Policy, Planning, and Research

WORKING PAPERS

Macroeconomic Adjustment and Growth

Country Economics Department
The World Bank
December 1989
WPS 323

The Old and the New in Heterodox Stabilization Programs

Lessons from the 1960s and the 1980s

Miguel A. Kiguel
and
Nissan Liviatan

Heterodox stabilization programs can bring down inflation quickly without costing much unemployment in the short run. But costs that appear up front in orthodox programs are delayed in heterodox programs. Tight fiscal policy and a strong nominal anchor are critical to their success in the long run.

Policy, Planning, and Research

WORKING PAPERS

Macroeconomic Adjustment and Growth

Heterodox stabilization programs combine tight monetary and fiscal policies, characteristic of the orthodox approach, with wage and price controls.

Heterodox programs are usually adopted as an alternative to orthodox programs to minimize the costs of bringing down inflation. The heterodox approach can bring inflation down rapidly without large costs in the short run (the easy part of the program). The costs are borne later when the authorities have to concentrate on sustaining low inflation. The magnitude of these costs is not yet clear.

Whether the stabilization program should adopt a gradual or shock strategy depends on the rate of inflation before stabilization. The orthodox shock is most effective for stopping hyperinflation. In economies with chronic, high inflation, a heterodox shock strategy is generally more appropriate.

The quick initial success of heterodox programs increases support for the program, opening the possibility for adding fiscal measures to deepen the stabilization effort.

This opportunity is usually forgone, however. Israel and Mexico introduced further fiscal adjustment during this phase. In the Austral and Cruzado plans (in Argentina and Brazil), the initial success was taken as evidence that more fiscal adjustment was not required (or could be postponed), and the stabilization effort collapsed.

A gradual approach — such as the one used in Argentina and Brazil in the 1960s — is more appropriate for economies with low inflation, where the case for income policies is much weaker.

Tight fiscal policy is critical to the success of a heterodox program — particularly during the flexibilization period in which price and wage controls are removed. In the failures of the 1960s and the 1980s, the budget situation had already deteriorated when controls were removed. A relaxed fiscal stance during the freeze led to a sharp acceleration of inflation later.

It is also important to maintain a strong nominal anchor, before and during flexibilization. In Israel, for example, using the exchange rate as the main nominal anchor during flexibilization helped prevent a rekindling of inflation (at the cost of overvaluing the currency).

The flexibilization period is the most critical time in a heterodox program, but policymakers do not perceive this. The strategy for getting out of the freeze is perhaps the most important and difficult part of a heterodox program. Heterodox programs fail not because income policies are poorly designed but because the fiscal effort does not persist.

This paper is a product of the Macroeconomic Adjustment and Growth Division, Country Economics Department. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Raquel Luz, room N11-057, extension 61588 (79 pages with figures and tables).

This paper is a major revision of "The Old and the New in Heterodox Stabilization Programs: A Study of the Sixties with the Perspective of the Eighties" and is part of Research Project (RPO 674-24) Stopping High Inflation. We are grateful to Bela Balassa, Adrienne Cheasty, Luis Giorgio, Leonardo Leiderman, Steve Webb and participants at the workshops at CEMA, Tel Aviv University and The World Bank for useful comments on an earlier draft. We thank Jariya Charoenwattana for her patient and effective research assistance.

I. Introduction

The heterodox stabilization programs of the eighties have revived the old controversy about the use of income policies for stopping inflation. Income policies are a central component of heterodox stabilization programs which combine the adjustment in fundamentals predicated by the orthodox approach with price and wage controls. The inclusion of controls has been motivated by the difficulties encountered in orthodox programs (based primarily on tight monetary and fiscal policies) for stopping inflation in chronic inflation countries, where inflation tends to display downward rigidity.

The objective of this paper is to gain new insights about the strengths and weaknesses of the heterodox approach for stopping inflation based on the experience of programs implemented in some Latin American countries and Israel in the sixties and eighties. The most important income policies supported stabilization programs in recent years were those launched in Argentina in June 1985 (the Austral plan), in Israel in July 1985, in Brazil in February 1986 (the Cruzado plan) and most recently by Mexico (the Pact for Economic Solidarity) in 1987-88.[1] Income policies are not a new feature in the big living laboratory of stabilization programs in Latin America. Indeed, they played a major role in three important stabilization programs of the sixties; those of Brazil in 1964, Argentina in 1967 and Uruguay in 1968. These programs shared some basic common features with those of the eighties. Specifically, they were based on wage and price controls and made use of the

---

[1] It is somewhat misleading to include the Cruzado Plan in a study of heterodox programs because the fiscal imbalances were not addressed in that program. We nevertheless decided to include it in our sample because most of the recent literature on heterodox programs has included it as well.

exchange rate as the main nominal anchor. These policies were combined with reductions in the budget deficits.

There is an extensive literature covering each of the programs of the two eras, while there are a number of works comparing the programs within each period.[2] This paper will provide a broader perspective on heterodox programs by analyzing within one framework the programs of the two eras and by incorporating the more recent developments in the successes and failures of the eighties.

Income policies were an effective tool for bringing down inflation in the short run in both eras. As can be seen in figure 1-a and 1-b, the initial results were very impressive in the four programs of the eighties and in Uruguay in the sixties where inflation came down very quickly to much reduced levels. The reductions were slower, but still significant, in the initial phase of the Brazilian and Argentine programs of the sixties.

The initial success proved difficult to sustain in many programs. In the success stories, Brazil in the sixties and Israel and Mexico so far in the eighties, there was persistence on the fiscal side and an effort to maintain a strong nominal anchor throughout the stabilization program. Lack of persistence on the fiscal side was perhaps the most important reason for

---

[2] The Brazilian program of the sixties is discussed in Fishlow (1973), Cardoso and Fishlow (1988), Foxley (1980) and (1983), Kafka (1968) and Simonsen (1974, among others; de Pablo (1972) and (1974), and Krieger Vasena (1987) analyzed the Argentine 1967 program; and Finch (1979) and Viana (1988) discuss in some detail the 1968 program of Uruguay. Pazos (1969) undertakes a comparative study covering the Brazilian program and the initial stages of the Argentine and Uruguayan programs. For the programs of the eighties see for example Cardoso and Dornbusch (1987), Heyman (1987) and Fischer (1987), El Trimestre Economico (Special Issue 1987) Estudios Economicos (Special Issue 1987), Blejer and Cheasty (1988), Bruno et. al (1988), Liviatan (1988), Kiguel (1989) and Solimano (1989).

the eventual failures of the Uruguayan, and the two Argentine programs and of the Cruzado plan.

Income policies have a clear and specific target in stabilization programs: control of what is commonly, and many times loosely termed the inertial component of inflation. This component, resulting for instance from indexation or lack of credibility, is usually used to describe that part of inflation that can not be explained by fundamental factors --namely seigniorage. The use of controls can be justified on a temporary basis only to deal with the inertial aspects of the inflation process. If controls are maintained beyond this stage the resulting distortions might well outweigh their usefulness for stabilization purposes.

The use of income policies is understandably viewed with skepticism. One important problem is that price controls can be and have been used many times as a substitute for the necessary correction in the fundamentals.[3] In addition, experience shows that once controls are introduced they are very difficult to remove. This is a critical problem because controls are not the appropriate policy to maintain low inflation in the medium and long run. If controls are maintained beyond the short term they will have damaging effects on resource allocation and induce the emergence of black markets.

The overall economic conditions were very different in the two eras. Macroeconomic imbalances prior to the programs, particularly the size of the budget deficit, were much smaller in the sixties than in the eighties, while

---

[3] This is specially the case in the populist programs where the fiscal aspects of inflation are entirely ignored. These type of programs have been "popular" in Latin America, as evidenced by Chilean and Argentine program of the early seventies, the Peruvian program of 1985-86 and possibly the Cruzado Plan. For a discussion of this topic see Dornbusch and Edwards (1989).

the overall performance of the economy as measured by growth, investment, etc. was also better in the early period. The behavior of inflation was also very different in the period preceding the programs. Inflation was much higher in the eighties than in the sixties for the countries included in this study. In addition, it had by then become a chronic problem in the eighties after many years of very high inflation and many failed stabilization attempts.

This divergence in the overall economic conditions had important implications for the strategy and the results of the stabilization programs. The higher rates of inflation in the eighties called for a strategy based on a shock treatment including a sharp reduction in the budget deficit and a freeze of the exchange rate, prices and wages. A more gradual approach was possible in the sixties because the level of inflation was lower thus providing enough time to phase in the various policy measures.

The external conditions were also less favorable in the eighties. In contrast to the sixties, the eighties were characterized by low growth in the world economy, high real interest rates, and deteriorating terms of trade for the Latin American countries. More importantly, the Latin American countries in the eighties were confronted with a sudden halt in their access to international credit since the beginning of the debt crisis in August 1982. These conditions also contributed to an easier adjustment in the sixties as the countries could use external financing to increase public and private investment and sustain growth.

