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DEVALUATION CONTROVERSIES IN THE DEVELOPING COUNTRIES:
LESSONS FROM THE BRETTON WOODS ERA

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ABSTRACT

This paper uses historical data from the Bretton Woods era to analyze the effectiveness of devaluation-based adjustment programs in the developing countries. Forty eight major devaluations undertaken between 1954 and 1971 are investigated in detail in an effort to understand the circumstances leading to these adjustment programs, as well as their degree of effectiveness. An important aspect of the analysis is the distinction between devaluations undertaken within the context of IMF programs, and devaluations implemented independently. We find out that, in general, countries with lower income per capita and deeper economic problems tended to seek IMF support with greater frequency. Also, our analysis indicates that countries with left-wing leaning governments were less likely to embark on IMF programs. With respect to the effectiveness of these devaluation programs, our findings support the notion that devaluations accompanied by restrictive and consistent macroeconomic policies are an efficient and powerful adjustment tool. Our historical investigation also shows that, in general, countries that embarked on IMF stand-by programs tended to perform better than countries that adjusted on their own.

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I. Introduction

In 1973 the international monetary system forged in Bretton Woods experienced a final collapse, as the industrial nations abandoned all efforts to sustain a fixed exchange rate regime and decided to adopt freely floating exchange rates. In spite of this significant change in the international financial system, throughout the 1970s most of the developing countries continued to rely heavily on fixed exchange rates, mainly pegging to specific countries within the spirit of an optimum currency area. For example, the December 1979 issue of the International Financial Statistics (IFS) reports that 85% of the developing countries had some sort of fixed exchange rate system at that time.

During the 1980s and early 1990s, however, an increasing number of developing countries moved away from fixed exchange rates and adopted more flexible regimes. According to the December 1990 issue of the IFS the proportion of LDCs that had some type of fixed exchange rate had declined to 67%. This movement towards greater exchange rate flexibility was, to a considerable extent, associated with the debt crisis unleashed in 1982. Those countries that had to cope with sudden cuts in external financing had very limited policy options. In an effort to engineer gigantic resource transfers to their creditors, most of these countries adopted adjustment packages that included, as an important component, the abandonment of fixed rate practices. It is in this context that in the mid-1980s we saw the end to long experiences with fixed exchange rates in countries such as Venezuela, Paraguay and Guatemala. Many countries rapidly adapted to their new circumstances. The exchange rate ceased to be a sacrosanct variable linked to the nationalistic destinies of countries; during the late 1980s a large number of economies had become increasingly comfortable with managed

exchange rate regimes.

Recently, however, a number of observers and experts -- including prominent members of the IMF Executive Board -- have argued that the enthusiasm for devaluation and an active exchange rate policy has gone too far. It has been pointed out that by relying too heavily on exchange rate adjustments, and by allowing developing countries to adopt administered systems characterized by frequent small devaluations, Fund programs have become excessively inflationary. According to this view exchange rate policy in the developing countries should move towards greater rigidity -- and even complete fixity -- as a way to induce financial discipline and reduce inflation. This position, which is steadily gaining new supporters, has largely been influenced by current macroeconomic views that emphasize the role of expectations, credibility and institutional constraints.¹

It would be illusory, however, to think that a return to greater exchange rate fixity will completely eliminate situations of "fundamental disequilibrium". In fact, most supporters of nominal exchange rate anchors concede that under conditions of severe exchange rate misalignment it is generally advisable to implement adjustment packages that combine fiscal and credit restraint with a discrete nominal devaluation.² What is perhaps paradoxical is that precisely this type of pegged arrangement, where the currency may be occasionally devalued by a large amount, was extremely controversial during the Bretton Woods period. In fact, the "devaluation issue" was often at the forefront of conflict between national authorities and the staff of the International Monetary Fund. Even under conditions of obvious "fundamental disequilibrium", the economic authorities in the developing countries tended to resist devaluing their currencies. Instead, they often imposed trade and exchange controls in an effort to avoid a

balance of payments crises.³ This historical resistance to devaluations had its roots in a deep skepticism on the effectiveness of exchange rate adjustment. In fact, it has been commonplace in the developing world to argue that large and discrete devaluations -- and especially devaluations implemented within the context of IMF programs -- have no impact on the external sector, result in output contractions and worsen income distribution.⁴

An important question in the current debate regarding the desirability of a return to fixed rates, revolves around the actual effectiveness of discrete and substantial devaluations in a context of a fixed rate regime. The purpose of this paper is to deal with this issue from a historical perspective. We analyze the conditions surrounding 48 major devaluation episodes in the developing countries that took place during the Bretton Woods period (1954-71). By focusing on the Bretton Woods era we can examine the fundamental empirical features of large nominal devaluations in a historical environment with generalized fixed exchange rates.

This paper differs from previous work in three fundamental respects: first, a formal distinction is made between devaluations undertaken within the context of an IMF program and unilateral devaluations implemented without a formal IMF-sponsored program.⁵ This distinction is particularly interesting because it allows a critical assessment of the role of the Fund; it provides a very natural benchmark for evaluating the results associated with IMF programs. In that sense, the traditional difficulty of finding appropriate "counterfactuals" to IMF programs is somewhat reduced.⁶ In this analysis we ask why some countries sought IMF supports, while others undertook adjustment-cum-devaluation programs on their own. We also inquire whether, on average, IMF devaluers tended to fare better than non-IMF devaluers. Second, in addition to analyzing the economic aspects of these devaluations, we

investigate some important political developments surrounding these episodes. We inquire, in particular, whether countries that received IMF assistance were characterized by a different political environment than those that did not approach the Fund. We also analyze the extent to which the political structure affects the degree of success of an adjustment-cum-devaluation program. And third, we compare the main features of these Bretton Woods devaluations with a number of more recent devaluations.

The empirical approach followed here is based on Edwards (1988, 1989a) and combines non-parametric tests with cross-country regression analyses in an effort to understand the circumstances surrounding these 48 devaluations. A salient feature of our approach is that we analyze in detail the evolution of a number of key variables during the three years preceding and three years following the 48 devaluation episodes. In doing this, an effort is made to detect regularities across countries that will allow us to infer some general rules relating to the causes and effects of devaluations. At the same time we point out peculiarities that help better understand the exchange rate history of a particular country. In addition to the groups of IMF and non-IMF devaluation countries, we defined a control group of 24 developing nations that maintained a fixed nominal exchange rate for at least 10 years; their behavior is compared to that of the devaluing countries. In these comparisons a series of parametric and non-parametric tests were used.⁷

II. The Simple Economics of Devaluation, Adjustment and Credibility

In this section we briefly provide an analytical framework for the empirical analysis that follows. We first analyze the conditions leading to a situation of "fundamental disequilibrium" and external sector crises, and discuss the conditions under which devaluations are effective.⁸ We then

analyze the role of an external multilateral agency, such as the IMF, in a stabilization program.

II.1 Fundamental Disequilibrium and the Theory of Devaluations

Fixed exchange rates introduce restrictions to macroeconomic policies: if a (small) country wants to maintain its parity its inflation rate cannot exceed (for a significant period of time) the rate of world inflation. Historically, however, policymakers have tried to ignore the constraints imposed by fixed exchange rates by implementing rapid fiscal expansions. If, as it is often the case, this increase in fiscal expenditures is mostly financed through domestic credit creation we will have a number of macroeconomic effects: first, there will be an increase in the demand for tradable goods, a worsening of the current account and, with other things given, a loss of international reserves. Second, there will be a higher demand for home goods, a higher domestic rate of inflation, a real exchange rate (RER) overvaluation and a continuous erosion in the country's degree of international competitiveness.

As international reserves draw lower, the government will usually try to tackle the situation by imposing exchange, capital and trade controls. The parallel premium for foreign exchange will increase and the black market will grow in scope. Naturally, these controls will not solve the crisis; they will merely slow down the loss of reserves and postpone the required adjustment. At some point the authorities will realize -- or will be forced to recognize -- that the country is following an unsustainable path, and that adjustment is required. This stylized story suggests that the conditions faced by countries facing "fundamental disequilibrium", and thus the need to devalue, can be summarized as follows: (1) fiscal and credit policies become "inconsistent" with the objective of maintaining a fixed

exchange rate; (2) there is a rapid rate of domestic inflation; (3) there is a large current account deficit; (4) international reserves become very low and continue to decline; (5) the parallel market premium increases; (6) and the RER becomes rapidly overvalued. Of course, a situation of "fundamental disequilibrium" can also be caused by a real shock (like a change in the terms of trade) that creates a macroeconomic gap that has to be closed.

The first fundamental step in an adjustment program is to tackle the sources of the initial disequilibrium: the fiscal imbalance has to be reduced and financial discipline re-established. Another crucial element in the adjustment program is the correction of the situation of RER overvaluation. The relative price of tradables to nontradables faced by domestic agents has to increase to a level compatible with external equilibrium. There are two basic ways of achieving this required RER adjustment or RER devaluation. The first is to follow a disinflationary policy, where the reduction in aggregate demand attained through the fiscal adjustment forces a reduction in nominal prices of nontradable goods. This option, however, has two important drawbacks: under most circumstances it is too slow, and if nominal prices (or wages) are inflexible downwards, the transition will be characterized by unemployment and reduced production. The second basic alternative for re-establishing RER equilibrium is by engineering an increase in the domestic price of tradable goods through a nominal devaluation. In this case, of course, all the nominal devaluation is attempting to do is to speed-up the adjustment. Even when realignment of relative prices is accomplished, the nominal devaluation is not the ultimate cause of the observed real exchange rate change; it is merely the vehicle through which the adjustment is attained.⁹

Naturally, for the nominal devaluation to be effective, in the sense of truly helping re-establish macroeconomic equilibrium in a smoother fashion, two main conditions have to be met. First, the devaluation has to be taken from a starting disequilibrium situation of RER overvaluation; and second, the devaluation has to be accompanied by consistent macroeconomic and, especially, fiscal policies.¹⁰ If these conditions are not met, the devaluation will.¹¹ In Sections III and IV of this paper we use data on 48 discrete devaluation episodes to analyze whether the experience in the LDCs during the Bretton Woods period conforms to the view on devaluation cases presented here.

II.2 Credibility, Commitment and Adjustment

Recent work on stabilization and adjustment has emphasized the role of institutions and credibility. A number of authors have argued that in order to put an end to macroeconomic and external sector disequilibrium, a "credible" change of the policy regime is needed.¹² To the extent that a stabilization is not credible -- that is, to the extent the public does not expect that the program will achieve its intended results -- the costs of adjustment escalates and the probability of success becomes smaller.¹³

This view leads naturally to look for ways of modifying and influencing expectations during a stabilization program. "Policy announcements" have been considered a possible vehicle for means of affecting inflationary expectations. However, it has been argued that in order for these announcements to be "credible" -- and, thus, to actually affect expectations -- it is necessary for the government to be able to precommit itself to a given course of action. This, of course turns out to be difficult since societies many times lack the institutional setup required for the government to credibly precommit itself.

otherwise. The following political and economic variables were used as regressors (although not everyone in every regression):

- (1) GDP per capita the year of the devaluation, relative to the U.S. GDP per capita that same year. Its sign is expected to be negative. These data were obtained from Summers and Heston (1988).
- (2) Changes in the real exchange rate index in the two years prior to the devaluation. The sign is expected to be negative, capturing the fact that countries with a more dramatic loss in international competitiveness are more likely to go to the IMF.
- (3) Change in the current account deficit in the three years prior to the crisis. Its sign is expected to be negative.
- (4) The net foreign assets ratio the year before the crisis. This measures the availability of own resources to withstand the adjustment. Its sign is expected to be negative, implying that the lower the availability of foreign resources the higher the probability of requesting access to Fund financing.³²
- (5) Index of political unpopularity, measured as the incidence of politically motivated strikes, protests and demonstrations. This index was calculated on per capita basis and was computed as the average between 1948 and the year prior to the devaluation. We expect its coefficient to be positive. When alternative periodicities were used no significant changes in the results were detected. The raw data used for constructing this and the other political indicators used in this analysis were taken from Taylor and Jodice (1983).
- (6) Index of political violence, measured by the incidence of politically related assassinations, attacks and deaths. This index was calculated as our political instability, variable (5), using the same source. We

"inconsistent" macroeconomic policies in generating "fundamental disequilibria" and in precipitating devaluation crises; (b) the differences, if any, between IMF and non-IMF devaluations; (c) the effectiveness of nominal devaluations as a means to restore equilibrium and competitiveness; (d) the role of political forces in devaluation and IMF involvement; and (e) the determinants of successful stabilization-cum-devaluation packages.

III.1 The Data Set

Our data set consists of 48 major stepwise devaluations implemented by independent developing countries in the period 1948-71. In order for a devaluation episode to be included in our sample it had to have the following properties: (1) the adjustment of the official rate had to exceed 14%; (2) the devaluation must have occurred after a period of at least two years where the country had a fixed exchange rate; and (3) the country in question must have had a population of at least one million people the year of the devaluation. Using the International Financial Statistics (IFS) tape and other sources we identified 69 devaluation episodes that met the three requirements set up above. Once those cases with no (or very little) data on the most important variables were eliminated, we were left with the 48 countries considered here. In that sense, then, an effort was made to identify, and then include, everyone of the large stepwise devaluation episodes that took place in the developing world during 1954-71. The final inclusion criteria was based exclusively on data availability.

The exact dates of our 48 devaluations, as well as the inception and expiration dates of IMF standby programs, are shown in Table 1. Twenty-two of the 48 devaluations implemented a unilateral (i.e., non-IMF) devaluation, while twenty-six had IMF programs. All the IMF programs considered here were stand-by arrangements, which were envisaged in 1952 by the Fund to

TABLE 1
Devaluation Episodes and IMF Programs In
Selected Developing Countries: 1954-1971

	<u>Country</u>	<u>Devaluation Date</u>	<u>IMF Program</u>	
			<u>Inception Date</u>	<u>Expiration Date</u>
1.	Argentina	Oct. 28, 1955	-	-
2.	Argentina	Jan. 2, 1959	Dec. 19, 1958	Dec. 18, 1959 ¹
3.	Argentina	Mar. 19, 1962	Dec. 12, 1961	Dec. 11, 1962 ²
4.	Argentina	June 18, 1970	-	-
5.	Brazil	Feb. 13, 1967	Feb. 13, 1967	Feb. 12, 1968
6.	Chile	Oct. 15, 1962	-	-
7.	Colombia	June 18, 1957	June 19, 1957	June 18, 1958
8.	Colombia	Nov. 20, 1962	Jan. 1, 1962	Dec. 31, 1962
9.	Colombia	Sept. 2, 1965	-	-
10.	Colombia	Mar. 22, 1967	Apr. 15, 1967	Apr. 14, 1968
11.	Costa Rica	Sept. 2, 1961	Oct. 4, 1961	Oct. 3, 1962
12.	Ecuador	July 14, 1961	June 8, 1961	June 7, 1962
13.	Ecuador	Aug. 17, 1970	Sept. 14, 1970	Sept. 13, 1971
14.	Egypt	May 7, 1962	May 7, 1962	May 6, 1963
15.	Ghana	July 8, 1967	May 25, 1967	May 24, 1968
16.	Ghana	Dec. 27, 1971	-	-
17.	India	June 6, 1966	-	-
18.	Indonesia	Apr. 17, 1970	Apr. 17, 1970	Apr. 16, 1971
19.	Israel	Feb. 9, 1962	-	-
20.	Israel	Nov. 19, 1967	-	-
21.	Israel	Aug. 21, 1971	-	-
22.	Jamaica	Nov. 21, 1967	-	-
23.	Korea	Feb. 23, 1960	-	-
24.	Korea	May 3, 1964	-	-
25.	Malawi	Nov. 20, 1967	-	-
26.	Mexico	Apr. 19, 1954	Apr. 16, 1954	Apr. 15, 1955
27.	Nicaragua	July 1, 1955	-	-
28.	Pakistan	Aug. 1, 1955	-	-

Table 1 (cont.)

