIS	0.80687	1.24080	0.2147
PCGDP	-0.00006	-1.77350*	0.0761
GROWTH	-0.80910	-1.25480	0.2095
OIL_1	0.50189	2.17150**	0.0299
AFR	-0.50432	-1.49230	0.1356
ASIA	-0.55992	-1.66310*	0.0963
LA	-0.54489	-1.92750*	0.0539
NAME	-0.09501	-0.31635	0.7517
EUR	-0.53085	-1.44550	0.1483

$R^2 = 0.1402$

Year 2: Dependent Variable: $CHGINF_2$

	Estimated Coefficient	t-statistic	p-value
TFER	-0.02483	-1.94810*	0.0514
GOODPOL	-0.20286	-0.99370	0.3204
BADPOL	0.02071	0.11181	0.9110
IMF_2	-0.04554	-0.32446	0.7456
CRISIS	0.64846	0.83928	0.4013
PCGDP	-0.00004	-1.02970	0.3032
GROWTH	-0.53302	-0.70660	0.4798
OIL_2	0.28844	1.53370	0.1251
AFR	-0.53137	-1.34060	0.1800
ASIA	0.02180	0.05454	0.9565
LA	-0.30787	-0.98109	0.3586
NAME	-0.29997	-0.84122	0.4002
EUR	-0.41259	-0.95449	0.3398

$R^2 = 0.1379$

Table 3 continued

Year 3: Dependent Variable: $CHGINF_3$

	Estimated Coefficient	t-statistic	p-value
TFER	-0.02150	-1.51370	0.1301
GOODPOL	0.23268	1.01340	0.3109
BADPOL	-0.09560	-0.46059	0.6451
IMF_3	-0.19786	-1.27580	0.2020
CRISIS	0.96745	1.13770	0.2552
PCGDP	-0.00006	-1.40420	0.1603
GROWTH	-0.30644	-0.36401	0.7159
OIL_3	0.34495	1.76320*	0.0779
AFR	-0.11518	-0.26075	0.7943
ASIA	0.39381	0.88452	0.3764
LA	-0.07866	-0.21091	0.8330
NAME	-0.14541	-0.36627	0.7142
EUR	0.21152	0.44221	0.6583

$R^2 = 0.1692$

Year 4: Dependent Variable: $CHGINF_4$

	Estimated Coefficient	t-statistic	p-value
RFER	-0.03863	-2.39170**	0.0168
GOODPOL	0.334233	1.27550	0.2021
BADPOL	0.20656	0.86977	0.3844
IMF_4	0.24876	1.36420	0.1725
CRISIS	1.76100	1.82910*	0.0674
PCGDP	-0.00008	-1.63030	0.1030
GROWTH	-1.47150	-1.53050	0.1259
OIL_4	0.59938	2.56600**	0.0103
AFR	-0.74918	-1.48530	0.1375
ASIA	0.22808	0.44929	0.6532
LA	-0.80893	-1.89580*	0.0580
NAME	0.06299	0.13904	0.8894
EUR	-0.20556	-0.37569	0.7072

$R^2 = 0.2466$

*Significant at the 10 percent level.
**Significant at the 5 percent level
***Significant at the 1 percent level

Appendix: Data Sources

This appendix cites the sources from which data were drawn to construct each of the variables used in the regressions.

CHGINF$_S$: Figures for annual inflation rates are percentage changes in consumer price indexes over the previous year, reported in the International Monetary Fund's (1991) *International Financial Statistics*, pp. 116-119.

GOODPOL and *BADPOL*: These variables were constructed from the Freedom House rankings of political rights, compiled by Gastil (various years).

TFER: Data on four types of transfer of executive power--regular executive transfers, irregular executive transfers, unsuccessful regular executive transfers, and unsuccessful irregular transfers--were taken from the *World Handbook of Political and Social Indicators*, by Taylor and Jodice (1983). This data set is available electronically from the Inter-University Consortium for Political and Social Research.

IMF$_S$: Data on IMF stand-by loans was obtained from the appendixes of IMF *Annual Reports*, various years.

CRISIS: The inflation data used to construct the *CHGINF* variables were also used to construct this variable.

PCGDP and *GROWTH*: Figures for per capita GDP were taken from variable 2 of the Summers and Heston (1991) Penn World Table. Growth in GDP was calculated from these data. (For three episodes, the appropriate GDP data were missing from the Penn World Table data set. In these cases, data from the closest year for which data were available were substituted. For Bahamas 1974, 1978 data were used; for Bahrain 1973, 1974 data were used; and for Nepal 1986, 1985 data were used.)