The remainder of the paper will be organized as follows. In section II we illustrate with some examples the difficulties encountered with the orthodox approach. We argue that downward rigidity in inflation, sometimes

referred to as inflation inertia, observed in the chronic inflation countries is the major obstacle for the success of orthodox programs. We examine some of the common explanations for inertia including backward indexation and expectational (forward looking) reasons resulting from lack of credibility and coordination problems. We conclude this section with an evaluation of whether price controls are indeed the right response in each of these cases.

In section III we look at issues in the design of heterodox programs. We first argue that the use of the shock approach in the eighties, as opposed to gradualism in the sixties, was motivated by the higher inflation rates prevailing in the more recent era. We also discuss the interrelation between fiscal policy and the strategy for managing the various nominal anchors and the way in which policies have to be adjusted as the program evolves. We argue that the strategy for getting out of the freeze is perhaps the most important and difficult part of a heterodox program. The outcomes of the programs are discussed in section V. Here we analyze the strengths and weaknesses of each program, and the major factors behind their success or failure. An important message is that heterodox programs can bring down inflation very quickly in the short run without much costs in terms of unemployment, the most difficult and costly part usually appears at a later stage when trying to sustain low inflation. In section V we deal with some long term issues such as the costs of failure and of sustaining price stability. We conclude in section VI with some final reflections on heterodox programs.

II. Difficulties with the Orthodox Approach

A. Empirical Evidence

The difficulties encountered with the implementation of the orthodox approach in chronic inflation countries provided the main motivation for the inclusion of income policies in stabilization programs. The existence of downward rigidities in inflation, sometimes referred to as inflation inertia, limits the effectiveness of orthodox policies to achieve rapid disinflation.

These difficulties were evident during the eighties in Brazil and Mexico (see figure 2).[4] These two countries implemented orthodox programs during 1983-84 in conjunction with IMF programs aimed at the double objective of reducing inflation and improving the balance of payments. The adjustment was based on a significant reduction in the budget deficit (exceeding 6 percent of GDP in the operational balance in Brazil and 8 percent in Mexico), a tightening in domestic credit, and large devaluations. While the programs were effective in restoring external balance, they resulted, paradoxically, in an increase in the rate of inflation. In Mexico, there was an important acceleration in inflation in 1987, a year in which the government was having surpluses in its primary and operational balances.[5] Similar frustration was observed in Argentina, a country that abandoned very quickly an IMF stand by agreement signed in late 1984, once it became apparent that a temporary tightening in fiscal and credit policies was having negative repercussions on economic activity but little impact on inflation.

---

[4] For a short discussion of these programs see Kiguel and Liviatan (1988).

[5] The primariy deficit is calculated by substracting all interest payments from the total deficit. The operational deficit is calculated by substrating the inflationary component of interest payments on domestic debt from the total deficit.

A similar pattern is observed in the sixties where the Brazilian and Uruguayan programs started along orthodox lines. The Brazilian stabilization program started in March 1964, under Castello Branco. It was based on a significant reduction of the overall budget deficit (from 4.? of GDP in 1962 to 1.6 in 1965), tight domestic credit, large realignments in relative prices (particularly of public sector and other prices subjected to controls) and frequent devaluations of the exchange rate. Income policies were limited to the control of nominal wages, an element found in other orthodox programs of the time.

The program achieved rapid success in the external front, (see table 1) while the results were more modest on inflation. Inflation remained high during 1964, and the first half of 1965, as can be noticed from figure 1-b, a striking fact given the cut in the budget deficit.

Uruguay initiated a stabilization effort in late 1967 supported by an IMF program. The adjustment was initiated with a 100 percent devaluation of the peso in November 1967 and was supported by a correction in the fiscal imbalance in late 1967 (from 3 percent of GDP in 1967 to 1.7 in 1968) and a tightening in domestic credit (see Table 2).

Despite the adjustment in the basic policy variables, inflation remained at very high levels (at an annual rate of 165 percent) during the first two quarters of the year (see figure 1-b). Additional devaluations in early 1968, added to the inflationary spiral. On the other hand, there was an improvement in the current account and balance of payments. Overall the outcome was like that of other programs. The orthodox approach was effective to correct external policies but had an adverse impact on inflation.

B. Inertia, Inflation rigidities and Income Policies

a. Reasons for Inertia

The similarities in the results of the various programs discussed above points to common elements in the inflation process in these countries. In fact, the orthodox approach fails to deal effectively with the inertial aspects of inflation present in chronic inflation countries, and faces major difficulties in those cases in which inflation displays strong downward rigidity. These difficulties offer a motivation for the inclusion of income policies in stabilization programs. Indeed, the use of wage and price controls in heterodox programs, sometimes in the form of a freeze, is primarily justified by the existence of rigidities in the inflation process (e.g. Dornbusch and Simonsen (1987), Heyman (1987), and Meller (1987) among others).

The term inflation inertia is difficult to define precisely, partly because the existing literature uses it in a loose way. This term is usually used to describe a situation in which there is persistence in inflation, and where the prevailing rate of inflation remains above the level that can be explained by fundamentals (namely seigniorage). Inflation inertia is primarily used in connection with countries that have experienced prolonged inflationary processes, the so called chronic inflation countries, where inflation to a large extent appears to have a life of its own, in many respects independent of the evolution in the fundamentals.

Inertial inflation, or more precisely persistence, could arise from backward looking elements, such as wage indexation, or from what essentially are forward looking factors, such as expectations about future policies. Much of the existing literature on persistence emphasizes the importance of staggered long term contracts (as in Fischer (1977) and Taylor (1979)), and

backward indexation (Fischer (1983) and Modiano (1988) among others), although a number of recent works give more weight to expectations and credibility issues (e.g. Persson and van Wijnbergen (1989), Dornbusch and Simonsen (1987)).

It is useful to illustrate the type of persistence that emerges from some of the existing models. Fischer (1977) and Taylor (1979) both consider the case in which labor contracts are staggered, and where the nominal wage is set for two periods. In Fischer's model, wage contracts are entirely forward looking and primarily depend on expectations about monetary growth. In this set-up there is no persistence beyond the expiration of the most recently signed contract; because once a new policy is announced new contracts will be drawn on the basis of the announced monetary targets. More persistence is generated by a Taylor type model, where contracts have forward and backward looking elements. The latter arise because one of the factors that enters into the determination of the marginal wage is the prevailing average wage, which includes the wage set in the previous period. There is no backward indexation in this model. The forward looking elements are similar to those in Fischer (1977). In Taylor's model the price level can be expressed as a distributed lag of past prices, hence implying that past rates of inflation feed back on current inflation even after all the contracts that were negotiated prior to the new policy announcement expire.

While persistence in these models is mainly driven by backward looking factors, this result rests on the assumption that policy announcements are credible. This, however, is not usually the case as lack of credibility could arise regarding the ability of the government to reduce the budget deficit in a sustainable manner, or about its determination to maintain the

nominal anchors, e.g. the exchange rate or the money supply. If inflationary expectations are a weighted average of say two alternative outcomes (i.e. one of high inflation and one of low inflation), it will lead to persistence as these expectations are incorporated in current contracts.[6]

The policy games literature, as developed in the works of Barro (1983), Barro and Gordon (1983.a) and (1983.b), Cukierman and Liviatan (1989) and Persson and van Wijnbergen (1989) among others, provides new insights regarding rigidities in inflation. If a government cannot abide by rules and uses surprise inflation in a discretionary way to achieve short term goals, then inflation can remain persistently above the minimum level determined by the fundamentals. A fiscal adjustment in a discretionary regime is likely to fail to achieve large reductions in inflation. Paradoxically, as shown in Kiguel and Liviatan (1989.a), it could lead to an increase in inflation.

Problems of coordination among private firms, examined in more detail in Dornbusch and Simonsen (1987), provides another explanation for persistence. In their framework lack of credibility does not result from lack of confidence in the government's ability to persist with sound policies. The problem arises due to the inability of price setters to coordinate a movement to a lower inflation step. A firm would be willing to make smaller increases in its price only if other firms follow a similar behavior. Lack of coordination could sustain inflation at ongoing levels even if there are changes in the fundamentals. Since each firm sets its price independently, the economy lacks a mechanism to synchronize the "jump"

---

[6] This result is consistent with Calvo (1983) where expectations of devaluation are taken into account in the determination of prices in new contracts.

to the low inflation step. In Dornbusch and Simonsen's words "Everybody would like to jump to a low inflation rate together, but nobody will jump unless the others do also." (p.5) Inflation will thus continue at the old rates even if a fiscal adjustment is implemented.