	Country	<u>IMF Program</u>		
	<u>Country</u>	<u>Devaluation Date</u>	<u>Inception Date</u>	<u>Expiration Date</u>
29.	Peru	Jan. 22, 1958	Feb. 18, 1957	Feb. 17, 1958 ³
30.	Peru	Aug. 31, 1967	Aug. 18, 1967	Aug. 17, 1968
31.	Philippines	Jan. 22, 1962	Apr. 12, 1962	Apr. 11, 1963
32.	Philippines	Feb. 21, 1970	Feb. 20, 1970	Feb. 19, 1971
33.	Sierra Leone	Nov. 22, 1967	-	-
34.	Spain	July 18, 1959	Aug. 17, 1959	Aug. 16, 1960
35.	Spain	Nov. 20, 1967	-	-
36.	Sri Lanka	Nov. 22, 1967	-	-
37.	Trinidad-Tobago	Nov. 23, 1967	-	-
38.	Tunisia	Sept. 28, 1964	Oct. 1, 1964	Sept. 30, 1965
39.	Turkey	Aug. 4, 1958	-	-
40.	Turkey	Aug. 3, 1970	Aug. 17, 1970	Aug. 16, 1971
41.	Uruguay	Dec. 15, 1959	-	-
42.	Uruguay	May 9, 1963	Oct. 4, 1962	Oct. 3, 1963
43.	Uruguay	Apr. 26, 1971	May 28, 1970	May 27, 1971
44.	Venezuela	Jan. 18, 1964	-	-
45.	Yugoslavia	Jan. 1, 1961	Jan. 1, 1961	Dec. 31, 1961
46.	Yugoslavia	July 25, 1965	July 26, 1965	July 25, 1966
47.	Yugoslavia	Jan. 23, 1971	Feb. 22, 1971	Feb. 21, 1972
48.	Zaire	June 24, 1967	July 6, 1967	July 5, 1968

¹Cancelled on December 2, 1959, when a new stand-by arrangement commenced.

²Cancelled on May 16, 1962.

³Cancelled on February 9, 1958, when a new stand-by arrangement commenced.

⁴Cancelled on July 29, 1971, when a new stand-by arrangement commenced.

Sources: Pick's Currency Yearbook and IMF Annual Reports and Reports on Exchange Restrictions.

control drawings in the credit tranches. Stand-by programs soon became the main instrument through which the IMF imposed conditionality. The specific contents of these programs, however, was not homogeneous across our sample of 26 IMF programs: not until 1956 the concept of phasing (i.e., drawings in installments) was introduced, and we had to wait until 1958 to observe that drawings were made conditional on performance criteria.¹⁷

Table 2 contains the percentage change in the (official) exchange rate the year of the crisis and in the three subsequent years. As pointed out, all the countries in our sample devalued their currencies in at least 14% after having maintained a fixed (official) exchange rate with respect to the U.S. dollar (or a stable managed float, like in the cases of Peru 1958, Argentina 1962 and Brazil 1967) for two or more years. The non-IMF episodes are shown in Panel A; the average depreciation of the exchange rate was 61%, while the median was 39%. The IMF programs are in Panel B; on average they devalued by 52% (43% was the median). As can be seen, while most of these countries returned to a fixed (or almost fixed) exchange rate, a few decided to follow a crawling peg system after the crisis. Also, some of the countries in our sample suffered, through the years, recurrent crises and devaluations.¹⁸ The nature of these devaluations and the specific circumstances that surrounded the episodes were very diverse. Some of the devaluations occurred in a unified exchange system and consisted in de jure modifications of the par value or the gold content of the currency agreed with the IMF. More frequently, however, there were de facto devaluations in which the parity of the official exchange rate was maintained, but the depreciation was effected by the introduction of a regime based on multiple exchange rates. In other episodes devaluations were implemented through the unification of multiple nominal exchange rates, or through the (temporary)

TABLE 2
Devaluation Crises and the IMF in the Bretton Woods Period

<u>Country</u>	<u>Year</u>	<u>Rate of Devaluation (exchange rate in local currency units per dollar)</u>			
		<u>Devaluation Year</u>	<u>1 Year After</u>	<u>2 Years After</u>	<u>3 Years After</u>
<u>A. Non-IMF Devaluers</u>					
ARGENTINA	1955	158.2	3.7	-1.2	8.1
ARGENTINA	1970	14.3	25.0	0.0	0.0
CHILE	1962	130.5	25.6	7.2	29.4
COLOMBIA	1965	50.0	0.0	16.7	7.1
GHANA	1971	78.2	-29.6	-10.2	0.0
INDIA	1966	58.7	-0.4	1.1	-0.9
ISRAEL	1962	66.7	0.0	0.0	0.0
ISRAEL	1967	16.7	0.0	0.0	0.0
ISRAEL	1971	20.0	0.0	0.0	42.9
JAMAICA	1967	16.0	0.9	-0.7	0.3
KOREA	1960	30.0	100.0	0.0	0.0
KOREA	1964	96.7	6.3	-0.2	1.3
MALAWI	1967	16.7	0.0	0.0	0.0
NICARAGUA	1955	40.0	0.0	0.0	0.0
PAKISTAN	1955	43.2	0.5	-0.6	0.1
SIERRA LEONE	1967	15.9	0.9	-0.7	0.3
SPAIN	1967	16.2	0.2	0.3	-0.5
SRI LANKA	1967	24.1	0.0	0.5	0.0
TRINIDAD/TOBAGO	1967	16.0	0.9	-0.7	0.3
TURKEY	1958	221.0	0.0	0.0	0.0
URUGUAY	1959	175.0	0.0	0.0	0.0
VENEZUELA	1964	38.2	0.0	0.0	0.0

Table 2 (cont.)

<u>Country</u>	<u>Year</u>	<u>Rate of Devaluation (exchange rate in local currency units per dollar)</u>			
		<u>Devaluation Year</u>	<u>1 Year After</u>	<u>2 Years After</u>	<u>3 Years After</u>
B. IMF Devaluers					
ARGENTINA	1959	108.1	-0.7	0.4	61.5
ARGENTINA	1962	61.5	-1.2	13.9	24.9
BRAZIL	1967	22.3	41.1	26.6	2.1
COLOMBIA	1957	116.1	18.0	0.0	4.7
COLOMBIA	1962	34.3	0.0	0.0	50.0
COLOMBIA	1967	16.7	7.1	5.7	6.9
COSTA RICA	1961	17.7	0.0	0.0	0.0
ECUADOR	1961	20.0	0.0	0.0	0.0
ECUADOR	1970	38.9	0.0	0.0	0.0
EGYPT	1962	23.9	0.0	0.0	0.0
GHANA	1967	42.9	0.0	0.0	0.0
INDONESIA	1970	16.0	9.8	0.0	0.0
MEXICO	1954	44.5	0.0	0.0	0.0
PERU	1958	28.9	14.3	-3.6	0.0
PERU	1967	44.4	0.0	0.0	0.0
PHILIPPINES	1962	94.1	-0.3	0.0	0.0
PHILIPPINES	1970	63.7	0.0	5.4	-0.8
SPAIN	1959	42.3	0.0	-0.2	-0.0
TUNISIA	1964	23.8	0.0	0.0	0.0
TURKEY	1970	65.0	-5.2	0.0	0.0
URUGUAY	1963	45.5	18.7	215.8	26.7
URUGUAY	1971	48.0	97.8	28.0	76.7

Table 2 (cont.)

<u>Country</u>	<u>Year</u>	<u>Rate of Devaluation (exchange rate in local currency units per dollar)</u>			
		<u>Devaluation Year</u>	<u>1 Year After</u>	<u>2 Years After</u>	<u>3 Years After</u>
YUGOSLAVIA	1961	18.7	0.0	0.0	0.0
YUGOSLAVIA	1965	66.7	0.0	0.0	0.0
YUGOSLAVIA	1971	36.0	0.0	-8.2	9.3
ZAIRE	1967	203.0	0.0	0.0	0.0

Source: International Financial Statistics and Pick's Currency Yearbook.

withdrawal of the Central Bank's intervention in the exchange market, allowing the exchange rate to float momentarily to a higher parity at which a new peg was tried to be maintained. In the Appendix we present a brief description of each of the 48 devaluation episodes and section III.3 discusses in detail the experience with parallel and multiple exchange rate practices.

III.2 Macroeconomic Policies and Fundamental Disequilibria

Under fixed nominal exchange rates macroeconomic policies determine whether the exchange rate chosen by the authorities can be sustained in the longer run. Under most circumstances, if macroeconomic policies become "inconsistent", international reserves will be eroded, the real exchange rate will experience an appreciation (i.e., overvaluation) and an exchange rate crises -- that is a devaluation -- will eventually occur. From an empirical point of view it is not trivial to determine whether, for a particular country at a particular moment in time, macroeconomic policies have indeed become inconsistent with the fixed peg. In this section we tackle this issue by comparing the evolution of macroeconomic policy in the devaluing countries with that of a control group of 24 fixed rate countries.¹⁹

Table 3 summarizes the behavior of five indicators of domestic credit and fiscal policies for our two groups of devaluing countries -- IMF and non-IMF countries -- and for the control group: (1) rate of growth of domestic credit (Panel A); (2) rate of growth of domestic credit to the public sector (Panel B); (3) percentage of credit received by public sector as proportion of total domestic credit (Panel C); (4) fiscal deficit as proportion of GDP (Panel D); and (5) increase in domestic credit to the public sector as percentage of GDP. All the indicators have been constructed using data from various issues of the International Financial

TABLE 3

Indicators of Macroeconomic Policy In 48 Devaluation Episodes
And Control Group of Fixers

	<u>Three Yrs. Prior</u>		<u>Two Years Prior</u>		<u>One Year Prior</u>		<u>Year of Devaluation</u>		<u>Control Group</u>
	<u>Non- IMF</u>	<u>IMF</u>	<u>Non- IMF</u>	<u>IMF</u>	<u>Non- IMF</u>	<u>IMF</u>	<u>Non- IMF</u>	<u>IMF</u>	
<u>A. Annual Growth of Domestic Credit (%)</u>									
1st Quartile	12.4	9.1	10.4	12.6	11.0	15.6	6.9	12.3	8.6
Median	23.5	16.7	16.1	19.6	17.8	18.7	15.4	17.1	14.7
3rd Quartile	35.8	28.6	23.9	29.5	24.9	28.5	22.7	27.5	22.5
<u>B. Annual Growth of Domestic Credit to the Public Sector (%)</u>									
1st Quartile	9.4	< 0	< 0	5.9	< 0	8.8	< 0	13.1	-7.7
Median	27.6	5.8	12.6	28.2	11.5	14.3	0.0	29.1	12.0
3rd Quartile	72.3	43.1	32.2	60.5	38.6	58.3	23.1	58.3	42.2
<u>C. Ratio of Domestic Credit to Public Sector to Total Domestic Credit</u>									
1st Quartile	13.5	11.0	12.8	14.0	14.4	14.2	8.4	12.8	1.2
Median	24.9	22.2	25.1	23.6	27.2	21.8	26.0	24.8	16.3
3rd Quartile	50.3	35.6	42.3	31.2	42.7	33.4	39.4	34.5	29.4
<u>D. Fiscal Deficit as Percentage of GDP</u>									
1st Quartile	1.5	0.1	0.9	0.5	0.7	1.0	1.0	0.5	0.4
Median	2.6	1.3	2.9	1.1	2.6	1.9	2.1	2.5	1.2
3rd Quartile	5.6	2.6	4.8	2.5	4.4	3.2	4.8	4.3	2.5
<u>E. Growth of Domestic Credit to the Public Sector as Percentage of GDP (%)</u>									
1st Quartile	0.7	-0.2	-0.2	0.1	-0.0	0.4	-0.8	0.7	-0.2
Median	1.8	0.5	1.0	1.2	0.9	0.9	0.5	1.5	0.5
3rd Quartile	2.9	2.7	1.7	2.7	2.0	2.4	2.3	2.9	1.6

Source: Constructed by the authors from raw data obtained from the International Financial Statistics.

Statistics, several IFS tapes, as well as the United Nations Statistical Yearbook. For the two devaluation groups these indicators are reported for 3 years, 2 years, 1 year prior to the devaluation, and for the year of the devaluation. While Panels A and B deal with monetary (or domestic credit) policy, the rest of the panels take us beyond the monetary realm and into the fiscal side of the economy.

A number of interesting facts emerge from this table. First, macro-economic policies became increasingly expansive in the devaluing countries as the year of the devaluation drew nearer. Indeed, when the data for three years prior to the crisis are compared to those from the year of the devaluation a clear shift to the right in most of the distributions can be detected. Second, IMF and non-IMF devaluers behaved quite differently. The table shows that two and one years prior to the devaluation the countries that ended up requiring IMF support were generally implementing more expansive policies than non-IMF devaluers. Moreover, computation of non-parametric χ^2 tests strongly suggest a different behavior across IMF and non-IMF devaluers. Finally, the devaluing countries as a group behaved quite differently than the control group. This is particularly clear for the fiscal policy indicators. For example, the year of the crisis half of the devaluing countries allocated one quarter or more of total domestic credit to the public sector; the median for the control group countries, on the other hand, was only slightly higher than 16%. Formal χ^2 tests indicate that with a fairly high degree of probability, these policy indicators for the devaluing nations come from a different population than those for the control group.

Table 4 contains the χ^2 statistics that test the hypothesis that our fiscal policy indicators for devaluers and control group countries come from

TABLE 4

χ^2 Tests Comparing Fiscal Behavior In Devaluation Countries
And Control Group^a

	<u>3 Yrs. Before</u> <u>Devaluation</u>	<u>Year of</u> <u>Devaluation</u>
1. <u>Ratio of Domestic Credit to Public Sector to Total Domestic Credit</u>		
IMF Devaluers	8.4 (0.015)	8.4 (0.015)
Non-IMF Devaluers	2.6 (0.268)	4.1 (0.127)
2. <u>Fiscal Deficit as Percentage of GDP</u>		
IMF Devaluers	0.2 (0.898)	6.3 (0.042)
Non-IMF Devaluers	8.2 (0.016)	6.0 (0.049)
3. <u>Growth of Domestic Credit to the Public Sector As Percentage of GDP</u>		
IMF Devaluers	2.4 (0.307)	8.6 (0.013)
Non-IMF Devaluers	13.5 (0.001)	4.7 (0.094)

^aThis test is distributed $\chi^2(2)$. Figures in parentheses are levels of probabilities.

the same population. These χ^2 statistics show a very clear picture: first they show that for three of the indicators the null hypothesis that devaluers and the control group belonged to the same population is rejected at fairly high levels of significance. Additionally, these χ^2 tests suggest quite clearly that as the crisis date approached in both devaluing groups macropolicies tended to become more and more inconsistent with the goal of maintaining a fixed exchange rate (i.e., they became significantly more different than the control group).

Even though when taken as a group the devaluing countries behaved in a distinctively different way than the control group, the policies of some individual stepwise devaluers -- Venezuela, for example -- were fairly similar to those of the control group. Also, the countries that devalued their currencies following the British Pound realignment of 1967 (Israel, Jamaica, Malawi, Sierra Leone, Spain, Sri Lanka and Trinidad) provide interesting individual cases. The macroeconomic policy indicators in all these countries show that their policies were very expansive in the years immediately preceding 1967, both relative to the control group and to the U.K. In fact, neither of these countries behaved, statistically speaking, differently than the rest of the devaluing groups. This suggests, then, that even in the absence of the Pound devaluation many of these countries may have had to realign their parities.

As pointed out in Section II, expansive macroeconomic policies will have an impact on the current account, the level of foreign assets, inflation, and the real exchange rate. Table 5 contains data for the 48 episodes on the evolution of: (1) the index of the (bilateral) real exchange rate with respect to the U.S. dollar;²⁰ (2) the ratio of net foreign assets of the monetary system to the domestic stock of money; and (3) the current

TABLE 5

Real Exchange Rates, Current Account and Net Foreign Assets
in Period Leading to 48 Devaluations

	Year	Real Exchange Rate ^a		Current Account As % of GDP		Net Foreign Asset As % Of Money Supply	
		3 Yrs. Prior	1 Yr. Prior	3 Yrs. Prior	1 Yr. Prior	3 Yrs. Prior	1 Yr. Prior
A. <u>Non-IMF Devaluers</u>							
ARGENTINA	1955	110.2	100.0	-3.6	0.0	1.7	3.7
ARGENTINA	1970	117.2	100.0	0.7	-1.0	7.3	6.3
CHILE	1962	120.5	100.0	-2.5	-5.2	1.0	-21.5
COLOMBIA	1965	155.7	100.0	-2.3	-3.0	-10.7	-11.7
GHANA	1971	101.2	100.0	-1.4	-2.9	-12.5	-3.4
INDIA	1966	121.2	100.0	-2.5	-2.9	2.3	1.2
ISRAEL	1962	109.1	100.0	-18.0	-17.9	20.7	30.6
ISRAEL	1967	107.0	100.0	-23.6	-14.6	42.4	34.4
ISRAEL	1971	102.5	100.0	-19.6	-25.9	29.4	3.6
JAMAICA	1967	99.7	100.0	-10.1	-14.7	16.8	25.5
KOREA	1960	97.8	100.0	-9.8	-6.9	3.6	7.2
KOREA	1964	127.7	100.0	-8.6	-10.4	27.2	4.9
MALAWI	1967	97.6	100.0	-12.0	-17.2	.	41.5
NICARAGUA	1955	122.9	100.0	.	.	34.8	15.4
PAKISTAN	1955	102.6	100.0	-2.5	0.6	33.1	26.8
SIERRA LEONE	1967	103.2	100.0	-3.1	-7.3	30.8	25.0
SPAIN	1967	113.8	100.0	-5.7	-8.0	11.3	6.1
SRI LANKA	1967	95.2	100.0	-2.6	-3.9	5.2	-0.6
TRINIDAD/TOBAGO	1967	100.7	100.0	-8.5	-6.1	31.4	21.3

Table 5 (cont.)

