# IMF Programs, Adjustment and Growth

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# ABSTRACT

**Title:** "IMF Programs, Adjustment and Growth"

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IMF programs have always been controversial. The IMF itself argues that countries faced expenditures in excess of output by excessive amounts (i.e. with an unsustainable balance of payments deficit) have little choice but to make adjustments through expenditure-switching policies. They will need to make some adjustments with or without the IMF. To be sure, some output growth may need to be sacrificed in the short-run, but this is a necessary cost of achieving better growth and a more sustainable payments position for the medium-term. The IMF's critics make points such as the following, The adjustment programs are ineffective achieving neither higher growth nor more sustainable balance of payments positions in the medium-term. Or that a different set of policies would work better: that IMF depends too much on expenditure reduction (and on markets rather than controls) and not enough on supply improvements which take longer to achieve. And/or that adjustment falls unduly on the poor and hence incur social costs that are unacceptably high. Or, to take a different extreme, that IMF programs are a source of international disequilibria – i.e. the existence of IMF resources causes borrowers and lenders to behave more recklessly knowing that there is a safety net to catch them, the so-called "moral hazard" problem.

The proposed paper will examine IMF programs – both the theoretical underpinnings and the experience – and attempt to come to a more balanced view as to their effectiveness. The paper is organized in four main sections. The first discusses the nature of IMF programs: what are the key features of these programs and what are the theoretical and practical considerations determining whether they should work? The second section looks at the evidence about IMF programs. It is divided into two parts, one looking at more casual investigations of the "before and after" of these programs and the other taking up a number of econometric studies covering IMF and other adjustment programs. The third section will evaluate a number of proposals for the reform of the IMF. Again it is divided into two parts, the first examining proposals for changing the nature of IMF programs to make them more supportive of growth and poverty reduction while the second looks at grander redesigns for the role of the Fund, for example as a world central bank of an international bankruptcy court. The fourth section will provide a brief summary and attempt and evaluation of the desirability of various reform proposals.

The research reported in this paper is presented at the International Conference on Economic Recovery and Reforms on October 29, 2002 at the Imperial Queen's Park Hotel, Bangkok, Thailand.

The conference is organized by the Faculty of Economics, Thammasat University and the Bank of Thailand. While the paper focuses on issues that have been recognized by this International Conference, the author(s) is(are) responsible for the views expressed in the paper.

# IMF PROGRAMS, ADJUSTMENT AND GROWTH

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IMF programs have always been controversial. The IMF itself argues that countries facing expenditures in excess of output by excessive amounts (i.e. with an unsustainable balance of payments deficit) have little choice but to make adjustments, through expenditure-reducing or expenditure-switching policies. They will need to make some adjustments, with or without the IMF. To be sure, some output growth may need to be sacrificed in the short-run, but this is a necessary cost of achieving better growth and a more sustainable payments position for the medium-term. The IMF's critics make points such as the following. The adjustment programs are ineffective achieving neither higher growth nor more sustainable balance of payments positions in the medium-term. Or that a different set of policies would work better: that IMF depends too much on expenditure reduction(and on markets rather than controls) and not enough on supply improvements which take longer to achieve. And/or that adjustment falls unduly on the poor and hence incur social costs that are unacceptably high. Or, to take a different extreme, that IMF programs are a source of international disequilibria – i.e. the existence of IMF resources causes borrowers and lenders to behave more recklessly knowing that there is a safety net to catch them , the so-called "moral hazard" problem.

This paper will examine IMF programs – both the theoretical underpinnings and the experience – and attempt to come to a more balanced view as to their effectiveness. The paper is organized in four main sections. The first discusses the nature of IMF programs: what are the key features of these programs and what are the theoretical and practical considerations determining whether or not they should work? In making such an assessment, it is stressed that the outcomes of IMF programs need to be compared with some realistic alternative. The second section looks at the evidence about IMF programs. It is divided into two parts, one looking at more casual investigations of the "before and

after" and the "with and without" of these programs and the other taking up a number of econometric studies covering IMF and other adjustment programs. The third section looks at IMF programs from the perspective of the 1997 Asian Crisis. It first looks at three key areas where IMF programs have come under criticism: fiscal policy; monetary policy and exchange rates; and capital controls. It then makes some further comments about the policy regimes adopted from a broader perspective. The fourth section presents a brief summary and an assessment of IMF policies.

## I. The Nature of IMF Programs

According to its Articles of Agreement, the IMF is charged with promoting the orderly growth of world output and international trade. Its attempts to assist countries to resolve their balance of payments disequilibria are to be pursued with these ends in mind - i.e. a viable medium-term balance of payments position should be accompanied by improved growth and price stability. Countries seek IMF assistance (mainly) when the imbalance between aggregate demand and supply is leading to a deteriorating external position (as revealed by such things as falling international (net) reserves, arrears in paying for goods or servicing debt, an unsustainable buildup of external debt, or some combination of these). Such problems can arise from the supply side as with a decline in the demand for exports or a decline in the terms of trade or a rise in international interest rates. They can also arise from the internal demand side as with too rapid growth of money and credit or an expansion of fiscal deficits. Faced with the onset of such problems, countries may delay adjusting for a period but with growing evidence of problems as with declining competitiveness coming from failure to make exchange rate adjustments or as with declining creditworthiness. Eventually adjustment will be necessary, with or without the IMF, in the cases where foreign financing dries up.

IMF programs are intended to lead to an orderly return to medium-term internal and external balance: orderly in the sense that they avoid temporary expedients like printing money and attempt to restore at least some of the foreign financing by cutting capital flight and mobilizing the resources of the IMF itself, other international organizations,

and commercial banks; and attempt to avoid large devaluations combined with minimal adjustment efforts which may just set off a round of competitive devaluations by other countries. Contrary to popular impressions, IMF programs are more than just demand management programs, more goes into them than just attempts to control the supply of money and credit or the size of fiscal deficits. [ See Box 1 for a description of various IMF financing facilities. These facilities, or "arrangements" to use IMF jargon, differ from each other in duration, the concessionality of their financing and the characteristics of countries that are eligible. In this paper, I abstract from these differences since I want to concentrate on IMF policy conditions and these are quite similar over the various facilities]. At the risk of some oversimplification(since lines may not be so carefully drawn), the instruments in typical IMF programs can be placed in three categories:

1. Demand-side policies: consist of all the policies which affect the rate of expansion of aggregate demand such as the usual monetary and fiscal policy instruments found in standard economic texts.

2. Supply-side policies are all those policies which affect an economy's ability to supply output. As such they fall into two categories: (a) actions which raise the efficiency with which factors are being used hence getting more output for given inputs e.g. elimination of monopolies or wage and price controls or consumer subsidies which often involve lower producer prices as with agricultural commodities or controls on the internal movement of capital or labor; and (b) actions which increase the level and growth rate of capacity e.g. interest rate increases to encourage higher domestic savings, measures to encourage more foreign direct investment, or the streamlining of domestic investment rules.