Wage indexation is probably the most frequently mentioned reason for the existence of inertia. The effect of indexation on persistence is, however, not always clear. On the one hand, as is usually argued, backward indexation creates persistence in the economy as past rates of inflation feed back on current wages and through costs on current inflation. Thus whatever rate of inflation prevailed in previous periods tends to remain in the system and hence increases persistence (as in Fischer (1983) and Modiano (1988)). On the other hand, wage indexation can facilitate a reduction in inflation since once the disinflation process starts, it subsequently leads to smaller wage increases and hence reducing persistence (as argued in Friedman (1974). The former argument is probably more important in models where prices are determined by a mark-up equation while the latter is more relevant for models that use market clearing prices (e.g. based on the quantity theory).

The above discussion illustrates that there is a component in the inflation process that is independent of the evolution of the fundamentals, at least in the medium run. While seigniorage in general will determine a lower bound to the rate of inflation, there is also a non-fiscal component which can move inflation above this lower bound. The non-fiscal part is probably very important in the chronic inflation countries where the available evidence does not indicate that a close relationship exists between

seigniorage and inflation.[7] Income policies are potentially more useful in those cases in which the non-fiscal component is at the heart of the inflation process.

b. Implications for stabilization programs

An implication of the preceding discussion is that when there is persistence, regardless of whether it results from staggered contracts, backward indexation, lack of credibility or coordination problems, the orthodox approach does not lead to significant reductions in inflation in the short run. The heterodox approach is intended to deal specifically with this problem, with income policies complementing the adjustment in fundamentals to achieve rapid disinflation. It turns out that the effectiveness of heterodox programs largely depends on the prevailing rate of inflation.

As a general rule one could argue that in chronic inflation countries a heterodox shock, of the type used in the eighties, is more appropriate for countries experiencing high inflation, while a gradual approach with less reliance on income policies and where controls are used in a flexible manner, is better suited for low inflation countries. High inflation countries are those where as a result of increases in the rate of inflation there is significant synchronization of prices and wages. Staggering is less important in these countries, and hence persistence is mainly explained by credibility and coordination issues.

i. The Shock Approach

A heterodox shock, including a freeze of prices, wages and the exchange rate can be effective to break persistence in this case. Suppose that there

---

[7] This point is discussed in more detail in Kiguel and Liviatan (1988).

is persistence mainly because the private sector does not believe on the sustainability of the fiscal adjustment or on the willingness of the monetary authority to maintain the fixed exchange rate, while the government is determined to implement and sustain a serious stabilization program. In this setup expected inflation will in general exceed the "official forecast". This is likely to result in rigidities in actual inflation as current prices (or wages) are determined based on forward looking expectations.

A price freeze could be effective in this situation as a mechanism to buy time while the authorities take the appropriate fiscal measures and demonstrate comprehensiveness and persistence in the stabilization effort. If controls are not used and inflation stays at rates close to those prevailing prior to stabilization, credibility problems could exacerbate as the fiscal adjustment proves ineffective to bring down inflation. Controls could be removed once major doubts about the seriousness of the program disappear and agents have reasonable confidence in the success of the program and in the sustainability of the situation.

Likewise, price controls (in the form of a freeze) can play an important role when there is a problem regarding coordination of price decisions of the type discussed in Dornbusch and Simonsen. A comprehensive price freeze provides the individual firm with information that the market mechanism does not furnish. It tells each firm that all others will set their prices under the same rule thus removing an important obstacle in moving the economy to a low inflation step. This argument, however, implies that once the coordinated movement to low inflation is completed, usually a short process, the authorities should start to remove controls.

Although it seems plausible that a shock treatment is appropriate when

prices are highly synchronized, why does it need to include income policies? Why can't an orthodox shock of the type used to stop hyperinflations be effective in chronic inflation countries? The answer lies primarily on sustainability issues, and on the perceived relationship between deficits and inflation in the two cases. A hyperinflation process is inherently unstable and in this respect unsustainable. It is almost unthinkable that a country can function for prolonged periods under hyperinflation. Thus a serious orthodox program is likely to be credible in this case. Chronic inflation, on the other hand, can be maintained. In most cases the public and private sectors develop mechanisms (such as indexation of wages, taxes, etc.) that allows them to live with inflation. Stabilization is thus postponable and hence less credible.

The second difference is related to the nature of inflation processes in the two cases. In hyperinflations the causes of inflation are clear, excessive seigniorage to finance a large budget deficit. In chronic inflation countries, on the other hand, fiscal and non-fiscal factors are equally important to explain inflation in the short run. As a result, while the cure for inflation is clear in hyperinflation, it is less so in chronic inflation countries. An orthodox shock is effective to stop hyperinflations, but a heterodox shock is more suitable to deal with high, chronic inflation.

Is the shock approach also well suited to deal with backward indexation in high inflation economies? The answer is positive because contracts are highly synchronized in these economies, although in this case the shock approach does not necessarily call for a prolonged freeze. If the authorities have enough information on the indexation arrangement and about the equilibrium real wage, then they can determine the correct initial wage

increase which in conjunction with the elimination of indexation for upcoming contracts should be sufficient for solving persistence arising from this source. The imposition of a freeze on wages after the initial adjustment is not in principle necessary to deal with backward looking elements after the initial adjustment is done. Income policies, however, can still be useful in practice since workers are not likely to give up indexation in the absence of an agreement in which firms accede not to increase prices. A social pact of this type, can serve as a coordination mechanism to facilitate the elimination of indexation.

ii. Gradualism

Low inflation economies are those where staggered long term contracts are still prevalent. Low inflation is used in a broad sense here, as it will include countries with annual rates of inflation up to 40 percent where wage adjustments take place on an annual basis and even countries which would be considered high inflation for other definitions, with inflation rates in the range of 100 percent per year, but where wages are usually adjusted semi-annually. The important feature in our definition is that due to the prolonged duration of contracts and the asynchronization in price and wage decisions (resulting from staggering), there is significant persistence in the economies. In other words, the system has a long memory.

The case for income policies is weaker in these cases. If the authorities want to stop inflation through income policies they would need very detailed information regarding the time at which each contract was signed, its duration, the time of the last wage adjustment, the relative weight of forward and backward looking elements in each agreement, etc. They would then use this information to design a complex set of rules providing

different wage increases for each contract. In practice this is likely to be very difficult thus weakening the case for a shock approach relying on income policies in low inflation countries.

While in low inflation economies long term staggered contracts are likely to be an important source of persistence, the scope for dealing with these forces is limited. This is also due to the fact that the non-fiscal factors are usually less important to explain the on-going rate of inflation. Thus, the orthodox component is the central part of a stabilization program in these economies, although some use of income policies in the form of guidelines or voluntary agreements could be included to deal with expectations.

iii. A Caveat

Although income policies can be useful in certain cases to support a stabilization effort, they are not the appropriate tool to maintain low inflation on a long term basis. The removal of controls is an important part of a heterodox program, but one that is not usually well planned. A central objective during the flexibilization period is to avoid an increase in inflation that would bring it back to the levels prevailing prior to the program. If lack of credibility about the sustainability of the program or problems of coordination are still prevalent (as they usually are), the removal of controls should proceed gradually. As controls are being removed in the various sectors without producing an increase in inflation, this would send a signal to agents that inflation is not going to return to previous levels.

III. Design and Implementation of Heterodox Stabilization Programs

The heterodox stabilization programs have as their main common element the use of price and wage controls. Nonetheless, there are important differences across programs regarding the comprehensiveness, enforcement and duration of controls, and on the supporting policies that were utilized to enhance the effectiveness of the programs. In this section we will look at the way in which the income policies based stabilization programs were implemented in the two eras, and highlight the main differences and similarities in the use of policy instruments.

A. Gradualism Versus Shock

We argued in the previous section that the strategy should depend on the underlying rates of inflation. The lower rates of inflation prevailing in the sixties made possible a more gradual approach for stopping inflation. This was not possible in the eighties, where the high rates of inflation and the chronic nature of the inflation process called for a shock treatment. In Brazil and Argentina during the sixties, for example, price and wage controls were phased in slowly, on a voluntary basis and in the form of ceilings on price increases. In most of the programs of the eighties, on the other hand, a shock treatment was followed with controls encompassing most sectors of the economy, they were compulsory and in the form of a freeze. The main exceptions in each era were Uruguay, a country that facing high inflation adopted a shock treatment in the sixties, and Mexico, who having the lowest inflation in the eighties opted for a more gradual approach.