	<u>Year</u>	<u>Real Exchange Rate</u>		<u>Current Account As % of GDP</u>		<u>Net Foreign Asset As % Of Money Supply</u>	
		<u>3 Yrs. Prior</u>	<u>1 Yr. Prior</u>	<u>3 Yrs. Prior</u>	<u>1 Yr. Prior</u>	<u>3 Yrs. Prior</u>	<u>1 Yr. Prior</u>
TURKEY	1958	128.3	100.0	-3.2	-0.8	10.3	7.4
URUGUAY	1959	129.8	100.0	0.2	1.1	10.6	3.4
VENEZUELA	1964	100.5	100.0	6.9	9.1	28.4	34.0
Average Change			-9.4%		-0.3		-5.0
<u>B. IMF Devaluers</u>							
ARGENTINA	1959	147.5	100.0	-1.4	-2.3	4.8	-0.8
ARGENTINA	1962	145.3	100.0	0.1	-4.1	2.9	1.5
BRAZIL	1967	185.6	100.0	-0.0	0.0	-58.7	-11.4
COLOMBIA	1957	102.2	100.0	-0.2	-0.8	17.9	8.6
COLOMBIA	1962	108.1	100.0	1.6	-3.0	1.2	-1.8
COLOMBIA	1967	78.7 ^b	100.0	-3.0	-4.7	-11.7	-8.8
COSTA RICA	1961	101.3	100.0	-3.2	-5.6	21.9	1.6
ECUADOR	1961	101.2	100.0	-0.9	-2.5	18.9	16.4
ECUADOR	1970	104.3	100.0	-5.8	-7.9	19.1	11.3
EGYPT	1962	101.3	100.0	-0.1	-1.2	12.0	4.1
GHANA	1967	134.6	100.0	-3.6	-6.0	15.6	-5.1
INDONESIA	1970	178.9	100.0	-9.3	-7.2	-22.0	9.2
MEXICO	1954	117.2	100.0	-3.4	-1.7	30.6	22.5
PERU	1958	106.4	100.0	-5.9	-8.7	15.9	9.6
PERU	1967	119.5	100.0	0.3	-3.7	23.9	18.0
PHILIPPINES	1962	105.7	100.0	-0.7	-2.2	9.6	4.8
PHILIPPINES	1970	97.9	100.0	-2.9	-4.3	1.1	-5.9

Table 5 (cont.)

	<u>Year</u>	<u>Real Exchange Rate</u>		<u>Current Account As % of GDP</u>		<u>Net Foreign Asset As % Of Money Supply</u>	
		<u>3 Yrs. Prior</u>	<u>1 Yr. Prior</u>	<u>3 Yrs. Prior</u>	<u>1 Yr. Prior</u>	<u>3 Yrs. Prior</u>	<u>1 Yr. Prior</u>
SPAIN	1959	110.7	100.0	-2.3	-1.7	1.8	0.8
TUNISIA	1964	98.9	100.0	-10.1	-10.5	22.9	3.4
TURKEY	1970	101.3	100.0	-0.6	-1.3	5.0	5.9
URUGUAY	1963	136.7	100.0	-6.0	-3.6	-2.1	-40.8
URUGUAY	1971	93.0	100.0	1.4	-2.3	-20.0	-10.0
YUGOSLAVIA	1961	99.7	100.0	-2.6	-2.1	0.0	0.0
YUGOSLAVIA	1965	117.7	100.0	-1.8	-3.1	2.3	-0.9
YUGOSLAVIA	1971	109.9	100.0	-2.4	-6.1	-0.7	-2.8
ZAIRE	1967	110.1	100.0	-1.9	-2.6	15.5	10.0
Average Change			-12.0% ^c		-1.3		-3.4

^aA decline in the index depicts real appreciation.

^bColombia devalued in 1965. This explains the evolution of the RER before the 1967 devaluation.

^cExcludes Colombia 1967.

Source: Constructed from raw data obtained from the International Financial Statistics

account as percentage of GDP for three and one years preceding the crisis. The main differences between Tables 3 and 5 is that in the former we have summarized the behavior of five key exogenous policy variables, while Table 5 deals with endogenous variables whose behavior responds to macroeconomic policy and other shocks.

The data in Table 5 clearly capture the deterioration of the external sector in the period immediately preceding the devaluations. In 39 out of the 47 episodes with relevant data the real exchange rate experienced a real appreciation in the three years prior to the devaluation. For the IMF devaluers the average real appreciation was 12.0%, while for the no-IMF devaluers it was 9.4%. Naturally, this real appreciation was the result of domestic rates of inflation that increasingly exceeded the world rate of inflation. A χ^2 test indicates that as the crisis date became closer the rate of CPI inflation in both groups of devaluing countries became more distinct, in a statistical sense, from that of the fixed rate control group. As it is apparent from Table 5, there is quite a difference in the individual countries' experiences. While some countries, such as Colombia in 1965, Argentina in 1959 and 1962, Brazil in 1967 and Indonesia in 1970 went through a major deterioration in competitiveness, others (i.e., Venezuela 1964, Trinidad 1967 or Yugoslavia 1961) only experienced an insignificant change in the real exchange rate index. It should be noticed, however, that there is a strong presumption that the recorded average real rates of appreciation presented in Table 5 provides an underestimation of the "true" magnitude of disequilibrium. This is because in many cases in the period leading to the crisis price controls became quite pervasive (like in the centrally planned Yugoslavia), rendering official CPIs somewhat inadequate to construct RER indices.²¹

The evolution of net foreign assets and of the current account balance, also presented in Table 5, clearly capture the effect of the inconsistent macropolicies on the external accounts. In 15 out of the 22 non-IMF episodes, and in 21 out of the 26 IMF cases the ratio of net foreign assets to money experienced a decline during this two year period. On average, for the non-IMF countries the net foreign assets ratio declined 5.0 percentage points during the two years prior to the devaluation; the corresponding drop for the IMF devaluers was smaller (3.5 points) but reaching a very low average ratio the year before the crisis (1.5%). That year the median of this indicator was for both groups of devaluers 5.1%, significantly below the median for the control group of more than 20%. Also, in 12 of the 22 non-IMF episodes and in 20 out of the 26 IMF devaluers the current account balance worsened in the two years before the crisis, with the magnitude of deterioration reaching almost one percentage point of GDP in both groups. The year prior to the crisis the median of current account deficit was 3.8% of GDP for the IMF group and 6.6% for non-IMF episodes, both higher than the 3.6% deficit for the control group.

In addition to the worsening of the current account, capital flight is a crucial force underlying the weakening position of these countries' external sector. Data not reported here show that in spite of existing and increasing control on capital mobility, as the devaluation drew nearer, and as a result of the heightened expectations of devaluation, substantially larger amounts of funds flew these countries.²²

The data in Table 5 clearly highlight the important fact that although it is possible to identify a dominant pattern among these devaluation episodes, there are nontrivial differences across countries. In the majority of them the devaluation responded to the simultaneous depletion of

international reserves and loss in competitiveness (i.e., real exchange appreciation). In a few episodes, however, it is not possible to detect either of these symptoms in the years prior to the crisis. In the case of the 1964 Venezuelan devaluation, for instance, the exchange rate adjustment amounted to a trade liberalization program where the unification of nominal exchange rates was an important component. In Indonesia a similar currency simplification took place with the 1970 devaluation.²³

The lack of data on external terms of trade did not allow us to analyze for every country whether devaluations responded, at least partially, to an exogenously-driven deterioration of the external sector. However, in some of the episodes for which we could gather data the devaluation was preceded by a worsening in the terms of trade. Although this doesn't mean that the terms of trade deterioration was the ultimate cause of the devaluation crises, it clearly indicates that external shocks can play a non-trivial role in unleashing external crises.

The data in Table 5 show an important difference between IMF-devaluers and non-IMF countries. On average, those countries that requested IMF assistance, had experienced a more dramatic loss in international competitiveness (measured by the extent of RER appreciation in the three year period preceding the devaluation) and a more precarious situation in their net foreign asset position than those countries that devalued unilaterally. Also, IMF devaluers experienced a more serious worsening in the current account deficit than non-IMF devaluers: 1.3 percentage points of GDP vs. 0.3 points for non-IMF countries. However, the average level of the current account deficit the year prior to the exchange rate adjustment was significantly higher in the unilateral adjusters than in the IMF devaluers. The main explanation for this is that, as shown in Table 5, IMF devaluers

initially had a lower availability of foreign assets than non-IMF countries and, thus, could not sustain deep current account deficits.

III.3 Parallel Markets, Multiple Exchange Rate Practices, and Devaluation Crises

In Table 6 we present data on multiple (official) exchange rates and on parallel (black) market premia in the period immediately preceding the devaluations. As can be seen, in many of these episodes the period preceding the devaluation was characterized by the existence of multiple exchange rates. It is interesting to note, however, that in most instances the multiple rates were in place at least three years before the crisis, and in most countries there was no increase in the number of official rates as the devaluation date approached.

The data in Table 6 show that in 34 out of the 45 devaluation episodes with available data there was a significant increase in the parallel premium during the period preceding the crises. The median premium among IMF devaluers increased from 12.0% three years before the devaluation to 48.1% one month before, while it went from 37.5% to 63.1% for the non-IMF countries in the same period. This evolution of the parallel market premium reflects three interrelated forces. First, in the presence of a freely determined parallel rate, expansive domestic credit policies will usually be reflected in a depreciation of the free rate, at the same time as the domestic rate of inflation increases and international reserves are eroded. Second, this hike in the premium is capturing the public's reaction to the movement towards greater exchange controls. In fact, the analysis of the evolution of foreign trade restrictions clearly shows that in the vast majority of countries regulations to international payments, commodities transactions and capital movements became increasingly restrictive in the

TABLE 6

Multiple Exchange Rates and Parallel Premium Before Devaluation

	<u>Year</u>	<u>Number of official exchange rates Years before devaluation</u>		<u>Parallel market premium before devaluation (percentage)</u>			
		<u>3</u>	<u>1</u>	<u>3 years</u>	<u>9 months</u>	<u>3 months</u>	<u>1 month</u>
<u>Non-IMF Devaluers</u>							
Argentina	1955	3	3	173.3	271.3	310.0	260.0
Argentina	1970	1	1	0.0	0.3	0.0	0.0
Chile	1962	2	1	0.0	0.3	1.0	13.9
Colombia	1965	3	3	37.5	42.8	110.6	114.4
Ghana	1971	1	1	74.5	61.9	46.3	34.3
India	1966	1	1	51.9	77.5	131.1	134.2
Israel	1962	1	1	-0.6	36.3	46.9	50.8
Israel	1967	1	1	7.8	5.6	13.9	9.9
Israel	1971	1	1	-5.0	26.9	7.7	6.9
Korea	1960	1	1	110.0	144.0	156.0	174.0
Korea	1964	1	1	40.0	50.0	111.5	119.2
Malawi	1967	1	1	n.a.	n.a.	n.a.	n.a.
Nicaragua	1955	2	2	26.7	25.8	26.2	26.2
Pakistan	1955	1	1	64.0	93.9	67.6	63.1
Spain	1967	1	1	0.3	0.2	0.0	0.5
Sri Lanka	1967	1	1	163.2	180.3	173.1	152.1
Turkey	1958	1	2	196.4	346.4	542.8	667.8
Uruguay	1959	2	2	98.5	128.2	175.6	155.8
Venezuela	1964	3	3	0.0	35.5	35.5	35.5

Table 6 (cont.)

	Year	Number of official ex- change rates Years before devaluation		Parallel market premium before devaluation (percentage)			
		<u>3</u>	<u>1</u>	<u>3 years</u>	<u>9 months</u>	<u>3 months</u>	<u>1 month</u>
		<u>IMF Devaluers</u>					
Argentina	1959	2	2	103.0	133.0	308.3	291.6
Argentina	1962	1	1	0.2	n.a.	n.a.	n.a.
Brazil	1967	1	1	0.0	0.9	0.5	0.5
Colombia	1957	1	1	38.4	66.8	3.5	1.8
Colombia	1962	3	3	11.1	33.4	34.7	58.0
Colombia	1967	3	4	35.9	19.2	46.3	48.1
Costa Rica	1961	1	1	23.2	32.1	36.2	37.5
Ecuador	1961	2	2	37.6	21.9	23.3	66.7
Ecuador	1970	2	2	11.1	22.5	23.9	55.6
Egypt	1962	2	2	3.3	91.4	125.7	128.6
Ghana	1967	1	1	62.0	70.5	135.2	135.2
Indonesia	1970	3	2	6.6	n.a.	n.a.	n.a.
Mexico	1954	1	1	0.0	-1.0	-1.0	-0.4
Peru	1958	1	1	0.0	0.0	0.0	0.0
Peru	1967	1	1	5.2	2.2	2.2	43.6
Philippines	1962	1	2	43.2	85.0	106.0	126.0
Philippines	1970	1	1	8.9	15.4	44.9	59.0
Spain	1959	2	1	12.9	38.6	41.6	38.6
Tunisia	1964	1	1	21.4	95.2	83.3	78.5
Turkey	1970	2	3	38.8	51.6	52.2	43.3
Uruguay	1963	1	1	3.8	0.4	0.3	1.4

Table 6 (cont.)

	<u>Year</u>	<u>Number of official ex- change rates Years before devaluation</u>		<u>Parallel market premium before devaluation (percentage)</u>			
		<u>3</u>	<u>1</u>	<u>3 years</u>	<u>9 months</u>	<u>3 months</u>	<u>1 month</u>
		Uruguay	1971	1	1	2.0	2.8
Yugoslavia	1961	3	3	18.6	18.6	26.5	58.2
Yugoslavia	1965	2	2	n.a.	39.5	41.9	54.7
Yugoslavia	1971	1	1	10.0	11.6	11.2	20.0
Zaire	1967	2	2	164.7	208.8	247.0	261.7

Source: Picks Currency Yearbook (several issues).

period immediately preceding the devaluations. And third, it also reflects the generalized expectations that the situation is increasingly unsustainable and will result in an eventual devaluation.²⁴

As the data on real exchange rate, net foreign assets and on the current account in Table 5 clearly show, the imposition of exchange controls and payments restrictions did not succeed in putting an end to the erosion of foreign reserves, nor did it succeed in halting the deteriorating situation in the country's degree of international competitiveness. In fact, the data clearly suggest that these heightened impediments to trade managed, at most, to slow down the unavoidable crisis, unleashed by the inconsistent macroeconomic policies. Moreover, not only exchange controls failed to halt international reserves depletion, but the available evidence suggests that an important negative side effect of these trade restrictions and exchange controls is that they introduced serious distortions into these economies, greatly affecting their overall performance.

III.4 Going to the Fund? Economic and Political Angles

Why do some devaluing countries go to the IMF, while others stay strictly away from it? Moreover, how can we explain that some countries request IMF assistance to tackle a particular crisis, but decide to face other crises -- apparently equally deep and serious -- on their own? In this subsection we use our devaluation episodes data set to address these questions. In principle, we would expect that the decision to approach the IMF for assistance would respond to a combination of economic and political considerations, including the depth of the external crisis. From a political economy perspective it would be expected that the degree of instability of the political system, as well as other institutional variables, would affect the decision to approach the IMF. We report results from a series of

probit regressions aimed at trying to understand what determines the probability that a devaluing country will approach the IMF for assistance.