3. Measures to improve international competitiveness consist of all those actions which increase a nation's ability to supply tradable goods, both exports and import substitutes - e.g. exchange rate changes(combined with demand restraint), reductions of controls on current account transactions(such as import quotas) , and reductions of taxes and tariffs on exporting and importing.

**Box 1 IMF Programs**

The IMF provides loans to countries experiencing balance of payments difficulties to facilitate recovery and a prompt return to sustainable economic growth. The resources the IMF provides are meant to enable countries to stabilize their exchange rates, rebuild reserve positions, and make payments for imports without intensifying trade restrictions and/or capital controls.

The types of "arrangement" or "facilities", the IMF provides its member countries includes "regular facilities" (stand-by and extended arrangements), "concessional facilities " for low-income countries (SAF and ESAF) , and "special facilities". These "arrangements" or "facilities" spell out the circumstances under which assistance can be sought and the conditions the country must meet in order to gain access to the loan. All arrangements are supported by an economic program negotiated and agreed to between the country and the IMF, spelled out in a "Letter of Intent", and presented to and approved by the IMF's Executive Board. Loans are then disbursed in phases, usually quarterly (which can be front-or back-loaded) as the program is implemented.

The amounts of resources available, the length of the program, the interest rate charged and the repayment period vary according to the various facilities and the problems that countries face.

Regular Facilities

The Stand by Arrangement (SBA), the Fund's must widely used facility, is meant to handle short-term balance of payments problems and typically lasts 12-18 months. SBAs include fiscal, monetary, and exchange rate policies designed to correct imbalances. Its performance criteria typically include budget and credit ceilings, reserve targets, external debt ceilings and the avoidance of intensified restrictions on current and capital transactions. Most SBA programs include supply-side measures but, because of the short duration of these programs, these would not get as much emphasis as in an extended program.

The Extended Fund Facility (EFF) is meant to support medium-term adjustments and usually covers 3-4 years. These programs are meant to address imbalances arising from macroeconomic and structural sources. Performance criteria are similar to those in SBAs but with greater emphasis on supply-side measures aimed at attacking structural problems. The policies for the first year's program are spelled out in detail and policies for subsequent years are specified in subsequent reviews. The amounts that can be borrowed under the SBA and EFF is 100 percent of the member's quota annually with a cumulative limit of 300 percent (although larger amounts are possible in exceptional circumstances). Interest rates charged are at market rates related to the Special Drawing Right and there are surcharges of 100 basis points and 200 basis points for loans exceeding 200 percent and 300 percent of quota respectively. SBAs are expected to be repaid within 2.25-4 years from date of drawing and EFFs within 4.5-7 years

**Concessional Facilities for Low-Income Countries**

**The Structural Adjustment Facility (SAF)** and **Enhanced Structural Adjustment Facility (ESAF)** were set up in March 1986 and December 1987 to offer highly concessional finance and handle the special problems of the low-income countries. Both cover macroeconomic and structural reform programs. Macroeconomic, financial and structural reform measures are laid out in a Policy Framework Paper (PFP), created and agreed in discussions between the government , IMF and World Bank. There would also be a Letter of Intent. For SAFs/ESAFs the interest rate was 0.5 percent and repayment was expected over 5.5 to 10 years.

In 1999, the IMF's Executive Board made a decision to increase the focus on poverty in these programs. The ESAF was replaced by the **Poverty Reduction and Growth Facility (PRGF)** under which loans were to be made in keeping with programs laid out in a Poverty Reduction Strategy Paper, prepared by the country itself in consultation with civil society, other development partners and the World Bank. Interest and repayment obligations under PRGF are the same as for ESAF.

**Special Facilities**

A number of special facilities have been created during the IMF's history in order to meet special problems as they arose. These facilities provide assistance that is additional to that provided by the other facilities but must be used for additional needs i.e. countries cannot finance the same balances of payments need from two facilities. Two facilities have been created in response to particular problems developing countries have been faced with in recent years. **The Supplemental Reserve Facility (SRF)** was created in 1997 and is meant to provide financing for countries facing a sharp drop in external market confidence resulting in massive capital flight and a large drop in international reserves. Loans under SRF are subject to surcharges above the basic rate of interest by 300 basis points during the first year following drawing, and, following that, rising by 50 points each six months to a maximum of 500 basis points. Members are expected to repay 1-1.5 years following drawing and must repay not later than 2-2.5 years. **The Contingent Credit Line (CCL)**, created in 1999, is meant to prevent crises by providing a massive amount of financing to countries with solid policies already in place. The CCL is meant to provide 300-500 percent of quota in addition to SBA/EFF amounts and is intended a line of defense against problems arising from international contagion. CCL repayment expectations are the same as for the SRF and the loans are also subject to surcharges, but at lower rates starting at 150 basis points up to a maximum of 350 basis points. Lastly there is a **Compensatory Financing Facility (CFF)**, established in 1960s, which was meant to help countries suffering from shortfalls in export proceeds or rising cereal imports needs caused by fluctuating world prices. Financing terms are similar to these for the SBA, except that there are no surcharges.

**Sources :** IMF(1995) , IMF(2001), IMF(2002)

Two further points are worth making. First the mix of the actions to be taken in any IMF program would depend on the nature of the problems the country was facing and political feasibility. Second, the above categorization is convenient and useful for expository purposes, but it is evident that a number of policy actions don't fall so clearly into one box or another among the three. Devaluations are likely to have aggregate demand effects by affecting the real value of money. Or consumer subsidy reductions may be motivated by a desire to reduce fiscal deficits as well to provide better incentives for producers. Or, still further, monetary policy may have supply effects through the influence of interest rates on investment. Nonetheless this three-way categorization is useful because it illuminates the primary objectives of many instruments and makes clear the point the IMF programs have actions meant to affect both demand and supply.

By putting the above arguments in a slightly more formal way, we can push the analysis a bit further. The gap between a country's output or income (Y) and its "absorption" (A, or its domestic demand as the sum of consumption, investment and government spending) would be equal to its current account balance or

$$(1) \qquad CAB = Y - A = Y - (C + I + G) = X - M$$

The current account would show a surplus when income exceeded absorption or, equivalently when exports exceeded imports. And conversely for a deficit. The current account balance must be matched by changes in the sum of (minus)net foreign asset holdings of the banking system and changes in net foreign indebtedness or

$$(2) \qquad CAB = \Delta R - \Delta FI$$

Or, in other words, the current balance must be financed in some fashion by changes in net reserves and net foreign indebtedness. If, for example, the country is running a current account deficit it must be financed by some combination of a draw down in reserves and an increase in foreign debt.