The heterodox shocks, used in Argentina, Brazil, and Israel in the eighties and in Uruguay in the sixties, usually included a freeze of

prices, wages and the exchange rate. In these episodes, particularly in the eighties, the heterodox shocks were implemented when inflation was at very high levels and at a time when there was a widespread perception that the non-fiscal component of the inflationary process was relatively important. In our view, the main justification for the use of controls was to deal with issues of credibility and coordination. This however, was not necessarily the reason provided by those who designed and conducted the programs, where backward indexation of wages was mostly blamed for the persistence of inflation. While backward indexation was widespread in these countries, the persistence that could result from this factor was less important because contracts became shorter and more synchronized as a result of increases in inflation.

Since non-fiscal factors were an important underlying element in the inflation process a heterodox shock could pulled down inflation very quickly. This approach was specially appealing because these programs had one main objective: stopping inflation. A simultaneous move on prices, wages and the exchange rate was needed to avert dispersion in relative prices and large changes in income distribution that could destabilize the programs. If the freeze had been restricted to a limited number of markets, say only to wages and the exchange rate, prices would have continued rising due to inertial forces deteriorating real wages and leading to an overvaluation of the currency.

The adoption of a more gradual approach in Brazil and Argentina during the sixties and in Mexico more recently was possible because the rate of inflation was much lower. The lower rate of inflation allowed more flexibility in the use of controls in the sense that delays in controlling

or decontrolling specific prices were not likely to create large distortions or to threaten the viability of the program. In addition, the likelihood of achieving a significant reduction in inflation through a heterodox shock when inflation was already low, was much smaller.

B. Stages in Heterodox Stabilization Programs

The analysis of a heterodox program can be simplified if we divide its evolution in three stages. We can distinguish a first stage in which the authorities concentrate all their efforts in stopping inflation. The priority here is to achieve drastic and rapid reductions in inflation rates. This stage is easy to recognize in the eighties (for example from figure 1-a) and took the form of a shock treatment including a large fiscal adjustment and a freeze of prices, wages and the exchange rate. The exact timing of the first stage is more difficult to identify in the sixties, especially in Brazil and Argentina because controls were introduced gradually and in a more flexible way. In Uruguay, on the other hand, this stage is clearly identifiable and coincides with the imposition of a freeze similar to that of the eighties. This stage is usually the easiest in a heterodox program.

The second stage, by far more difficult, comprises the period during which the stabilization process needs to be consolidated and prices are flexibilized. Few countries have been able to complete this stage successfully. It is in this stage when the problems and difficulties that were not apparent during the first stage in the less comprehensive and less persistent programs start to emerge. The typical problems are an overvaluation of the domestic currency and increasing imbalances in the external or budgetary accounts.

The key aspect of the second stage is the design of a mechanism for decontrolling the economy and the choice of a strategy for monetary, fiscal and exchange rate policies to support price stability on a longer term basis. Especially important is the choice of an exchange rate rule which balances the need for greater flexibility in managing the nominal exchange rate with the maintenance of a strong nominal anchor. The second stage is usually a difficult period in the programs because little is known about the mechanisms and timing for de-controlling prices, the choice of nominal anchor and about the selection of appropriate fiscal, monetary and exchange rate policies to support the process.

The completion of these two stages can be regarded as the end of the heterodox phase of the program (for both successes and failures). There are issues, however, that arise thereafter which are still related to the original program. We can thus include a third stage in our analysis, which refers to the evolution of macroeconomic variables and policy issues beyond the heterodox phase. This includes issues such as what are the costs of failure, problems of overvaluation observed in successes and failures and what are the options regarding the choice of nominal anchor after the initial heterodox phase.

C. Prices, Wages and Exchange Rate Policies

The policies for prices, wages and exchange rates varied across programs and were modified as the programs moved through the different stages of the stabilization process. Controls were usually more strict during the first stage when the main objective was to bring down inflation. Policies for prices, wages and the exchange rate were generally similar across programs in this stage. There is more variation regarding the way

in which the various programs removed the controls and the manner in which they confronted the difficulties that arose at later stages.

a. Income Policies in the First Stage

i. Price Controls

As discussed in the previous section a shock approach was adopted in those countries facing high inflation, while gradualism was followed in the low inflation countries. There is little variation in the way in which controls were applied in the various shock programs, controls were mandatory and quite comprehensive. None of the programs made a large effort to enforce controls, in the shock programs the mere announcement of controls was enough to achieve rapid disinflation.

The use of controls was even more flexible in the gradual programs. In the Brazilian program of the sixties price controls were first introduced in 1965, one year after the initial program was launched. Price controls were mandatory for agricultural food products, public services and other basic goods; while they were voluntary for most industrial firms in the private sector.[8] Similarly, price controls were phased in gradually in Argentina during 1967, also on a voluntary basis.[9] In the Mexican program

---

[8] Nonetheless, the government attempted to influence compliance through the introduction of tax and credit incentives for those firms that restraint their increases in prices. Firms that would agree to restraint their price increases to 7% until the end of the year would receive a reduction in income taxes, an expansion in their access to (cheap) lines of credit from Banco do Brazil and an increase in their quota for imports of raw materials. For a more detailed discussion of the structure of controls see Foxley (1980, p. 898).

[9] Influenced by the Brazilian strategy, a mechanism was introduced in mid 1967 by which those firms that would agree to fix their prices for a pre-determined period received fiscal benefits and access to special lines of credits in exchange. The government was successful with this strategy as the majority of the leading industrial companies joined the agreement.

there was also flexibility in this respect as prices for most industrial products were not directly under government control.

The imposition of controls did not result in generalized shortages, at least in the first stage. There were shortages in a limited number of products, but they tended to be of a temporary nature and in many cases in goods that had seasonality in either production or consumption. Shortages and black markets only became a serious problem at a later stage in those programs, such as Uruguay and the Cruzado, which attempted to maintain the freeze in spite of economy wide excess demand pressures. The absence of economy-wide shortages indicates that controls were used judiciously in most programs. Their role was to serve as guidelines and in helping to coordinate the move to low inflation. This stands in opposition with the populist programs where controls are used to repress inflation.

ii. Wage policy

Wage policy was similar in most programs and usually consisted of a mandatory freeze of nominal wages at the existing levels. In most cases the duration of the freeze was not made explicit. Two areas that deserve special attention are the initial adjustment in relative wages, and the approach to wage indexation.

The Krieger Vasena program and the Cruzado plan were particularly sophisticated in realigning relative wages at the outset. In Argentina, prior to 1967, wage contracts were staggered and had a duration of one year. The program included an initial adjustment in wages, the size of the adjustment differed across sectors and depended on the expiration of

ongoing wage contracts.[10] This strategy was followed in order to limit the size of disparities in real wages that would arise as a result of the freeze. The Cruzado program also included a mechanism to minimize the impact of the wage freeze on relative wages. New wages were determined so as to restore the purchasing power of the previous six months, in some cases including a reduction in nominal wages.

It is difficult to assess whether the initial realignment in relative wages had a significant role in later developments. It was probably a strength in the Argentine program of the sixties. In the Cruzado plan it does not appear to have been useful, but mainly because the resulting real wage was much too high to maintain external balance. On the other hand, the three programs that achieved greater success (Brazil in the sixties, and Israel and Mexico in the eighties) did not deal directly with this issue in the design and implementation of the policy packages.

The approach to wage indexation is a second difference across programs. The programs of the eighties attempted to limit the use of indexation and frequency of indexation, although this in practice was very difficult to do. Wage indexation was prevalent in Israel and Brazil during the eighties prior to the stabilization programs. Indexation was not eradicated in either case as wage adjustments became contingent on inflation exceeding some trigger point. In the Cruzado plan the trigger point was 20 percent while in Israel, indexation was initially suspended

---

[10] The larger increases (24 percent) were for contracts that were about to expire (i.e. the older contracts) with smaller increases (up to 8 percent) for those contracts that were signed just before the plan. Public sector wages were increased by 15 percent, which roughly corresponds to the average raise in the private sector.

for three months with a trigger point of just 4 percent, later increased to 7 percent.

A different story is observed in the Brazilian programs of the sixties, where indexation was introduced by the program. The formula included backward and forward looking elements, with the latter consistently underestimated by the authorities to maintain control on real wages. Nevertheless, given today's perception about the rigidities introduced by backward indexation, it looks surprising that the authorities introduced rather than eliminated indexation in the midst of a stabilization program.[11]

iii. Exchange rate policy

The exchange rate appears to be the preferred nominal anchor in heterodox stabilization programs. In all programs the exchange rate was frozen at the outset. In some of them, as in Krieger Vasena and to some extent in Mexico, this was preceded by a maxi-devaluation which was intended to provide a cushion to avoid (or at least postpone) an overvaluation of the domestic currency. In all cases, the initial value of the exchange rate was changed at a later stage. The main differences (which we will examine shortly) were on the timing of the devaluation and on the rule adopted for adjusting the exchange rate after the first devaluation.

b. Flexibilization and Decontrolling in the Second Stage

---

[11] Indexation, however, was not seen during those days as an obstacle for reducing inflation, just the opposite, people like Milton Friedman were advocating the use of indexation to minimize the costs of reducing inflation. In Brazil, however, it was apparently adopted in order to provide a mechanism to allow the economy to adapt to inflation.