To the extent that the IMF provides technical assistance and financial support, it is expected that the probability of approaching the IMF, conditional on the fact that adjustment will be undertaken, should depend on the following class of economic variables: (1) the availability of technical expertise in the country in question. The lower this availability, the higher the expected probability of approaching the IMF. The measurement of this variable is difficult and in the empirical analysis presented below we proxy it by each country's income per capita relative to that of the U.S.²⁵ (2) In general, we would expect that the deeper the external sector crisis -- measured through the use of indicators such as changes in the current account and loss in international competitiveness, the higher the likelihood of approaching the IMF. (3) The availability of foreign currency funds to withstand the transition without obtaining Fund financing. Countries with high reserves of foreign exchange or with higher borrowing ability will be in a better position to tackle a crisis on their own. We proxy this variable by the relative level of available foreign assets the year before the devaluation.

In addition to the economic variables discussed above, we would expect that the decision to approach the IMF will also depend on political and institutional variables. An important implication of the recent work on the political economy of stabilization is that countries with weaker, more unstable and more polarized political systems will have greater difficulties in putting together a credible stabilization program. There are two reasons for this: first, the more unstable the political system, the less binding will government's reputational constraint become;²⁶ second, countries with a

more unstable political system will have a higher proclivity to rely on inflationary financing to fund public expenditures.²⁷ An important empirical implication of this approach to stabilization is that countries with a more unstable political regime will tend to have a higher probability of approaching the IMF. In this way they will be able to obtain a "seal of approval" for their stabilization and, thus, gain in credibility. In the empirical analysis reported above we use a series of political variables to investigate this hypothesis.

The modern public choice approach to international organizations provides an additional rationale for considering political and institutional variables in explaining the probability of requesting IMF assistance.²⁸ According to this view an important role of international organizations is to do national governments "dirty work". By involving multinational bodies in the decisionmaking process, local politicians can shield themselves from the political fallout associated with unpopular policies.²⁹ This implies that governments with a more unstable political base, and thus subject to suffering more heavily from unpopular policies, will recur more frequently to the IMF. A second implication of this public choice view is that, with other things given, countries with dictatorial regimes will have a smaller incentive to request IMF assistance. This is because dictatorial regimes can, in general, withstand unpopular adjustment programs without suffering serious political consequences.³⁰ Finally, ideological considerations are also likely to affect the decision to implement an IMF program. In general, we would expect that left-leaning governments will be less likely to approach the Fund.³¹

In the probit analysis on IMF programs the dependent variable took a value of one if the episode corresponded to an IMF devaluation and zero

otherwise. The following political and economic variables were used as regressors (although not everyone in every regression):

- (1) GDP per capita the year of the devaluation, relative to the U.S. GDP per capita that same year. Its sign is expected to be negative. These data were obtained from Summers and Heston (1988).
- (2) Changes in the real exchange rate index in the two years prior to the devaluation. The sign is expected to be negative, capturing the fact that countries with a more dramatic loss in international competitiveness are more likely to go to the IMF.
- (3) Change in the current account deficit in the three years prior to the crisis. Its sign is expected to be negative.
- (4) The net foreign assets ratio the year before the crisis. This measures the availability of own resources to withstand the adjustment. Its sign is expected to be negative, implying that the lower the availability of foreign resources the higher the probability of requesting access to Fund financing.³²
- (5) Index of political unpopularity, measured as the incidence of politically motivated strikes, protests and demonstrations. This index was calculated on per capita basis and was computed as the average between 1948 and the year prior to the devaluation. We expect its coefficient to be positive. When alternative periodicities were used no significant changes in the results were detected. The raw data used for constructing this and the other political indicators used in this analysis were taken from Taylor and Jodice (1983).
- (6) Index of political violence, measured by the incidence of politically related assassinations, attacks and deaths. This index was calculated as our political instability, variable (5), using the same source. We

also expect a positive coefficient.

- (7) Frequency of attempted coups d'etat (both successful and unsuccessful). We take this to be an alternative measure of political instability, and expect its coefficient to be positive.
- (8) A dummy variable that takes the value of one if the government in office is democratic and zero if dictatorial. We expect its sign to be negative.
- (9) An ideological index that measures whether the country in office is right, center or left.³³ This index takes a value of zero if the government is rightwing, one if it is of centrist orientation and two if it is leftwing. We expect its coefficient to be negative.

Table 7 contains several probit regressions on IMF programs. The results obtained are quite encouraging: the χ^2 statistics indicate that the overall regressions are significant at conventional levels and the majority of the coefficients have the expected sign, although some of them are estimated somewhat imprecisely. Overall, these regressions do provide support to the view that both political and economic variables determine the probability of going to the Fund. From the economic point of view, our estimations indicate that the relative GDP and net foreign asset position are the most important determinants in the decision to go to the Fund: poorer countries and countries facing a more severe exchange crisis have a higher probability of requesting Fund assistance. Surprisingly, exchange rate appreciation and deterioration in the current account do not seem to be as important as the other economic determinants.³⁴ On the political side, Table 7 shows that countries with a higher frequency of coups and less democratic regimes are more likely to undertake a program endorsed by the IMF. The two indices of political instability have the expected signs, but

TABLE 7

Probit Analysis For IMF-Programs

	<u>(Eq. 1)</u>	<u>(Eq. 2)</u>	<u>(Eq. 3)</u>	<u>(Eq. 4)</u>
Constant	1.481 (2.148)	1.517 (2.178)	1.245 (1.705)	0.815 (1.551)
Relative GDP per capita	-2.556 (-1.549)	-3.098 (-1.975)	-2.414 (-1.503)	-2.528 (-1.890)
ΔRER	0.014 (1.032)	0.009 (0.659)	0.013 (0.896)	-0.006 (-0.454)
ΔCurrent Account	0.022 (0.217)	0.028 (0.276)	0.019 (0.194)	-
Lagged Net Foreign Assets	-0.041 (-2.328)	-0.043 (-2.455)	-0.041 (-2.323)	-
Political Unpopularity	0.001 (0.682)	-	-	-
Coups	1.338 (1.409)	1.623 (1.800)	1.151 (1.207)	1.000 (1.814)
Political Violence	-	-	0.018 (1.096)	0.017 (0.633)
Democracy	- 0.796 (-1.611)	-0.849 (-1.678)	-0.855 (-1.626)	-0.564 (-1.284)
Ideology	- 0.218 (0.711)	0.263 (0.830)		-
Log likelihood ratio	16.695	16.537	18.484	8.058

t-statistics in parentheses.

their standard errors are rather high. Finally, the coefficient of ideology variable is estimated very imprecisely and has the opposite sign to what we expected. Since it is very likely that countries with a long history of coups and political instability may lack reputation and suffer from more severe credibility problems than countries with a history of constitutional government transfers and political tranquility, the results obtained give some support to idea of a "seal of approval" exposed in Section II. We interpret these results as promising and suggestive. We believe that further formal empirical studies on the political economy of adjustment are likely to provide important new light on this area of inquiry.

IV. The "Effectiveness" of IMF-Sponsored and Unilateral Nominal Devaluations During the Bretton Woods Period

Were these devaluations successful? Was it worthwhile engaging in these programs? Is there any evidence that IMF-devaluers fared any better than non-IMF countries? In this section we address these issues by focusing on the behavior of the three set of variables of Section III -- real exchange rates, net foreign assets and current account ratios -- for the period immediately following our 48 devaluations. Although the great majority of the IMF programs considered in this study were restricted to a one year duration, we look at performance in the three year period following each devaluation. The spirit of IMF programs is, of course, that after the program is over the country will continue to do well. We start our analysis by investigating whether these devaluations impacted the real exchange rate. We then analyze the role of accompanying macropolicies, and finally analyze the response of net foreign assets and the current account balance. In Section V we look at some political aspects of adjustment.

IV.1 Nominal Devaluations, Real Devaluations and the External Sector

Tables 8 and 9 deal with real exchange rates behavior during the three years following our 48 devaluation episodes. In Table 8 the index of the bilateral (with respect to the U.S. dollar) real exchange rate one year before the devaluation, the year of the devaluation, and one, two and three years after the devaluation is presented. As can be seen, in the majority of cases (20 out of 22 non-IMF and 21 out of 26 IMF episodes) the RER was higher (that is, more depreciated) three years after the devaluation than the year prior to the devaluation. Moreover, in a large number of cases three years after the adjustment program, the RER index exceeded its value three years prior to the devaluation. This provides preliminary information suggesting that these nominal devaluations were, as a group, largely successful in helping generate RER realignments.

Table 9 looks at the issue of nominal and real devaluations from a different perspective. This table presents data on the cumulative ex-post elasticity of the real exchange rate. This cumulative "effectiveness" index of nominal devaluations is computed in the following form:

$$\text{Effectiveness Index}_k = \frac{\hat{RER}_k}{\hat{E}_k} \quad (1)$$

where k refers to the number of years since the devaluation, \hat{RER}_k is the accumulated percentage change in the real exchange rate between the year prior to the devaluation and k years after the devaluation ($k = 0, 1, 2, 3$). \hat{E}_k is the accumulated percentage change in the nominal exchange rate during the same period. This elasticity provides an index of the degree of erosion experienced by the real exchange rate during the three years after the devaluation. A value of one means that the nominal exchange rate adjustment has been fully transferred into a one-to-one real devaluation. A negative value of the index, on the other hand, indicates that more than 100% of the

TABLE 8

Real Exchange Rate Indexes in the Aftermath of 48 Devaluation Episodes^a

<u>Country</u>	<u>Year</u>	<u>Year Prior</u>	<u>Devaluation Year</u>	<u>1 Year After</u>	<u>2 Years After</u>	<u>3 Years After</u>
A. <u>Non-IMF Devaluers</u>						
ARGENTINA	1955	100.0	229.5	218.2	177.8	148.0
ARGENTINA	1970	100.0	104.3	99.7	65.8	46.1
CHILE	1962	100.0	203.2	176.5	130.0	134.1
COLOMBIA	1965	100.0	148.2	127.1	138.0 ^b	142.6 ^b
GHANA	1971	100.0	166.3	111.6	96.1	96.1
INDIA	1966	100.0	146.8	129.5	130.1	131.9
ISRAEL	1962	100.0	151.2	143.9	131.9	129.5
ISRAEL	1967	100.0	114.8	115.5	116.3	112.7
ISRAEL	1971	100.0	110.6	102.9	96.6	117.5 ^b
JAMAICA	1967	100.0	113.2	110.2	107.4	103.7
KOREA	1960	100.0	118.0	217.3	204.4	170.2
KOREA	1964	100.0	152.5	145.4	187.9	172.8
MALAWI	1967	100.0	123.9	114.7	117.1	112.5
NICARAGUA	1955	100.0	123.5	131.8	141.0	135.8
PAKISTAN	1955	100.0	144.7	198.6	185.9	182.3
SIERRA LEONE	1967	100.0	110.5	114.3	112.3	111.3
SPAIN	1967	100.0	108.9	107.5	109.5	106.3
SRI LANKA	1967	100.0	122.1	117.8	114.9	112.5
TRINIDAD TOBAGO	1967	100.0	114.3	108.6	109.7	111.3
TURKEY	1958	100.0	271.2	220.1	217.6	216.9
URUGUAY	1959	100.0	201.4	146.8	118.5	107.4
VENEZUELA	1964	100.0	135.1	135.9	137.3	138.1

Table 8 (cont.)

<u>Country</u>	<u>Year</u>	<u>Year</u>	<u>Devaluation</u>	<u>1 Year</u>	<u>2 Years</u>	<u>3 Years</u>
		<u>Prior</u>	<u>Year</u>	<u>After</u>	<u>After</u>	<u>After</u>
B. IMF Devaluers						
ARGENTINA	1959	100.0	97.6	76.3	67.2	85.2 ^b
ARGENTINA	1962	100.0	126.8	100.4	93.9	93.1
BRAZIL	1967	100.0	94.0	111.4	119.5	103.2
COLOMBIA	1957	100.0	193.1	201.8	188.9	190.3
COLOMBIA	1962	100.0	131.4	99.2	84.4	125.0 ^b
COLOMBIA	1967	100.0	108.5	112.2	112.3	116.4
COSTA RICA	1961	100.0	115.6	112.5	108.9	106.1
ECUADOR	1961	100.0	115.0	112.0	105.7	101.6
ECUADOR	1970	100.0	136.9	130.7	126.6	126.6
EGYPT	1962	100.0	127.7	126.5	122.2	108.9
GHANA	1967	100.0	157.2	146.8	144.1	145.1
INDONESIA	1970	100.0	106.8	116.1	114.1	98.4
MEXICO	1954	100.0	137.9	119.1	117.6	115.1
PERU	1958	100.0	121.5	123.3	109.5	102.8
PERU	1967	100.0	131.7	113.5	111.4	109.0
PHILIPPINES	1962	100.0	184.8	174.1	160.5	160.3
PHILIPPINES	1970	100.0	149.1	133.9	133.8	131.9
SPAIN	1959	100.0	133.2	131.5	127.4	121.5
TUNISIA	1964	100.0	119.4	114.1	113.3	110.5
TURKEY	1970	100.0	159.2	134.8	126.3	123.9
URUGUAY	1963	100.0	119.8	100.2	205.9 ^b	155.3 ^b
URUGUAY	1971	100.0	153.0	105.5	91.5	106.8
YUGOSLAVIA	1961	100.0	105.1	94.9	86.0	79.1

Table 8 (cont.)

	Year	Devaluation	1 Year	2 Years	3 Years	
<u>Country</u>	<u>Year</u>	<u>Prior</u>	<u>Year</u>	<u>After</u>	<u>After</u>	<u>After</u>
YUGOSLAVIA	1965	100.0	127.8	104.3	98.4	95.9
YUGOSLAVIA	1971	100.0	121.8	109.2	94.4	100.9
ZAIRE	1967	100.0	222.9	152.3	148.3	141.7

^aAn increase in the index depicts real depreciation.

^bA new devaluation took place that year. Consequently this value is not relevant to evaluate the effectiveness of the devaluations.

Sources: Constructed from raw data obtained from various issues of the International Financial Statistics.

TABLE 9
Ex-Post Real Exchange Rate Elasticities of Devaluations^a

<u>Country</u>	<u>Year</u>	<u>Devaluation Year</u>	<u>1 Year After</u>	<u>2 Years After</u>	<u>3 Years After</u>
A. <u>Non-IMF Devaluers</u>					
ARGENTINA	1955	0.82	0.70	0.47	0.26
ARGENTINA	1970	0.30	-0.01	-0.80	-1.26
CHILE	1962	0.79	0.40	0.14	0.11
COLOMBIA	1965	0.96	0.54	0.51 ^b	0.49 ^b
GHANA	1971	0.85	0.45	-0.30	-0.31
INDIA	1966	0.80	0.51	0.50	0.55
ISRAEL	1962	0.77	0.66	0.48	0.44
ISRAEL	1967	0.89	0.93	0.98	0.76
ISRAEL	1971	0.53	0.15	-0.17	0.24 ^b
JAMAICA	1967	0.83	0.60	0.46	0.22
KOREA	1960	0.60	0.73	0.65	0.44
KOREA	1964	0.54	0.42	0.81	0.65
MALAWI	1967	1.44	0.88	1.02	0.75
NICARAGUA	1955	0.59	0.79	1.03	0.89
PAKISTAN	1955	1.03	2.25	2.00	1.90
SIERRA LEONE	1967	0.66	0.84	0.76	0.68
SPAIN	1967	0.55	0.46	0.57	0.39
SRI LANKA	1967	0.91	0.74	0.60	0.50
TRINIDAD TOBAGO	1967	0.90	0.50	0.60	0.68
TURKEY	1958	0.77	0.54	0.53	0.53
URUGUAY	1959	0.58	0.27	0.11	0.04
VENEZUELA	1964	0.92	0.94	0.98	1.00

Table 9 (cont.)

