

NBER WORKING PAPER SERIES

THE INTERNATIONAL MONETARY FUND AND THE DEVELOPING COUNTRIES:  
A CRITICAL EVALUATION

Sebastian Edwards

Working Paper No. 2909

NATIONAL BUREAU OF ECONOMIC RESEARCH  
1050 Massachusetts Avenue  
Cambridge, MA 02138  
March 1989

This is a revised version of a paper presented at the Carnegie-Rochester Conference on Public Policy, November 18-19, 1988. In preparing this paper I have benefited from discussions with a number of colleagues. I am especially grateful to the many Fund staff and executive directors (present and past) that helped me understand a little bit the functioning of the Fund. Also, I want to thank a number of former and current senior policy-makers in the developing countries for sharing with me their experiences in dealing with the Fund. I am grateful to Allan Meltzer, John Taylor, John Williamson, Guido Tabellini, Debra Glassman and my discussant Morris Goldstein for helpful comments. I thank Mr. Azizali F. Mohammed for allowing me to use information on the characteristics of recent Fund programs. Miguel Savastano provided able research assistance and very useful comments. I am indebted to UCLA's Academic Senate and to the National Science Foundation for financial support. This paper is part of NBER's research program in International Studies. Any opinions expressed are those of the author not those of the National Bureau of Economic Research.

NBER Working Paper #2909  
March 1989

THE INTERNATIONAL MONETARY FUND AND THE DEVELOPING COUNTRIES:  
A CRITICAL EVALUATION

ABSTRACT

The purpose of this paper is to critically evaluate the IMF's role in the developing countries' adjustment process. In particular, the paper tries to answer the following questions: What model or framework does the IMF use to generate its advice, and is that advice eclectic? Is there evidence that countries that followed the IMF's advice do better than countries that proceed in other ways? Are the policy decisions of the Fund based on technical knowledge or do they reflect the political views of the larger members? Is the IMF position regarding the debt crisis conducive to a realistic solution? What can we expect from the Fund in the future? The paper also includes an evaluation of recent IMF programs, as well as an econometric analysis of the contractionary devaluation issue.

Sebastian Edwards  
Department of Economics  
UCLA  
Los Angeles, CA 90024-1477

"There may be no way out for the IMF ... [T]he Fund will be tossed occasional bones -- some statistics to collect, some indicator to keep an eye on, and so forth. But if the past few years are any guide, the agreements that matter will be settled privately between the finance ministers of the big economies"

The Economist (24 Sept. 1988, p. 87)

## I. Introduction

The International Monetary Fund is a mysterious and often-feared institution. One of the many myths that surround the Fund is that its staff travels around the world imposing unnecessarily harsh adjustment policies to the developing countries. Strictly speaking this is incorrect; the IMF cannot impose any policy to any country. However, occasionally -- frequently, may be a more accurate word -- countries require assistance, both technical and financial, from the Fund. In most cases before providing financial help, and this is the catch, the country has to agree to follow a given set of macroeconomic policies. This process, by which the Fund provides financial help on the condition that the recipient country agrees on a policy action, has come to be known as conditionality.

Since the eruption of the debt crisis in 1982 the Fund has played an important role in the effort to bring about an orderly adjustment to the world economy. Not only did the Fund provide financial help to the highly indebted countries, but it was also instrumental in coordinating the private banks' involvement in the first "emergency" packages. Since 1982 the Fund's evaluation of a country's performance has become a key element in the process of debt restructuring and refinancing. The Fund provides a "seal of approval" that assures the banks that the country in question is indeed making a serious effort to improve things. People from very different persuasions have recognized the important, indeed crucial, role of the Fund in helping avert a global international financial collapse following the debt crisis. However, more and more observers are now questioning the wisdom of the Fund's current approach toward the debt crisis and adjustment. Interestingly enough, these criticisms are coming from all sides of the ideological and political spectrum. On the one hand we have the traditional critics that now, as yesterday, argue that the Fund's programs are unnecessarily harsh, ill-conceived,

poverty-promoting, and at best inefficient in achieving their external (i.e., balance of payments and current account) objectives. What is new, however, are the somewhat veiled criticisms coming from conservative quarters. According to this view -- which has not yet been fully articulated in writing, but that is perceived in many places including the IMF itself -- the Fund has ceased to operate as a financial institution guided by technical principles, and has taken an unrealistic view regarding the debt crisis. It is argued that by proceeding as if the debt crisis will be solved without major relief and writeoffs the Fund is postponing drastic and needed actions. In a way, this view claims, the Fund is acting more and more as a development aid-granting agency.<sup>1</sup> Even worse, the argument goes, by operating in this fashion the Fund is endangering its own financial stability.

The purpose of this paper is to critically evaluate the IMF's role in the developing countries' adjustment process. In particular, the paper tries to answer the following questions: What model or framework does the IMF use to generate its advice, and is that advice eclectic? Is there evidence that countries that followed the IMF's advice do better than countries that proceed in other ways? Are the policy decisions of the Fund based on technical knowledge or do they reflect the political views of the larger members? Is the IMF position regarding the debt crisis conducive to a realistic solution? What can we expect from the Fund in the future? The paper, however, does not go into the institutional details of the Fund, nor does it discuss in detail the mechanics of its administration. There is now a large descriptive literature on this subject and the interested readers are referred to it.<sup>2</sup> Also, the paper does not discuss in detail the Fund's behavior from a public choice perspective, nor does it deal in detail with whether its existence is justified from an economic perspective.<sup>3</sup>

---

<sup>1</sup>To some extent after the debt crisis the differences between the Fund and the World Bank have become somewhat blurred.

<sup>2</sup>The Fund itself has published a number of highly informative institutional introductions. See, for example, the Supplement to the September 1988 issue of the IMF Survey. See also de Vries (1987) and the references cited therein.

<sup>3</sup>For a public choice view of the Fund and other international organizations see Vaubel (1987) and the literature cited therein.

For any outsider it is extremely difficult -- utterly impossible, some would even say -- to fully evaluate the functioning of the IMF. Many of its decisions are confidential, as are most of the key documents that set the Fund's policy position. Moreover, the details of specific programs, including the Letters of Intent, Memoranda of Understanding and other documents, are also confidential. This makes the evaluation of programs' performance very difficult. For this reason any study like the present one has to rely on the limited information publicly available, and partially on informal conversations with current and former staff and executive directors, as well as on interviews with policymakers in the developing nations themselves.

The paper is organized in the following way: Section II deals with the Fund's analytical model. The inception and evolution of Fund financing programming is reviewed. This section also discusses the contributions made by the Fund staff to economic theory throughout the years. Section III deals with the effectiveness of Fund's programs. The literature on the subject is reviewed and the recent experience with conditionality is discussed. Section IV is devoted to the Fund's role in the management of the debt crisis. This is done from an international political economy perspective. Section V deals with devaluation, the most controversial component of Fund programs. Issues related to the output and income distribution effects of devaluations are empirically analyzed for a sample of developing countries. Finally, Section VI contains the conclusions and briefly discusses what we can expect from the Fund in the future.

## II. Analytical Bases of Fund Adjustment Programs

The design of Fund programs is based on an analytical framework known as Financial Programming (FP). This framework was developed in the late 1950s and early 1960s by a group of economists in the Fund Research Department led by J.J. Polak; its theoretical underpinnings were first fully exposed in an article by Polak published in the Staff Papers in 1957. Financial Programming consists of a set of simple equations that relate, for the case of a small open economy with a fixed exchange rate, the behavior of the monetary sector to the balance of payments. This framework had its direct intellectual origins in the work of Robert Triffin and in the models used by the Netherland's Central Bank. Financial Programming corresponds closely to what in the 1970s came to be known as the Monetary Approach to the Balance of

Payments (MABP). In fact, practically all of the insights of the MABP had been made by the architects of FP in the 1950s and early 1960s.<sup>4</sup>

Although since 1957 the Staff Papers has published a number of theoretical papers dealing with different aspects of FP, the Fund has traditionally been very circumspect with respect to its operational details. In fact, it is only recently that official publications and papers by senior staff members have provided a glimpse of how the Fund actually uses FP to formulate its adjustment programs.<sup>5</sup> What is most striking from reading these documents is how little Financial Programming has changed in 30 years. It is not an exaggeration to say that Fund economists use today a very similar analytical apparatus to that used by their colleagues 25 or 30 years ago. This, of course, is both reassuring and troubling. On the one hand it is reassuring that the framework has endured the passage of time; this indicates, at the very least, that this is a powerful and useful tool. On the other hand, however, it is troublesome that in its operational work the Fund has not picked up many of the large number of developments in open economy macroeconomics of the last 25 years.<sup>6</sup>

In this section I briefly present the essentials of the Fund's model. A useful and natural starting point is Polak's model. I will show that, contrary to what a number of critics have argued, this model is quite general and flexible. In fact, for its time it was quite elegant. Moreover, Polak and his colleagues were fully aware of its limitations. I will then deal with the evolution of the Fund's model in the last 30 years, presenting the

---

<sup>4</sup>On the monetary approach see Frenkel and Johnson (1976). For an early mathematical formulation of the Polak model see Prais (1961).

<sup>5</sup>In 1981 the IMF Institute published a case study on Kenya where the different components of FP were explained in detail. However, in the Preface the Director of the Institute says: "I wish to stress that these workshops must not be construed as representing necessarily the techniques used by the Fund staff in dealing with member countries" (p. viii). In 1984 the IMF Institute published a second case study dealing with Colombia. Only in the last couple of years has the Fund publicly exposed the nuts and bolts of Financial Programming as practiced at the Fund. See Khan, Montiel and Haque (1986, 1988) and the IMF (1987). Robichek (1985) has recently provided an insiders account on how FP is practiced.

<sup>6</sup>The emphasis here is on the word "operational". Anyone that has kept up with Staff Papers is aware that sophisticated and current research is done at the Fund.

essential aspects of FP as is understood today. Next I will briefly deal with FP as actually practiced when formulating a program. Finally, I will discuss ways in which the incorporation of some of the most important recent developments in open economy macroeconomics could affect the Fund's advice.

### II.1 The Polak Model

The Polak model, on which the Fund's analytical approach is based, was developed in the 1950s to analyze the relation between the financial and monetary sectors and the balance of payments in the developing nations. In accordance with the institutional setting of the time the model assumes fixed nominal exchange rates. The key assumption of the model is that there exists a stable demand for domestic money that depends on a small number of variables. In fact, in its simplest representation the model assumes that the demand for (nominal) money depends on (nominal) income only and that velocity is constant.<sup>7</sup> It is assumed that capital flows and exports are predetermined and that imports depend in a proportional way on income. Following Triffin, changes in the domestic money supply are broken down into two components: changes in domestic credit (money of internal origin) and changes in net foreign assets of the monetary system (money of external origin). The behavior of nominal income is left unspecified and it is not broken down between changes in the price level and changes in real income.

The functioning of the model is simple and very well-known by now. Assuming (permanent) monetary equilibrium, and given the estimates of the exogenous and predetermined variables -- capital flows, exports, income -- it is possible to compute the evolution of domestic credit that is compatible with a certain balance of payments target:

The analysis ... can be used to derive an estimate of the amount of internal credit expansion by the monetary system which an economy can afford.  
(Polak; p. 47)

The main insights of the Polak model are: (1) in a small open economy with a fixed exchange rate both the real and nominal quantities of money are endogenous; (2) domestic credit is the relevant policy tool for conducting

---

<sup>7</sup>Contrary to what some critics have insinuated, Polak was fully aware that there can be (and that there are) important changes in velocity. In fact, Section V of his 1957 article is fully devoted to the case of a changing velocity.

monetary policy; (3) in the short run, with a given level of nominal income, domestic credit increases will be exactly offset by losses in international reserves, and (4) measures geared towards increasing exports or decreasing imports (i.e., devaluations) will only generate a temporary improvement in the balance of payments.<sup>8</sup>

Polak did not consider FP as necessarily competing with other approaches for understanding balance of payments behavior. In fact FP was originally viewed as a way of analyzing balance of payments behavior from a different perspective than that of the income-expenditure model.