OIL_S: Percentage decreases in oil prices were calculated from a series of real U.S. average Crude Oil Domestic Purchase Prices reported in the U.S. Energy Administration's *Annual Energy Review* (1991), p. 151.

References

Ahamed, L. 1986. "Stabilization Policies in Developing Countries." *The World Bank Research Observer* 1:79-110.

Alesina, A. 1987. "Macroeconomic Policy in a Two-Party System as a Repeated Game." *Quarterly Journal of Economics* 102:651-678.

_____ 1991. "Political Models of Macroeconomic Policy and Fiscal Reform." World Bank Country Economics Department WPS 970.

Alesina, A., and A. Drazen. 1991. "Why are Stabilizations Delayed?" *American Economic Review* 81:1170-88.

Alesina, A., and L. Summers. 1990. "Central Bank Independence and Macroeconomic Performance." mimeo, Harvard University.

Alesina, A., and G. Tabellini. 1990. "A Positive Theory of Fiscal Deficits and Government Debt." *Review of Economic Studies* 57:403-14.

Barro, R. 1991. "Economic Growth in a Cross-Section of Countries." *Quarterly Journal of Economics* 106:407-43.

Bhagwati, J. 1966. *The Economics of Underdeveloped Countries* McGraw-Hill: New York.

Blackburn, K., and Christensen, M. 1989. "Monetary Policy and Policy Credibility: Theories and Evidence." *Journal of Economic Literature* 27:1-45.

Blanchard, O., R. Dornbusch, P. Krugman, R. Layard, and L. Summers. 1991. *Reform in Eastern Europe* . The MIT Press: Cambridge, MA.

Collier, D., ed. 1979. *The New Authoritarianism in Latin America.* Princeton University Press: Princeton.

Cukierman, A., S. Edwards, and G. Tabellini. 1992. "Seignorage and Political Instability *American Economic Review* 82:537-55.

Dornbusch, R. 1991. "Credibility and Stabilization." *Quarterly Journal of Economics* 106:837-50.

Dornbusch, R., F. Sturzenegger, and H. Wolf. 1990. "Extreme Inflation: Dynamics and Stabilization." *Brookings Papers on Economic Activity* 2:1990:1-62.

Drazen, A. and V. Grilli. 1993. "The Benefits of Crises for Economic Reforms." *American Economic Review* 83:598-607.

The Economist. "Survey of Business in Eastern Europe." September 21, 1991.

Edwards, S., and J. Santaella. 1991. "The Bretton Woods System, The IMF, and Some Devaluation Controversies in the Developing Countries." mimeo, UCLA.

Edwards. S., and G. Tabellini. 1990. "Explaining Fiscal Policies and Inflation in Developing Countries." NBER Working Paper No. 3493.

Findlay, R. 1988. "Trade Development and the State" in G. Ranis and T. P. Schultz, eds., *The State of Development Economics* . Basil Blackwell: Oxford.

Gastil, R. (various years) *Freedom in the World*. Greenwood: Westport, CT.

Grilli, V., D. Masciandaro, and G. Tabellini. 1991. "Political and Monetary Institutions and Public Financial Policies in the Industrial Countries." *Economic Policy* October:341-92.

Haggard, S. 1985. "The Politics of Adjustment: Lessons from the IMF's Extended Fund Facility." in M. Kahler, ed., *The Politics of International Debt*. Cornell University Press: Ithaca.

Haggard, S. 1991. "Inflation and Stabilization." in, G. M. Meir, ed., *Politics and Policy Making in Developing Countries*. ICS Press: San Francisco.

Haggard, S., and R. Kaufman. 1989. "The Politics of Stabilization and Structural Adjustment." in Sachs, J., ed., *Developing Country Debt and the World Economy*. University of Chicago Press: Chicago.

_____ 1992. "The Political Economy of Inflation and Stabilization in Middle Income Countries." in Haggard, S. and Kaufman, R., eds., *The Politics of Economic Adjustment*. Princeton University Press: Princeton.

Haggard, S., and S. Webb, S. 1991. "What Do We Know About the Political Economy of Policy Reform?" mimeo.

Haggard, S., R. Kaufman, K. Shariff, and S. Webb. 1991. "Politics, Inflation and Stabilization in Middle-Income Countries" mimeo.