<u>Country</u>	<u>Year</u>	<u>Devaluation</u> <u>Year</u>	<u>1 Year</u> <u>After</u>	<u>2 Years</u> <u>After</u>	<u>3 Years</u> <u>After</u>
B. IMF Devaluers					
ARGENTINA	1959	-0.02	-0.22	-0.31	-0.06 ^b
ARGENTINA	1962	0.44	0.01	-0.07	-0.05
BRAZIL	1967	-0.27	0.16	0.16	0.03
COLOMBIA	1957	0.80	0.66	0.57	0.54
COLOMBIA	1962	0.91	-0.02	-0.46	0.25 ^b
COLOMBIA	1967	0.51	0.49	0.38	0.40
COSTA RICA	1961	0.88	0.70	0.50	0.35
ECUADOR	1961	0.75	0.60	0.29	0.08
ECUADOR	1970	0.95	0.79	0.69	0.68
EGYPT	1962	1.16	1.11	0.93	0.37
GHANA	1967	1.33	1.09	1.03	1.05
INDONESIA	1970	0.43	0.59	0.52	-0.06
MEXICO	1954	0.85	0.43	0.40	0.34
PERU	1958	0.74	0.49	0.22	0.07
PERU	1967	0.71	0.31	0.26	0.20
PHILIPPINES	1962	0.90	0.79	0.65	0.64
PHILIPPINES	1970	0.77	0.53	0.47	0.45
SPAIN	1959	0.79	0.74	0.65	0.51
TUNISIA	1964	0.81	0.59	0.56	0.44
TURKEY	1970	0.91	0.62	0.46	0.42
URUGUAY	1963	0.44	0.00	0.24 ^b	0.09 ^b
URUGUAY	1971	1.10	0.03	-0.03	0.01
YUGOSLAVIA	1961	0.28	-0.27	-0.75	-1.12

Table 9 (cont.)

<u>Country</u>	<u>Year</u>	<u>Devaluation</u> <u>Year</u>	<u>1 Year</u> <u>After</u>	<u>2 Years</u> <u>After</u>	<u>3 Years</u> <u>After</u>
YUGOSLAVIA	1965	0.42	0.07	-0.02	-0.06
YUGOSLAVIA	1971	0.61	0.26	-0.23	0.02
ZAIRE	1967	0.61	0.26	0.24	0.21

^aSee text for explanations.

^bIncludes the effect of new devaluations that took place that year.

nominal devaluation has been eroded and that, at that particular point, the real exchange rate is below its value one year before the crisis. The advantage of this indicator is that it measures the "effort", in terms of nominal devaluation, that a country has had to make in order to achieve a 1% real depreciation. Consequently, it corrects for those cases where the discrete devaluation is followed by a crawling peg, where the authorities try to maintain a high level of the RER by successive rounds of nominal devaluations and, most of the time, higher inflation. The actual value of this ex-post elasticity index measures in a broad (and preliminary) sense what percentage of the devaluation has been "effective".

As in Table 8, the data in Table 9 show a fairly high degree of effectiveness of nominal devaluations: in 27 out of the 48 episodes the ex post RER elasticity is equal or greater to one half, one year after the devaluation. Three years after, 26 out of the 48 countries have an effectiveness index that exceeds 0.33. For IMF countries the median RER elasticity one year after the crisis was 0.49, while for unilateral devaluers a value was 0.57. The difference between the two groups is accentuated three years after the devaluation: the index is 0.23 for IMF devaluers and 0.50 for non-IMF countries.

The final outcome of adjustment programs -- including the RER effect of devaluations -- will largely depend on the accompanying macroeconomic policies. If, as shown in Edwards (1989a), the nominal devaluation is accompanied by expansive macroeconomic policies, the real effect of the nominal devaluation will tend to be eroded. Table 10 contains data for the three years following each devaluation on three of the indicators of domestic credit and fiscal policies considered in Section III: (a) rate of growth of domestic credit; (b) rate of growth of domestic credit to the

TABLE 10

Macroeconomic Policies After Devaluation Episodes

<u>Country</u>	<u>Year</u>	<u>Growth of Domestic Credit</u>		<u>Growth of Domestic Credit to the Public Sector</u>		<u>Ratio of Domestic Credit to Public Sector to Total Domestic Credit</u>	
		<u>1 Year After</u>	<u>3 Years After</u>	<u>1 Year After</u>	<u>3 Years After</u>	<u>1 Year After</u>	<u>3 Years After</u>
A. NON-IMF DEVALUERS							
ARGENTINA	1955	13.4	43.6	-36.4	68.9	5.8	36.7
ARGENTINA	1970	41.9	94.7	14.3	133.3	2.1	4.8
CHILE	1962	33.9	44.9	45.4	55.4	43.4	48.6
COLOMBIA	1965	17.9	16.4	-6.1	-1.5	24.9	21.5
GHANA	1971	12.2	48.8	24.1	52.6	43.4	46.4
INDIA	1966	8.7	9.8	6.3	3.9	57.8	52.6
ISRAEL	1962	34.1	18.4	438.9	18.0	12.7	13.2
ISRAEL	1967	37.8	28.1	111.4	35.4	29.1	40.8
ISRAEL	1971	12.5	74.6	-5.5	96.7	35.9	31.4
JAMAICA	1967	22.5	20.2	29.5	394.1	6.7	7.9
KOREA	1960	128.1	17.3	78.2	8.3	27.6	31.3
KOREA	1964	31.3	69.9	-7.0	21.3	18.0	7.4
MALAWI	1967	1.4	2.7	93.8	-61.2	17.3	8.1
NICARAGUA	1955	11.4	5.4	20.0	0.0	-10.3	-7.7
PAKISTAN	1955	21.5	8.5	29.7	10.9	69.4	75.9
SIERRA LEONE	1967	-8.7	36.8	-37.5	250.0	23.8	26.9
SPAIN	1967	21.0	14.0	18.2	4.4	26.0	22.5
SRI LANKA	1967	13.6	10.0	6.1	9.6	63.7	61.2
TRINIDAD/TOBAGO	1967	17.3	27.5	62.3	61.4	22.1	17.6
TURKEY	1958	13.0	-3.0	10.5	157.7	13.5	41.9

Table 10 (cont.)

<u>Country</u>	<u>Year</u>	<u>Growth of Domestic Credit</u>		<u>Growth of Domestic Credit to the Public Sector</u>		<u>Ratio of Domestic Credit to Public Sector to Total Domestic Credit</u>	
		<u>1 Year After</u>	<u>3 Years After</u>	<u>1 Year After</u>	<u>3 Years After</u>	<u>1 Year After</u>	<u>3 Years After</u>
URUGUAY	1959	26.3	25.5	-23.8	347.1	3.3	11.0
VENEZUELA	1964	10.7	8.9	-20.7	-14.8	-13.4	-11.8
Median		17.6	19.3	19.1	28.3	24.4	29.1
Average		23.7	28.3	39.8	74.3	25.0	28.0
B. IMF DEVALUERS							
ARGENTINA	1959	27.8	14.0	14.6	23.6	36.7	35.1
ARGENTINA	1962	23.5	27.7	41.3	26.0	40.1	42.8
BRAZIL	1967	55.6	29.3	33.5	-4.7	21.1	12.5
COLOMBIA	1957	12.1	11.2	3.0	-1.8	22.4	19.6
COLOMBIA	1962	16.7	23.0	12.6	45.7	24.1	31.3
COLOMBIA	1967	16.4	17.2	-1.5	-6.4	21.5	14.2
COSTA RICA	1961	0.0	14.7	-22.6	19.5	9.0	11.0
ECUADOR	1961	1.9	10.8	3.3	-41.0	11.0	4.8
ECUADOR	1970	13.0	7.8	18.7	-31.9	27.8	16.0
EGYPT	1962	20.4	7.3	35.1	12.0	52.1	57.5
GHANA	1967	12.5	3.4	18.5	-6.5	59.3	48.3
INDONESIA	1970	35.9	64.7	29.4	-281.6	11.4	-1.3
MEXICO	1954	-1.9	13.0	-5.7	25.1	26.8	22.8
PERU	1958	14.3	11.1	30.3	-8.5	30.5	22.5
PERU	1967	12.1	13.2	18.5	-12.8	36.3	25.0
PHILIPPINES	1962	25.3	6.2	17.8	-23.1	12.3	8.2
PHILIPPINES	1970	11.9	13.0	5.0	-47.7	14.4	5.8

Table 10 (cont.)

		<u>Growth of Domestic Credit</u>		<u>Growth of Domestic Credit to the Public Sector</u>		<u>Ratio of Domestic Credit to Public Sector to Total Domestic Credit</u>	
SPAIN	1959	9.2	15.7	2.4	-3.8	40.6	30.4
TUNISIA	1964	14.2	7.2	11.1	-1.9	33.0	28.1
TURKEY	1970	20.8	22.0	29.9	-21.6	19.4	10.1
URUGUAY	1963	55.7	5.9	15.4	36.4	10.9	19.4
URUGUAY	1971	87.5	-83.3	60.0	122.2	17.8	181.8
YUGOSLAVIA	1961	36.8	10.0	150.0	0.0	19.2	12.1
YUGOSLAVIA	1965	25.2	16.3	22.4	-10.8	9.4	6.4
YUGOSLAVIA	1971	18.6	23.4	53.8	30.4	7.6	7.8
ZAIRE	1967	11.2	29.1	10.0	20.7	80.7	69.7
Median		16.6	13.1	18.5	-2.9	22.0	19.5
Average		22.2	12.8	23.5	-5.5	26.8	28.5

Source: Constructed from several issues of the International Financial Statistics.

public sector; and (c) proportion of total domestic credit received by the public sector. As can be seen, IMF devaluers exhibit tighter macroeconomic policies than non-IMF countries. Interestingly enough this difference across groups was maintained three years after the devaluation, even after most IMF programs had expired. It is also educational to compare the evolution of macro indicators in the devaluing countries with the behavior of these indices for the control group of 24 fixers. In half of the 48 episodes the rate of growth of domestic credit was below the third quartile figure for the fixers in both one and three years after the devaluation.

In order to gain additional insights on the way in which macroeconomic policies and nominal devaluations impacted on the RER during these episodes, a number of cross section regressions on the real exchange rate effect of nominal devaluations were estimated. These regressions take each devaluation episode as an observation, and consider the rate of change of the real exchange rate as the dependent variable. The independent variables include the rate of nominal devaluation, the rate of growth of domestic credit, the rate of growth of domestic credit to the public sector, the change in the ratio of the fiscal deficit to GDP and a dummy (equal to one) in the presence of an IMF program. The equations estimated were of the following form:

$$\hat{RER}_k = \alpha_0 + \alpha_1 \hat{E}_k + \alpha_2 \hat{M}_k + \alpha_3 IMF + u \quad (3)$$

where \hat{RER}_k is the accumulated percentage change in the real exchange rate between the year prior to the devaluation and k years after the devaluation (for $k = 1, 2, 3$ years), for episode n . \hat{E}_k is the percentage change of the nominal exchange rate during the same period, for episode n . Given the nature of the data set used, in most step-wise devaluation cases $\hat{E}_1 = \hat{E}_2 = \hat{E}_3 = \hat{E}$ = initial devaluation. \hat{M}_k is a measure of accumulated macroeconomic measures between the year preceding the devaluation and year

k. Among these measures, \hat{C} stands for growth in domestic credit, \hat{CPS} is growth of credit to the public sector, and \hat{DEF} is the change in the fiscal deficit. IMF is a dummy variable that takes the value of one if the episode in question corresponds to an IMF devaluation. The results from this type of equation allow us to have an idea on the average effects of the nominal devaluations on the RER maintaining other macroeconomic variables constant. The results obtained from the estimation of this equation are presented in Table 11.

Overall these regressions are quite revealing. Controlling for macropolicies, the nominal devaluation exerts a strong influence on the real exchange rate, although its effect diminishes from around 0.68 in the year of the devaluation to approximately 0.15 after three years. Moreover, these results strongly confirm the key role of macroeconomic policies in adjustment programs. In every equation but one the macrovariables had a negative coefficient, and in many significantly so. If macroeconomic policies are expansive it is likely -- as was the case of the Argentinian devaluations of 1959, 1962 and 1970, the Brazilian devaluation of 1967 or the Yugoslav devaluations of 1961 and 1965 and others depicted in Table 8 -- that the real effect of the nominal devaluation will be rapidly eroded.

In order to analyze whether the IMF exerts an independent effect over the real exchange rate in the period following the devaluation, we added an IMF variable to the regressions in Table 11. In every case the coefficient of this dummy turned out to be insignificant, indicating that apart from its influence through macroeconomic policies, the IMF does not appear to have an independent impact on the RER. This dummy may be capturing an additional factor consistent with our analysis of the determinants of the use of IMF credit. In Section III we noted how countries with a more critical economic

TABLE 11
 Nominal Devaluations, Macroeconomic Policies, the IMF
 and Real Devaluations: Cross Episode Regressions
 (Ordinary Least Squares)

	<u>Const</u>	<u>\hat{E}_k</u>	<u>\hat{C}_k</u>	<u>\hat{CPS}_k</u>	<u>\hat{DEF}_k</u>	<u>IMF</u>	<u>\bar{R}^2</u>
<u>A: k = 0 years</u>							
	0.063 (1.362)	0.689 (13.273)	-0.0006 (-0.614)	-	-0.009 (-0.715)	-0.065 (-1.247)	0.800
	0.061 (1.302)	0.684 (13.235)	-	-0.0001 (-0.112)	-0.005 (-0.465)	-0.073 (-1.308)	0.798
<u>B: k = 1 year</u>							
	0.209 (3.355)	0.484 (7.992)	-0.008 (-4.366)	-	-0.019 (-1.380)	-0.099 (-1.477)	0.619
	0.146 (2.262)	0.411 (6.748)	-	-0.004 (-3.447)	-0.024 (-1.533)	-0.063 (-0.813)	0.568
<u>C: k = 2 years</u>							
	0.334 (5.184)	0.358 (7.799)	-0.014 (-5.195)	-	-0.029 (-1.862)	-0.111 (-1.509)	0.591
	0.187 (2.842)	0.308 (6.082)	-	-0.005 (-3.180)	-0.022 (-1.199)	-0.131 (-1.536)	0.456
<u>D: k = 3 years</u>							
	0.408 (4.160)	0.093 (2.677)	-0.009 (-2.332)	-	0.005 (0.305)	-0.184 (-0.895)	0.186
	0.314 (4.421)	0.162 (4.019)	-	-0.008 (-3.355)	-0.011 (-0.630)	-0.170 (-1.021)	0.274

t-statistics in parentheses.

and political conditions were more likely to rely on the Fund and therefore the negative sign of the IMF dummy in Table 11 may indicate a reversion to that state of economic and political instability once the Fund program expired. Further evidence in Section V will shed some light to this issue.

IV.2 Devaluation Programs and the External Sector

The ultimate goal of an adjustment-cum-devaluation program is to generate an improvement in the external position of the country. Table 12 contains summary data on the evolution of the ratio of the current account balance to GDP, and the ratio of net foreign assets to money after the devaluation. These indicators give the accumulated changes of the levels of these variables one, two and three years after the crisis from their levels one year before the devaluation. These data show important differences in behavior across IMF and non-IMF devaluers. While, on average, those countries that requested IMF assistance experienced a fast and significant current account improvement, most non-IMF countries did not see an improvement even three years after the devaluation. By the third year 15 out of 26 IMF devaluers had a stronger current account position than the year before the devaluation. The average improvement was, in fact, 1.3 percentage points of GDP. After three years, however, the majority of the non-IMF devaluers (13 out of 22) had experienced a worsening in the current account ratio. (Table A.1 in the Appendix contains the detailed data for the individual countries.) This difference in behavior across both groups of devaluers is formally picked up by a battery of χ^2 tests. For one year after the devaluations the $\chi^2(2)$ had a value of 6.7, while it was 4.5 for three years after the crisis, which rejects the null hypothesis that both groups come from the same population at conventional significance levels.³⁵

TABLE 12

Current Account and Net Foreign Assets Behavior in
Three Years Following 48 Devaluation Episodes

	<u>One Year</u>		<u>Two Years</u>		<u>Three Years</u>	
	<u>IMF</u>	<u>Non-IMF</u>	<u>IMF</u>	<u>Non-IMF</u>	<u>IMF</u>	<u>Non-IMF</u>
A. <u>Change In Current Account Balance/GDP</u>^a						
First Quartile	0.4	-2.8	-0.2	-3.5	-1.3	-3.6
Median	1.9	-1.2	1.2	0.3	0.6	-1.2
Third Quartile	3.2	1.1	3.0	2.1	4.0	2.3
Mean	2.2	-0.9	1.8	-0.9	1.3	-1.1
B. <u>Change in Net Foreign Asset Ratio</u>^a						
First Quartile	-6.3	-4.1	-3.7	-4.4	-4.6	-4.6
Median	0.4	1.3	2.7	-0.7	2.8	-0.8
Third Quartile	3.8	10.7	9.8	8.2	10.2	5.3
Mean	0.9	3.1	1.9	2.3	4.2	-1.6

^aRelative to one year prior to devaluation.