With equations (1) and (2) in mind, we can get some further insights into the problem at hand. First is the obvious point that a balance of payments problem arises when a country runs a current account deficit that is larger than can be financed by its willingness to

reduce reserves and its ability to increase its indebtedness abroad (the latter of which is also affected by the willingness of foreign institutions to lend ). While current account deficits are normal for developing countries, deficits which involve a continuous reduction in net reserves and/or debt accumulation at a rate which raises questions about the future capacity to service debt will need somehow to be corrected, with or without the help of an IMF program. Second, from equation (1), we can see that bringing the deficit down to a more sustainable level can involve reductions in demand or absorption or an increase in supply or the output side or some combination of the two. These are not usually interchangable and the key question then becomes "what is the appropriate mix of the two?". Moreover, IMF programs, in addition to policy conditions, can involve increased capital inflows(from its own resources, those of other international institutions and governments, and commercial banks even in cases where fear of payments problems had led to reduced inflows or even outflows and capital flight.

In terms of equation (1), output or y might be assumed to be fixed in the short-run, constrained on the up side by the capital, labor and technology. On the other hand, "actual output" might be below 'potential output" because of (1) a deficiency in aggregate demand (i.e. the usual "Keynesian problem") or because of (2) constraints on the supply side which keep an economy below its potential (e.g. arising from monopoly; or wage, price or interest rate controls; or foreign exchange controls). The nature of any adjustment program is to spell out that set of policies which will bring demand and supply into balance and achieve both internal and external balance simultaneously within some timeframe and financing program that is reasonable.

Internal balance requires that aggregate demand (or C + I + G + X - M ) equal to potential output at a politically acceptable level of inflation. External balance requires that the excess of absorption over potential output be consistent with levels of foreign reserves and foreign borrowing that are sustainable in the long-run. Achieving both balances at the same time is most likely to require multiple policy instruments. A couple of examples will illustrate this point. First suppose that a country is suffering from a rate of inflation its authorities feel is too high and excessive foreign borrowing. A tighter fiscal policy might work to reduce the size of both imbalances but only by accident would it eliminate

both and achieve both internal and external balance at the same time. If, for example, internal balance might be achieved while still leaving an excessive current account deficit. A further fiscal tightening might reduce foreign borrowing but only at the expense of unemployed capital and labor. Achieving both balances simultaneously is likely to require the use of a second policy instrument (e.g. exchange rates) which would shift the structure of incentives in favor of the production of tradable goods (i.e. more exports and import substitutes). A second illustration involves the case where actual output lies below its potential level not because of deficient demand but because of constraints on the supply side. The problem might be monopolies or distorted incentives such as price controls or regulations concerning investment or the movement of labor. These problems need to be attacked directly, aggregate demand policies will not do the trick. More generally, where the problem is not just with the level of demand but with its composition as well -- e.g. too much consumption not enough investment, or too much non-tradables and not enough tradables production -- policy changes which create incentives to alter the structure of output will be needed in addition to aggregate demand policies.

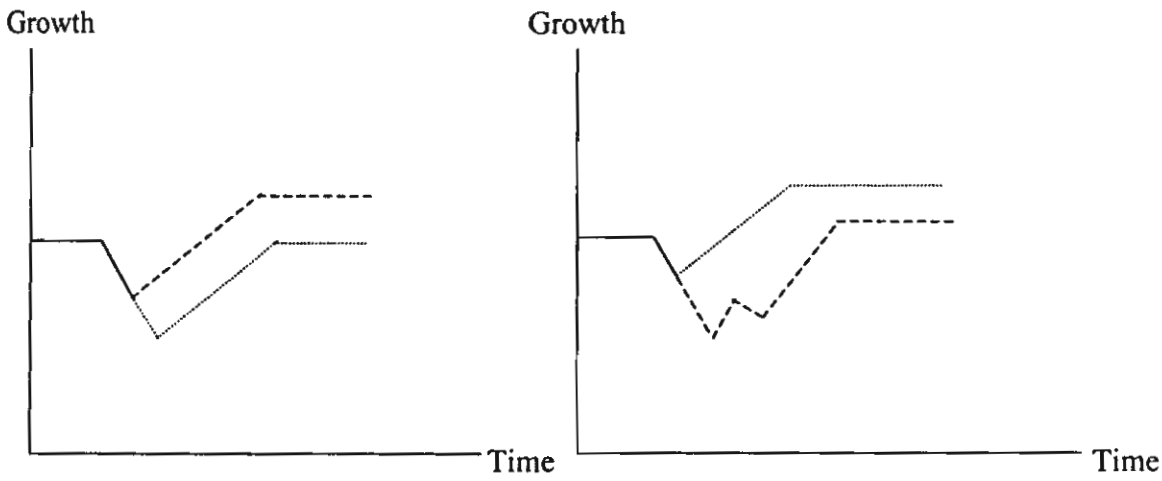
An important question is whether demand restraint is likely to lead to lower output or a fall in the rate of growth. In theory there might be no effects but in reality some adverse effects seem likely even if temporary. One possibility for the effects to be very limited would be for demand restraint to impact entirely on the trade sector -- the fall in demand for importables leads to a reduction in imports and for exportables just leads to larger exports. No fall in domestic output need be involved. Obviously a very limiting case. If, as is likely, the reduction in absorption also falls on non-tradable goods, this would release resources for the production of tradables. If these resources could be moved very easily and quickly into the production of exportables and import substitutes the resulting fall in output need not be very large or last very long. A second case involves flexible prices and wages. Here demand restraint - say in the form of slower growth in the money supply -- would lead to lower prices and wages (or a slower rise therein) and need not affect output. However, where there is some inertia in the price or wage-setting mechanism, such as adjustments occurring with a substantial lag or a dependency on past events, greater monetary restraint will likely result in lower output.

Two further points about the relation between adjustment and the level or growth rate of output can be injected at this point. First, if absorption is excessive, it cannot be sustained for long. Some adjustment will need to be made. The question then becomes one of comparing the effects of an IMF program with some alternative program. The alternative needs to be spelled out. Which of the two programs brings the most favorable results in terms of the combination of output loss and restoration of growth, considering both timing and magnitudes? The second is the appropriate mix of policies under the IMF program? Why not put greater emphasis on policies which would increase supply rather than on those which reduce demand? ; possibly this would minimize output losses. Clearly this would be preferable but a couple of considerations constrain this approach. Since any expansion of supply will also bring forth its own expansion of demand, aggregate demand restraint will still need to be a part of the program, especially if excess demand were a source of the problem to begin with. Moreover timing and financing considerations also enter in. Efforts to change the level and composition of output take time to achieve, certainly more so than changes coming from lower demand. If so, programs that involve major supply side changes will be more protracted in time and involve longer periods of imbalance. Will there be financing available for these imbalances? If the country is one with heavy debt and debt servicing problems, will the further accumulations of debt (including obligations to the IMF) be desirable or a mere postponement of the problem to some future (most likely near term) date? Thus financing considerations can dictate the use of demand-side as well as supply -side measures.