By focusing on the monetary side of the same circular process, we can approach the problem from another angle, which makes it more tractable in many situations. (Polak, p. 25)

Overall, Polak had an eclectic attitude with respect to this model. He clearly stated that his presentation was deliberately simple, and acknowledged that many of the assumptions made in the paper were not fully realistic. For instance, he pointed out that velocity may actually change depending on the evolution of other variables (pp. 51-55); he recognized that domestic credit may not be fully exogenous and that it may well be governed by a feedback rule (pp. 26-27); and he certainly acknowledged that the assumption of a given level of money income is not fully appropriate in many circumstances (p. 44). I believe that it is fair to say that from the very beginning FP was seen as a minimal framework to analyze balance of payments behavior from a monetary perspective. It was neither rigid nor dogmatic; quite the contrary, it was seen as a fairly eclectic and flexible construct. The framework could, in fact, be supplemented by different macroeconomic models. If these models were simple (constant velocity, full employment, law of one price) the outcome of FP would be simple. If, on the other hand, a more sophisticated supplemental macroeconomic model was used, a richer set of results would emerge from the use of FP.

## II.2 The IMF Model in the 1980s

Khan, Montiel and Haque (1986, 1988) have provided the most authoritative

---

<sup>8</sup> Notice, however, that in Polak's (1957) there is no explicit reference to exchange rate changes as a policy measure. However, the first paragraph on page 42 can clearly be interpreted as including the case of devaluations. (The page numbers refer to the version of Polak reprinted in the 1970s.)



insider's exposition of the Fund's model as currently used.<sup>9</sup> Following them, the 1980s version of the Fund's model can be described by equations (1) through (11):<sup>10</sup>

$$M = R + D \quad (1)$$

$$M^d = Pf(y) \quad (2)$$

$$D = D^P + D^G \quad (3)$$

$$Y = P\bar{y} \quad (4)$$

$$P = wP^D + (1-w)EP^* \quad (5)$$

$$R = ER^* \quad (6)$$

$$\Delta R^* = \bar{x}^* - z^* + \Delta \bar{F}^* \quad (7)$$

$$\Delta \bar{F}^* = \Delta \bar{F}^{*P} + \Delta \bar{F}^{*G} \quad (8)$$

$$z^* = P^*V \quad (9)$$

$$V = g(y, EP^*/P_D) \quad (10)$$

$$\Delta M = \Delta M^D \quad (11)$$

where the following notation is used:

M : nominal stock of money

R : stock of international reserves of the monetary system expressed in domestic currency

D : domestic credit

D<sup>P</sup> : domestic credit to the private sector

D<sup>G</sup> : domestic credit to the nonbanking government sector

---

<sup>9</sup>Another useful insider exposition of the Fund model available to the general public is IMF (1987). Robichek (1985), who was for many years one of the major intellectual forces in the Fund, provides a fascinating description of how FP works in practice.

<sup>10</sup>It is important to emphasize that this description of the Fund model has been taken verbatim from Khan et al. (1986, 1988). It fully corresponds to an insiders' description of the model used by the Fund.

- $P$  : domestic price level  
 $Y$  : nominal income  
 $y$  : real income  
 $P^D$  : prices of domestic goods  
 $E$  : nominal exchange rate  
 $P^*$  : world price of imports expressed in foreign currency  
 $R^*$  : stock of international reserves in foreign currency  
 $\Delta R^*$  : balance of payments in foreign currency  
 $\bar{x}^*$  : exports in foreign currency  
 $z^*$  : imports in foreign currency  
 $\Delta \bar{F}^*$  : change in net foreign assets in foreign currency  
 $\Delta F^{*P}$  : change in net foreign assets of the private sector  
 $\Delta F^{*G}$  : change in the net foreign assets of the public sector  
 $V$  : volume of imports.

Equation (1) is the balance sheet of the monetary system, and states that the stock of money is composed of the stock of international reserves (money of foreign origin) and domestic credit (money of domestic origin). Equation (2) is the demand for money, which is assumed to depend only on income. Equation (3) decomposes domestic credit into domestic credit to the private sector and domestic credit to the public sector. Equation (4) is the definition of nominal income, where real income  $\bar{y}$  is considered to be exogenous. Equation (5) is the price level, assumed to be a weighted average of the prices of domestic goods and the domestic currency prices of importable goods. Equation (6) relates international reserves in domestic and foreign currency. Equation (7) defines the balance of payments in foreign currency as the trade account plus the capital account. The change in net foreign assets (NFA) is exogenous and in equation (8) it is broken down into changes in NFA of the private sector and of the public sector. In equation (9) the foreign currency value of imports is defined. Equation (10) states that the volume of imports is a function of real income and relative prices (the real exchange rate). Finally equation (11) is the key relation in the model and states that the money market is in (flow) equilibrium.

The targets of most Fund adjustment programs are the balance of payments ( $\Delta R$ ) and the change in domestic prices ( $\Delta P^d$ ). Domestic credit expansion and exchange rate changes are the instruments. If equation (2) is replaced by a constant velocity demand for money equation ( $M^d = kPy$ ), and the import demand

function is assumed to be linear ( $V = \alpha_0 + \alpha_1 y - \alpha_2 (EP^*/P_D)$ ) the model can be reduced to a two linear equations in  $\Delta R$  and  $\Delta \bar{P}^d$ .<sup>11</sup> For given values of the exogenous variables -- foreign prices, capital flows, real income, exports -- and of the balance of payments and inflation targets, the system can be solved for the required changes of the policy instruments  $\Delta D$  (domestic credit) and  $\Delta E$  (the nominal exchange rate). Denoting the balance of payments and domestic inflation targets as  $\Delta \bar{R}$  and  $\Delta \bar{P}^d$  we obtain:

$$\Delta D = ((\gamma_1/\beta_1) - 1) \Delta \bar{R} + (\gamma_1 - \gamma_2 \beta_2/\beta_1) \Delta \bar{P}^d + \sigma_0 \quad (12)$$

$$\Delta E = \beta_1^{-1} \Delta \bar{R} - (\beta_2/\beta_1) \Delta \bar{P}^d + \psi_0 \quad (13)$$

where  $\sigma_0$  and  $\psi_0$  are constants and:

$$\beta_1 = (\bar{x} - \Delta \bar{F} - z_{t-1} - \alpha_2); \quad \beta_2 = \alpha_2$$

$$\gamma_1 = ky_{t-1}^w; \quad \gamma_2 = (ky_{t-1}^{(1-w)P^*-R_{t-1}})$$

Since equation (12) links directly credit creation to the balance of payments target, it provides the intellectual rationale for using credit ceilings as an "performance criterion" (an intermediate target) in Fund conditionality programs.<sup>12</sup> In fact, according to Khan et al. (1986):

Since policymakers' loss functions in countries experiencing balance of payments deficits presumably attach little weight to positive deviations of  $\Delta R$  from the desired value ... the targeted expansion of domestic credit is set as a ceiling. (page 10)

Of course, this model is very simple. If prices and imports are taken as given, and the exchange rate is assumed not to change, the model will actually collapse into the simplest version of the Polak model where there is a strict one-to-one inverse relation between domestic credit creation and the balance of payments. In fact, there are almost no substantive differences between the basic model of the Fund described in equations (1) through (11) above, and the model developed more than 30 years ago. This similarity has been acknowledged

<sup>11</sup> These equations correspond to equations (9b) and (20a) in Khan, et al. (1986).

<sup>12</sup> See also Guitián (1981) for an explanation of the intellectual underpinnings of conditionality along the lines of the model presented above.

within the Fund itself:<sup>13</sup>

The Fund approach to economic stabilization, generally referred to as "financial programming", is based largely on the oral tradition ... [T]he analytical basis of the program was articulated ... in a number of papers ... principally by Polak (1957) ... and Robichek (1967, 1971) ... [E]ven the more recent writings by Fund staff in the general area of financial programming closely follow the directions set by these contributions. (IMF 1987, p. 1)

The actual process of program design can be best described as one that uses FP as its backbone. This basic framework is then supplemented by a series of models that pertain to particular sectors of the economy. In practice, the use of these supplementary models amounts to endogenizing some of the exogenous variables and to looking in great detail at some aspects of the economy such as government finances. Which sectors are actually singled out for additional analysis depends on the specific circumstances of the country in question, on the data available, and on the specific staff involved.

The fact that the model described above is considered only as a general framework, and not as a rigid recipe, is clearly captured by the actual role of exchange rate adjustments in Fund programs. Although devaluations are one of the two instruments considered in the analytical model, there are many cases where the Fund does not consider a change in the exchange rate as a required element in an actual program. For example, Reichman and Stillson (1978) point out that between 1963 and 1972 only 30% of upper-credit-tranche programs included a devaluation. In 1977-80, however, the proportion of programs that included a devaluation increased to 50 percent (Loser, 1984).

An area where FP is particularly strengthened in practical applications refers to government finances. Moreover, in this area the Fund has shown some flexibility in incorporating into the analysis the changing circumstances of a given country. A particularly interesting example refers to taking into account the effect of indexation and inflation in the fiscal deficit. For instance, after long and protracted discussions with the Brazilian

---

<sup>13</sup>It should be noted that this document goes on to say that "the design of Fund-supported adjustment programs has gradually absorbed many of the new developments that have taken place in the study of macroeconomics and international economics" (p. 1). However, most of the "new developments" that the document discusses are rather simple extensions. For instance, the paper discusses the role of lags in demand for money adjustment, the role of nontradables and the like.

authorities, the Fund recognized that indexation had a significant distortive effect on fiscal accounts. As a result, modifications were introduced into the definition of performance criteria for Brazil; instead of focusing exclusively on the public sector borrowing requirements (PSBR), the program shifted its emphasis to the "operational budget", which excluded interest payments on government debt.<sup>14</sup>

### II.3 Financial Programming in Practice

The framework described above is used in practice to design adjustment programs. In doing so the staff follows a step-by-step approach that requires a large amount of information as well as a great deal of judgment. The program is put together in an iterative fashion, where consistency checks are frequently implemented. If the outcome is not consistent, the program is revised and redone.

The design of a program usually starts with an evaluation of the country's situation. Next, targets for the key variables are determined and a course of policy actions is envisaged. E. Walter Robichek, one of the intellectual fathers of FP, has recently described the key steps involved in designing a financial program. What follows is a summary of Robichek's (1985) description of the steps involved in putting a Fund program together:

1. Levels for targets -- net foreign assets, inflation and others -- are picked.
2. Given (1), the exogenous components of the balance of payments (i.e., exports, interest payments, noncompensatory capital flows) are estimated.
3. From (2) a preliminary value of imports consistent with (1) is obtained.
4. If, as in most cases, the value of imports obtained from (3) differs from the historical trend it is necessary to decide if exchange rate action is needed. If a devaluation is considered, steps (2) and (3) have to be redone in the light of the new exchange rate level.
5. The quantity of money demanded is forecasted. This requires estimates of nominal income and velocity. The latter is many times, but not always, taken as given.

---

<sup>14</sup> The Brazilians, however, have argued that it took a very long time for the Fund staff to recognize this fact. Moreover, according to Bastos Marques (1986) the inability of the Fund to recognize this problem early enough was at the root of the repeated violations of the targets.

6. A preliminary decision on whether "interest rate action" is needed is made at this stage. If the answer is positive, step (5) is revised.
7. The relation between the country's monetary aggregates and the central bank monetary aggregates is determined.
8. The sustainable level of central bank domestic credit -- i.e., the level compatible with the NFA target -- is derived.
9. The domestic credit target determined in (8) is checked for consistency and realism. This is done by analyzing in detail the demand sources for domestic credit. The key element here is the potential demand for credit by the public sector. This step, thus, includes a difficult and detailed analysis of government finances.
10. If the public sector borrowing requirements are inconsistent with the maximum expansion of domestic credit, new sources of adjustment are sought. These include demand management, supply oriented policies and policies geared to the financial side.
11. After the new measures are devised, steps (1) through (10) are repeated and the exercise is iterated until consistency is achieved.
12. Once an "equilibrium" program is achieved, the performance criteria that will guide the monitoring of the program are determined. These criteria usually fall into two groups: non-quantitative performance criteria and quantitative criteria.
13. The program is then negotiated with the country's authorities.

As is evident from the above description, FP is a painful and difficult exercise. Its implementation not only requires knowledge of the country and ample statistical information, but also good judgment. In the actual preparation of a financial program there is usually a need to obtain estimates of the relevant parameters of the underlying model. It is often at this stage where more sophisticated analyses that incorporate newer approaches and statistical techniques are incorporated.

#### II.4 Economic Theory and the Fund's Model

The analysis of Polak's original article, and of Khan et al. (1986, 1987) and Robichek's (1985) recent contributions, clearly indicates that the Fund's minimal model has remained fundamentally unchanged in the last 25 years or so. This has happened during a period when economic theory in general, and open economy macroeconomics in particular, have experienced important developments

that have in one way or another changed the way economists think about economic policy. Even though, as already stressed, the FP model is not used rigidly, and many times when used in practice it is significantly enriched, it is still fair to say that the Fund's basic operational framework has missed many of the most important new developments in the theory of economic policy.