Sources: Constructed from raw data obtained from the IFS.

The data on net foreign assets, displayed in Panel B of Table 12, show a slightly different story, with non-IMF countries having a stronger performance in the early years. After 3 years, however, the majority of the countries in both groups had experienced an improvement in their net foreign asset position, with IMF devaluers having fared, on average, substantially better than non-IMF countries (see Table A.1 in the Appendix for detailed information on the individual countries performance). Those countries that did not experience an improvement in their current account and net foreign asset positions correspond largely to those that failed to generate a real exchange correction and maintained expansive macropolicies.

V. The Political Economy of Failed Devaluations

Although the broad picture that emerges from our previous analysis is one of overall effectiveness in the majority of the adjustment-cum-devaluation programs the sample includes some spectacular failures. In this section we address this issue, trying to understand why in some countries the programs failed so precipitously, while in others they attained varying degrees of success. We start by classifying the 48 episodes into successful and failed programs. We then provide an analysis on the extent to which political development in these nations can help explain these differences in program outcomes. Our empirical analysis is motivated by the new literature on the political economy of macroeconomic policy. Since it is based on limited data, the analysis should be considered as preliminary and somewhat tentative. We think, however, that it provides some interesting results, suggesting that this is a promising avenue for further empirical investigations.

V.1 Successful and Unsuccessful Devaluations

In this section we attempt to classify our 48 episodes as "successful" and "unsuccessful" devaluations. To do this we have concentrated on the behavior of three key indicators during the period following the devaluations:

1. Real exchange rates. Our focus is on the effectiveness index reported in Table 9.
2. Net foreign assets of the monetary system.
3. Current Account as percentage of GDP.

An episode was defined as failure if in any of the three years after the devaluation more than 90% of the real exchange rate effect of the devaluation had been eroded -- that is, the effectiveness index is less than 0.1 -- or even when the effectiveness index was above 0.1, both the net foreign assets and current account positions had worsened three years after the devaluation.³⁶ All other episodes were classified as having been effective. However, in order to have a finer analysis these "effective" programs were divided into two groups: "successful" and "limited success". Successful countries are those where the real exchange rate elasticity of the devaluation exceeded 0.3 after 3 years and where the current account or net foreign assets exhibited an improvement 3 years after the crisis. All the rest of the countries were classified as having limited success. This specific definition of success and failure -- like any other such classification -- is somewhat arbitrary. However, by using these indicators we have concentrated on the most immediate targets of devaluations. The cutoff points allowed us to be "generous" with respect to strictly "successful" devaluations while at the same time being strict in the consideration of unsuccessful devaluations.

Table 13 contains the 48 episodes classified according to this criterion. As can be seen, among the 22 non-IMF devaluers, there are 8 clearcut successful cases, 6 clearcut failures, and 8 limited success cases. For the 26 IMF devaluers there are 8 clearcut successful episodes, 12 unsuccessful ones and 6 cases of limited success. Out of the twelve unsuccessful IMF devaluers, four had their program canceled: Argentina, 1959, 1962, Peru 1958, and Yugoslavia 1971.

Our analysis has placed great emphasis on the role of accompanying macroeconomic policies when evaluating the degree of success of a devaluation. In order to formally investigate the relationship between success and macroeconomic policies, a series of χ^2 tests were performed. The results obtained are quite supportive of the view that macroeconomic policies make a difference in the degree of effectiveness a devaluation achieves. For many of the monetary and fiscal indicators included it is possible to reject (at conventional levels of confidence) the null hypothesis that "effective" and "failed" devaluations come from the same population. This is especially the case for the annual growth of domestic credit in the year after the devaluations ($\chi^2 = 6.8$) as well as three years after ($\chi^2 = 5.3$).

V.2 Political Instability and Failed Adjustment

Naturally, the statement that some devaluation programs failed because the authorities didn't implement, alongside the devaluation, consistent macroeconomic policies begs the question on why was this the case. Why are some countries able to regain fiscal and credit disciplines, while others are unable (or unwilling) to do it?

An important empirical implication of some of the new literature on political economy of stabilization, is that countries with weaker, more unstable and polarized political systems will generally face greater

TABLE 13

Successful and Unsuccessful Devaluation Episodes

	<u>Country</u>	<u>Year</u>
A.	<u>Non-IMF Devaluers</u>	
1.	Successful:	
	INDIA	1966
	ISRAEL	1962
	KOREA	1964
	MALAWI	1967
	SIERRA LEONE	1967
	SPAIN	1967
	TURKEY	1958
	VENEZUELA	1964
2.	Limited Success:	
	CHILE	1962
	ISRAEL	1967
	JAMAICA	1967
	KOREA	1960
	NICARAGUA	1955
	PAKISTAN	1955
	SRI LANKA	1967
	TRINIDAD/TOBAGO	1967
3.	Unsuccessful:	
	ARGENTINA	1955
	ARGENTINA	1970
	COLOMBIA	1965

Table 13 (cont.)

	<u>Country</u>	<u>Year</u>
	GHANA	1971
	ISRAEL	1971
	URUGUAY	1959
B.	<u>IMF Devaluers</u>	
1.	Successful:	
	COLOMBIA	1967
	ECUADOR	1970
	GHANA	1967
	MEXICO	1954
	PHILIPPINES	1962
	PHILIPPINES	1970
	SPAIN	1959
	TURKEY	1970
2.	Limited Success:	
	COLOMBIA	1957
	COSTA RICA	1961
	EGYPT	1962
	PERU	1967
	TUNISIA	1964
	ZAIRE	1967
3.	Unsuccessful:	
	ARGENTINA	1959
	ARGENTINA	1962
	BRAZIL	1967
	COLOMBIA	1962

Table 13 (cont.)

<u>Country</u>	<u>Year</u>
ECUADOR	1961
INDONESIA	1970
PERU	1958
URUGUAY	1963
URUGUAY	1971
YUGOSLAVIA	1961
YUGOSLAVIA	1965
YUGOSLAVIA	1971

Source: See text for explanation.

difficulties in implementing the fiscal adjustment required for a devaluation to be successful. The reason for this is that in more unstable countries with weaker governments it will be difficult to come to a decision on which groups should bear a higher percentage of the adjustment costs. Thus, countries with weaker and more polarized political systems will either delay the adjustment, or will not carry it out as originally designed (Alesina and Drazen, 1991).

In order to investigate these implications of the theory we used the data set compiled by Taylor and Jodice to define a number of political related variables for the period following the adjustment. In particular, we are interested in obtaining data capturing, on the one hand, the degree of political resistance generated by the adjustment program and, on the other hand, the extent to which the government repressed dissidents. Additionally, we also obtained information on whether in the period immediately following the devaluation there was a coup attempt.

Table 14 contains data on five indices of political instability for the 46 episodes for which we have data. As can be seen, "failure" countries indeed appear to have a more unstable political structure: the frequency of politically motivated strikes and riots is higher than those in the "effective" devaluation countries. Additionally, in the unsuccessful countries the governments tried to exercise a stricter control on dissidence. Finally, "failure" episodes experienced a higher incidence of coups. In fact, it is quite impressive how many "failure" episodes were followed by a coup attempt: Argentina's four episodes, Colombia 1965, Ecuador 1961, Uruguay 1963 and 1971, and Ghana 1971.

In order to gain additional insights on the influence of political instability and weakness on the outcome of devaluation outcomes, we

TABLE 14

Indices Of Political Instability And Weakness

In Devaluation Episodes: Means.*

	<u>1 Year After Devaluation</u>			<u>3 Years After Devaluation</u>		
	<u>Successful</u>	<u>Limited</u>	<u>Failed</u>	<u>Successful</u>	<u>Limited</u>	<u>Failed</u>
1. Politically Motivated Strikes	0.06	0.04	0.10	0.02	0.00	0.13
2. Political Demonstrations and Riots	0.26	0.09	0.37	0.10	0.70	0.21
3. Government Repression of Dissidents	0.80	0.64	1.97	0.51	0.73	0.83
4. Index of Government Transfers	0.60	0.54	0.61	0.67	0.31	0.83
5. Index of Coups Attempts	0.27	0.23	0.67	0.00	0.23	0.28

*There were no data on the two Korean episodes.

Source: Constructed from data obtained from Taylor and Jodice (1983).

estimated a series of probit regressions. The dependent variable was defined as a dummy that took a value of one if the episode was classified as either being a "success" or a "limited success", and a value of zero if the episode was a failure. In addition to the political instability and weakness variables in Table 14, we also included our measures of political ideology, democracy and IMF presence from section III.3 at the time of the devaluation. As a way to reduce serious simultaneity problems we restricted the independent variables to one year after the devaluation. The results obtained from this analysis are in Table 15.

As can be seen, the results are quite interesting. Every coefficient has the expected sign and a number of them are significant at conventional levels, providing some (preliminary) support to the view that governments with greater political instability and weakness have more difficulty implementing successful adjustment. What is particularly interesting is that these results suggest that, with other things given, countries that had a democratic rule at the time of the devaluation have a greater probability of success, although the coefficient is estimated quite imprecisely. This implies that in order to "put the house in order" and implementing adjustment programs based on financial discipline there is no need to eschew democracy. This point was forcefully made by Carlos Díaz Alejandro in the early 1980s, when the pessimism associated to the debt crisis created doubt on the probability of coexistence in the LDCs of democratic rule and "sound" economic policy.

VI. Bretton Woods and After: A Preliminary Comparison of Inflation and Growth.

At the time the Bretton Woods system was abandoned, a number of observers thought that a more flexible regime would generate more efficient

TABLE 15

Probit Analysis On Effectiveness And Failure
Of Devaluation Programs*

Constant	<u>(Eq. 1)</u>	<u>(Eq. 2)</u>
Constant	0.582 (1.455)	0.584 (1.540)
Riots	-0.271 (-0.822)	-0.271 (-0.823)
Strikes	-1.331 (-0.893)	-1.331 (-0.894)
Repression	-0.106 (-1.085)	-0.106 (-1.010)
Coups	-0.400 (-1.523)	-0.400 (-1.531)
Demo	0.270 (0.623)	0.271 (0.627)
Ideology	0.003 (0.010)	
χ^2	7.530	7.530

t-statistics are in parentheses.

adjustment paths. The main idea was that greater flexibility in exchange rate management would allow countries to correct external imbalances without incurring "unnecessary" reductions in real income. In a sentence, it was thought that a greater flexibility would "reduce the real costs of adjustment". On the other hand, a minority of analysts pointed out that moving away from fixed parities was likely to generate an increase in world-wide inflation.³⁷ Others, however, argued that this didn't have to be the case and that countries could maintain low inflation through monetary discipline.

Now that enough time has elapsed since the demise of the Bretton Woods regime we can look back and ask whether the move to a system of exchange rate flexibility indeed reduced the "real costs of adjustment" without greatly affecting inflation. In this section we address this issue by undertaking a preliminary, but nevertheless suggestive, comparison of our 48 devaluations during the Bretton Woods period to a series of devaluations undertaken during the decade that followed the collapse of the fixed rate system. The sample of devaluations that occurred during the turbulent 1970s and early 1980s was obtained from Edwards (1989a), and includes 17 episodes.³⁸ Due to space restrictions, and in order to concentrate on some of the more controversial aspects of this debate, we focus exclusively on inflation and real GDP growth.

Table 16 contains data on growth and inflation in the three year period following the devaluations. As before, the data are disaggregated for the IMF and unilateral devaluers. Simple inspection reveals that in the post-Bretton Woods era output tended to decline more sharply in the period immediately following the devaluation. However, in both periods the rate of economic growth recovered its pace after three years. The recovery seems to be also less dynamic during post-Bretton Woods. However, it is important to

TABLE 16

Growth and Inflation following Devaluation Episodes:
The Bretton Woods Period and One Decade Later

	<u>Year of Devaluation</u>		<u>1 Year After</u>		<u>2 Years After</u>		<u>3 Years After</u>	
	<u>IMF</u>	<u>Non-IMF</u>	<u>IMF</u>	<u>Non-IMF</u>	<u>IMF</u>	<u>Non-IMF</u>	<u>IMF</u>	<u>Non-IMF</u>
<u>I. The Bretton Woods Period</u>								
A. Growth of GDP								
First Quartile	0.3	2.4	2.9	2.4	3.1	2.7	3.5	3.3
Median	3.3	4.7	5.2	4.9	4.9	4.8	7.3	5.9
Third Quartile	5.5	9.5	7.0	6.4	9.2	8.7	9.5	9.3
Mean	2.7	5.3	4.8	4.9	5.8	6.1	7.1	6.6
B. Rate of Inflation								
First Quartile	4.7	2.2	5.8	4.2	6.2	2.1	4.0	4.8
Median	8.5	9.5	14.8	9.2	7.6	5.7	7.4	7.1
Third Quartile	21.9	13.4	24.5	15.2	14.9	18.3	22.2	18.5
Mean	15.8	9.7	18.1	11.5	14.4	10.3	16.0	13.1
<u>II. One Decade after Bretton Woods</u>								
A. Growth of GDP								
First Quartile	-4.4	-1.2	-3.0	-1.2	-1.7	2.7	-0.2	1.4
Median	0.5	2.1	4.4	2.7	3.9	5.4	2.5	5.2
Third Quartile	4.4	5.6	7.7	6.3	5.4	6.8	5.5	9.0
Mean	-1.8	1.1	2.9	2.0	2.1	4.7	2.6	4.1
B. Rate of Inflation								
First Quartile	5.9	9.5	20.4	21.1	10.5	14.9	10.2	7.0
Median	11.8	18.0	23.1	30.2	23.9	24.2	14.8	23.1
Third Quartile	48.2	29.0	35.3	47.5	27.3	44.2	24.8	57.8

Table 16 (cont)

	<u>Year of Devaluation</u>		<u>1 Year After</u>		<u>2 Years After</u>		<u>3 Years After</u>	
	<u>IMF</u>	<u>Non-IMF</u>	<u>IMF</u>	<u>Non-IMF</u>	<u>IMF</u>	<u>Non-IMF</u>	<u>IMF</u>	<u>Non-IMF</u>
Mean	35.6	21.8	57.7	37.8	198.3 ^a	29.3	1691.3 ^a	35.4

^aIncludes the Bolivian hyperinflation.

Source: Constructed from raw data obtained from the International Financial Statistics.

to keep in mind that the external environment was less supportive in the 1970s and 1980s and, in particular, both GDP in industrial countries and world trade were growing at lower rates after 1971 than during the 1960s. In fact GDP in industrial countries grew on average 4.6% per year during 1955-71, while it grew only 2.8% during 1971-82.

The differences in GDP growth rates become minor when compared to the differences in inflation. As seen in Table 16, inflation is always higher during the post-Bretton Woods period, and the inflationary impact of the devaluation is significantly more substantial during the 1970s and early 1980s than under the fixed exchange rate system. Of course, to a large extent the reason for this is that after the Bretton Woods collapse there was no longer an institutional setting that helped maintain cross exchange rates constant.³⁹ In fact, the devaluers of this period resorted more to crawling-pegs than to stepwise devaluations, further fueling inflationary pressures. Another important aspect of Table 16 is that the behavior of IMF and unilateral devaluers follows the broad across-period description outlined above, although there are some differences within periods. The rate of growth of GDP was lower the year of the devaluation for IMF devaluers than for the Non-IMF episodes in the Bretton Woods group, but it picked up very quickly and even exceeded the performance of the unilateral devaluers one year after the devaluation. This recovery was not as prominent in the decade after Bretton Woods.⁴⁰

VII. Concluding Remarks

In this paper we have investigated empirically the historical circumstances surrounding 48 major discreet devaluations in the developing countries during the Bretton Woods period. We looked at both the conditions leading to these devaluations, as well as the external sector performance in

the period following the adjustment. Four aspects of devaluation programs were analyzed in detail: first, we investigated whether there are differences between countries that devalued within the framework of IMF programs and those that undertook devaluations unilaterally; second, we made an effort to determine whether, in general, devaluations were an effective policy tool that facilitated these countries adjustment; third, we analyzed what are the economic determinants of successful devaluations; and, finally we investigated the role of political economy developments, and in particular political instability, in determining the degree of success of stabilization programs.