In the IMF view, slower (or even negative growth) ought not be attributed as the costs of its program. Some adjustment will need to be made -- with or without an IMF program. The only legitimate comparison is between what happens under the IMF'S program as compared with the alternative. This is illustrated in Figure 1(a) with a solid line showing the growth rate over time prior to the crisis and then under the IMF program and the dashed line showing the experience under some alternative program. At point to, some event sets off the problem -- e.g. a decline in the terms of trade or fall off in export demand, a rise in international interest rates, or a capital outflow caused by worries that external debt is accumulating too rapidly. Figure 1(a) illustrates the case where the IMF's program is superior. The V-shaped recovery is quicker, the fall in output less deep, and

the growth rate following recovery is faster. National welfare will likely be higher under the IMF scenario. This might be so because the IMF exerts greater pressure to complete policy reforms, brings in its own external resources together with those of multilateral institutions, government and commercial banks, and government policies carry greater "credibility" when carried out under IMF auspices. Other outcomes are, of course, possible -- U-shaped recoveries where restoring growth takes longer or even W- shapes where recovery is staggered or the possibility that the "alternative" scenario is better than the IMF scenario (see Figure 1(b)). This could come from a smaller (or shorter) sacrifice of growth or greater post-recovery growth or some combination. This combination could involve a more fortuitous mix of expenditure-switching and expenditure-reducing policies.

**Figure 1 Comparison of Alternative Adjustment Program**




And so, in principle, it is possible that the so-called "counterfactual" is superior to the IMF program in achieving growth and stabilization objectives. It is important that the details of the "counterfactual" be laid out clearly. In making comparisons with the IMF's proposed program and projected outcomes, a number of criteria need to be met:

1. the external environment the country faces must be the same in both cases.

2. all the elements of the "alternative program" must be spelled out in the same detail as in the Fund program -- i.e. both programs must be equally detailed and internally consistent(the Fund's methodology forces this consistency in its programs, at least *ex ante)*.

3. while the time period for adjustment and the amounts of external finance entailed need not be exactly the same as in the IMF program, they need to be spelled out clearly and be reasonably consistent with the amounts of finance the proposed programs might be expected to mobilize (e.g. a gradual adjustment with protracted large external requirements can always be justified by assuming finance with a large grant element will be available but the question that needs answering is "what amounts and terms are realistic?"). And

4. since IMF programs have the virtue of being negotiated and agreed with governments(under varying degrees of duress), the details of the alternative program must also pass the test of being something that the government might reasonably be expected to agree to( e.g. recommending in 1996 that Argentina drop its currency board and move to flexible exchange rates or that Pakistan cut defense expenditures may be impeccably good economic advice but not something the government was likely to do)

## II. The Impacts of IMF Programs

As suggested near the end of the previous section, ideally one would like to compare the effects of an IMF program with those of an "alternative program" -- the "counterfactual". Since IMF programs usually take place in situations where a country's growth path has become unsustainable, merely assuming unchanged policies and growth as usual is not a realistic alternative and one needs to compare the effects of alternative programs on growth, inflation, the balance of payments. However, this is easier said than done and ,as we shall see below, no empirical study really involves "counterfactual analysis". The requirements are too demanding -- a fairly complete specification of the policy changes involved, some assurances that this set is politically acceptable, and some demonstration that the resulting sets of external imbalances could in fact be financed. Moreover, no economic models exist for doing comparative simulations of different combinations of a fairly large number of policy variables; at most a small number of changes can be handled.

As a consequence, we will need to be satisfied with much simpler analysis. Below we will examine the evidence from two broad approaches to the problem. The first is what I have called "comparative analysis" which examine the effects of IMF programs by looking at periods "before and after" or comparing experiences of two sets of countries "with and without IMF programs". The second is a set of econometric studies which look at the effects of IMF programs themselves or of IMF-like objectives on country performance.

### A. Comparative Analysis

In this section, I will examine the results of studies done by individual economists (both academics and IMF staff) as well as two major studies by the IMF itself on the effects of its programs. The results of the individual studies may be grouped into three categories: "before and after", "with and without" , and "comparative simulations" and their effects on the balance of payments, current account, inflation and economic growth are summarized in Table 1.

## Table 1

## "Before and After" and "With and Without" Studies

| Study | Time Period | Number of Programs | Number of Countries | Effect on[b] | | | |
|---|---|---|---|---|---|---|---|
| | | | | Balance of Payment | Current account | Inflation | Growth |
| **Before - After** | | | | | | | |
| Reichmann and Stillson (1978) | 1963-72 | 79 | ... | 0 | ... | 0 | + |
| Connors (1979) | 1973-77 | 31 | 23 | 0 | 0 | 0 | 0 |
| Killick (1984) | 1974-79 | 38 | 24 | 0 | 0 | - | 0 |
| Pastor (1987) | 1965-81 | ... | 18 | + | 0 | 0 | 0 |
| Goldstein and Montiel (1986) | 1974-81 | 68 | 58 | - | - | - | - |
| | | | | - | + | - | + |
| **With - without** | | | | | | | |
| Donovan (1981) | 1970-76 | 12 | 12 | ... | ... | - | + |
| Donovan(1982) | 1971-80 | 78 | 44 | + | + | - | - |
| Gylfason (1987) | 1977-79 | 32 | 14 | + | ... | 0 | 0 |
| Loxley (1984) | 1971-82 | 38 | 38 | 0 | 0 | - | - |
| Goldstein and Montiel (1986) | 1974-81 | 68A | 58A | - | + | - | + |
| | | B | B | - | - | + | - |

[a] Comparison over one-year periods, unless otherwise noted.

[b] Direction of change; (+) indicates positive effect, (-) indicates negative effect, 0 indicates no effect.

**Source :** M.Khan (1990), p.208

The "before and after" approach is the most common and involves a comparison of a set of economic variables in the period before and after the program, usually one year but sometimes averages of several years (do the variables get "better" +, or "worse" -, or show "no change" 0). The results, quite typically we shall discover are quite mixed:

- *growth:* mostly no effects, with studies showing positive and negative effects roughly canceling out;
- *inflation:* mostly reduced, with some studies showing no effects,
- *balance of payments:* no effects with studies showing improvements and deteriorations roughly canceling;
- *current account:* mostly no effects, with positive and negative results offsetting.

The "before and after approach " is rather simple to apply but the problem is that it is a rather poor substitute for the counterfactual. Implicitly, it is assuming that "all other things remain equal" and hence any changes that results are due entirely to the effects of the IMF programs. But this assumption is unlikely in reality, the world economy for starters is likely to be different in the two periods and so part of the effects are attributable to that.

The "with and without" approach is meant to correct for this problem by looking at before and after for two sets of countries and asking were there comparative improvements *over the same time periods.* Since both sets of countries will have faced the same world environment in the two time periods, any differences in their performance would supposedly be due to the IMF programs. Or put slightly differently, without the IMF programs, the two sets of countries would have performed the same (i.e. we have a counterfactual. As in the previous case the results are quite mixed:

- *growth:* a mix with studies showing improved and worse growth.
- *inflation:* most studies show worse inflation performance
- *balance of payments:* improvements appear to dominate worsenings or no change
- *current account:* show improvements or no effects.