The Fund's basic model is fundamentally static, has a fairly rudimentary financial sector, ignores the existence of uncertainty and has no fundamental role for expectations.<sup>15</sup> Moreover, the basic framework assumes that real income is exogenous and does not respond to the policies implemented in the program. This model has failed to formally incorporate issues related to the intertemporal nature of the current account, the role of risk and self-insurance in portfolio choices, the role of time consistency and precommitments in economic policy, the economics of contracts and reputation, the economics of equilibrium real exchange rates, the "Lucas critique," and the theory of speculative attacks and devaluation crises, just to mention a few of the more important recent developments in international macroeconomics.<sup>16</sup>

I am aware, of course, that this criticism may sound picayune; even as somewhat frivolous. One can always argue that someone else's model is not sophisticated or general enough, or that it does not include this or that exquisite refinement, or, as it has become way too common in the recent years, that it is not based on "first principles". Moreover, it may be argued that the new developments in macroeconomic theory are too abstract and not relevant from an operational point of view, or that it is too difficult to incorporate them into an actual policymaking framework, or even that, if incorporated, the main thrust of the model will not change. I don't think that this is the case. I believe that many of the new developments in the theory of economic

---

<sup>15</sup> A priori it is not at all clear the direction in which the incorporation of new ideas the theory of economic policy would affect the Fund's policy advice. At the end of the road they could very well strengthen the type of advice the Fund now dispenses. It is also possible, however, that in the light of these new ideas some of the Fund's recommendations would appear incorrect. Obviously, a concrete answer to this question would require additional research. Below I provide some simple examples of how some of the new theories could, in fact, alter the Fund's policy advice.

<sup>16</sup> See Stockman (1988) for a recent interesting discussion of the interrelation between new developments in the theory of international finance and economic policy in the developed countries. See Fischer (1988) for a survey on recent developments on macroeconomics.

policy can enrich the Fund's policy and operational framework and that they can result in tighter, better and more effective policy advice. Although a formal inquiry on how these modern developments will specifically alter the implications of FP is well beyond the scope of this paper, it is possible to illustrate how some of these innovations may enrich IMF policy analysis. In what follows I will provide three examples that attempt to illustrate how some of the new developments in macroeconomics may help in refining the Fund's basic model. Naturally I do not intend to lay out a complete agenda for revising FP.

The first example deals with the use of an explicit intertemporal optimizing framework for analyzing current account behavior.<sup>17</sup> Within this framework expectations of future events will play a crucial explicit role. Moreover, in an intertemporal setting it is necessary to recognize explicitly that Fund programs are of a short-term nature and that, as a consequence, many of the structural reforms implemented under them may be reversed once the programs are over. As Calvo (1987), among others, has recently pointed out, it is not at all clear whether temporary reforms will be desirable for the country in question. A direct implication of this result is that when giving policy advice special care should be taken to provide long term incentives that, ideally, will survive the program itself.

Also, in an intertemporal setting it is crucial to analyze both inter and intratemporal margins of substitution. The timing of policies becomes very important, as does the distinction between temporary and permanent policies. The implications of these models for fiscal policy are particularly relevant for the Fund policy advice. For example, Frenkel and Razin (1987, pp. 437-41) have shown that, in general, the intertemporal model will generate very different predictions, both in terms of directions and magnitude of the effects, than traditional static models such as the Fund's basic model described by equations (1) through (11). Although the practical implementation of intertemporal models is not easy, some of the new econometric attempts to establish the extent of intertemporal substitution in production and consumption can be particularly helpful. Also, recent developments in time-series econometrics

---

<sup>17</sup>It should be noticed that in many Fund documents (Guitian 1981), there is an emphasis on the distinction between temporary and permanent shocks. However, the model presented above has none of that. On formal intertemporal models see, for example, Frenkel and Razin (1987b) and Edwards (1989).



that allow the decomposition of economic series into permanent and cyclical components, can provide some of the operational elements required for a satisfactory empirical implementation of these models.<sup>18</sup>

The second example deals with time consistency, credibility and reputational issues. The incorporation of these concepts into an explicit intertemporal optimizing framework will generally introduce important insights on the policymaking process that cannot be obtained with simple static models. As a first approximation, time consistency arguments can be used to provide a firm theoretical justification for conditionality. At the same time, they will clearly indicate what are some of the main limitations of this type of program. The inability of governments to make credible precommitments on future policies will generally result in suboptimal policy outcomes. Under certain circumstances, however, conditionality of the type implemented by the Fund can be translated into credible precommitments and, thus, more desirable results. However, for conditionality to play this role it is necessary that the Fund has the ability, as well as the willingness, to enforce the programs. These considerations introduce two important dimensions into the analysis of the Fund's programs. First, it is necessary to investigate in detail how much enforcement power the Fund actually has. This is, at the end, an empirical matter that is currently unresolved. Sachs (1988), for example, has recently argued that although threats of cutting future credit are a credible sanction, they have a limited effect on country behavior.<sup>19</sup> If this is indeed the case, the Fund's programs could become more effective by enhancing their enforcement capability. Alternatively, if this is not possible the Fund should recognize that its enforcement ability is low and reform its modus operandi accordingly. The second issue regarding the effectiveness of conditionality refers to the Fund's perceived willingness to enforce the programs. This, of course, has to do with the Fund's own credibility. If the Fund is perceived as inherently and ultimately "weak", conditionality will not provide the required vehicle for making countries' policies credible. An important question here is

---

<sup>18</sup> See, for example, Beveridge and Nelson (1981) and the survey article by Stock and Watson (1988). The intertemporal approach to the current account also has important implications for evaluating RER movements. Contrary to the more traditional views based on the purchasing power parity theory, in an optimizing intertemporal framework the equilibrium RER can exhibit large fluctuations

<sup>19</sup> He does not, however, provide evidence supporting this assertion.

whether the recent practice of setting tight targets and then granting waivers reduces the perception of the Fund's "toughness". If this perception is, indeed, weakened there is a good reason for revising this practice.<sup>20</sup>

The third example refers to speculative attacks and exchange rate collapses. This literature has provided important insights into the dynamics and the timing of exchange rate crises. One of the most relevant predictions is that if the public anticipates a crisis it would raid the Central Bank and the devaluation will take place before it would have occurred in a non-forward-looking setting. This result, in fact, provides support to the Fund's practice of usually including devaluations as a component of the prior action packages. Moreover, this framework would suggest that the Fund should be even stricter in requiring that devaluations are undertaken under full confidentiality and before public negotiations on a program even begins.<sup>21</sup> A second implication of speculative attack models is that real exchange rate behavior should be closely monitored in order to avoid situations of real exchange rate misalignment. In fact, recent empirical studies indicate that real exchange rate misalignment is indeed one of the most important determinants of speculative attacks (Edwards 1989). One way of avoiding overvaluation is by adopting a nominal exchange rate regime based on a crawling peg. The Fund's record in this area is somewhat mixed; quite often, in fact, the policy

---

<sup>20</sup> An interesting question within the time consistency framework -- and one for which I don't have a full answer -- refers to the circumstances under which Fund conditionality programs should be explicitly contingent on some exogenous variables. In principle, it is possible to think of some reasonable setting under which -- due to informational asymmetries, transaction and negotiation costs, or reputational considerations -- the optimal program will explicitly establish contingent performance criteria. In this case, under certain states of the world the ceilings on the intermediate targets would be automatically revised, without the need to resort to a renegotiation process. The recent establishment of the Compensatory and Contingent Financing Facility (CCFF) by the Executive Board in August of 1988 is, in fact, a step in this direction. However, the fact that the activation of the contingency mechanism generally requires the agreement of the Executive Board, makes this facility less than fully contingent. On the details of CCFF, including the way it is activated, see Pownall and Stuart (1988). On the theory of contingent policies see Aizenman (1988) and Canzoneri (1985).

<sup>21</sup> The emphasis here is on public negotiations. Many policymakers in the LDC's have pointed out that as soon as the press announces that a Fund mission will arrive into the country, the public speculative activities greatly increase introducing unnecessary distortions.

recommendation has been to maintain a fixed exchange rate.<sup>22</sup> Another important implication of expectations-based models of devaluation refers to the role of the parallel market rate in deciding by how much to devalue the official rate. Very frequently the Fund staff recommends to devalue the official rate in a proportion equal to the existing parallel market premium. In part, the rationale for this advice is that in this way -- and assuming that the correct fiscal policies are implemented -- an exchange rate unification will be achieved. However, Lizondo (1987) has recently shown that in a framework where agents have forward-looking expectations there is no reason why the equilibrium unified exchange rate will be equal to the parallel rate. In fact, it may well be above this rate. Consequently, recommendations on the magnitude of devaluations will usually require sophisticated prior empirical analysis.<sup>23</sup>

How can we explain that an institution that was once at the forefront of economic research has now failed to incorporate so many of the important developments in economics to its basic operational model?<sup>24</sup> I believe that there are a number of explanations, some internal to the Fund and others external to it. I will concentrate, however, on some of the internal factors. I think that these have a lot to do with the evolving role of the Research Department within the Fund's structure. During the 20 years going from the late 1950s to the late 1970s the Research Department, under the leadership of J.J. Polak, played a key role within the Fund, both by providing intellectual leadership and by participating actively in mission work. Members of the Research Department not only developed original theoretical work that left an imprint in the profession, but also had an enormous impact on the way the operations staff absorbed new ideas and techniques. It is interesting to see

---

<sup>22</sup> It should be noticed, however, that more recently, and partially as a consequence of the debt crisis, a large number of the adjustment programs include some kind of exchange rate management.

<sup>23</sup> Of course, in many countries the required data for the ideal type of statistical work will be missing. Still the insights of these models should be kept in mind when making use of whatever data are available.

<sup>24</sup> In the 1950s and 1960s a number of important theoretical developments in international economics originated at the Fund. These include the absorption approach (Alexander 1952), the theory of forward markets (Tsiang 1959), the theory of floating exchange rates (Fleming 1962), the policy assignment problem (Mundell 1961) and the monetary approach (Polak 1957).

what Polak himself has to say about the early role of the Research Department within the Fund:

[S]enior officers of the Research Department had by far the most contact with the Board, with management and with other departments. They were therefore better informed on the issues that required policy responses; they were also quite often better informed about issues that required new research activities. In some cases policy and Research weren't all that separate ...

(Polak 1988, p. 2)

Although not lacking in arrogance, the following statement by Polak reflects fairly accurately the relative position of the Fund in the research world:

[W]e were operating at the frontier of international economics. It was very clear to us then, and now I'm speaking probably about the 1960s or perhaps the 1950s, that we were well ahead of the universities in many of these international economic matters.

(Polak 1988, p. 3)

During the first six or seven years of the 1980s and for reasons that are not entirely clear (at least to me), the Research Department lost much of its influence and its force.<sup>25</sup> Research became less related to policy work and the rewards from being attached to that department were reduced. As a consequence of this reduced interaction between research and other departments, fewer of the new ideas developed during this period were actually incorporated into the operational thinking of the Fund. While during these years people in research continued to do high quality work that found its way to some of the top professional journals, these new ideas, models and developments were not incorporated into the operational thinking of the staff. What makes this particularly tragic is that these years correspond to a period where macroeconomic thinking went through revolutionary changes.

It should be noticed, however, that during these years other departments, most notably, Fiscal Affairs, did continue to generate important work that indeed had some impact on the way adjustment programs were designed. Of particular importance here are the studies on underground economies, the reformulation of fiscal accounting under indexed domestic debt (Blejer and Chu 1988), and the incorporation of the tax collection lag (the Tanzi effect) into the study of highly inflationary cases. Since M. Camdessus became Managing

---

<sup>25</sup> It should be noted that other authors date the decline of the Research Department's role before this 1980. See, for example, Mundell's (1969) fascinating article.

Director and J. Frenkel took over the post of Director of Research, that department has experienced a clear revival, where new and important ideas on issues such as policy coordination, contingent financing and debt buy-back schemes have been developed. Also, new econometric models explicitly incorporating rational expectations are being designed in the research department. It is too early to say, however, whether these and other developments will eventually make their way to the operational thinking of the Fund.

### III. The Effectiveness of Fund Programs

A number of papers, books and pamphlets have analyzed whether Fund programs have "worked". This literature is of uneven quality, going from serious empirical studies to sheer propaganda. Not surprisingly perhaps, up to now there is no clearcut answer to this question. Part of the reason, of course, is that the question itself is extremely difficult, and that in order to answer it we have to clearly define what is meant by a "successful" program.