Only two of the programs of the eighties have extended their success beyond the initial stage, Israel and Mexico. The experiences of the sixties are more difficult to evaluate because the beginning of the second stage is harder to identify while the policies adopted in some cases implied greater reliance on controls.

The flexibilization period in Israel started approximately six months after the beginning of the plan. Price controls were removed on a small number of goods starting in January 1986, and the number of products under control slowly decreased from 80 percent at the beginning of the program to approximately 25 percent in January 1987.[12] The exchange rate remained fixed against the US dollar throughout the flexibilization period, thus continuing to fulfill the task of main nominal anchor. The first devaluation in fact took place much later, in January 1987.

The approach was different in Mexico where controls for most private sector prices were never in effect. After the initial freeze the situation remained basically unchanged until December 1988, when the new administration came to power. The first substantive changes in the program were announced at that time and consisted of an annual increase in minimum wages and public sector prices and the adoption of a preannounced devaluation schedule. This was followed by an extension of the Pacto until March 1990. In Mexico the authorities have so far been able to maintain control over the nominal anchors during most of the flexibilization stage, though prices have not been fully liberalized and in this sense this stage

---

[12] There had always been price controls in the Israeli economy for public utilities, some foodstuffs and for those industries where firms had monopoly power. By January 1987 the nature and comprehensiveness of control returned to the pre-stabilization period.

can not be considered as completed.

The design of this stage in Israel and Mexico stands in sharp contrast with the two failures of the eighties. Neither the Austral or Cruzado plans had a strong nominal anchor during the flexibilization stage. In both programs all the initial anchors were abandoned at that time, as wages, controlled prices and the exchange were essentially adjusted according to past inflation.

The outcome is less clear cut in the programs of Uruguay and Argentina of the sixties. Although it is difficult to trace the beginning of flexibilization to a specific date, it probably started a few months after the programs were launched coinciding with increases in wages and some controlled prices. The increased flexibility was undertaken without the elimination of price controls. The end of the flexibilization period in Uruguay could be linked to the devaluation of March 1972, while it is more difficult to determine it in Argentina, where the exchange rate remained fixed once controls on prices and wages had been in practice removed.

The Brazilian program of the sixties is a unique case which deserves separate treatment. Price controls were not removed during the flexibilization stage; in fact their use was intensified in 1967 as they became mandatory for most of the large industrial sectors.[13] Flexibilization, instead was initiated with the adoption of a crawling peg rule for the exchange rate and with the introduction of a new indexation

---

[13] Indeed two institutes the CONEP (National Commission of Price Stabilization), and the CIP (Interministerial Price Commission) were created at that time to supervise controls (see Simonsen (1974)).

rule for wages.

D. Fiscal and Monetary Policies

a. Fiscal Policy

An adequate and sustainable reduction in the budget deficit is a necessary condition for maintaining price stability, particularly in the medium term. In almost all the programs included in this study there was an initial reduction in the budget deficit. There is less homogeneity regarding the sustainability of the fiscal effort. In the Brazilian program of the sixties, and in the Israeli and Mexican programs of the eighties, the reduction in the budget deficit was maintained throughout, while in the two Argentine programs, the Cruzado and the Uruguayan program, the reduction in the deficit did not survive the initial stages.

The role of fiscal policy is particularly important in the second stage of a heterodox stabilization program. A tight fiscal stance at this stage is crucial to ensure that demand pressures remain under control at the time in which prices are flexibilized.

A significant difference exists between the size of the fiscal adjustment in the two eras. The reductions in the budget deficit were more impressive in the eighties mainly because the fiscal imbalances were also larger. In Argentina the deficit was cut by over 8 percentage points of GDP between the first and third quarter of 1985; likewise, a reduction of over 7 percentage points was effected in Israel over the same period. In the sixties, on the other hand, the fiscal adjustment in Brazil only required a cut in the budget deficit of approximately 3 percentage points of GDP, while in Uruguay and Argentina the reductions were even smaller. The large adjustment of the eighties was facilitated by the drastic fall in

inflation which partly offset the erosion in government revenues resulting from the Olivera-Tanzi effect.

In the successful cases of both eras the fiscal adjustment achieved roughly a balance in the fiscal accounts, and in two instances (Israel in 1986 and Mexico in 1987) there was a small surplus in the operational balance of the public sector. Large reductions in the deficit which fall short of the non-inflationary finance target are bound to fail, as it happened for example in the Austral plan where a cut in the deficit of about 7 percentage points of GDP was not enough to sustain stability.

Also important is the nature of the reduction in the budget deficit. In the success stories (Brazil in the sixties, Israel and Mexico) the fiscal adjustment was effected in a balanced way through reductions in expenditures and increases in tax revenues (see tables 1, 6, and 7). Reductions in government expenditures are particularly important to increase the credibility of the program and the sustainability of the fiscal adjustment. In the failed experiments, on the other hand, most of the reduction in the deficit was effected through increases in tax revenues while very little was done on the expenditure side.

b. Monetary Policy

A casual look at the behavior of monetary aggregates in the heterodox programs of the two eras suggests that monetary policy did not play a central role in most of them. Money supply was primarily accommodating in the programs of the sixties, despite some tightening in the supply of domestic credit to the public sector. Tables 1 through 3 show the annual rates of growth of M1 and M2, which during those years were proportional to, and in most years exceeded, the increases in the price level. We only

find some evidence of tight money in Brazil in 1966, when M2 expanded by only 22 percent while inflation remained at around 40 percent per year and in Uruguay in 1968.

A similar pattern is observed in the eighties, where although tight domestic credit was used in some instances (especially in Israel and in Mexico during the first months), monetary variables did not perform the role of nominal anchor. In the Austral plan monetary policy appears to have been accommodating, while the growth in monetary aggregates exceeded inflation, this was not necessarily inflationary because the demand for money was expected to increase in the new low inflation environment. The Cruzado plan adopted the opposite, unsound approach as the authorities opted for a large expansion in the money supply at the outset in order to bring down interest rates quickly.

High real interest rates is a feature observed in most of the heterodox programs of the eighties. As can be seen in figure 3, specially in Israel and Mexico during the first stage, the initial rapid fall in inflation was not accompanied by a proportional reduction in nominal interest thus yielding high real ex-post interest rates. Lack of reliable evidence makes difficult to examine whether a similar phenomenon occurred in the sixties. Interest rates in the official market (for which data exists) were under government control while data on curb market rates is difficult to obtain.

The existence of high interest rates was used as evidence that monetary policy was tight during this period.[14] These high real rates,

---

[14] See for example Dornbusch (1986).

however, could instead have reflected lack of credibility on the sustainability of the program, particularly on the ability of the central bank to peg the exchange rate. This alternative explanation would argue that while real interest rates were high in an ex-post sense, ex-ante real interest rates were not necessarily high. This second view perhaps provides a more appropriate explanation for the persistence of high real interest rates, specially because in economies with open capital markets, as is the case in Mexico, the monetary authorities cannot control the money supply over extended periods.[15]

IV. Outcomes of the Programs

The heterodox programs of the two eras were successful in bringing down inflation during the first stage. The use of income policies was an important asset to achieve rapid reductions in inflation. In many programs however, price stability was difficult to maintain beyond the first stage. The failures of the Argentine and Uruguayan programs in the sixties, and of the Austral and Cruzado plans in the eighties are evidence of this fact. The medium term success stories were few: Brazil was able to maintain low inflation for over eight years in the sixties, Israel has been successful for over four years, and Mexico has maintained its program in course for almost two years.

While there are many similarities in the evolution of the successful programs, they share some common features with the less successful ones,

---

[15] For empirical evidence on Mexico see Cumby and Obstfeld (1983).

particularly in the first stage. The Israeli and Argentine programs of the eighties, discussed in more detail in Blejer and Liviatan (1987), yielded similar results during the first few months. Likewise there are many similarities between the outcomes of the Brazilian program of the sixties and the Krieger Vasena program. Developments were also analogous in some of the failed experiments, as for example between the Uruguayan and the Cruzado plans. In the remainder of this section we will compare the evolution of the various programs during their various stages. We will attempt to highlight those aspects that are unique to each program and that are important to understand their success or failure.

A. Inflation

a. The Eighties

The four programs of the eighties were successful in sharply reducing inflation during the first stage. The effectiveness in this respect was common to all programs, regardless of whether or not they undertook a large fiscal adjustment; the short run reduction in inflation was similar in the Cruzado plan where the budgetary situation was ignored and considered irrelevant as it was in Israel, where the deficit was cut substantially. The easiness with which inflation can be brought down in the short run is a striking characteristic of the heterodox approach; a shock treatment based on price and wage controls is usually very effective in pulling down inflation very quickly, in chronic, high inflation countries.