The problem is that the "with and without approach" is flawed as well. This is not a random selection from two groups, one of which happens to be subject to IMF programs and the other not. The "with" group has IMF programs presumably because they were exhibiting more severe signs of internal and/or external imbalances, otherwise there would be no need for a program. Any differences in performance as compared from the control group would come from differences in the starting points plus the effects of the IMF program, not just from the program alone. Goldstein and Montiel (1986) attempt to correct for his problem by forcing the starting points to be the same, and then asking whether performance still varied. Their results, about which some skepticism would still be justified, show that there were no differences in performance between the two sets of countries.

In summary, the above studies show a rather mixed bag of results, most particularly for growth where positive and negative impacts seem to cancel out approximately. Basically, however, the studies are flawed: they are not really comparing what happened under Fund programs as against some alternative. Moreover, all the studies are pretty much confined to looking at short-run effects. Ideally one would like to look at results over longer periods as well: over the long-run have countries which have had IMF programs performed better or worse than they would have had they not had these programs or better than some other carefully chosen set of countries. There are no answers here as well.

A third set of studies -- usually conducted by the IMF's own macro modelers -- involves comparative simulations using econometric models (see Khan and Knight 1981 and Khan and Knight 1985. These do not look at the results of any actual Fund program, but instead

compare the effects of a specified IMF policy package with that of some other policy package. For example, Khan and Knight's 1985 model involves parameters estimated on the basis of the experience of 29 countries (which in turn are broadly consistent with those drawn from other sources) and involves assessing the effects of changes in aggregate demand variables and the exchange rate on growth, inflation and the balance of payments. From this two hypothetical simulations are specified. Both specifications stipulate that the government wishes to achieve a given increase in international reserves within one year and the problem is whether to do this solely through aggregate demand measures or a mix of aggregate demand and supply measures. The former case has a 10 percent once-and -for - all reduction in the growth rates of domestic credit and government expenditures plus a 10 percent devaluation. The latter is the same plus a 2-3 rise in the investment -income ratio (hence raising capacity output by 0.5 percentages points a year for four years. Since prices adjust only with a lag, the tight credit and fiscal policies more than offset the expansionary devaluation effects, thus lowering the growth rate. As inflation subsides, real government expenditures and credit begin to expand and the old real growth rate is reattained. The target reserves ratio is achieved but at the expense of a temporary fall in the growth rate. If supply side measures are also used and have immediate impact, the initial fall in the growth rate would be smaller and growth rates above those in the previous case would be attained. The supply side measures reduce the costs and raise the benefits of the program.

There are several advantages the comparative simulations approach. First it explicitly involves counterfactual analysis; how do two alternative policy scenarios compare? Second, since the scenarios are hypothetical, one does not have to worry about real - world problems such as incomplete implementation of either scenario; one assumes that policy implementation was complete. Thirdly it focuses very clearly on policies and their outcomes. Other exogenous events can be abstracted from.

On the other hand these models have their drawbacks. Virtually all these models are comparatively simple, focusing on the relation between a relatively small number of variables and growth, inflation and the balance. They cannot handle a larger number of variables in a convincing fashion and hence really cannot get at the complexity of an IMF

program. In addition, note that in this Khan-Knight model, the supply side enters exogenously -- the rise in the investment-income ratio is merely assumed to occur, it is not an endogenous response to a change in one or more policy variables. On the basis of the experience of the 29 countries upon whom this model is based, we have no assurance that this would in fact occur. Still further the parameters in these model are derived from the experience of a number of countries under a variety of circumstances. Will they be relevant for a particular country under a specific set of circumstances? Will they be invariant to changes in the policy regime? Will they be invariant to the strength of a particular government's "credibility". All these considerations limit the usefulness of these models other than for expository purposes: actual outcomes might vary considerably from those simulated and the counterfactuals may not be giving the right comparison.

Finally we have two IMF surveys of the experience under its adjustment programs in the late 1980s and early 1990s. The first is a 1993 review for the 19 countries that had entered the Structural Adjustment Facility (SAF) and Enhanced Structural Adjustment Facility (ESAF) by mid-1992 (see Box 1, for a description of various IMF facilities). The second reviews the experience of some 36 countries in some 45 Standby and Extended Fund Facility arrangements entered into mid-1988 to mid-1991. Both reviews use mostly what we have called the "before and after" approach, sometimes supplemented by some "with and without". The first of the two reviews provides considerably more information on outcomes both overall and for individual countries and hence is discussed at greater length here. Countries eligible for SAF and ESAF are among the most disadvantaged in the world, overwhelmingly they are African: (a) their per capita incomes are very low; (b) agriculture accounts for much of economic activity and exports tend to be concentrated in a few primary commodities; (c) most energy requirements are met through imports making them very susceptible to terms-of-trade fluctuations; And to make matters worse,(d) state intervention in the economy tends to be widespread in the form of price setting and ownership, making them less responsive to price signals. By and large, the 1980s for these countries were a disaster. Their terms of trade deteriorated, weather was often bad, and many were disrupted by internal or external wars. Inadequate policy responses kept exports weak and absorption high. The result for many was falling

per capita incomes, very large current account deficits (averaging 12 percent of GNP in the three years prior to the SAF/ESAF programs), rising inflation rates in most countries, and rising external indebtedness (to the extent that 13 of the 19 countries could not service debt. Thus most of these countries had very adverse external positions: not only were their current borrowing requirements too high but also there was a pressing need to reduce the existing stock of debt

The results on average were quite positive for the 19 countries (see Table 2). While growth on average had been only 2 percent p.a. in the three years prior to the SAF/ESAF, it rose to 4 percent in the case of SAF countries and 2.8 percent in the case of ESAFs

**Table 2**

**Indicators of Economic Performance**

**(Annual averages for 19 ESAF countries, in percent, unless otherwise noted)**

| | Pre-SAF Or Pre-ESAF[1] | SAF | ESAF | Most Recent Year[2] |
|---|---|---|---|---|
| Real GDP growth | 2.1 | 4.0 | 2.8 | 2.9 |
| Export volume growth | 2.2 | 4.4 | 7.3 | 7.3 |
| Inflation[3] | 16.9 | 15.0 | 13.3 | 17.6 |
| Savings/GDP | 6.9 | 8.7 | 8.5 | 10.2 |
| Investment/GDP | 14.9 | 18.5 | 20.7 | 19.7 |
| Current account/GDP[4] | -12.3 | -15.4 | -18.0 | -16.8 |
| Reserves (months of imports) | 2.3 | 2.9 | 3.3 | 3.5 |
| Terms of trade (improvement = +) | 0.3 | -5.7 | -3.9 | 0.9 |

[1] Average over three years preceding the first SAF or ESAF supported arrangement.

[2] Calendar year 1991 or fiscal year 1991/92.

[3] Excluding Bolivia and Uganda.

[4] Excluding official transfers.