Gutián (1981) has proposed three alternative criteria for evaluating Fund programs. The first, which he calls the positive criterion, is based on a before-and-after approach. For a particular country the value of key macroeconomic variables before and after the program are compared to determine the program's degree of effectiveness. Although this approach is easy to implement, it has a number of methodological shortcomings, including the fact that the conditions prevailing before the program usually are unsustainable. The second criterion, called by Gutián normative, compares the value of the program's targets to its observed outcomes. In a way, this approach compares the actual behavior of the economy to some ideal behavior. However, it also has some limitations, including the fact that many times programs' goals fail to be met due to external shocks. The third criterion is what Gutián called conjectural and consists of comparing the programs' outcomes with the possible outcome of an alternative policy package that, in principle, would have achieved a similar degree of adjustment. Although this approach is close to the ideal yardstick of comparison it is very difficult to implement; defining the alternative program and what is meant by a "similar degree of adjustment" can be highly controversial.<sup>26</sup>

---

<sup>26</sup>Williamson (1983) has proposed an alternative criterion on these lines. See also Mundell (1969).

Most of the empirical studies have been based on one of the first two criteria; in fact the majority has either compared the behavior of key macro-variables within a country before and after a program or have compared program countries with a control group of no-program countries.<sup>27</sup> The purpose of this section is twofold. First, I briefly review the most important empirical studies on the effectiveness of Fund programs. Second, I analyze the recent record with conditionality. I do this by investigating how a number of upper-credit-tranche programs approved in 1983 have fared.

### III.1 Cross-Country Empirical Studies

In this subsection I briefly review a number of cross-country empirical studies on the effectiveness of Fund programs.<sup>28</sup> Many of these works have been undertaken at the Fund itself. Undoubtedly, given the confidentiality of most (or all) of the relevant information, the Fund staff have a considerable advantage in performing this research.<sup>29</sup>

The literature on cross-country experiences with the Fund's programs can be classified into three broad groups. The first consists of studies based on a "before" and "after" methodology. Many of these studies have used nonparametric statistical methods to evaluate whether there is a significant change in these variables through time. To my knowledge this method was first used for internal program evaluations within the Fund and the first published version of it is Reichman and Stillson (1978). In this article 79 upper-tranche programs implemented between 1963 and 1972 are analyzed.<sup>30</sup> The authors classified the programs in two groups: The first includes those programs that called for restraint in credit creation and the second group

---

<sup>27</sup> Although most of these studies have been highly informative they suffer from a number of methodological problems. See Goldstein and Montiel (1986).

<sup>28</sup> See Williamson (1983) for a number of interesting country specific studies. See SELA (1986) for recent Latin American episodes.

<sup>29</sup> Mikesell (1983, p. 53) illustrated the difficulties associated with evaluating Fund programs by stating that: "Since IMF-standby agreements are secret ... how is it possible for an outsider to evaluate them ...?"

<sup>30</sup> An upper tranche program is a program that includes conditionality clauses. First credit tranche programs, on the other hand, only require that the country "demonstrates" reasonable efforts to overcome balance of payments difficulties. Performance criteria (conditionality) are not used in first tranche programs.

includes those programs that did not specify a deceleration of domestic credit creation. They used Mann-Whitney U-tests to compare the values of the domestic credit policy variables as well as of some of the most important targets (net foreign assets, prices, and level of economic activity) before and after the programs. The authors conclude that, overall, 76 percent of the programs succeeded and that 9% of the programs failed due to exogenous forces. With respect to the balance of payments they found that in 24% of the cases there was an improvement after the programs while in 17% there was no significant change.

Since Reichman and Stillson's pioneering article the before-and-after methodology has been applied by a number of authors to different periods and aspects of IMF programs. Connors (1979) looked at 31 programs implemented between 1973 and 1979. Kelly (1982) focused on fiscal intermediate targets and supplemented the before and after approach with regression analysis. Not too surprisingly, she found that those countries that met the fiscal target exhibited a greater probability of achieving the current account target. Killick (1984) focused on 38 programs between 1974-79; Zulu and Nsouli (1985) restricted their analysis to Africa, while Pastor (1987a,b) concentrated on Latin America. The results from these studies are somewhat mixed: broadly speaking, they indicate that in over one half of the programs the external accounts either improved or remained unaffected. In terms of inflation the programs were less successful, and with respect to growth even less so.

In an attempt to overcome some of the limitations of the "before" and "after" approach, in the late 1970s the Fund started to implement studies based on the "control group" methodology. Here the behavior of the key variables in the program countries are compared to their behavior in non-program countries. Donovan (1981, 1982) used all non-oil developing countries as the control group and focused on the period 1970-80. His results were strongly supportive of Fund programs. He found that the balance of payments and current accounts improved in the program countries in relation to the control group; exports grew faster and inflation was lower in the program countries. With respect to output the results were mixed, indicating that there were wide variations across countries and time. In a highly critical study Pastor (1987a,b) also used the control group technique to analyze the effectiveness of Fund programs in 18 Latin American countries between 1965-81. He found some improvement in the external accounts of the program countries,

particularly in the overall balance of payments. He also found that inflation increased significantly in program countries while growth did not appear to be affected by the programs themselves. Pastor also added income distribution indicators to the traditional list of macroeconomic variables analyzed by almost every other study, and found that those Fund programs had been associated with significant worsening in the labor share of income. Gylfason (1987) also used the control group technique to analyze the effects of programs undertaken in 32 countries between 1977 and 1978. His control group was formed by countries with payments difficulties that did not have a Fund program. He concluded that the programs were successful regarding balance of payments improvements. He also found that in the program countries' group the inflation rate was kept below that of the control group and that, although output growth experienced some decline, this was not significant.<sup>31</sup>

In an important paper Goldstein and Montiel (1986) criticized the control group methodology. They showed that by ignoring the initial conditions these studies were subject to a sample selectivity bias. As an alternative they suggest the use of a "modified control group" procedure consisting of regressions that correct for the differences in initial conditions and in policies undertaken in program and non-program countries. They apply this new approach to a data set of 58 countries during 1974-81. Although they consider their findings preliminary, the results show that the Fund's programs have no significant effects (either positive or negative) on any of the target variables. More recently Khan (1988) has applied the modified control group technique to a very large sample containing 67 countries during 1973-86. In his analysis he focuses on the one year effects of programs and found that, on average, the programs have resulted in a positive (though non-significant) effect on the balance of payments, in a significantly positive effect on the current account, in a statistically non-significant reduction in inflation and in a significant reduction in the rate of output growth.

The third group of studies focuses on the relation between the programs' targets and the actual outcomes. This corresponds to what Guitián calls the normative approach. This criterion is useful in assessing the validity of the

---

<sup>31</sup>In Section V, I present regression results on the effects of devaluation and fiscal policies on output. The Appendix contains a model that investigates these issues.



frequent criticism that IMF programs set unrealistic targets. In fact, Jeffrey Sachs (1988) has recently argued that this approach provides the most useful yardstick to measuring programs' effectiveness. Reichman and Stillson (1978) found that 65.4% of the programs of their sample that specified domestic credit deceleration actually achieved it; they also found that in 72.2% of those programs the rate of growth of credit to the public sector was also reduced. Beveridge and Kelly (1980) focused on the fiscal side of programs arranged during 1969-78 and found that the overall fiscal deficit targets were met only in 48 percent of the cases.

To summarize, the existing empirical evidence indicates that when compared with the years prior to the program or with a control group IMF programs have resulted, on average, in: (1) an improvement of the balance of payments situation; (2) an improvement in the current account balance; (3) a slight -- although not necessarily significant -- reduction in inflation; and (4) a short run reduction in output growth.<sup>32</sup> It is important to stress, however, that these findings have not been based on the ideal comparison criterion that would compare program outcomes to those of an alternative "counterfactual" program. In fact, the design of more adequate comparison frameworks is one of the most important areas for future work on the evaluation of the Fund programs. However, as Khan (1988) has pointed out, the difficulties of this task should not be underestimated.

### III.2 Recent Experience With Conditionality

The year 1983 marked the beginning of the IMF involvement with the debt problem. That year 34 upper-tranche programs involving conditionality (stand-by and EFF programs) were arranged. In the vast majority of cases these programs involved countries seriously affected by the debt crisis. In this subsection I review the experiences of these 34 programs, concentrating on the programs' contents and on the relation between targets and actual outcomes, emphasizing the evolution of three final targets: the current account,

---

<sup>32</sup>To some extent these findings reflect the Fund's traditional priorities; the main objective of Fund programs is to improve the country's external accounts. Fund critics from the Third World have often argued that the Fund pursues these objectives even at the expense of provoking major declines in output. See, for example, SELA (1986).

inflation, and output growth.<sup>33</sup>

Table 1 contains a list of the countries that had upper-tranche programs arranged in 1983. In 1982 all of these countries faced severe external imbalances, with the average ratio of current account deficit to GNP amounting to more than 10 percent. Moreover, the vast majority of them faced serious debt problems; 8 of these countries -- Argentina, Brazil, Chile, Ecuador, Mexico, Morocco, Philippines and Uruguay -- are included in the IMF list of the 15 highly indebted countries.<sup>34</sup>

In accordance with the Articles of Agreement the programs sought an adjustment that would generate balance of payments viability. Given the global nature of the problem and contrary to the historical experience, these programs could not rely on increased private capital inflows in order to achieve viability. Consequently in all cases rapid and significant current account turnarounds were sought. For the sample as a whole the programs targeted a reduction of the current account deficit from 10.2 percent of GDP in 1982 to 7.1 percent of GDP in 1983, and to 6 percent of GDP in 1984. Of course, for the individual countries the targets varied quite dramatically. The programs also set inflation and output growth targets.

The programs sought to achieve their objectives by a combination of expenditure reducing and expenditure switching policies, as well as by the implementation of structural reforms aimed at increasing the overall efficiency of the economies. Table 2 contains a broad description of the policy content of these programs. As can be seen, almost every program contained credit ceilings and a devaluation component. This contrasts sharply with previous Fund programs. According to Reichman and Stillson (1978) only about one half of the upper credit tranche programs arranged between 1963 and 1972 contained credit ceilings as performance criteria and one third of the

---

<sup>33</sup>The purpose of this subsection, then, is not to provide an ideal evaluation of recent Fund programs. Its more modest objective is to provide a description of debt-related the program's contents, and to compare targets to actual outcomes, and to follow the evolution of the targets through time. Consequently, these data should be interpreted with some caution, since they are subject to some of the limitations associated with the "before" and "after" methodology discussed above.

<sup>34</sup>I am grateful to Mr. Azizali Mohammed for allowing me to use these data, which have not been released to outside analysts until now. Data referring to specific country programs remain confidential.

TABLE 1  
IMF Conditionality Programs Approved in 1983\*

Country

Argentina  
Bangladesh  
Brazil  
Central African Republic  
Chile  
Dominican Republic  
Ecuador  
Ghana  
Guatemala  
Haiti  
Kenya  
Korea  
Liberia  
Malawi  
Mali  
Mauritius  
Mexico  
Morocco  
Niger  
Panama  
Philippines  
Portugal  
Senegal  
Solomon Islands  
Sri Lanka  
Sudan  
Togo  
Turkey  
Uganda  
Uruguay  
Western Samoa  
Zaire  
Zambia  
Zimbabwe

\*These are countries that had upper credit tranche programs -- either standby or EFF -- arranged in 1983. A number of these countries had programs prior to 1982, and some also had programs approved after 1983.

Source: IMF Annual Reports.

programs included a devaluation component. On the other hand, according to Loser (1984) 50 percent of the upper tranche programs arranged during 1977-80 included a devaluation component.<sup>35</sup>

As can be seen from Table 2, in the 1983 programs the traditional fiscal, monetary and exchange rate measures were supplemented by a battery of other policies, including measures geared towards reducing the extent of indexation and microeconomic oriented policies. Notice that in only about one half of the cases structural reforms -- that is trade or financial liberalization -- were contemplated.<sup>36</sup> Moreover, in a number of cases the Fund programs have called for a hike in trade taxes as a way to strengthen the fiscal side and reduce the fiscal imbalance.

How well did the 1983 programs fare? Table 3 contains data on the evolution of three key final targets -- the current account, inflation and output growth. As can be seen, on average, the current account improved somewhat while inflation increased quite significantly. With respect to output growth, after a steep reduction in 1983, there was a small improvement in 1984 and 1985. However, as mentioned above, before-and-after type of comparisons are not fully satisfactory. This is particularly true for the debt crisis period, during which, given the sudden halt in capital inflows, these countries had no alternative but to engineer a rapid current account turnaround. In fact, countries that did not have Fund programs also experienced major current account improvements.