International Monetary Fund. 1991. *International Financial Statistics Yearbook*. Washington, D.C.

_____ (various years) *Annual Report*. Washington, D.C.

Kaufman, R. 1985. "Democratic and Authoritarian Responses to the debt issue: Argentina, Brazil and Mexico." in Kahler, M., ed., *The Politics of International Debt*. Cornell University Press: Ithaca.

Killick, T. 1984. *The Quest for Economic Stabilisation*. Heineman Educational Books: London.

Levine, R. and D. Renelt. 1992. "A Sensitivity Analysis of Cross-Country Growth Regressions." *American Economic Review* 82:942-963.

McMillan, J., G. Rausser, and S. Johnson. 1991. "Freedoms and Economic Growth." Institute for Policy Reform Working Paper.

Nelson, J. 1984. "The Political Economy of Stabilization: Commitment, Capacity and Public Response." *World Development* 12:983-1006.

Nelson, J., ed. 1992. *Economic Crisis and Policy Choice*. Princeton University Press: Princeton.

New York Times. "Eastern Europe's Leaders in Bind as Economic Reform Stirs Anger." July 7, 1991, p. 1.

O'Donnell, G. 1973. *Modernization and Bureaucratic-Authoritarianism: Studies in South American Politics.* Institute of International Studies, University of California, Berkeley, Politics of Modernization Series No. 9.

Persson, T. 1988. "Credibility of Macroeconomic Policy: A Broad Survey." *European Economic Review* 32:519-32.

Persson, T. and L. Svensson. 1989. "Why a Stubborn Conservative Would Run a Deficit: Policy With Time Inconsistent Preferences." *Quarterly Journal of Economics* 104:325-346.

Persson, T. and G. Tabellini. 1990. *Macroeconomic Policy, Credibility and Politics.* Harwood Academic Publishers: Chur.

Przeworski, A. and F. Limongo. 1993. "Political Regimes and Economic Growth." *Journal of Economic Perspectives* 7:51-69.

Remmer, K. 1986. "The Politics of Economic Stabilization: IMF Standby Programs in Latin America, 1954-1984." *Comparative Politics* 19:1-24.

Rodrik, D. 1989. "Promises, Promises: Credible Policy Reform via Signalling." *Economic Journal* 99:756-72.

_____ 1990. "How Should Structural Adjustment Programs be Designed?" *World Development* 18:933-47.

Rogoff, K. 1990. "Equilibrium Political Budget Cycles." *American Economic Review* 80:21-39.

Roubini, N. and J. Sachs. 1989. "Political and Economic Determinants of Budget Deficits in the Industrial Democracies." *European Economic Review* 33:903-938.

Ruttan, V. 1991. "What Happened to Political Development?" *Economic Development and Cultural Change* vol:265-292.

Sachs, J. 1985. "External Debt and Macroeconomic Performance in Latin America and East Asia." *Brookings Papers on Economic Activity* 2:523-573.

_____. "Social Conflict and Populist Policies in Latin America." NBER Working Paper No. 2897.

Sachs. J. and F. Larrain. 1993. *Macroeconomics in the Global Economy.* Prentice Hall: Englewood Cliffs, NJ.

Sargent, T. 1982. "The End of Four Big Inflations." in Hall, R., ed., *Inflation: Causes and Effects* The University of Chicago Press: Chicago.

_____ 1983. "Stopping Moderate Inflation: The Methods of Poincarre and Thatcher." in R. Dornbusch and M. H. Simonsen, eds., *Inflation, Debt and Indexation* . The MIT Press: Cambridge, MA.

Scully, G. 1988. "The Institutional Framework and Economic Development." *Journal of Political Economy* 96:652-662.

Skidmore, T. 1977. "The Politics of Economic Stabilization in Postwar Latin America" in Malloy, J. ed., *Authoritarianism and Corporatism in Latin America.* University of Pittsburgh Press: Pittsburgh.

Summers, R. and A. Heston. 1991. "The Penn World Table (Mark 5): An Expanded Set of International Comparisons, 1950-1988." *Quarterly Journal of Economics* 106:327-68.

Taylor, C., and D. Jodice. 1983. *World Handbook of Political and Social Indicators* (volumes 1 and 2). Yale University Press: New Haven.

U. S. Department of Energy, Energy Information Administration. 1992. *Annual Energy Review 1991.* Washington, D.C.

Williamson, J., ed. 1990. *Latin American Adjustment: How Much Has Happened?* Institute for International Economics: Washington, D.C.