**Source :** IMF (1993), p.32

(and 2.9 percent for all in the most recent year. Other aspects of the programs also turned out quite well: (a) export volume growth accelerated rapidly; (b) reserve coverage expanded; and (c) while savings rates rose, investment rates rose even more so that current account balances deteriorated somewhat. All of these favorable developments occurred while the terms of trade for these countries continued to deteriorate. Only on the inflation front was there little progress: inflation rates stayed high. In assessing the meaning of all this, readers need to be cautioned of two things. First, the "before and after" analysis being used is subject to the same problem: is what we are witnessing the result of IMF reforms or the result of favorable changes in other variables or even the result of the sets of years or countries chosen for comparison? Second, the use of averages may mask considerable variations in performance across countries.

The IMF then proceeds to examine the behavior of individual countries, dividing the 19 countries into two groups: those which made substantial progress toward achieving external viability (11 countries) and those that failed to make such progress (8 countries). The IMF defines "improved external viability" as a significant decline in debt service ratios combined with reduced reliance on what it calls "exceptional financing" i.e. accumulation of arrears in payments to external creditors, reschedulings of interest and principal payments, and balance of payments support from multilateral international organizations (including the IMF itself). The IMF feels that the strength of external positions and domestic economic performance are related, with the factors producing debt accumulation also leading to a worsening internal performance as shown by rising inflation, falling savings and investment ratios, and weak efficiency and output growth. Improvements in domestic performance and in external positions are correlated, except where improvements are based on excessive reliance on demand restraint, thus dampening investment and growth; improvements brought about in this manner are not sustainable for long.

The indicators of economic performance for the two sets of countries are shown in Table 3 For the countries with improving external positions, real GDP growth accelerated to a 3.2 percent average in the three most recent years and 3.7 percent in the most recent year.

Table 3

**Indicators of Macroeconomic Performance by Country**

**(Annual averages, in percent, unless otherwise noted)**

| | Real GDP Growth | | |
|---|---|---|---|
| | Pre-SAF or Pre-ESAF[1] | Latest Three Years[2] | Latest year |
| I. Countries that made relatively more progress toward external viability | | | |
| Bangladesh | 4.2 | 4.1 | 3.2 |
| Bolivia | -1.1 | 3.2 | 4.1 |
| Gambia, The | -1.0 | 3.8 | 4.0 |
| Ghana | 6.3 | 4.5 | 5.0 |
| Guyana | -1.7 | - | 6.0 |
| Lesotho | 1.4 | 2.5 | 0.3 |
| Malawi | 2.0 | 5.6 | 7.8 |
| Mozambique | -3.4 | 3.1 | 2.7 |
| Senegal | 0.8 | 2.4 | 2.3 |
| Sri Lanka | 3.6 | 4.4 | 4.8 |
| Togo | 2.7 | 1.5 | - |
| Mean | 1.3 | 3.2 | 3.7 |
| Median | 1.4 | 3.2 | 4.0 |
| II. Countries that made relatively little progress toward external viability | | | |
| Burundi | 4.6 | 3.5 | 5.0 |
| Guinea | . . . | 3.1 | 1.9 |
| Kenya | 5.5 | 4.0 | 2.4 |
| Madagascar | 1.6 | - | -6.9 |
| Mauritania | 1.1 | 1.8 | 2.6 |
| Niger | 6.2 | 0.1 | 1.9 |
| Tanzania | 3.0 | 3.6 | 3.8 |
| Uganda | 0.8 | 4.7 | 4.2 |
| Mean[3] | 3.3 | 2.6 | 1.9 |
| Median[3] | 3.0 | 3.5 | 2.5 |

[1] Average during three years preceding first SAF or ESAF-supported program.

[2] Average during most recent three-year period ending in 1991 or 1991-1992

[3] Excluding Guinea, for which data are not available for the three years before SAF/ESAF arrangements.

**Source :** IMF (1993), p.34

Moreover growth accelerated in all but two of the 11 countries (Bangladesh and Ghana where quite high growth rates were maintained in all periods before and after). For the group where little progress was made toward external viability, growth rates fell on average and higher growth was achieved in only 3 of the 8 countries. On the external side, in countries showing improvements, a rapid recovery of exports made possible an acceleration of import growth. For the other countries, continued stagnation in exports necessitated the continued compression of imports. The improving group also shows relatively better performance in reducing inflation and in raising investment ratios. Only in the continuing failure to raise savings rates do the two sets of countries show comparable performance.

The results of the review of Standby/EFF countries was broadly similar and hence can be summarized more quickly. In the period prior to the IMF programs, Standby/EFF countries and SAF/ESAF countries had roughly similar low growth rates but the former set of countries had a number of distinct advantages: (a) savings and investment ratios that were higher; (b) current account deficits that were only half as large; and (c) more diversified economies and better infrastructure and human resources. The results are shown in Table 4. By and large growth rates accelerated, although not uniformly so (New Users seem to have improved the most while Countries with one prior IMF program maintained reasonable growth in all periods. Several other points are worth making (data not shown):

- similar to the SAF/ESAF countries, export volumes increased, debt service ratios declined and reserve ratios were improved (relative to the pre-program period).

- however, current account deficits relative to GDP fell whereas in the SAF/ESAF cases they widened. Continued weakness in the terms-of-trade of the latter set of countries was an important factor.

- lastly, the Standby/EFF countries were generally more successful in reducing "exceptional financing".

**Table 4**

**Growth Rates for Stand by/EFF Countries**

**(% per annum)**

| | Year Before Program | Program Average | 1992 |
|---|---|---|---|
| Countries with Several[1] Previous IMF Programs | 0.9 | 1.1 | 0.7 |
| Countries with One Previous IMF Program[2] | 4.0 | 3.5 | 3.4 |
| New Users[3] | 0.1 | 0.4 | 4.7 |

[1] Argentina, Costa Rica, Cote d' Ivoire, Ecuador, Haiti, Jamaica, Mali, Mexico, Morocco, Philippines

[2] Algeria, Egypt, Gabon, Nigeria, Tunisia

[3] Cameroon, El Salvador, Honduras, Jordan, Pakistan, Papua New Guinea, Trinidad and Tobago, Venezuela

**Source :** IMF (1995), Chart 13, p.43

Summarizing the overall findings of what we have called the "comparative approach" is somewhat difficult. First, while it may be true that on average growth accelerated between the periods before and after IMF programs, the overall pattern between countries was quite mixed with some countries experiencing rising and others falling growth. Second, disentangling why this might be so is not easy. Is the differential experience between countries the result of imperfections in the design of some programs, or differences in the degree to which various programs were implemented, or differences in the external circumstances facing different countries, or a combination of all three? There

were differences but we really can't say why. Third other aspects of Fund programs seem less controversial. Generally, they seem to lead to rising exports, falling debt service ratios and improvements in reserves. However whether this translates into improved savings and investment ratios, sustainable current account deficits and increased inflows of foreign debt and equity capital still seems more questionable. Lastly, before ending this section, it is important to stress once again that the technique being employed here is somewhat questionable. While it yields much interesting data and comparisons, it really does not answer the question " how much of what happened was the result of IMF programs and how different were these results from some alternative program?"