Our analysis shows that those countries that approached the IMF for assistance were initially facing a deeper economic crisis than those countries that decided to face the imbalances on their own: they had suffered greater losses in competitiveness, deeper worsening in the current account and reached more serious levels in their net foreign asset positions. Additionally, we found that countries with a more unstable political history had a greater probability to approach the IMF. We interpreted this finding as providing some support to the view that countries with a record of political instability have greater difficulties in designing credible adjustment programs; as a result they have a greater incentive to obtain a "seal of approval" as a substitute from reputation.

Given the above discussion it is perhaps not too surprising that the IMF countries engineered, on average, larger devaluations. In our analysis of the aftermath of these crises we follow these countries for a period of four years. Our results show that, in general these devaluations were quite "successful": in the majority of the countries the RER was realigned, the current account balance improved and the net foreign assets position became

stronger. On average IMF devaluers experienced greater improvements in the external sector indicators.

Our data analysis clearly shows that a key element in determining the degree of a devaluation program is the package of policies implemented along side it. The data show that IMF devaluers were more conservative, implementing, in general, tighter macroeconomic policies. However, and perhaps surprisingly we also found that IMF devaluers were also more prone to inflationary pressures, as evidenced by the erosion of their real devaluations.

Although our investigation shows unequivocally that these historical devaluations were, in general, successful, it also shows that during this period there was a large number of fundamental failures. Invariably these failures were related to the inability (or unwillingness) to implement consistent fiscal and macro policies. In Section VI we provide some preliminary analysis that tries to explain these failures through political economy developments. We find that in general countries that experienced a greater degree of political instability in the period following the crisis, especially with respect to coup attempts, tended to end up having an unsuccessful experience. In these nations the government weakness does not allow them to withstand the criticism associated with the program. Interestingly enough, we found that although the degree of political instability following the crises plays a role in explaining success, the historical political environment was less important. Another finding in this section is that, with other things given, countries with a democratic regime at the moment of the devaluation have a higher probability of success.

Finally, this study suggests quite clearly that the hopes that the post-Bretton Woods regime would allow for a reduction in the "real costs of

adjustment", were not met.

Although this study has not addressed directly the current debate on the merits of returning to greater exchange rate fixity in the LDCs, it has dealt in detail with the economics of devaluation in a fixed-exchange rate context. Our evaluation of the causes of "fundamental disequilibria", the LDCs relationship with the IMF and the politics and economics of exchange rate adjustment has shown that, at least with respect to these areas, Bretton Woods was not as bad as it sometimes seemed.

NOTES

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1. See, for example, Aghevli, Khan and Montiel (1991); Agenor and Montiel (1991) and Burton and Gilman (1991).

2. See Burton and Gilman (1991).

3. There has traditionally been a sense among some observers that LDCs have been forced by third parties -- and in particular by the IMF -- to devalue their currencies. See, for example, Denoon (1986).

4. Denoon (1986), Buirra (1983), SELA (1986).

5. For lack of a better name we called these "unilateral" devaluations. Notice, however, that according to Bretton Woods rules the Fund had to approve all nominal devaluations exceeding 10%.

6. Most studies evaluating the effectiveness of Fund programs have compared these programs with countries that have not undertaken an adjustment program. This has even been the case in recent efforts based on regression analyses.

7. This episodic strategy has modern precedents in Cooper's (1971a,b,c) classical studies on devaluation and, more recently, on Harberger and Edwards' (1982) study on balance of payments crises. However,

Cooper did not deal with the period preceding the devaluation, and, contrary to this study, and to Harberger and Edwards', he did not use a control group for comparison. Other studies that make use of the episodic approach employed in this paper are Kamin (1988) and Eichengreen (1990).

8. For a more technical representation of the economics of devaluation see, for example, Edwards (1989a) and Khan and Lizondo (1987).

9. Eichengreen (1990) documents how during the 1930s some countries decided to follow a deflation while others chose to devalue their currency.

10. These may include the need to de-index labor and other contracts.1 have no lasting effect, and the external crisis will not be solved.

11. The above discussion clearly suggests that in order for devaluations to "work" there is no need, as it is often suggested, for economic agents to have money illusion. Indeed, within this scenario devaluations will facilitate the adjustment even when there are ultra-rational forward-looking economic agents. In fact, in a forward-looking world devaluations undertaken within the context described here will tend to be particularly effective. The reason for this is that these highly informed rational individuals will clearly understand that the devaluation is facilitating relative price changes and, thus, is inducing the required expenditure switching away from tradable goods. Consequently, economic agents will not react to this exchange rate change in a perverse way. However, if the devaluation is not accompanied by consistent macroeconomic policies, the informed public will anticipate a devaluation-inflation spiral, making the situation even more critical than before. Some cross country evidence on the effectiveness of devaluations can be found in Cooper (1971a,b,c), Edwards (1989a), Kamin (1988), and Gylfason and Radetzki (1985).

12. Sargent (1986). See also Edwards and Tabellini (1991a,b).

13. Dornbusch (1991).

14. See Persson and Tabellini (1990).

15. See Sachs (1989), Edwards (1989b) and Santaella (1991).

16. Accounts of the support given by external credits and loans to stabilizing countries are in the League of Nations (1946) and Dornbusch and Fischer (1986).

17. See Dell (1981), Guitián (1981), de Vries (1976,1987) and Horsefield (1969) for discussions on the evolution of IMF policies.

18. From today's perspective it is paradoxical to see Spain among the developing countries. However, during the Bretton Woods period, Spain's income per capita was similar to that of many developing nations.

19. This approach, of course, assumes that the control group followed sustainable policies. The countries and years in the control group are Cote d'Ivoire, Dominican Republic, Ecuador, Egypt, El Salvador, Ethiopia, Greece, Guatemala, Honduras, Iran, Iraq, Jordan, Malaysia, Mexico, Nicaragua, Nigeria, Panama, Paraguay, Singapore, Sudan, Thailand, Tunisia, Venezuela and Zambia. See Edwards (1989a) for more details and for some of the most important caveats in using the control group approach. In this paper years included as observations in the control group have been restricted to the Bretton Woods period.

20. Since during the Bretton Woods period there was relative exchange rate stability, focusing on bilateral, rather than multilateral RERs, does not bias the analysis. In fact, for most of these countries, bilateral and multilateral real exchange rates behaved very similarly throughout the period under study.

21. This is partially reflected in the data on parallel market premium presented in Table 6.

22. See Edwards (1989a) for data on capital flight for some of the countries in our sample as well as for a number of post-1971 major devaluations.

23. For more details of these and other cases see the Appendix.

24. The fact that the black market premium is lower for IMF devaluations would suggest that countries with an anticipated adjustment endorsed by an external institution may have lower credibility problems to implement a stabilization program than countries that do not.

25. The use of relative income per capita stems from the fact that we are using a cross section of devaluations that took place at different moments in time.

26. See, for example, Persson and Tabellini (1990).

27. See Cukierman, Edwards and Tabellini (1992).

28. See, for example, Vaubel (1986).

29. All of these propositions assume that local politicians associate some cost to yielding some of their power to the international bureaucracy.

30. Vaubel (1986).

31. There is an abundance of political science papers that look at the Fund program from an ideological, pressure groups perspective. See, for example, Haggard (1986).

32. Variables (2) through (5) were obtained from the IFS.

33. Of course, this type of classification of ideological inclination is always prone to some ambiguities. For example, how to classify Bourguiba's government in Tunisia? Or Mobutu in Zaire? Our subjective analysis yielded a reduced number of leftist governments: Bourguiba, Nasser, Ghandi,

Tito and Israel's labor governments.

34. These results are different from those obtained by Conway (1991), who finds that a higher current account deficit in previous period, among other things, is a significant determinant of participation in an IMF program. On the other hand, he finds that foreign-exchange revenues were not significant. Conway does not control for the political determinants. Moreover, he does not use an episode as an observation, he studies only the period 1976-86, and he is not conditioning on a devaluation.

35. These results coincide with other studies that have investigated the effects of IMF programs. One of the most recent ones (Conway, 1991) also finds a striking improvement in the current account in the period 1976-86.

36. Colombia's devaluation in 1965 did not conform to this classification but was nevertheless classified as a failure because Colombia had to devalue again in 1967.

37. Some of these debates are summarized in de Vries (1987).

38. The exact devaluations are Bolivia 1972, 1979 and 1982, Chile 1982, Costa Rica 1974, Ecuador 1982, Egypt 1979, Indonesia 1978, Jamaica 1978, Kenya 1981, Korea 1980, Mexico 1976 and 1982, Nicaragua 1979, Pakistan 1972 and 1982, and Peru 1975.

39. On the variability of the nominal and real exchange rate for these different institutional settings, see Edwards (1989c).

40. Again, this is consistent with Conway (1991), who finds a significant contemporaneous reduction in economic growth during an IMF program, but a positive, though weaker, effect later on. He also finds an increase in the rate of inflation with increased participation in IMF programs.

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TABLE A.1
Change in Current Account and Net Foreign Assets Ratios

Country	Year	<u>Changes From Year Prior to Devaluation</u>			
		<u>Current Account Ratio</u>		<u>Net Foreign Assets Ratio</u>	
		<u>1 Year After</u>	<u>3 Yrs. After</u>	<u>1 Year After</u>	<u>3 Yrs. After</u>
A. <u>Non-IMF Devaluers</u>					
ARGENTINA	1955	-1.4	-2.3	1.1	-4.5
ARGENTINA	1970	-0.8	2.9	-3.0	-5.1
CHILE	1962	1.3	4.0	-16.8	3.1
COLOMBIA	1965	-1.7	-0.5	2.9	6.1
GHANA	1971	7.0	-2.2	17.0	5.0
INDIA	1966	-0.1	1.8	-0.8	3.6
ISRAEL	1962	-3.2	-0.9	18.8	10.8
ISRAEL	1967	-5.0	-11.4	-5.0	-30.8
ISRAEL	1971	4.6	-11.2	21.6	9.0
JAMAICA	1967	-2.3	5.8	4.7	-2.6
KOREA	1960	-1.7	-3.5	19.9	-2.3
KOREA	1964	4.0	1.6	8.6	18.7
MALAWI	1967	-0.1	1.8	-4.2	-0.5
NICARAGUA	1955	.	.	-4.0	-4.0
PAKISTAN	1955	-3.0	-3.1	4.5	-5.3
SIERRA LEONE	1967	0.8	7.2	18.2	25.9
SPAIN	1967	1.9	6.4	-1.4	-1.0
SRI LANKA	1967	0.4	-1.2	-10.8	-17.5
TRINIDAD/TOBAGO	1967	-1.2	-3.6	3.1	-4.5
TURKEY	1958	-2.6	-2.6	-1.4	3.7
URUGUAY	1959	-7.0	-4.7	-5.6	-44.2

Table A.1 (cont.)

Country	Year	<u>Changes From Year Prior to Devaluation</u>			
		<u>Current Account Ratio</u>		<u>Net Foreign Assets Ratio</u>	
		<u>1 Year After</u>	<u>3 Yrs. After</u>	<u>1 Year After</u>	<u>3 Yrs. After</u>
VENEZUELA	1964	-8.7	-7.3	1.4	0.8
B. IMF Devaluers					
ARGENTINA	1959	0.6	0.2	7.9	-5.7
ARGENTINA	1962	6.0	5.1	-1.9	-0.4
BRAZIL	1967	-1.3	-1.3	0.8	12.7
COLOMBIA	1957	1.9	-0.3	-11.7	-7.7
COLOMBIA	1962	-0.0	2.6	-10.8	-4.2
COLOMBIA	1967	1.3	1.2	3.2	4.5
COSTA RICA	1961	0.5	-0.4	-2.6	-7.5
ECUADOR	1961	0.7	-0.5	0.2	3.9
ECUADOR	1970	-4.1	5.3	-6.2	21.3
EGYPT	1962	-5.4	-2.1	-7.5	-10.4
GHANA	1967	4.6	3.1	-7.4	1.7
INDONESIA	1970	3.1	4.0	-6.6	10.7
MEXICO	1954	1.9	-1.5	16.2	13.1
PERU	1958	6.1	7.3	4.1	8.9
PERU	1967	2.8	6.4	-3.9	9.5
PHILIPPINES	1962	3.1	1.8	0.9	0.7
PHILIPPINES	1970	2.5	3.9	-0.1	26.4
SPAIN	1959	4.6	0.6	7.5	9.8
TUNISIA	1964	-5.9	-3.0	-6.5	-11.6
TURKEY	1970	0.4	3.5	2.6	6.7
URUGUAY	1963	3.7	7.8	-4.9	-18.1
URUGUAY	1971	1.4	-1.6	10.0	10.0
YUGOSLAVIA	1961	0.4	-1.0	3.7	0.0
YUGOSLAVIA	1965	1.9	0.7	0.5	0.3
YUGOSLAVIA	1971	2.8	-5.4	1.7	0.7
ZAIRE	1967	24.9	-2.0	33.8	33.7

Source: Constructed from raw data obtained from the International Financial Statistics.

APPENDIX

The 48 Devaluation Episodes: A Brief Description

In this Appendix we provide a brief description of the circumstances surrounding our 48 devaluations. The information presented here has been obtained from various sources, and especially from various issues of Pick's Currency Yearbook and the IMF Report on Exchange Restrictions.

1. Argentina 1955

On October 28, 1955, almost one month after overthrowing Peron's government, a new regime implemented an economic reform that included a devaluation. The official price of the dollar was increased to 18.00 pesos, replacing three previous official rates (5.00, 7.50 and 13.95 pesos). Multiple export rates were maintained, while a special import rate and an open fluctuating free market were created. The latter closed the year at 36.00 pesos to the dollar.

2. Argentina 1959

On December 30, 1958, Frondizi abolished the basic official rate that had been set at 18.00 pesos per dollar and initiated an austerity program based on conservative monetary management. The "uncontrolled" free rate had closed in 1958 at 40.00 pesos to the dollar, and a freely fluctuating exchange rate was created on January 2, 1959. The value of the dollar opened in this market at around 65.00 pesos, and it closed the year at 83.00 pesos. Differential rates for exports and imports were maintained.

3. Argentina 1962

After two years of a stable currency, a full crisis developed in early 1962 and Frondizi was ousted by the military. New austerity measures and exchange restrictions were implemented and official support for the peso was

withdrawn from the freely fluctuating market on March 19, 1962. The exchange rate dipped to 134.00 pesos per dollar after having closed 1961 with a parity of 83.02.

4. Argentina 1970

A period of currency stability started in 1967 came to an end in 1969, when inflationary pressures resurfaced again. On January 1, 1970 a new currency was introduced: the peso Argentino, equal to 100 old pesos. The official exchange rate was devalued from 3.50 to 4.00 pesos to the dollar on June 18, 1970. This parity was again affected during 1971 when, after a period of political crisis in the military government, a series of minidevaluations were implemented. At that time multiple exchange rates were imposed.

5. Brazil 1967

The cruzeiro lived a period of surprising stability after the 1965 devaluation. However inflation was not eliminated and a devaluation cum currency reform was implemented in February 13, 1967. The official parity was cut from 2210.00/2220.00 to 2700.00/2215.00 cruzeiros per dollar and a new "hard" cruzeiro, equal to 1000 old units, was introduced. Growing fiscal and trade deficits forced tighter currency controls and a new devaluation on December 28, when the new rate was set at 3.20 cruzeiros to the dollar.

6. Chile 1962

A reversion to a dual rate system was implemented by the Alessandri administration on January 15, 1962, in order to cope with exchange rate pressures. The external imbalance was not completely contained and on October 15, the Central Bank ceased supporting the official bank rate set at

1.05 escudos to the dollar, which was thus put on a fluctuating basis reaching initially a level of 1.395 and closing the year at 1.66 escudos per dollar. The broker's (free) rate closed 1962 with a dollar value of 2.41 escudos.

7. Colombia 1957

The introduction of the exchange certificate in late 1956 did not solve Colombia's payments conditions. In May 1957 President Rojas fell and the new government enacted a new currency reform on June 18. The former basic rate of 2.50 pesos per dollar was abolished and a new system of multiple rates was created. The system was based on the exchange certificate which was set initially at 4.88 pesos to the dollar and reached 5.20 in December.

8. Colombia 1962

The newly inaugurated government of Leon Valencia tried to handle the pressure on exchange reserves by adopting a "stabilization" package during 1962. The measures undertaken proved to be insufficient, and on November 20 and December 21 the exchange rate system was modified, with the exchange certificate being devalued from 6.50/6.71 to 7.10/9.00 pesos per dollar. The coffee and other rates underwent similar adjustments.