The results were mixed during the flexibilization stage. This is usually the critical period of a heterodox stabilization program since it is at this stage when the overall design and implementation of the policy package becomes an important element for its success. Two aspects of the

program are particularly important to sustain the stabilization effort during this stage. First, there is a clear need to maintain the "fundamentals" at levels consistent with price stability. The fiscal accounts should be roughly balanced, while in some cases an over-adjustment might be needed to support a policy of generalized excess supplies while prices are flexibilized, and to provide an unambiguous signal about the authorities' commitment to maintain the stabilization program. Second, it is necessary for the system to have a strong nominal anchor in order to avoid increases in inflation which are disproportionate with the underlying situation in the fundamentals during flexibilization.

The failures of the Cruzado and Austral plans surfaced during this stage (as can be noticed from figure 1-a). In Brazil, a policy of unsustainable budget deficits, high real wages and loose monetary policy resulted in a situation of overall excess demands which led to a sharp acceleration in inflation starting in November 1986. Flexibilization in the Austral plan started in April 1986. Inflation increased during this period, although in a much more moderate way than in the Cruzado, mainly because the fiscal imbalance was much smaller. This increase in inflation reflected both a lack of fiscal and monetary discipline, and the absence of a strong nominal anchor. As can be seen in figure 4-a, the fiscal adjustment effected in the second semester of 1985 started to be relaxed prior to the flexibilization period. Since there had also been an expansion in expenditures by the private sector, this meant that flexibilization took place in an expanding economy. As important was the lack of a strong nominal anchor; the ones used in the first stage were not maintained during the flexibilization stage. New rules were announced for

wages, public sector prices and the exchange rate which in essence amounted to backward indexation of nominal variables.

Israel and Mexico, on the other hand, successfully completed the first stage and were more effective in undertaking flexibilization. In both cases a tight fiscal stance was maintained throughout; Israel over-adjusted on the fiscal side and had a budget surplus in 1986; Mexico started from a surplus in 1987 and while it had a small deficit in its operational balance in 1988 (caused mainly by a deterioration in the price of oil in world markets and a substantial increase in domestic real interest rates), it sustained a large surplus in its primary balance (figure 4-a). Both countries also maintained strong nominal anchors through the flexibilization stage, and attributed to the exchange rate a central role in this phase.

The flexibilization period started in Israel in January 1986, six months after the implementation of the program. There was a gradual lift of controls of private sector prices, followed by greater flexibility in wages. The exchange rate remained essentially fixed to the US dollar throughout this period, except for the fact that starting in August 1986 the shekel was pegged to a basket of currencies. In Israel the fixed exchange rate was somewhat easier to maintain than in other countries the Shekel depreciated by 17 percent in real terms against the basket of currencies as a result of the fall of the Dollar in the world markets. In Mexico, the first adjustment in nominal variables took place in December 1988, coinciding with a decision to extend the Pacto. It was announced a rule for the devaluation of the Peso (1 peso per day) until June 1989, amounting to approximately 8 percent for the whole period. The extension

included increases for minimum wages and controlled prices, while most prices in the private sector were allowed to be freely determined as before.

Tight fiscal policy in conjunction with the maintenance of a strong nominal anchor were effective to prevent an increase in inflation during the flexibilization period. In both countries, however, annual inflation remained in the 20 percent step, and it has proved extremely difficult to bring it down below that level. In fact, this appears to be a broader phenomenon observed not only in successful heterodox programs but also in orthodox programs such as those of Chile and Bolivia.

b. The Sixties

The three programs of the sixties were also successful in bringing down inflation. The beginning of the income-policies based stabilization in Brazil could be traced to 1965 coinciding with the introduction of voluntary price controls. As can be seen in figure 1-b there was a sharp deceleration in inflation in the third quarter of that year, followed by an almost continuous fall until it basically stabilized in the low twenty percent range by 1967. Likewise, the fall in inflation was also slow but relentless in the Krieger Vasena program following the introduction of controls in the second half of 1967. Inflation fell from 25 percent in 1967 to 9.8 in 1968 and to 6.8 percent in 1969. More dramatic was the fall in inflation in Uruguay after June 1968; inflation was brought to a halt in just one month, and the price level remained stable for the remainder of the year.[16] This supports the findings of the eighties that a heterodox

---

[16] Inflation fell from 13.5 in June, to just over half a percentage point in July and the price level actually dropped by 1.6 in August.

shock treatment in cases where inflation is high and accelerating can produce spectacular results in the short run.

The three programs evolved along different paths after the initial reduction in inflation. Brazil was the most successful case, where inflation remained low for a number of years while it experienced very high rates of growth. As can be seen in table 1, inflation fell even further during the early seventies reaching just 12 percent in 1973. This spectacular economic performance for over six years in which low inflation was accompanied by robust growth is now widely known as the Brazilian Miracle. The fall of inflation was less persistent in Argentina and Uruguay, but still lasted for over two years.

Persistence on the fiscal side was a crucial element for the success of the Brazilian program. This was supported by a nominal system in which price controls were the main nominal anchor. The reliance on income policies for the purpose of controlling inflation on a long term basis was a unique feature of the Brazilian program. This un-orthodox approach was necessary in order to provide a strong nominal anchor to the system, since the other two original anchors (wages and the exchange rate) were by then being adjusted in accordance to past inflation, while monetary policy had been accommodating from the outset.

While it is difficult to establish the beginning of the flexibilization stage in Argentina and Uruguay, the evidence indicates that some flexibilization took place in both programs without igniting significant inflationary pressures. In the Krieger Vasena program, for example, the two first wage increases (in January 1968 and 1969) did not lead to any noticeable increase in inflation. Likewise, in Uruguay the

increase in wages in the private and public sectors effected in December 1968 and in December 1969 did not appear to have had an effect on inflation.[17] In both countries this was possible because the economy maintained two strong nominal anchors, the fixed exchange rate and price controls.

The eventual failure of the programs of the sixties in Argentina and Uruguay can be tied to the lack of persistence in maintaining fiscal discipline. This can be seen from figure 4-b, which shows the behavior of inflation, devaluation and budget deficits over the period. In both cases the budget deficits display a U shape. There was an important fiscal adjustment at the beginning which lasted for approximately two years which was critical for the initial positive results of the anti-inflation effort. This was followed, however, by a relaxation at a later stage in the fiscal effort which led to a resurgence of inflation, although this was partly postponed by delaying exchange rate devaluations. In the two programs, the deterioration in the fiscal balance preceded the resumption of inflation. The fiscal cycle is a feature observed in many stabilization programs. In Argentina, for example, all major stabilization efforts during the last three decades started with significant reductions in the budget deficit, which in all cases were later abandoned (see Kiguel and Liviatan 1988).

B. Output and Unemployment

The heterodox approach is primarily used as a way to limit the costs of reducing inflation usually encountered in orthodox programs. The available evidence indicates that in most cases the programs have been

---

[17] For details on these increases see data in Viana (1988).

successful in at least limiting the unemployment cost of disinflation during the first stage. Figures 5-a to 5-b show the behavior of these variables in the programs under consideration.

None of the programs led to large increases in unemployment or to a prolonged recessionary period. Just the opposite, in both the programs that succeed and in those that failed there was an expansion in the economy that started during the first stage. In the Cruzado plan, for example, the program resulted in a sharp increase in industrial production and a consequent reduction in unemployment. The economic boom lasted until November, when the authorities made an adjustment in policies including a devaluation and the removal of the freeze. Although in Brazil the expansion was partly caused by an initial set of policies favoring excess demands which made the Cruzado "incredible", a similar pattern for output and unemployment is observed in Israel and in the Austral plan. Even in the Israeli program which adopted and persisted on a tight fiscal stance, the economy started to experience an expansion during the first stage that would last for over two years. After a small increase in unemployment in the third quarter of 1985, unemployment fell and remained low until the end of 1987, while industrial production remained strong. Likewise, industrial production started to expand in Argentina in the first months of the program, at a time when the fiscal situation remained under control and the program could be thought to have at least some chance of success. While Mexico was also able to cut inflation without noticeable reductions in economic activity, we do not observe the expansion shared by the other programs.

The programs of the sixties were even more effective in terms of

growth. As can be seen from figures 5-b the period of price stability was accompanied by sustained high rates of growth. In Brazil, for example, the annual rate of growth between 1967 and 1973 exceeded 11 percent, while Uruguay experienced the highest growth rate of the decade (averaging 5 percent per year) in 1969-70.