An informative exercise consists of comparing targets and outcomes. As discussed above, the comparison of intermediate targets -- many of which are actually performance criteria -- and the actual behavior of the policy variables, provides important elements to evaluate conditionality. Table 4 compares the compliance percentage of three key policy variables -- the ratio of government deficit to GDP, the rate of growth of domestic credit and the rate of growth of domestic credit to the public sector. As can be seen these debt-related variables experienced a fairly low rate of compliance. This is

---

<sup>35</sup>It is important to note that in many cases devaluations are part of the so-called prior-actions, or measures the country has to undertake before the program is approved.

<sup>36</sup>This contrasts with the structural adjustment programs of the World Bank which have contained trade liberalization conditions in the majority of cases.

TABLE 2

Policy Content of High-Conditionality Programs: 1983-1985

(in percent)

Percent of Programs to  
Which Policy Applies

(out of 34 Programs)

A.	<u>FISCAL POLICY</u>	
A.1	<u>Control of Public Expenditures</u>	
	• Current Expenditures	76
	- (Public Sector Wages)	(74)
	- (Subsidies)	(44)
	• Investment Expenditures	68
A.2	<u>Revenues</u>	
	• Enlarging Tax Base	68
	• Higher Tax Rates	74
A.3	<u>Public Enterprises</u>	
	• Pricing Reform	79
	• Administrative Reforms	47
	• General Reform	59
B.	<u>MONETARY POLICY</u>	
	• Control of Money and Credit Aggregates	97
	• Control of Credit to Government and Public Sector	100
	• Hike in Interest Rates	74
C.	<u>EXCHANGE RATE POLICY</u>	
	• Devaluation	79 <sup>a</sup>
D.	<u>WAGE-PRICE POLICY</u>	
	• Wage Indexation	44
	• Pricing Rationalization	62
	• Adjustment of Producer Prices	59

(continued)

Table 2 (cont.)

	<u>Percent of Programs to Which Policy Applies</u>
	(out of 34 Programs)
E. <u>DEBT MANAGEMENT</u>	
• Rescheduling	56
• Coordinated Financing	38
• Regularization of Arrears <sup>b</sup>	62
F. <u>TRADE REFORM</u>	
• Tariff Liberalization	35
• Relaxing Exchange Restrictions	41
G. <u>FINANCIAL SECTOR POLICY</u>	
• Financial Liberalization	44
H. <u>TAX REFORM</u>	
• Tax Reform	59

<sup>a</sup>Programs that did not include exchange rate component corresponded to those with institutional constraints, such as belonging to a monetary union or not having a national currency.

<sup>b</sup>All countries with arrears are included here.

Source: IMF.

TABLE 3

Current Account, Inflation and Growth for the 1983 Programs

	<u>1981</u>		<u>1982</u>		<u>1983</u>		<u>1984</u>		<u>1985</u>	
	<u>Average</u>	<u>Median</u>	<u>Average</u>	<u>Median</u>	<u>Average</u>	<u>Median</u>	<u>Average</u>	<u>Median</u>	<u>Average</u>	<u>Median</u>
Current Account/ GDP	11.6	11.2	10.2	9.5	7.4	5.8	6.0	4.2	6.7	6.0
Inflation	28.9	18.1	24.5	12.0	40.3	12.4	47.7	14.7	38.1	10.5
Growth	1.7	2.4	0.2	0.2	-0.1	-0.5	2.0	2.2	2.5	3.0

Source: IMF.

TABLE 4

Compliance With Conditionality:

34 Programs Approved in 1983

(percentage of countries that comply)

	<u>1983</u>	<u>1984</u>	<u>1985</u>
1. Government Deficit to GDP	30.3%	18.8%	43.5%
2. Changes in Domestic Credit	54.8%	46.4%	40.9%
3. Changes in Net Domestic Credit to Government	72.0%	52.8%	52.4%

Source: IMF.

particularly the case for the deficit target, which in no year reached a 50 percent rate of compliance.

It is interesting to compare the rate of compliance of fiscal targets in 1983-85 to those obtained in the past. Beveridge and Kelly (1980), for example, report that in 48 percent of upper credit tranches programs implemented between 1969-78 the target of overall fiscal deficit as percent of GDP was achieved. This figure is higher than that for 1983-85 reported in Table 4. There are a number of possible explanations for this difference in the rate of success of the programs. First, a large number of program countries were affected by negative terms of trade shocks in 1983-85, which made the achievement of the targets more difficult than anticipated.<sup>37</sup> A second possible explanation for the poor recent rate of achievement of intermediate targets is related with the debt crisis. There is a wide agreement now that the debt crisis has introduced a serious incentive problem for the highly indebted LDCs. Under the current situation of debt overhang, while the costs of the adjustment are fully borne by the highly indebted country, its benefits in the short run are (almost) fully received by the creditors in the form of higher debt repayment.<sup>38</sup> Naturally, under these circumstances the program countries have little incentive to comply with conditionality. In this context it may be argued that many recent Fund programs have failed to recognize that under this type of incentive problem a revised type of conditionality is called for. In Section IV below I discuss in some detail the Fund's strategy with respect to the debt crisis.

A serious consequence of the low rate of compliance has been that in the recent years there has been a significant increase in the number of programs that have been interrupted, as well as in the number of waivers approved by the Fund.

Table 5 contains information on the percentage of final targets that have been achieved in the period 1983-85. These results indicate that programs

---

<sup>37</sup> In the case of Latin American countries, for example, the depressed terms of trade persisted for a much longer time than expected. Also, the industrial economies did not recover as fast or as strongly as originally expected by the authorities and the Fund staff.

<sup>38</sup> The existence of this type of incentive problem has been recognized by a very large number of participants in the debate. See, for example, Corden (1988), Sachs (1988), Krugman (1988).



TABLE 5  
 Conditionality and Program Results:  
 Percent of Countries That Met or Exceeded  
 Program's Target\*

	<u>1983</u>	<u>1984</u>	<u>1985</u>
1. Current Account Target	55	52	50
2. Inflation Target	48	41	36
3. Growth Target	14	39	32

\*The number of countries included are 27 in 1983 and 1984 and 22 in 1985.

Source: International Monetary Fund.

have recently been less successful than in the past. In relative terms, the current account target was met more frequently than the inflation targets, and these, in turn, were met more often than the growth targets.

#### IV. The Fund and the Debt Crisis: Some Political Angles

From the outset of the debt crisis the Fund played a crucial role in leading the efforts to coordinate the actions of private banks, creditor governments, and debtors. It is not an exaggeration to say that the Fund was instrumental in avoiding generalized default that would have resulted in a major collapse of the international financial system. Even some of the most ardent critics of the IMF have praised its role during this early period. For example, in an otherwise highly critical document the Group of 24 (1987) recognizes that "[t]he Fund played an important role at the time of the severe debt crisis in 1982 not only by organizing financial support for countries with debt servicing problems, but also by increasing its own lending" (p. 35). The purpose of this section is to briefly analyze the Fund's strategy towards the debt crisis. Due to space limitations I concentrate on some political-economy aspects of this strategy which I think are particularly relevant. Consequently I don't deal with some important issues such as the relation between structural reforms and macro-stabilization, the sequencing of liberalization, devaluation and global adjustment, and the need for symmetry in treating deficit and surplus countries.<sup>39</sup>

By and large since 1982-83 the IMF has maintained a very consistent approach regarding the debt crisis. The cornerstone of the Fund's position is the case-by-case approach, and the belief that a combination of macroeconomic adjustment in the debtor countries, rescheduling agreements with the banks and free-market oriented structural reforms in the LDCs will, in most cases, suffice to solve the crisis. If the countries follow the "right" policies, the approach goes, they will get fresh monies and will be able to "efficiently" grow out of the crisis via export expansion. In fact, in the early years of the crisis, once a country reached an agreement with the IMF, the banks would move in, providing funds or agreeing to some form of rescheduling. As time has passed the Fund has endorsed additional measures, including the use of secondary markets, and has encouraged concessional aid by the industrial

---

<sup>39</sup> I have dealt with some of these issues elsewhere (see Edwards 1988).

countries. Needless to say the Fund has opposed the granting of generalized debt forgiveness.<sup>40</sup> This, at least, has been the official position of the institution.

In early 1983 the Fund staff, like most observers, saw the crisis as a temporary liquidity problem only affecting a handful of countries. In fact during 1983 and 1984 the Fund had high expectations for a quick and relatively painless resolution of the problem. As part of the adjustment effort in 1983 the Fund arranged a record number of upper credit tranche programs, and the use of its resources increased significantly.<sup>41</sup> The Fund's optimistic view was clearly reflected in the 1984 issue of the World Economic Outlook. That report included highly optimistic projections of the main debt-related indicators, predicting a steady decline of the debt export ratio until 1990. Things, however, did not work as expected and in the following years the Fund came to recognize that it had badly underestimated the magnitude of the problem. In fact, in the 1986 World Economic Outlook the staff expressed surprise at the lack of progress attained in spite of the major current account adjustments that had taken place. Starting in 1985 the Fund emphasized more and more the importance of structural reforms in solving the crisis, and from 1986 onwards the Fund has strongly endorsed the Baker plan calling for free market oriented policies as a precondition for providing new monies to the highly indebted countries.

Perhaps the main limitation of the Fund's approach towards the debt crisis is that it has failed to recognize, in practice, that the nature of the crisis has changed. The crisis has ceased to be a global financial problem and has, for most debtor countries, become a development problem. With the world financial system no longer at risk, one of the most urgent outstanding issues is to work out packages that would permit the developing countries to

---

<sup>40</sup>Notice, however, that the Bolivian buyback was supported by the Fund. In fact, the trust account used for this operation was set at the Fund. I have deliberately used the word "forgiveness" and not "relief". There is some discussion on what debt "relief" exactly means. Some authors have argued that we have already seen a significant amount of relief.

<sup>41</sup>Since mid-1984, however, the use of Fund resources has declined steadily. Today the Fund is a net recipient of capital from the LDCs. Moreover, a fairly large number of countries have been building arrears with the Fund.

recover and grow.<sup>42</sup> For a large -- indeed a very large -- number of countries the debt problem is not one of temporary illiquidity. It is a deep structural problem that should be treated as such. In many cases, by approving standby programs whose targets everyone knows will not be met, the IMF is participating in a big charade; it is implicitly saying that, according to the Articles of Agreement, the resources have been provided on a temporary basis, and there is a high probability that the country will attain balance of payments viability in the near future. For many countries this is not the case, and everybody knows it. The issue, of course, is not whether these countries should undertake reforms and prudent macroeconomic policies -- they certainly should -- but whether these policies will suffice for solving the crisis.

The Fund has not participated in this delusion willingly. In many cases its participation was the result of political decisions made by the largest members, in particular by the United States. For political reasons -- dictated by geopolitical or other considerations -- and many times against the judgment of the staff, the U.S. and other industrialized countries saw fit to request (force?) the Fund to approve unrealistic programs for Egypt, the Sudan, Nicaragua, Argentina and Brazil. What has happened is that concessionary development funds have been given through the IMF. Of course, there is per se nothing wrong with providing aid. Quite the contrary, given these countries positions, aid is a good step. What is questionable is the wisdom of using a financial institution such as the Fund for this purpose. David Finch, the former director of the Exchange and Trade Restrictions (ETR) department at the Fund has strongly argued against the use of the Fund for political purposes. He rightly points out that the Fund, by approving programs that everyone knows are destined to fail, will not only lose credibility but also will see its own resources imperiled, in the not so unlikely event that some of these countries ultimately default on the Fund. He asks politicians that they "Let the IMF be the IMF."<sup>43</sup>

Of course, it is naive to ask that the large members don't try to influence IMF policy in ways that favor their global interests; as it would be

---

<sup>42</sup>Through the combination of reduced exposure to highly indebted countries and an increase in provisions for bad LDC loans, the vast majority of the major banks are now in a fairly solid position.

<sup>43</sup>Finch (1988a,b,c).

naive to ask the staff not to oppose measures that reduce its own power.<sup>44</sup> It is not clear, however, whether the long term interests of the major countries are indeed enhanced by these policies. Why do they risk damaging the Fund in this process? These are difficult questions and I don't have full answers to them. One can speculate, however, that this is at least partially motivated by a desire to salvage the Baker plan.<sup>45</sup> Nevertheless, more and more observers are now arguing that in many countries structural reform and macro adjustment are not enough to get out of the current debt trap (Sachs (1988)).