9. Colombia 1965

During 1965 Colombia experienced economic and political hardships. To face the shortage of foreign exchange, the coffee rate was adjusted first in March and then subsequently during the year. In May a state of siege was declared and the National Front Coalition still under Leon Valencia all but collapsed, worsening the financial crisis. In July more stringent capital controls and government budget adjustments were announced and on September 2 the exchange certificate auction system was replaced by a dual system of

preferential and intermediate official rates alongside with the fluctuating free rate. The preferential rate was set initially at 9.00 pesos per dollar and equal to the old selling rate of the exchange certificate. The intermediate rate was established at 13.50 pesos to the dollar.

10. Colombia 1967

To reduce the drain of reserves a controlled capital market rate was established in late 1966, in fact abolishing the free exchange market rate. On March 22, 1967, President Lleras Restrepo announced a new economic program that included a new exchange rate structure. The intermediate rate of 13.50 pesos per dollar was replaced by a certificate market rate established initially at the same rate, but that was allowed to fluctuate, reaching 15.79 by December. The coffee rate was abolished but other rates continued to function.

11. Costa Rica 1961

On September 2, 1961, Costa Rica devalued the colon from a par of 5.60 per dollar to one of 6.625 to the dollar. The multiple exchange rate system, which had been in effect for many years, although simplified a number of times, came to an end.

12. Ecuador 1961

Banana and cacao exports fell dramatically during 1961, forcing the government of Velasco Ibarra to restrict imports, tighten credit, raise revenues and cut public expenditures. On July 14 the sucre was devalued from 15.00 to 18.00 units to the dollar. This parity applied to all exports and imports, while the use of the free fluctuating rate was narrowed and mixed rates were abolished. The austerity measures improved the economic conditions but prompted the ousting of the Chief Executive in November by

Arosemena Monroy.

13. Ecuador 1970

In order to meet deep budgetary problems, the new Velasco Ibarra administration introduced emergency tax measures. Challenged by Congress and the Supreme Court, Velasco Ibarra took dictatorial powers in May 1970. To further handle economic problems, the sucre was devalued on August 17. The official (18.00 sucres per dollar) and all other multiple rates were unified at 25.00 units per dollar, ending the ten-year old de jure dual rate system and the de facto multiple rate regime. On November 22, 1971, the dual system was reinstated.

14. Egypt 1962

After Nasser's extensive nationalization program in previous years, the secession of Syria from the U.A.R. in 1961 and severe trade deficits, created a delicate economic situation in 1962. In January the government decreed the repatriation of all national bank notes and on May 7 a devaluation was effected. The numerous export and import rates were replaced by an effective single exchange rate, in which the basic official rate of 2.87 dollars per pound was depreciated to a new parity of 2.30 Dollars to the pound.

15. Ghana 1967

The military government that deposed Nkrumah in February 1966 tried to carry out a deflationary program to relieve pressures on the foreign exchange market. In February 1967 a new currency was introduced: the new cedi, with a parity of 1.40 units per dollar. This rate was reduced on July 8 to a new value of 0.98 dollars. Later in 1967 a tax reform to induce foreign investment was adopted.

16. Ghana 1971

The civilian rule under Busia failed to improve the social and economic conditions of Ghana. The cocoa crisis of 1971 had to be faced with unpopular taxes and a series of partial devaluations implemented through export bonuses, taxes on remittances and tourist rates. Following the floating of the U.S. dollar on August 15, Ghana kept its link to the pound Sterling until November 4, when this tie was broken and the official rate of 0.98 dollar per cedi was reinstated. An additional drop in cocoa prices forced a huge devaluation on December 27, when the new official rate was set at 0.55 dollars to the cedi. The devaluation prompted a coup on January 12, 1971, by Acheampong, who once on power revaluated the cedi to a new parity of 0.78 dollars.

17. India 1966

Indira Gandhi, who had become Prime Minister in January 1966, devalued the rupee on June 6 from 4.75 to 7.50 units to the dollar. This measure was supported by a five-year plan, and was seen as an attempt to put an end to a long situation of monetary instability, food shortages and payments difficulties.

18. Indonesia 1970

Thanks to the oil boom of 1969 the foreign exchange market, gross monetary reserves, the payments situation and tax revenues had improved in Indonesia. This allowed a simplification of the exchange rate structure on April 17, 1970. The export bonus certificate rate (327.00 rupiahs per dollar) and the complementary foreign exchange rate (378.00) were replaced by the new flexible general exchange rate (378.00) and the flexible credit exchange rate (326.00). On December 10 the exchange rate was unified to the flexible general exchange rate of 378.00 rupiahs per dollar applicable to

all exchange transactions.

19. Israel 1962

In order to meet upward price pressures that had intensified in 1961, as well as the requirement on the recent GATT membership, Ben Gurion's government devalued the Israeli pound. On February 9, 1962, the parity was lowered from 1.80 to 3.00 pounds per dollar and existing multiple exchange rates were abolished. The action was also accompanied by a partial liberalization of imports.

20. Israel 1967

The Israeli economic upsurge, prompted by the spectacular military victory of Israel in June, was interrupted by the British pound devaluation. Israel matched that devaluation by reducing its exchange rate from 3.00 to 3.50 pounds to the dollar on November 19, 1967.

21. Israel 1971

Four years of explosive economic expansion had deteriorated substantially the balance of payments and fueled inflationary pressures. Following the floating of the dollar on August 15, 1971, the pound was devalued from 3.50 to 4.20 units to the dollar, effective August 21. Golda Meir's government complemented this measure with a credit squeeze, severe price controls and additional taxes. The pound also followed the U.S. de jure devaluation of the dollar on December 20, keeping the same nominal parity but altering the gold content 7.89%.

22. Jamaica 1967

Being a member of the Sterling Area, the Jamaican pound was devalued on November 21, 1967, from 1.40 to 1.20 dollars per pound. Thus, the parity of 2.00 Jamaican pounds per pound sterling was maintained.

23. Korea 1960

On February 23, 1960, the exchange rate was devalued from 500.00 hwan per dollar to a new parity of 650.00 units to the dollar. On April the government led by Rhee collapsed and a new administration under Chang initiated a more comprehensive economic program. As part of this ambitious program, the multiple exchange rate system was reformed. On February 2, 1961, an exchange rate of 1250.00 hwan per dollar was established. A flexible certificate rate initially fixed at 50.00 hwan per dollar, had to be added for all commercial and financial dealings.

24. Korea 1964

The 1962 currency reform replaced 10 hwan by one unit of the new currency, the won. After being elected in 1963, Park adopted an austerity plan to face inflationary and foreign exchange problems. On January 10, 1964, all imports were subject to a surcharge of 50.00 won per dollar to be added to the effective rate of 130.00 units per dollar. On May 3, a unitary floating system was established based on a rate of 255.00 won per dollar.

25. Mexico 1954

Mexico devalued her peso by raising the dollar value from 8.65 to 12.50 pesos on April 18, 1954.

26. Malawi 1967

Malawi was a member of the Sterling Area and its pound was at par with sterling. It therefore dropped from 2.80 to 2.40 dollars per pound on November 20, 1967, in the midst of dropping exchange revenues and growing trade deficits.

27. Nicaragua 1955

An extensive monetary reform, designed to improve the position of the Cordoba, took place on July 1, 1955. The basic official rate was devalued from 5.00 to 7.00 cordobas to the dollar, the export rate was kept and other official rates were abolished.

28. Pakistan 1955

The Pakistan rupee did not follow the pound sterling and Indian rupee devaluations of 1949. It was until August 1, 1955, that Pakistan devalued her currency for the first time, when the official value was increased from 3.31 to 4.76 rupees to the dollar, at par with the Indian rupee.

29. Peru 1958

External and internal pressures jeopardized the peg of 19.00 soles per dollar maintained by the Central Bank in the fluctuating free market since 1949. On January 22, 1958, the Central Bank stopped intervening, forcing a de facto devaluation. Several attempts were made by Prado's government to stabilize the soles at different levels during the year, and the value of the dollar closed at 25.10 soles. Tax hikes, import controls and wage freezes were also implemented during the year.

30. Peru 1967

The 1960 currency reform abolished the fluctuating exchange rate system and established a single officially controlled exchange rate. Belaunde's expansive policies together with collapsing export prices put serious pressures on the soles. On August 31, 1967, the Central Bank withdrew its support from the exchange market allowing the rate to jump from 26.82 to 38.70 units to the dollar. The latter was the parity on October 9 when the Central Bank began intervention in the newly created certificate market in a

dual exchange system. These events occurred in the midst of a full fledged economic financial and political crisis, which ended with the 1968 military coup.

31. Philippines 1962

In April 1960 a free rate was legalized to coexist with the official parity of 2.00 pesos per dollar. The initial free rate was set at 3.20 pesos and later revalued to 3.00 pesos per dollar. January 22, 1962, soon after his inauguration, Macapagal instituted an ambitious economic program of monetary stability that included an exchange decontrol component. Exchange controls were relaxed, and a truly fluctuating free rate was established. The free rate closed 1962 at 3.70 pesos per dollar. However, the old parity of 2.00 pesos was maintained for some transactions.

32. Philippines 1970

The official par value was raised from 2.00 to 3.90 pesos in late 1965. To cope with a currency that had deteriorated during the initial Marcos years, the Central Bank instituted a multiple rate structure on February 21, 1970. This new structure was based on an official fluctuating free market rate or "guided" rate set initially at 5.50 pesos per dollar, and mixed rates for exports and imports. In May the mixed rate for exports was abolished. The "guided" closed 1970 at 6.435 pesos to the dollar.

33. Sierra Leone 1967

The leone was a currency of the Sterling Area, and followed the sterling devaluation on November 22, 1967. The leone depreciated from a value of 1.40 dollars to a new value of 1.20 dollars, maintaining the parity of 2.00 leones per pound sterling.

34. Spain 1959

A series of partial devaluations during the fifties introduced a multiplicity of exchange rates while keeping an official par value of 11.22 pesetas per dollar. An extensive monetary reform was finally implemented on July 18, 1959. The most important rate of the old system, the controlled free market rate, stood at 42.00 pesetas per dollar at the moment of the unification of all exchange rates at a parity of 60.00 pesetas to the dollar. An austerity program, including interest rate action, tight credit, and budget improvements, was also adopted.

35. Spain 1967

Facing increasing trade deficits and a drain of foreign exchange, Spain followed the British devaluation on November 20, 1967. The dollar value was unexpectedly cut from 60.00 to 70.00 pesetas.

36. Sri Lanka 1967

Ceylon also followed the pound Sterling devaluation on November 22, 1967. However, the reduction in the value of her rupee, from 4.76 to 5.95 rupees per dollar, was higher than the depreciation of the British currency. The measure, together with increases in export duties and the adjustment of the domestic price of rice and wages, were intended to help the deteriorated balance of payments.

37. Trinidad-Tobago 1967

Along with the pound sterling, to which the Trinidad and Tobago dollar was linked at 4.80 dollars per pound, the Trinidad Tobago dollar was devalued from 1.714 to 2.00 units to the U.S. dollar on November 23, 1967.

38. Tunisia 1964

In June 1964 France ended Tunisia's privileged trade position as another retaliation in a war of trade restrictions and nationalizations. Faced with no more French aid and with little official reserves, Bourguiba's government devalued the dinar on September 28, 1964. The parity was changed from 0.42 to 0.525 dinars per dollar, and was effected within the framework of a stabilization program.

39. Turkey 1958

In a long history of currency deterioration, a partial devaluation took place in 1956 with the introduction of the tourist Lira (5.25 units per dollar) that would coexist with the official parity (2.80 liras per dollar). In 1958 a major economic reform program was implemented by the Menderes' regime, including the freezing of credits, the control of public expenditures, the temporary ban of imports and the abolition of export subsidies. As a part of this plan, a selling exchange rate of 9.00 liras per dollar was created on August 4, while maintaining three buying rates (4.90, 5.60 and 9.00 liras per dollar). The basic rate of 2.80 was kept on books and became inoperative until it was aligned with the effective rate of 9.00 liras per dollar in the de jure devaluation of August 1960.

40. Turkey 1970

In the midst of a profound financial economic crisis, the 14-nation Aid Consortium that had poured millions of dollars into the country threatened to cut off all foreign assistance. The lira was devalued on August 3, 1970, from 9.00 to 15.00 units to the dollar for almost all commercial and financial transactions, eliminating all other exchange categories. The economic crisis led to the coup de'etat in March 1971, in which Demirel was deposed by the military.

41. Uruguay 1959

The newly elected conservative National Party began an austerity program to "save the peso" in 1959. A comprehensive monetary reform was undertaken on December 15. The cumbersome system of multiple rates was replaced by a unified freely fluctuating exchange rate. The basic rate had been 1.52/2.10 pesos per dollar at the end of 1958, while the certificate rate closed 1958 at 4.10. The new free rate ended 1959 with a value of 11.10 pesos per dollar.

42. Uruguay 1963

Tight capital controls were imposed in 1963 in order to contain the flight from the peso. These were not enough and eventually, on May 9, the Central Bank withdrew its peg of 10.95 pesos per dollar from the exchange market and temporarily suspended all private foreign exchange dealings. On May 29 the Bank was back in the market at 16.15/16.55 pesos per dollar and closed 1963 at 16.30/16.40. A new gold parity was also created just under 15.00 pesos to the dollar. The "free" market was no longer free since banks were forbidden to sell foreign exchange to private individuals.

43. Uruguay 1971

The economic and political situation had become chaotic, and given the disturbances by the revolutionary group Tupamaros', Pacheco Areco began to rule by decree in a state of siege. Trade and capital controls were tightened, and on April 26, 1971, a multiple exchange structure was established. The official rate of 250.00 pesos per dollar was kept for special transactions, while a surcharge of 50.00 pesos would apply to consular fees, 75.00 pesos for subsistence and 100.00 for traveling. All these surcharges were revised upwards several times during 1971. The rate for traditional exports and most imports closed the year at 370.00 pesos per dollar, the

rate for consular fees and subsistence at 500.00 pesos and travel at 600.00 pesos. In early 1972, the new government of Bordaberry reformed the currency system to a two-tier exchange market.

44. Venezuela 1964

Since 1962 Venezuela had enjoyed a marked improvement in its economic and financial conditions. On January 18, 1964, the newly elected Leoni administration implemented a major exchange reform that initiated a trend towards a unification of the multiple rate system. Most transactions were moved from the controlled rate of 3.33/3.35 bolivars per dollar to an import rate of 4.45/4.50 bolivars, while the official free market was abolished.

45. Yugoslavia 1961

For a number of reasons the three Yugoslav devaluations considered in this study fall in a somewhat different category than the rest of our episodes. Although more liberalized than other Eastern European countries, central planning was still imposed in Yugoslavia, and Tito's government retained control of most prices and investment funds. On January 1, 1961 the currency structure was simplified. The settlement rate was devalued from 632.00 to 750.00 dinars per dollar and applied to most transactions, making the official 300.00 dinars rate inoperative. On January 1, 1962, the tourist and diplomatic rates were aligned to the 750.00 dinars per dollar rate, unifying the exchange rate, except for some export premiums.

46. Yugoslavia 1965

The devaluation of July 25, 1965, was part of an extensive economic reform program that included trade liberalization, administrative simplification and tight credit. The official rate of 750.00 Dinars was devalued to 1250.00 dinars for dollar after a temporary financial rate had been

established earlier in the month. Beginning January 1966 a hard dinar, equal to 100 old dinars, was introduced.

47. Yugoslavia 1971

Another over expansion brought the economy to the crisis point. The expected devaluation of the dinar came to pass on January 23, 1971, and the parity was increased from 12.50 to 15.00 dinars to the dollar. There was also a price and wage freeze and finally the private sector was allowed to issue bonds. The dinar followed the floating of the dollar, but on December 21 it was further devalued to a new official parity of 17.00 dinars per dollar.

48. Zaire 1967

After several years of civil war, political unrest and economic troubles, the financial situation of the Congo became unsustainable. The Belgians cut off their traditional aid as a retaliation of the nationalization of the copper mining company. Mobutu increased the official dollar rate on June 24, 1967, from 150.00/180.00 to 500.00 Congo francs. Simultaneously a new currency was introduced: the zaire, equal to 1000 Congo francs.