These systematic increases in output are difficult to explain using traditional aggregate demand based type of arguments. The tightening in fiscal policy observed in most programs, at least in the early stages, and the initial fall in real wages would a priori lead to a fall in aggregate demand and output. The recent work emphasizing the intertemporal aspects of consumption decisions is perhaps more useful to understand this phenomenon. An increase in demand could take place if the exchange rate based stabilization program is not credible and hence is perceived as temporary by private agents (as in Calvo 1987). In that case, if agents anticipate that there will be a balance of payments crisis in the near future resulting in a devaluation and in the introduction of import restrictions, consumption of tradeables and hence imports will increase initially. Consumption of domestic goods will also increase if domestic and foreign goods are complements.

Lack of credibility on the sustainability of the stabilization effort was an important endogenous force behind the increase in output in all the programs. In the programs of the sixties this was reinforced by government policies aimed at increasing investment with the objective of restoring long term growth. In particular the announcement of the programs included as objectives the need to maintain the availability of credit to the private sector (part of which was provided at subsidized interest rates),

while in the three programs there was an increase in the public sector investment.

The increase in output, however, was not sustained in most programs and the costs of stabilization were faced at a later stage. In Israel, a successful program, the initial expansion was reversed at a later stage and the economy entered a recessionary period in 1988 which had even turned worse recently. The cost was also paid later in the failures; in Uruguay, the Austral and the Cruzado there was a reduction in economic activity in the aftermath of the failures.

C. The Trade Balance, Consumption, and Investment

The increase in output was accompanied by a deterioration in the trade balance. This was most dramatic in Uruguay and in the Cruzado plan, although as can be seen from figures 6-a and 6-b this phenomenon is observed in almost all the programs. This behavior of the external accounts is just opposite to the one observed in the orthodox programs where the initial impact was a sharp improvement in the external accounts (see Kiguel and Liviatan 1988).

In the programs of the sixties the increase in demand was driven by a combination of increases in private consumption and total investment (private and public). The expansion in investment was partly due to special tax and financial incentives which were implemented during the programs. In the eighties, on the other hand, while there was also an expansion in consumption, investment remained rather depressed. As can be seen from tables 4 to 6 there were reductions in investment in Brazil and Israel, and to a lesser extent in Argentina.

Two factors might be important to explain the dissimilar behavior of

investment in the two eras. First, by and large the stabilization programs of the eighties were launched in a more unstable macroeconomic environment in which the fiscal problems and the debt crisis made long term investment decisions especially difficult. This was not the case in the sixties, where a) the size of the fiscal disequilibria were much smaller (e.g. in Argentina the budget deficit was 3 percent of GDP in 1966, compared with 12.6% in 1984), and b) the countries (both public and private sectors) had access to international financial markets. Second, the high real interest rates that were observed in the eighties created an additional bias against investment. The programs of the sixties, on the other hand, did not encounter this difficulty mainly because they were implemented in financially repressed economies with controlled interest rates. In addition, there was a deliberate effort by the authorities at that time to increase investment, particularly in the public sector, since the plans were designed as comprehensive strategies aimed at the double objective of stopping inflation and restoring growth. The better fiscal situation of the sixties made this increase in public investment feasible. Private investment was stimulated through additional lines of credit with favorable terms and tax benefits.

D. Real Exchange Rate and Real Wages

There were also similarities regarding the behavior of real wages and the real exchange rate (see figure 8-a and 8-b). In most programs the initial maxi-devaluation was followed by an exchange rate freeze. Since in general inflation tends to remain above international levels during the exchange rate freeze, this policy results in a continuous appreciation of the real exchange rate. Wages were also frozen at the beginning in most

cases, although they were gradually flexibilized over time. Real wages portray a U shape, they deteriorated during the initial freeze but recovered previous levels over time.

The reason for this pattern is related to the design of the programs. As discussed in Blejer and Liviatan (1987), the design of an incomes policies based stabilization program calls for an initial reduction in real wages accompanied by a depreciation in the real exchange rate. As the exchange rate usually is the main nominal anchor, a central objective is to keep it fixed for as long as possible. In order to maintain the exchange rate fixed while inflation continues (probably at much lower levels) as a result of "inertial" elements, the initial devaluation should produce an overshooting of the real exchange rate. Real wages, on the other hand, should be reduced initially to support a policy of excess supplies and be allowed to increase over time as the overall situation improves. Nevertheless, even this type of strategy cannot guarantee that the real exchange rate will not be overvalued at a later stage.

In this respect, the three programs of the sixties and the programs of the eighties displayed a similar pattern. As can be seen from figures 8-a and 8-b, there were nominal devaluations at the beginning which coupled with the imposition of price controls were effective in achieving an initial real depreciation of the currency. This period was followed in most cases by a continuous appreciation, as prices continued rising while the exchange rate remained fixed to provide a nominal anchor to the system. In some cases, such as the Cruzado, the appreciation occurred very rapidly, while in others, namely in Israel and in the Krieger Vasena program, this was a slower process.

In all cases, regardless of their success in controlling inflation, the authorities faced great difficulties when trying to determine whether and when a devaluation was warranted. There is usually a trade off between avoiding an overvaluation of the currency and a deterioration on the external balance on the one hand, and the fears that the devaluation might destabilize the anti-inflation process on the other.

The available evidence suggests that the authorities are usually reluctant to undertake a devaluation once a program of this type is in place. Uruguay in the sixties and the Cruzado plan in the eighties are clear examples of cases where as a result of an unwillingness to devalue the currency became grossly overvalued. As can be seen from figure 9-a and 9-b, in both cases the depreciation of the exchange rate in the black market started to take place well before the official devaluations in the official exchange rate were finally effected, resulting in large premiums on the parallel exchange rate. The size of these premia made the devaluation all but unavoidable. The situation was more dramatic because, as can be seen from figures 7-a and 7-b, in both episodes the period of appreciation was accompanied by significant deteriorations in the trade balance. The devaluations came too late and were followed by a rapid acceleration in inflation, highlighting one of the biggest dangers of this type of policy.

Even in the more successful programs there were periods in which the domestic currency became overvalued. The Cruzeiro (in the Brazilian program of the sixties) and the Shekel in Israel during the eighties experienced overvaluation during the fixed exchange rate period. The Mexican evidence is less clear in this respect, although there is some

indication that the currency was overvalued by the end of 1988.

The approach adopted to overcome this difficulty varied across countries. Israel and Argentina under Krieger Vasena opted for step devaluations, while Brazil in the sixties and Mexico more recently moved to a crawling peg. There are trade-offs between these two approaches.

A step devaluation has the advantage of providing a nominal anchor to the system and in this respect it can send a stronger signal regarding the determination of the government not to accommodate ongoing inflation. The main risk with this strategy is that the devaluation can be delayed, and hence that a larger devaluation will be needed in the future with its potential destabilizing effect on inflation.

The main advantage of the crawling peg is that, through very frequent adjustments in the exchange rate, it greatly reduces the risks of gross overvaluation of the domestic currency. In addition it avoids the cycles in the real exchange that are bound to occur under step devaluations. The main disadvantage is that the exchange rate may lose its role as nominal anchor when it takes a passive role accommodating inflation.

V. Long Term Aspects of the programs

A. The costs of disinflation in the successful heterodox programs

A central reason for following the heterodox approach is to dampen the costs of disinflation. While the heterodox approach appears to be effective in this respect during the first stage, the available evidence suggests that difficulties must be faced at some stage (either before or after the heterodox phase), and that at least in the successful programs

the costs of disinflation had to be born at some point. A full evaluation in this respect thus requires that the programs be examined from a longer term perspective.

In Israel, for example, the costs in terms of unemployment were very small during the first two and a half years of the program. There was a very short recessionary period (less than a year) at the beginning followed by a strong expansion in 1986 and 1987. The recessionary phase came much later, but it has extended for over a year with unemployment rates exceeding 9 percent in 1989. To what extent was the ensuing recession related to a program that started over two years earlier? It essentially was, according to a line of analysis discussed in more detail in Liviatan (1989); once controls were removed the program became in effect an exchange rate based orthodox stabilization program and hence the resulting costs were similar to other programs of that type.

In the other two success stories, Brazil of the sixties and Mexico, the orthodox phase preceded the heterodox period. In Brazil, the worse part of the recession occurred between 1963-65, with some recovery during the first stage of the heterodox period (1966 and 1967), and strong growth thereafter. Likewise in Mexico, economic growth was dismal during the orthodox phase, but unlike other heterodox programs it did not recover during the heterodox phase.

This evidence indicates that the heterodox approach cannot be expected to avoid altogether the costs of disinflation. A recessionary period can be considered as a test for the authorities regarding their determination to maintain low inflation, and in this way provide an important signal to the private sector. This means that at some point the

authorities will have to refrain themselves from accommodating inflation (via monetary or exchange rate policies) in order to sustain the stabilization effort and eventually succeed in controlling inflation.