**B. Econometric Analyses**

Below we will present the results of several econometric studies which try to get at the effect of IMF programs themselves or the implementing IMF-like policies on the economic growth of developing countries. The first study concludes that IMF programs are very damaging to economic growth while the other studies are more supportive of the conclusion that countries that countries that follow the conservative macroeconomic and financial programs of the sort advocated by the IMF achieve higher growth rates over the medium-term.

Przeworski and Vreeland (PV 2000) reach a rather devastating conclusion: that participation in an IMF lowers the growth rate compared to what it would have been with no IMF program; that exiting an IMF program will raise the growth rate but not back to the level that would have pertained had their been no program; and that following an IMF program a country will continually grow more slowly than it would have had it never had an IMF program. In other words IMF programs lower growth rates not only during the program period but forever thereafter. Working from a data set for 79 countries for the period 1970-1990, they start from the simple observation that countries "without IMF programs" grow faster under a variety of circumstances and then make corrections for the IMF selection process. Table 5 shows the growth experience for two sets of countries

**Table 5**

**Growth according to observable conditions (reserves and deficit)**

| Reserves/ deficit | Not under | | | | |
|---|---|---|---|---|---|
| | Growth | Deficit | Reserves | Debt service | *N* |
| Good, good | 5.22 | -0.84 | 5.47 | 3.50 | 248 |
| Good, bad | 4.65 | -11.99 | 4.36 | 3.83 | 121 |
| Bad, good | 4.00 | -1.96 | 1.19 | 3.76 | 102 |
| Bad, bad | 2.19 | -12.51 | 1.09 | 5.29 | 88 |
| Total | 4.39 | -5.30 | 3.76 | 3.90 | 559 |
| | | | Under | | |
| Good, good | 4.20 | -2.25 | 4.26 | 6.08 | 97 |
| Good, bad | 3.14 | -9.35 | 3.34 | 5.46 | 89 |
| Bad, good | 1.95 | -2.07 | 1.06 | 6.65 | 97 |
| Bad, bad | 0.40 | -11.87 | 0.89 | 7.54 | 182 |
| Total | 2.04 | -7.34 | 2.10 | 6.65 | 465 |

"Good" reserves : foreign reserves > 2 times monthly imports.

"Bad" reserves : foreign reserves ≤ 2 times monthly imports.

"Good" deficit : government budget surplus > –5% of GDP.

"Bad" deficit : government budget surplus ≤ -5% of GDP.

**Source :** Przworski and Vreeland (2000), p.396

"with and without" both on average for each group and then by subsets where the countries in each group are differentiated by policy performance variables; in each case, budget deficits as a share of GDP, reserves as months of imports, and debt service ratios are shown, Growth for those "not under" IMF programs averages 4.39 percent while the growth for those "under " averages 2.04 percent.

Furthermore the groups can be broken up into further subgroups on the basis of "good " and "bad" policies according to whether their budget deficits were above or below 5 percent of GDP and their reserves were above or below 2 months worth of imports; and four subgroups have been created on the basis of all the various combinations of 'good" and 'bad". No matter which subgroup you consider, subgroups with better policies have higher growth rates than hose with worse policies. Countries that were never under an IMF program in general perform better with respect to growth but they also have lower budget deficits, higher reserves and lower debt service ratios than the Fund program countries. This is some indication -- at least on a crude basis -- that better policies matter. However , for the same reasons that the usual "with and without ' comparisons are flawed, PV say that Table 5 is flawed.

PV say that the comparisons of Table 5 can be misleading because (1) the conditions facing the two sets of countries are not likely to have been the same; and (2) unobserved variables are likely also to explain part of the differences. They then proceed in the following fashion. They construct what they call a "bare bones model " in which country growth rates are explained by their growth rates of capital and labor inputs and by instruments which control for the effects of governments and the IMF making choices about whether to go under and remain under IMF programs. The model is then estimated separately for countries observed as being "under" and "not under" IMF programs. Then the vector of independent variables at each point in time is multiplied by the parameter values characterizing the "under" and "not under" cases giving two values of "expected growth" in each cases which are independent and unbiased of selection. The difference between the two is the "effect of the IMF program"; and, averaged over all countries (and all situations), it shows the net effects of IMF programs during 1970-1990.The results are summarized in Table 6. Countries actually observed as being "under" and "not under" Fund programs are separated by whether the model predicts they were expected to be "under" or "not under" such a program and the difference in each case is the result of the program. If all the countries had had Fund programs in all years they would have grown by 2 percent per year on average whereas if they had had no Fund program they would have grown by 3.53 percent; that is, Fund programs reduce growth rates by 1.53 percentage points.

**Table 6**

**Growth Performance, Corrected and Uncorrected**

| Observed as | Hypothetically as | | |
|---|---|---|---|
| | Under | Not | Program effect |
| Under | 0.70 | 2.33 | -1.63 |
| Not | 3.08 | 4.52 | -1.44 |
| All | 2.00 | 3.53 | -1.53 |

**Source :** Przworski and Vreeland (2000), p.397

The actual observed difference of 2.35 points between the two sets of countries means that another 0.82 points of difference were attributable to other "not specified" differences in economic circumstances. From there, PV go on to show that IMF programs reduce growth in every year that countries remain under the programs and that leaving the programs will accelerate growth but never back to the level achieved before the program or to the level that would have been achieved had there never been a program (note that the implication here is that IMF programs are so devastating that they can even lower the growth rate before entry to the program below what it would have been expected had there never been a program). The tables showing these results are sizable and quite difficult to understand and so we do not attempt to reproduce them here.

Now PV have produced quite a damning indictment of IMF programs. They reduce growth rates not only during the program period but forever thereafter (or at least until 1990 when the observation period runs out). Since developing countries have not been doing very well in general, since some IMF programs have had apparently adverse effects, and since our observations above -- however flawed the methodology may have been -- show a rather mixed bag of program effects on growth, PV's results ought not to be dismissed out of hand. However the results do raise questions about why countries

would enter into arrangements that inflict permanent damages on themselves (especially when most do not like even temporary pain). Do they not understand the outcomes or have very poor predictions about the results? Or do they have some other objective more important than income growth which IMF programs allow them to achieve? Moreover there seems to be a number of concerns about PV's methodology used in their "bare bones model":

- the model really is minimalist in that no corrections are made for the possibility that countries might be different because of "initial conditions" (e,g, GDP per capita, levels of education) or physical circumstances (e.g. geography, dependence on primary products) or demographics (e.g. population growth, age structure) or the state of technology.

- economic policies apparently have no effects on the growth rates. Factors such as budget deficits, indebtedness, inflation, exchange rate over- and under-valuation and trade policies do not enter the explanation for differential growth rates. Apparently the fact that the 'under" and "not under" countries might be following very different policies is thought to be irrelevant to explaining differential growth rates.