#### V. The International Monetary Fund and Some Devaluation Controversies

Undoubtedly, devaluations constitute one of the most controversial components of Fund's programs. They are not only vehemently resisted by the LDCs authorities, but they have also been severely criticized by a number of observers. Ariel Buira, a former Executive Director for Mexico, is one of the most respected Third World critics of the Fund. In many ways his views are shared by a wide group of economists in the developing world. It is educational, then, to cite at some length from Buira (1983). With respect to the incorporation of devaluations in the set of Fund's policy tools Buira says:

Devaluation was introduced as an ad hoc measure to financial programs ... [I]nstead of developing an analytical framework ... devaluation was often requested as a prior action ... Thus, the existing financial techniques could be applied without any modifications. (p. 122)

Fundamentally, he questioned the supposedly beneficial effects of devaluation on output:

A questionable assumption underlying many Fund-oriented devaluations is the belief in the existence of a positive correlation between devaluation and output based on an implicit "elasticity optimism" ...

The view of a general positive relationship between devaluation and output is questionable on theoretical grounds.

(pp. 124-125)

---

<sup>44</sup> See Vaubel (1986) for an interesting analysis of international organizations within the framework of the public choice theory.

<sup>45</sup> After this paper was presented at the Carnegie-Rochester Conference there have been some indications that the new Bush administration would be willing to revise the Baker plan.

The purpose of this section is to investigate empirically two controversial aspects of devaluations within the context of Fund programs: the relation between devaluation and output -- the so-called contractionary devaluation issue -- and the relation between devaluations and income distribution.

### V.1 Devaluations and Output

Although the theoretical possibility of devaluations being contractionary has been recognized by a number of authors, there has been very limited empirical work related to this issue.<sup>46</sup> In this section I present empirical results dealing with the contractionary devaluation issue. The analysis is based on a minimal model of a country that produces three goods -- importables, exportables and nontradables -- and uses imported inputs in the production of the nontradables. The model, presented in detail in the Appendix, is sufficiently general as to include the results of Cooper (1971b), Krugman and Taylor (1978), Hanson (1983) and Branson (1986) as special cases.

The following equation based on the model in the Appendix is the basis of the estimation:<sup>47</sup>

$$\begin{aligned} \log g_t &= \gamma \text{TIME} + \Sigma \beta_{1i} H_{t-i} \\ &+ \Sigma \beta_{2i} \log \text{TOT}_{t-i} + \Sigma \beta_{3i} \log \text{GCGDP}_{t-i} \\ &+ \Sigma \beta_{4i} \log E_{t-i} + u_t \end{aligned} \quad (14)$$

where  $g_t$  is real GDP; H is "money"; TOT is terms of trade; GCGDP is the ratio of government consumption over GDP; E is the nominal exchange rate and u is the error term.

---

<sup>46</sup>Modern theoretical discussions on contractionary devaluation go back at least to Hirschman (1949) and Diaz Alejandro (1965). Cooper (1971a,b) provided important empirical evidence in his cross country studies. More recently Krugman and Taylor (1978), Gylfason and Schmid (1983), van Wijnbergen (1986), Buffie (1984), Branson (1986) and Larrain and Sachs (1986) have provided further theoretical refinements. Empirical studies based on the "before" and "after" approach include Cooper (1971b) and Krueger (1978). Gylfason and Schmid (1983), Gylfason and Risager (1984), and Branson (1986) presented results based on simulation analyses. Edwards (1986) provides one of the very few regression analyses.

<sup>47</sup>This equation differs from the reduced form in an Appendix available from the author.

In the estimation of equation (14), three alternative concepts for the monetary variable were used. First, as indicated by the model, actual changes in the log of nominal money -- which were denoted by  $\Delta H_{t-1}$  -- were included. Second, equation (14) also incorporated the role of monetary innovations ( $MS_1$ ). And third, changes in domestic credit were also included. The most plausible assumptions regarding the effects of terms of trade (TOT) changes on output indicate that  $\Sigma\beta_{21}$  should be positive. On the other hand, the coefficients  $\beta_{31}$  measure the role of fiscal policy and according to the model it is expected that they will be positive. However, the main interest of this analysis lies in the coefficients of the exchange rate -- the  $\beta_4$ 's. If devaluations are contractionary as suggested by the IMF critics, it is expected that their sum will be significantly negative. If, however, devaluations are expansive as suggested by the more traditional theories, the sum of the  $\beta_4$ 's will be positive. Finally, if output is independent of exchange rate, monetary and fiscal policies, as suggested by the Fund basic model in equations (1) through (11), the  $\beta_4$ 's would not be significantly different from zero. It is possible, however, to have a short run effect that goes in one direction and a long run effect that goes in the opposite direction. For this reason in equation (14) a number of lags have been incorporated.

Equation (14) was estimated using pooled data for 12 developing countries -- India, Malaysia, Philippines, Sri Lanka, Thailand, Greece, Israel, Brazil, Colombia, El Salvador, South Africa and Yugoslavia. These countries were chosen because of data availability: they were the only developing countries that had long enough time series for all the variables of interest (fiscal deficits and terms of trade are the most difficult data to obtain). The time period covers 1965 through 1984 for most countries. All of these countries have experienced important real exchange rate changes (i.e., real devaluations and appreciations) during the period under consideration, and all but El Salvador had also gone through episodes of major nominal devaluations. Many of them have also been subject to Fund programs during the period. The list of the upper-tranche Fund programs of the sample countries and the exact definition and sources of the data are also given in the Appendix.

Before estimating the versions of these equations that include monetary "innovations", it is necessary to find adequate time series for the unexpected money term  $MS$ . As in a number of other studies, this unexpected money growth term is constructed, for each individual country, by taking the differences

between actual money growth and the estimated rate of growth of money obtained from a money creation equation. In a large number of developing countries the printing of money is an important source of fiscal deficit financing (Edwards 1983). Consequently, in the money creation equations used in this study the ratio of the fiscal deficit scaled by lagged high-powered money was used as an explanatory variable. Additionally the equation included lagged values of  $\Delta \log H_t$ .<sup>48</sup> In all cases the residuals were closely examined in order to make sure that they were white noise, and consequently qualified as proxies for money surprises in the estimation of the real output growth equations.

In the estimation of equation (14) the  $\gamma$  coefficient was allowed to differ across countries. In this way the differences in trend growth of real output across countries is accounted for. Also, country dummy variables that capture those elements that are specific to each country, such as country size, were included.<sup>49</sup> Table 6 contains the results. Although some of the coefficients are not significant at conventional levels, these results provide support to the view that devaluations have at least a short-run contractionary effect on real output. In both equations the coefficient of the contemporaneous exchange rate variable is significantly negative. Moreover, its magnitude is quite large, indicating that with other things given, devaluations in these countries have exerted important short term negative pressures on real output.

---

<sup>48</sup>For each individual country, the following money creation equation was estimated:

$$\Delta \log H_t = a_0 + a_1 \Delta \log H_{t-1} + a_2 \Delta \log H_{t-2} + a_3 \Delta \log H_{t-3} + a_4 \text{DEH}_t + \mu_t$$
 where  $H_t$  is broadly defined (M2) nominal money,  $\text{DEH}_t$  is the fiscal deficit term and  $\mu_t$  is a white noise term. In all cases the fits were quite good. In 10 of the 12 cases the coefficients of the fiscal deficit term  $\text{DEH}_t$  are positive as expected. However, in only four cases -- Greece, Israel, Brazil and Colombia -- this coefficient is significant at conventional levels. The approach followed here has well-known shortcomings, including the fact that by using data on all the sample to generate the money creation equation parameters too much information is being considered (Barro, 1977). In the present case, however, the lack of long enough data series makes the use of rolling regressions or similar procedures impossible. As in much of this literature, the equations reported here are subject to the problems stemming from using generated regressors (see Pagan (1984, 1986)).

<sup>49</sup>Since the number of time series observations were not the same for each country, it was not possible to estimate these equations using a random coefficient procedure. However, when some observations were dropped and the Fuller-Batesse (1974) procedure was used, results very similar to those reported here were obtained.



TABLE 6  
Devaluations and Real GDP  
(OLS)

	(14.1)	(14.2)
$\log E_t$	-0.199 (-7.019)	-0.153 (-6.173)
$\log E_{t-1}$	0.019 (0.445)	-0.008 (-0.211)
$\log E_{t-2}$	0.032 (0.999)	0.033 (1.074)
$\Delta H_t$	0.086 (1.687)	-
$\Delta H_{t-1}$	0.021 (0.353)	-
$\Delta H_{t-2}$	0.092 (1.826)	-
$MS_t$	-	0.024 (0.375)
$MS_{t-1}$	-	0.131 (2.316)
$MS_{t-2}$	-	0.124 (2.197)
$\log TOT_t$	0.103 (3.340)	0.100 (3.138)
$\log TOT_{t-1}$	0.019 (0.587)	0.014 (0.420)
$\log GCGDP_t$	-0.010 (-1.527)	-0.007 (-0.349)
$\log GCGDP_{t-1}$	-0.029 (-1.527)	-0.026 (-1.363)
N	230	230
Root MSE	0.044	0.053
$R^2$	0.99	0.99

Notes: These equations were estimated using OLS. The number in parentheses are t-statistics. Root MSE is the root mean square error. All equations were estimated using a fixed effect procedure where country specific dummy variables were included.

With respect to the long run effects of devaluations on real output, it is not possible to reject the hypothesis that the sum of the exchange rate coefficients is zero. This suggests that although devaluations have a negative impact effect on output, they are neutral in the long run.

Regarding the other variables the results are also quite revealing. Almost all the coefficients of the change of actual money in (14.1) turned out to be nonsignificant at conventional levels and at least one of the coefficients of the monetary surprises were significantly positive at conventional levels in (14.2). The terms of trade coefficients are significantly positive and quite large. This indicates that a terms of trade deterioration will result in a reduction of real GDP relative to its trend. It should be noted that when actual money growth was replaced by growth in domestic credit their coefficients turned out to be non-significant; the coefficients of the exchange rate, however, did not change in any significant way.

Most discussions on contractionary devaluations, including the model developed in the Appendix, do not specify what are the alternatives to devaluations in conditions of disequilibrium. In reality, however, when faced with adverse external sector conditions economic authorities face the decision of whether to devalue or to implement other policies. As is shown in Edwards (1989), in most historical episodes the developing nations have resisted devaluation and have instead imposed exchange and trade controls. Moreover, many of the critics of the Fund have argued that trade restrictions could be key components of alternative adjustment packages. An important issue, then, is whether these policies considered to be alternatives to devaluations, have also had negative effects on real output. In principle, the model in the Appendix can be easily amended to incorporate (some) real output effects of trade controls. In fact, in that model tariffs on imported intermediate inputs will have a contractionary effect similar to that generated by a devaluation. Moreover, in more complete models distortions will generally have their own negative consequences on output.<sup>50</sup>

In order to test the hypothesis that increased trade impediments, exchange controls and other variables negatively affect real output, equation

---

<sup>50</sup> This is a much more controversial statement than what it may appear at first. In fact, it is not that easy to generate that kind of result with standard neoclassical equilibrium growth models. The problem, of course, relates to the difference between levels and rates of growth. See Lucas (1988).

(14) was re-estimated adding a "catchall" proxy for the level of distortions in an open economy. In Edwards (1989) I have argued that the premium in the black market for foreign exchange (BMPR) is a good proxy for these distortions. Estimation using instrumental variables yielded the following results:

$$\begin{aligned} \log y_{nt} = & -0.212 \log E_t - 0.056 \log E_{t-1} + 0.107 \log E_{t-2} \\ & (-6.296) \quad (-1.090) \quad (2.534) \\ & -0.195 \text{ BMPR}_t + 0.105 \Delta H_t - 0.045 \Delta H_{t-1} + 0.012 \Delta H_{t-2} \\ & (-5.352) \quad (1.935) \quad (-0.711) \quad (2.355) \\ & + 0.073 \log \text{TOT}_t + 0.001 \log \text{TOT}_{t-2} + 0.003 \log \text{GCGDP}_t \\ & (2.324) \quad (0.003) \quad (0.155) \\ & -0.008 \log \text{GCGDP}_{t-1} \quad \text{Root MSE} = 0.043 \\ & (-0.419) \quad \text{N} = 207; \end{aligned}$$

As can be seen the coefficient of BMPR turned out to be significantly negative at conventional levels. These results then provide some preliminary evidence supporting the idea that increased distortions in these economies have historically resulted in declines in real output relative to trend. Moreover, these estimates support results reported in Edwards (1989) that suggest that in a number of developing countries exchange controls are at least partially responsible for the observed deterioration in real output before the devaluation.

In sum, these findings provide some preliminary results regarding the contractionary devaluation issue. They show that, contrary to the assumption in the Fund basic model represented by equations (1) through (11), real output does respond to changes in some of the most important policy variables. More specifically, these results provide some support to the hypothesis that devaluations have a short run contractionary effect on output. However, the results presented in this section go beyond the narrow question of the effects of devaluation and output, suggesting that the policies usually recommended as alternatives to devaluations and Fund-type programs also exert significant negative effects on output. Moreover since, contrary to devaluations, these policies usually fail to bring around an improvement in the external accounts, there is evidence suggesting that the exchange rate adjustment route is a more

effective one.<sup>51</sup>

## V.2 Devaluation and Income Distribution

For many years the IMF has been criticized for ignoring the social effects of its policies. In particular, a number of authors and politicians in the Third World have repeatedly argued that Fund policies -- and especially their devaluation component -- have negative effects on income distribution. For example, Pastor (1987a,b), has recently argued that, although IMF policies may, and some times do, improve countries' external positions, they do it at the cost of generating poverty. For many years the Fund did not react to this line of criticism.<sup>52</sup> However, recently -- since the appointment of M. Camdessus as Managing Director, I would say -- the Fund has explicitly expressed concern on the distributional aspects of its programs, arguing that in fact Fund programs tend to help the poor -- especially the landless rural poor. Surprisingly, perhaps, this debate has been characterized by a lack of empirical inquiry. Most of the discussion has remained at general, and not always at analytical levels; there have been virtually no empirical studies on the subject.<sup>53</sup> In this section some of the income distribution ramifications of devaluations are investigated for 36 devaluation episodes that took place between 1960 and 1982. The analysis concentrates on labor shares in income and should be considered preliminary; there are very limited data on primary income distribution indicators. In fact, according to data in the World Bank World Tables most of the developing countries have data on the personal distribution of income for at most two out of the last 25 years.

Table 7 contains the evolution of labor's share in GDP for the period surrounding these devaluation episodes. These figures provide some information that can help solve the jigsaw puzzle of the relation between devaluations and income distribution. Many of these devaluations were in fact undertaken as part of a Fund-supported program. The main characteristic that

---

<sup>51</sup>Naturally, devaluations will only help the adjustment if undertaken in conjunction with demand management packages. On these issues see Edwards (1989).

<sup>52</sup>An exception is the paper by Johnson and Salop (1980).

<sup>53</sup>Besides Johnson and Salop (1980), and Pastor (1987a,b), Blejer and Guerrero (1988) constitute an exception to this feature of the discussion.

emerges from these data is that for most countries labor shares move very slowly through time, making the analysis of the effects of devaluations on factoral distribution of income rather difficult. For this reason in this section I compare the average for the four years prior to the crisis with the four year average for the year of the devaluation and the three years that follow. This comparison is done in two ways: first I have arbitrarily defined a significant change in the labor share as any movement that exceeds, either up or down, 1.5 percentage points. Second, I have used non-parametric tests ( $\chi^2$ ) to analyze whether there has been a statistically significant change in income distribution in the years surrounding the devaluation.

Using the first criterion the data from Table 7 show that in 15 out of 31 episodes there were no significant changes in income distribution in the period surrounding the devaluations; in 9 out of 31 cases the labor share was reduced -- Bolivia 1972, Egypt 1979, Israel 1971, Jamaica 1967, Jamaica 1978, Peru 1975, Philippines 1962 and 1970, and Sri Lanka 1961; and in 7 out of the 31 episodes there were significant gains in the labor share of GDP -- Bolivia 1979, Colombia 1962, Egypt 1962, India 1966, Korea 1980, Mexico 1976, Pakistan 1972.

These findings are remarkably inconclusive, indicating that, from a historical point of view, and given the available information, it is not possible to make sweeping statements regarding the relation between devaluations and income distribution. Again, this analysis clearly suggests that an improvement of our knowledge on these important matters will not only require additional analysis but, more importantly, the construction of appropriate data.

With respect to the nonparametric tests, I compared each of the years following the devaluation that appear in Table 7 to each of the years prior to the crisis. What this does is provide a very broad "before and after" view where no a priori commitment is made on any one pair of years as providing the most relevant comparison. The  $\chi^2$  obtained ranged from 0.6 to 3.0. These statistics are distributed with two degrees of freedom; consequently these tests clearly indicate that for these devaluation episodes as a group there was no significant change in income distribution.

TABLE 7

## Devaluations and Income Distribution

(percentage of compensation to employees with respect to GDP)

	Year of Devalua- tion	Dev. Yr.							
		-4	-3	-2	-1	0	+1	+2	+3
Argentina	1970	40	41	40	40	41	42	39	43
Bolivia	1972	37	37	34	36	35	32	30	33
	1979	33	34	35	35	36	36	n.a.	n.a.
	1982	35	36	36	n.a.	n.a.	n.a.	n.a.	n.a.
Chile	1982	39	36	38	40	n.a.	n.a.	n.a.	n.a.
Colombia	1962	n.a.	n.a.	34	36	38	38	36	37
	1965	36	38	38	36	37	36	37	36
	1967	38	36	37	36	37	36	38	38
Costa Rica	1974	47	48	48	45	45	46	47	45
Cyprus <sup>1</sup>	1967	87	87	88	87	88	88	88	88
Ecuador	1961	n.a.	n.a.	n.a.	28	29	29	29	28
	1970	27	27	28	28	29	30	28	26
	1982	28	28	32	30	29	n.a.	n.a.	n.a.
Egypt <sup>2</sup>	1962	n.a.	n.a.	39	41	42	42	40	41
	1979	46	39	38	37	33	34	n.a.	n.a.
Guyana	1967	47	47	48	49	49	49	48	49
India	1966	73	72	74	72	74	77	75	74
Indonesia <sup>1</sup>	1978	89	89	89	89	89	89	90	90
Israel	1962	n.a.	n.a.	44	44	44	44	45	48
	1967	44	45	48	50	50	46	44	47
	1971	50	46	44	47	46	43	45	43
Jamaica	1967	50	50	50	46	47	48	49	50
	1978	54	56	57	56	52	51	51	53
Kenya	1981	32	34	35	35	n.a.	n.a.	n.a.	n.a.
Korea	1980	32	33	37	36	37	35	38	n.a.
Malta	1967	49	50	49	47	47	47	47	50

Table 7 (cont.)

	Year	-4	-3	-2	-1	Dev. Yr. 0	+1	+2	+3
Mexico	1976	37	36	37	38	40	39	38	38
	1982	38	38	36	37	36	n.a.	n.a.	n.a.
Nicaragua	1979	54	55	54	56	n.a.	n.a.	n.a.	n.a.
Pakistan <sup>1</sup>	1972	87	81	84	85	85	86	88	86
	1982	86	84	83	84	84	n.a.	n.a.	n.a.
Peru	1975	36	38	39	37	37	37	37	32
Philippines <sup>1</sup>	1962	n.a.	n.a.	88	87	87	86	86	86
	1970	86	86	86	86	84	83	83	82
Sri Lanka	1967	45	41	43	42	41	41	39	36
Venezuela	1964	45	45	42	43	43	43	44	45

<sup>1</sup>(Compensation to employees + operating surplus)/GDP.

<sup>2</sup>Year beginning July 1.

Source: United Nations, Yearbook of National Accounts Statistics.

## VI. Conclusions

The International Monetary Fund is an important institution. Throughout the years it has played a crucial role in helping maintain an efficient international financial system and in bringing about an orderly adjustment to the world economy. In particular, the Fund's role in coordinating the first stages of the debt crisis was instrumental in helping avoid the collapse of the international financial system. In many areas the Fund has shown dynamism and flexibility, adapting to new times and circumstances. However, in other areas, and in particular with respect to its own operational analytical framework, it has shown itself to be slow to change. The analysis in this paper has actually shown that the basic model used by the Fund for program design is basically the same developed by J.J. Polak 30 years ago.

In many ways the IMF is now facing a crucial period in its existence. A wide consensus has now developed regarding the need to move to a new stage in the management of the debt crisis, which would include some debt forgiveness for some countries. This step will probably require that all the agents involved recognize this, and that countries and banks start serious bilateral negotiation processes. It is still to be seen whether the IMF will take in this process the same kind of leadership it took in 1982-83, or if it will stall.

Overall, the main conclusions of this study can be summarized as follows:

(1) The IMF advice, and more specifically IMF programs, have shown flexibility and a somewhat eclectic view of the world. Contrary to the most popular and simplistic criticisms it is not true that the IMF has always imposed the same policy package, irrespective of the specific characteristics of the country. However, the general framework used to design programs -- the so-called financial programming -- is badly outdated. There is an urgent need to seriously revise this framework incorporating some of the most important developments in the theory of economic policy that have taken place in the last 15 years or so. The analysis in Section II provides three examples on how these modern developments could affect the IMF advice. There are, of course, other areas of IMF policy advice that would be affected by new developments.

(2) The historical evidence indicates that in a narrow sense IMF programs have worked. This means that, on average, the external situation of program countries improved relative to the situation prevailing before the program. Existing studies also suggest that Fund programs have had some



success with respect to lowering inflation and less success in terms of achieving growth targets. In a deeper sense, however, the existing empirical literature has failed to develop fully satisfactory analyses on the effectiveness of Fund programs. The problem, of course, has to do with constructing adequate comparison benchmarks; ideally one would want to know whether Fund programs are able to induce adjustment in a more efficient way than alternative packages without conditionality (or maybe with a different type of conditionality). The problem is not easy, and we would probably have to wait for some time before more adequate empirical evaluation of Fund's programs effectiveness is developed.

(3) The relatively low recent rate of compliance of the Fund's intermediate targets -- and the profusion of waivers -- provides some indication that recent conditionality programs may not have been fully adequate to deal with the debt crisis. Moreover, there is direct evidence that some of the recent programs have been approved under political pressure, and under conditions where the staff strongly doubted their viability.<sup>54</sup> There are a number of undesirable consequences of this practice of approving unrealistic programs. First, the Fund's resources are imperiled; second, the much-needed direct negotiations between banks and countries on possible writeoffs is postponed.

(4) Traditionally, Fund programs have paid little attention to issues related to the supply side and in particular to income distribution. More specifically, critics of the Fund have pointed out again and again that Fund policies, and in particular its devaluation components result in output contraction, in increased unemployment and in a worsening of income distribution. In this paper I developed a minimal framework to analyze the effects of devaluations, and other Fund-related policies on output and employment. Empirical results obtained for a group of 12 countries and reported in Section V indicate that, contrary to the assumption made in the Fund basic model, devaluations have indeed had a negative short run effect on output. However, the analysis also suggests that alternative policies such as exchange and trade controls also have negative effects on output growth. In that section I also provide preliminary results on the income distribution effects of devaluations; this analysis shows no significant effect of devaluations on the labor's share of national income.

---

<sup>54</sup>See Finch (1988a,b,c).

## REFERENCES

- Aizenman, J.  
(1988) "Debt and Contingencies," unpublished ms., Hebrew University.
- Alexander, S.  
(1952) "Effects of a Devaluation on the Trade Balance," IMF Staff Papers, vol. 2: 263-278.
- Barro, R.  
(1977) "Unanticipated Money Growth and Unemployment in the United States," American Economic Review vol. 67: 101-115.
- Bastos Marques, Maria Silvia  
(1986) BPM: Síntesis de las Experiencias de la FMI, el Banco Mundial y la Crisis Latinoamericana (Siglo XXI).
- Beveridge, S. and C. Nelson  
(1981) "A New Approach to Decomposition of Economic Time Series Into Permanent and Transitory Components With Particular Attention to Measurement of the 'Business Cycle'." Journal of Monetary Economics, vol. 7: 151-174.
- Beveridge, W. and M. Kelly  
(1980) "Fiscal Content of Financial Programs Supported by Stand-By Arrangements in the Upper Credit Tranches, 1969-78," IMF Staff Papers vol. 27: 205-249.
- Blejer, M and K. Chu  
(1988) Measurement of Fiscal Impact: Methodological Issues, IMF Occasional Paper No. 59.
- Blejer, M. and I. Guerrero  
(1988) "The Impact of Macroeconomic Policies on Income Distribution: An Empirical Study," IMF Working Paper WP/88/57.
- Branson, W.  
(1986) "Stabilization, Stagflation and Investment Incentives: The Case of Kenya 1979-1980," in S. Edwards and L. Ahamed (eds.) Economic Adjustment and Exchange Rates in Developing Countries, Univ. of Chicago Press.
- Buffie, E.  
(1984) "The Macroeconomics of Trade Liberalization," Journal of International Economics, vol. 17: 212-238.
- Buira, A.  
(1983) "IMF Financial Programs and Conditionality," Journal of Development Economics vol. 12: 111-136.