- No consideration is given to whether IMF programs are in fact being implemented; country performance here is quite uneven in practice and countries may stay under IMF programs by making only 'reasonable" progress toward implementing the policies called for in the programs.

- Lastly the difference between the "under" and "not under" countries is not just that the former have IMF programs while the latter do not. The former have usually suffered from some external shock or been mismanaged in some fashion or both. Thus the starting points for the two sets of countries are different and the former would be expected

to perform worse than the latter whether or not they decide to undertake an IMF program; if so, differences in performance between the two groups are partly the result of different starting points as well as the result of programs.

In sum, it seems improbable that the "bare bones model" like that of PV which takes no account of policies, or of initial conditions, or of environments and starting points is really capable of answering the question "what is the effect of IMF programs on economic growth" or "what is the relationship of macroeconomic and structural policy change in general and the resulting growth performance of countries". Nonetheless, it is worth keeping in mind that less developed countries are not performing very well in general and IMF programs have a very uneven track record both in terms of what has actually been implemented and in terms of what results have been achieved. Therefore we need to continue approaching the evaluation of IMF programs with a considerable degree of skepticism.

In 1999, the IMF published its analysis of the experience of those countries that had been under its ESAF program. The study covered some 84 low- and middle- income countries 1981-1995, including some 30 non-transition ESAF countries, thus providing a basis of comparison for two sets of countries. The analysis starts with the IMF's observation that the first half of the 1980s was very difficult for many developing countries and a disaster for the ESAF countries with per capita income actually falling at a 1.4 percent p.a. rate. Following this their growth rates picked up and by the end of the period was actually higher than that of non-ESAF countries (see Table 7). Overall averages are quite deceiving however, masking continuous success in the Asian ESAF countries (Pakistan, Bangladesh and Sri Lanka), improvements in the Latin American ESAF group and generally weak performance among the African group (although even here there were variations with Guyana, Lesotho and Equatorial Guinea growing at over 6 percent p.a., Uganda at over 4 percent and many countries continuing to decline - e.g. The Gambia, Madagascar, Togo, Burundi and Sierra Leone).

**Table 7**

**Growth in Real Per Capita GDP in ESAF Countries and Other Developing Countries**

(Annual average, in percent)

| | 1981-85 | 1986-90 | 1991-95 | 1995 |
|---|---|---|---|---|
| ESAF (excluding transition) | -1.4 | 0.4 | 0.3 | 1.5 |
| Africa | -1.8 | 0.4 | -0.3 | 1.2 |
| CFA | -2.0 | -0.6 | -0.2 | 3.5 |
| Non-CFA | -1.7 | 1.0 | -0.4 | -0.1 |
| Asia (excluding transition) | 2.3 | 2.3 | 2.7 | 3.4 |
| Western Hemisphere | -3.2 | -1.9 | 1.5 | 1.5 |
| Non-ESAF developing countries[1] | 0.3 | 1.0 | 1.0 | 1.4 |

**Sources:** *World Economic Outlook* (Washington: IMF, various issues); and IMF staff estimates.

[1] Eighty-four low-and middle-income non-transition developing countries comprising 90 non-ESAF developing countries as defined in the *World Economic Outlook* less 6 countries classified as high-income by the World Bank (World Development Indicators database).

**Source :** Kochhar and Coorey (1999), p.72

The IMF then proceeds to ask whether this growth performance can be explained by using the usual variables economists use to explain differential growth rates between countries. Traditional growth theory seeks to account for growth differences by reference to six sets of factors. I. *Convergence.* That once other factors affecting growth are factored in, "conditional convergence" says that lower income countries will grow faster than high income countries, because of the ability to borrow technology and the scope for raising capital-labor ratios. II. *Human Capital.* That better educated, healthier people make higher growth possible plus the possibility, according to the "New Growth" theory, that human capital accumulation may eliminate diminishing returns to capital

investments. III. *Macroeconomic Policy including the following*: (a) the size of the government' budget deficit as a proxy for stable and conservative macro policies; (b) the rate of inflation, entered in a non-linear fashion with low inflation rates (say below 10 percent) having minimal negative effects but higher rates having progressively more harmful effects; and (c) other possibilities such as various indicators of debt burden or changes in the real exchange rate which were not considered in this IMF study. III. *Openness of the Economy.* An indicator of the degree of openness of the economy (among several possibilities) on the supposition that it has positive impacts on growth because of increased size of market, exposing the economy to more competition, and reducing distortions in the economy. V. *Structural Distortions*. Include a number of other factors such as (a) size of government (as a possible indicator of inefficient government spending or possible future distorting tax increases thus ignoring that government spending can have positive effects such as with economic and social infrastructure which might be supportive of growth). And (b) an indicator of financial sector development since financial institutions contribute to growth by pooling risks, mitigating adverse selection and encouraging innovation. And VI. *Other Factors*. Adverse shocks stemming from terms of trade changes or weather and political strife.

The results of the regression equation for the 84 countries for the period 1981-1995 are shown in Table 8. The equation provides a satisfactory explanation for the growth rates for this set of countries in this period and, in addition, tests reveal that jointly the coefficients are equivalent for ESAF and non- ESAF countries. The results may be briefly summarized as follows:

- Economic growth is positively related with government budgetary balances and with the degree of trade openness but negatively with the size of government of government consumption.

- Inflation at rates above 5 percent p.a. negatively affects economic growth while inflation at lower rates seems to have a positive impact (although the latter is not statistically significant at either the 5 or 10 percent level).

**Table 8**

**Determinants of Growth**

(Pooled annual data for 84 low- and middle-income developing countries, 1981-95, as available; dependent variable: real per capita GDP growth)

| Variable | Coefficient | t-Statistic (absolute values, based on heteroscedastic consistent standard errors) |
|---|---|---|
| *CONSTANT* | -5.658 | 1.18 |
| *POPG* | -0.825 | 4.38** |
| *LLIFE* | 5.023 | 3.42** |
| *LGDP80* | -1.392 | 4.10** |
| *LINFL (> 5 percent)* | -0.752 | 5.96** |
| *LINFL (≤ 5 percent)* | 0.456 | 1.62 |
| *EXTRA5 (kink)* | 1.208 | 3.63** |
| *DEFL* | -1.953 | 2.64** |
| *BUDBAL* | 0.101 | 4.00** |
| *OPENIND* | 0.019 | 3.42** |
| *GCONS* | -0.071 | 2.40** |
| *ECONSEC* | 0.222 | 1.74** |
| *WEATHER* | -2.068 | 7.36** |
| *WAR* | -0.746 | 2.01** |
| *DTOT1* | 0.033 | 2.733 |

**Note :** Number of observations = 994

Adjusted $R^2$ = 0.22

Jarque-Bera Normality test = 254.7(**)

F-statistic (zero slopes) = 22.1 (**)

Hypothesis tests

Hausman Test for exogeneity of investment

Test statistic : 7.29**

F-test for joint equivalence of coefficients across ESAF and non-ESAF subsamples

Test statistic: 1.43**