- Calvo, G.  
(1978) "On the Time Consistency of Optimal Plans in a Monetary Economy," Econometrica vol. 49: 575-596.
- Calvo, G.  
(1987) "On the Costs of Temporary Liberalization," in M. Conolly et al. (eds) Economic Reform and Stabilization in Latin America, Praeger.
- Canzoneri, M.  
(1985) "Monetary Policy Games and the Role of Private Information," American Economic Review, December, vol. 75: 1056-1070.
- Connors, T.  
(1979) "The Apparent Effects of Recent IMF Stabilization Programs," International Finance Discussion Paper No. 135, Washington, DC, Board of Governors of the Federal Reserve System.
- Cooper, R.  
(1971a) "Currency Devaluation in Developing Countries," in G. Ranis (ed.) Government and Economic Development, New Haven, Yale University Press.
- Cooper, R.  
(1971b) "Currency Depreciation in Developing Countries," Princeton Essays in International Finance, No. 86.
- Corden, W.  
(1988) "Debt Relief and Adjustment Incentives: A Theoretical Exploration," IMF Working Paper WP/88/36.
- de Vries M.G.  
(1987) Balance of Payments Adjustment: The IMF Experience, Washington, DC, IMF.
- Diaz Alejandro, C.  
(1965) Exchange Rate Devaluation in a Semi-Industrialized Economy: The Experience of Argentina 1955-1961, Cambridge, MA, MIT Press.
- Donovan, D.  
(1981) "Real Responses Associated With Exchange Rate Action in Selected Upper Credit Tranche Stabilization Programs," IMF Staff Papers, vol. 28: 698-727.
- Donovan, D.  
(1982) "Macroeconomic Performance and Adjustment Under Fund-Supported Programs: The Experience of the Seventies," IMF Staff Papers vol. 29: 171-203.
- Edwards, S.  
(1983) "The Short-Run Relation Between Inflation and Growth in Latin America: Comment," American Economic Review vol. 73: 477-482.

- Edwards, S.  
 (1986) "Are Devaluations Contractionary?" Review of Economics and Statistics vol. 68: 501-508.
- Edwards, S.  
 (1988) "Structural Adjustment in Highly Indebted Countries," in J. Sachs (ed.) The Developing Country Debt and Economic Performance, University of Chicago Press.
- Edwards, S.  
 (1989) Real Exchange Rates, Devaluation and Adjustment: Exchange Rate Policy in Developing Countries (forthcoming) MIT Press.
- Finch, D.  
 (1988a) "Let the IMF Be the IMF," International Economy, Jan./Feb.
- Finch, D.  
 (1988b) "The International Indebtedness Crisis," mimeo, Institute for International Economics, Washington, DC.
- Finch, D.  
 (1988c) "Annual Meetings in the Past and in the Future. Issues for the IMF and the World Bank," mimeo, Institute for International Economics, Washington, DC.
- Fischer, S.  
 (1988) "Recent Developments in Macroeconomics," Economic Journal (June), vol. 98: 294-339.
- Fleming, M.  
 (1962) "Domestic Financial Policies Under Fixed and Flexible Exchange Rates," IMF Staff Papers, vol. 9: 369-379.
- Frenkel, J. and H. Johnson  
 (1976) The Monetary Approach to the Balance of Payments, London: Allen & Unwin.
- Frenkel, J. and M. Mussa  
 (1984) "Asset Markets, Exchange Rates and the Balance of Payments," in Handbook of International Economics, North-Holland.
- Frenkel, J. and A. Razin  
 (1985) "Government Spending, Debt and International Economic Dependence," Economic Journal, vol. 95: 619-636.
- Frenkel, J.  
 (1986) "The International Transmission and Effects of Fiscal Policies," American Economic Review, vol. 76: 330-335.
- Frenkel, J.  
 (1987a) "The Mundell Fleming Model Twenty Five Years Later," IMF Staff Papers, December.

- Frenkel, J.  
(1987b) Fiscal Policies and the World Economy, MIT Press.
- Fuller, W. and G. Batesse  
(1974) "Estimation of Linear Models with Cross-Error Structure," Journal of Econometrics vol. 2: 67-78.
- Goldstein, M. and P. Montiel  
(1986) "Evaluating Fund Stabilization Programs With Multicountry Data: Some Methodological Pitfalls," IMF Staff Papers vol. 33: 304-344.
- Group of Twenty Four  
(1987) "The Role of the IMF in Adjustment With Growth," unpublished ms., Washington, DC.
- Gutián, M.  
(1981) Fund Conditionality: Evolution of Principles and Practices IMF Pamphlet Series No. 38, Washington, DC.
- Gylfason, T.  
(1987) "Credit Policy and Economic Activity in Developing Countries with IMF Stabilization Programs," Princeton Studies in International Finance No. 60.
- Gylfason, T. and M. Radetzki  
(1985) "Does Devaluation Make Sense in the Least Developed Countries?" IIES Seminar Paper 314, University of Stockholm.
- Gylfason, T. and O. Risager  
(1984) "Does Devaluation Improve the Current Account?" European Economic Review vol. 25: 37-64.
- Gylfason, T. and M. Schmid  
(1983) "Does Devaluation Cause Stagflation?" Canadian Journal of Economics vol. 16: 641-654.
- Hanson, J.  
(1983) "Contractionary Devaluation, Substitution in Production and Consumption and the Role of the Labor Market," Journal of International Economics vol. 14: 179-189.
- Hirschman, A.  
(1949) "Devaluation and the Trade Balance: A Note," Review of Economics and Statistics vol. 16: 50-53.
- International Monetary Fund  
(1981) Financial Policy Workshops: The Case of Kenya, IMF Institute, Washington, DC.
- International Monetary Fund  
(1984) Programacion Financiera Aplicada: El Caso de Colombia, Instituto del FMI, Washington, DC.

## International Monetary Fund

- (1987) Theoretical Aspects of the Design of Fund-Supported Adjustment Programs IMF Occasional Paper No. 55, Washington, DC.

## International Monetary Fund

World Economic Outlook, Washington, DC (various issues).

## Johnson, O., and J. Salop

- (1980) "Distributional Aspects of Stabilization Programs in Developing Countries," IMF Staff Papers, vol. 27.1.

## Kelly, M.

- (1982) "Fiscal Adjustment and Fund-Supported Programs 1971-1980," IMF Staff Papers vol. 29: 561-602.

## Khan, M., P. Montiel and N. Haque

- (1988) "The Macroeconomic Effects of IMF-Supported Adjustment Programs: An Empirical Assessment," unpublished ms. IMF, Washington, DC.

## Khan, M. and P. Montiel

- (1987) "Real Exchange Rate Dynamics in a Small Primary Producing Country," IMF Staff Papers vol. 34: 681-710.

## Khan, M., P. Montiel and N. Haque

- (1986) "Adjustment With Growth: Relating the Analytical Approaches of the World Bank and the IMF," World Bank, Development Policy Issues Series Discussion Paper.

## Khan, M.

- (1988) "Adjustment with Growth: Relating the Analytical Approaches of the World Bank and the IMF," Journal of Development Economics (forthcoming).

## Killick, T.

- (1984) "The Impact of Fund Stabilisation Programmes," in T. Killick (ed.) The Quest for Economic Stabilisation: The IMF and the Third World, New York, St. Martin's Press.

## Krueger, A.

- (1978) Foreign Trade Regimes and Economic Development: Liberalization Attempts and Consequences Ballinger Publishing Co. for NBER, Cambridge, MA.

## Krugman, P.

- (1988) "Market-Based Debt-Reduction Schemes," NBER Working Paper #2587.

## Krugman, P. and L. Taylor

- (1978) "Contractionary Effects of Devaluation," Journal of International Economics vol. 8: 445-456.

## Larrain, F. and J. Sachs

- (1986) "Contractionary Devaluation and Dynamic Adjustment of Exports and Wages," NBER Working Paper #2078.

- Lizondo, S.  
 (1987) "Unification of Dual Exchange Markets," Journal of International Economics, vol. 22: 57-77.
- Loser, C.  
 (1984) "The Role of Economy-Wide Prices in the Adjustment Process," in J. Muns (ed.) Adjustment, Conditionality and International Financing, International Monetary Fund, Washington, DC.
- Lucas, R.  
 (1988) "On the Mechanics of Economic Development," Journal of Monetary Economics vol. 22: 3-42.
- Mikesell, R.  
 (1983) "Appraising IMF Conditionality: Too Loose, Too Tight, or Just Right?" in J. Williamson (ed.) IMF Conditionality, MIT Press for the Institute of International Economics.
- Mundell, R.  
 (1961) "The Appropriate Use of Monetary and Fiscal Policies Under Fixed Exchange Rates," IMF Staff Papers vol. 9: 70-79.
- Mundell, R.  
 (1969) "The International Monetary Fund," Journal of World Trade Law vol. 3: 455-497.
- Pagan, A.  
 (1984) "Econometric Issues in the Analysis of Regressions With Generated Regressors," International Economic Review vol. 25: 221-247.
- Pagan, A.  
 (1986) "Two Stage and Related Estimators and Their Applications," Review of Economic Studies vol. 53: 517-538.
- Pastor, M.  
 (1987a) The International Monetary Fund and Latin America, Westview Press, Boulder and London.
- Pastor, M.  
 (1987b) "The Effects of IMF Programs in the Third World: Debate and Evidence From Latin America," World Development vol. 15: 249-262.
- Polak, J.J.  
 (1957) "Monetary Analysis of Income Formation and Payments Problems," IMF Staff Papers vol. 6: 1-50.
- Polak, J.J.  
 (1988) "Operating at the Frontier of International Economics," Staff News, International Monetary Fund, September.
- Pownall, R., and B. Stuart  
 (1988) "The IMF's Compensatory and Contingency Financing Facility," Finance and Development, vol. 25, no. 4 (December): 9-11.

- Prais, S.J.  
 (1961) "Some Mathematical Notes on the Quantity Theory of Money in an Open Economy," IMF Staff Papers, vol. 8,2: 212-26.
- Reichmann, T. and R. Stillson  
 (1978) "Experience with Programs of Balance of Payments Adjustment: Stand-By Arrangements in the Higher Credit Tranches, 1963-72," IMF Staff Papers vol. 25: 278-292.
- Robichek, E.W.  
 (1967) "Financial Programming Exercises of the International Monetary Fund in Latin America," unpublished ms., Rio de Janeiro.
- Robichek, E.W.  
 (1971) "Financial Programming, Stand-By Arrangements and Stabilization Programs," unpublished ms., Washington, DC.
- Robichek, E.W.  
 (1985) "Financial Programming as Practiced by the IMF," unpublished ms., World Bank.
- Sachs, J.  
 (1988) "Conditionality, Debt Relief and the Developing Country Debt Crisis," NBER Working Paper #2644.
- SELA  
 (1986) El FMI, el Banco Mundial y la Crisis Latino Americana Mexico DF, Siglo XXI.
- Sengupta, A.  
 (1988) "A Proposal for a Debt-Adjustment Facility in the IMF," The World Economy (July), 11, 2: 165-186.
- Stock, J. and M. Watson  
 (1988) "Variable Trends in Economic Time Series," Journal of Economic Perspectives, vol. 2: 147-174.
- Stockman, A.  
 (1988) "On the Roles of International Financial Markets and Their Relevance for Economic Policy," Journal of Money, Credit and Banking vol. 20: 531-549.
- Tsiang, S.C.  
 (1959) "The Theory of Forward Exchange and Effects of Government Intervention on the Forward Exchange Market," IMF Staff Papers vol. 7: 75-106.
- van Wijnbergen, S.  
 (1986) "Exchange Rate Management and Stabilization Policies in Developing Countries," in S. Edwards and L. Ahamed (eds.) Economic Adjustment and Exchange Rates in Developing Countries, University of Chicago Press.



Vaubel, R.

(1986) "A Public Choice Approach to International Organization," Public Choice, vol. 51: 39-58.

Williamson, J.

(1983) "On Judging the Success of IMF Policy Advice," in J. Williamson (ed.) IMF Conditionality, MIT Press for the Institute of International Economics.

Zulu, J. and S. Nsouli

(1985) Adjustment Programs in Africa: The Recent Experience, IMF Occasional Paper No. 34, Washington, DC.