B. The costs of failure

A common feature in heterodox programs is the reluctance generally displayed by the authorities to devalue. The over-commitment to the fixed exchange rate is specially dangerous when there are large underlying imbalances resulting from substantial budget deficits. In most of the failures these imbalances surfaced prior to the devaluation in the form of large trade deficits, increases in the premium on the black market exchange rate, an overvaluation of the domestic currency or high real interest rates.

An extreme example of this phenomenon is Uruguay in the sixties. In that case there were clear indications of macroeconomic imbalances by 1970. In that year, as can be noticed in table 3, the current account and the balance of payments were in deficit, the exchange rate started to show signs of being overvalued and there was a significant rise in the premium on the parallel exchange rate (see figure 9-b). The macroeconomic situation underwent further deterioration in 1971, as the current account deficit increased accompanied by a further real appreciation of the domestic currency and a drastic increase in the premium. Throughout this time the exchange rate remained fixed. A devaluation was undertaken in late 1971, but it was followed by a significant increase in inflation and a devaluation inflation cycle (see figure 1-b).

The imbalances were not as pronounced in the Krieger Vasena program where some signs of macroeconomic problems emerged in 1969. During that

year the exchange rate displayed some indications of overvaluation while there was a large deficit in the current account (see table 3). The imbalances, however, were much smaller than in Uruguay, partly because the fiscal situation had not yet deteriorated. The response was a 25 percent devaluation in June 1970, which was effective in restoring external balance. Despite some increase in inflation, it was not as dramatic as in the case of Uruguay.

This difference in the timing of the adjustment in both countries is important to understand the ensuing developments in inflation. In Uruguay the adjustment was long overdue by the time of the devaluation. Postponing the adjustment was a costly strategy because a massive devaluation was required and the result was a significant increase in inflation. In Argentina, on the other hand, the imbalances were smaller and the adjustment was more gradual.

A similar difference is observed in the speed of events after the initial failures of the Austral and Cruzado plans in the eighties. The exchange rate freeze was overextended in the Cruzado plan and the result, as can be noticed from figure 1-a, was an explosive path of inflation immediately after the devaluation was undertaken. During the Austral plan, on the other hand, the freeze was abandoned while imbalances were not as large and, at least initially, the result was a more moderate increase in inflation.

The overall performance of the economy deteriorated in the aftermath of the programs in all cases. In the two failures of the sixties the countries experienced sustained growth during the period of price stability. Annual GDP growth in Argentina averaged 6 percent between 1968

and 1970, and 5.4 percent in Uruguay in 1969 and 1970. This trend was reversed during the inflationary period, with the rate of growth in Argentina averaging 2.3 percent during 1971 and 1976 while it was slightly negative in Uruguay between 1971 and 1973. A similar pattern can be observed regarding investment (see tables 2 and 3), which in both countries increased strongly during the period of macro-stability but experienced a sharp fall as inflation rekindled. The evidence is less clear on the external side, where there are no marked differences between the two periods, as can be seen from the evolution of the trade and current account balances. It should be pointed out, however, that the good external performance during the high inflation years was partly due to an improvement in the terms of trade, and that in Uruguay this was supported by an adjustment in the fiscal imbalance.

The performance in the eighties in Brazil and Argentina after the failures of the Austral and Cruzado plans has been dismal. By and large both countries experienced a period of high uncertainty about macroeconomic performance characterized by low and erratic growth, recurrent balance of payments crises, high real interest rates and pronounced inflation-stabilization cycles. These cycles (shown in figure 1-a) are a novel feature and are a direct consequence of the failure of the heterodox approach. As discussed in Kiguel and Liviatan (1989.b) both countries entered a new regime in which inflation can accelerate very quickly and even reached hyperinflation levels, only to be stopped through the reimposition of controls. This regime is self defeating, as inflation accelerates each time controls are removed awaiting the new round of controls.

C. Sustaining price stability in the long run

It is difficult to pinpoint the moment in which a stabilization program can be considered as completed and a new era starts in which the problems become more akin to those of low inflation economies. When price stability is achieved in economies that traditionally belonged to the group of chronic inflation countries, the low inflation stage is likely to differ from that of the traditional low inflation economies. For example, if the countries developed indexation mechanisms during the preceding high inflation period those mechanisms will be difficult to eradicate in the new equilibrium. This happened in Israel where, paradoxically, the trigger rates of inflation under which wages would be adjusted were smaller in the low inflation era than in the previous one. In these episodes, the indexation rule and other institutional arrangements adopted after the stabilization program were a reflection of the the inflation history of the economy and of the characteristics of the stabilization strategy. For example, indexation is difficult to eradicate in countries where failed stabilization is the rule rather than the exception. It is useful to compare the policies and strategies adopted to maintain low inflation in the only two cases for which we have a long enough perspective, Brazil in the sixties and Israel in the eighties.

An important difference between these two successes was the philosophy towards indexation. In Brazil, the arrangements in the labor markets, namely wage indexation, and the exchange rate rule were maintained throughout the period of price stability. Institutional arrangements were not changed during this period, although they are certainly less justified in an economy with low inflation. Israel has taken the opposite approach

in dealing with this institutional inertia. The authorities are attempting to remove indexation from the economy as a way to reduce the destabilizing effects that these arrangements might have if the economy faces an external shock.

The Brazilian program of the sixties provides the most interesting insights from a long term perspective. The long period of low inflation was disrupted in the mid-seventies, coinciding with the first oil shock. Although the increase in inflation at that time was a world-wide phenomenon, inflation never came down from the higher levels. Just the opposite, inflation reached a new plateau (of around 45 percent) and stayed there until 1979, the time of the second oil shock.

The increase in inflation in 1973-75 was caused by a combination of factors, some internal, other external. According to estimates by Malan and Bonelli (1977), Brazil reached full capacity during 1972. Traditional arguments suggest that the economy was becoming overheated and that in the absence of restrictive policies it would enter an inflationary period. On the external side, the oil shock had important cost effects, particularly because it led to large devaluations (19 percent in 1974 and 22 percent in 1975) to deal with the large imbalances in the trade and current account balances.

Why did inflation remain in the new higher plateau once the economy adjusted to the shocks? The answer to this question has been partially addressed in section IV. The system developed during the "miracle" years was not strong enough to confront the nominal shocks of the mid-seventies. Monetary and exchange rate policies were basically accommodating, while wages were adjusted according to an indexation rule. Price controls became

the main nominal anchor of the system, and was in effect the only available mechanism to avoid accelerations in inflation.

Israel adopted a different strategy to tackle this problem. The initial reliance on price controls and the fixed exchange rate was slowly being replaced by one in which the exchange rate and high interest rates played more important roles as a stabilization instrument. There has also been an effort to limit the extent of backward indexation of wages from the economy in order to ensure greater flexibility in relative prices. Although this seems to be an appropriate path, more time will be needed to evaluate whether this strategy will lead to sustained low inflation and to assess what are the costs of a continuous commitment to using the the exchange rate as the main nominal anchor in the process of bringing down inflation.

VI. Final Remarks and Policy Issues

Heterodox programs are usually adopted as an alternative to the orthodox approach in an attempt to minimize the costs of bringing down inflation. The evidence obtained in this study indicates that the heterodox approach can indeed bring down inflation very rapidly without large costs in the short run; this stage, however, is the easy part of a heterodox programs. The costs have to be born at a later stage when the authorities have to concentrate all their efforts to sustain low inflation. This second stage is the difficult and costly part of heterodox programs. The magnitude of these costs and how do they compare with those of an orthodox program are yet not clear, more evidence will be needed in this

respect. What is clear is that while these costs appear up-front in orthodox programs they are delayed in the case of heterodox plans.

Whether the heterodox program should be based on a gradual or shock strategy largely depends on the rate of inflation prior to stabilization. In chronic, high inflation economies a shock strategy is generally more appropriate. The main advantage of the heterodox strategy is in facilitating a rapid transition to low inflation. When the orthodox approach was followed in chronic inflation countries the reductions in inflation were typically slow and in this sense they undermined the support for the programs. The heterodox approach has an advantage in this respect, since the initial success in reducing inflation increases the overall support to the program thus opening the possibility for the introduction of additional measures on the fiscal side to deepen the stabilization effort. This opportunity, however, is usually foregone, only Israel and to some extent Mexico used this success to introduce further fiscal adjustment. In most cases, as for example in the Austral and Cruzado plans, the initial success is taken as evidence that more fiscal adjustment is not required leading to a complete collapse of the stabilization effort.

A gradual approach is more appropriate for low inflation countries. This is in fact the strategy followed in Argentina and Brazil in the sixties. Income policies probably contributed to a faster reduction in inflation in both countries, but their role was not as critical and their effects not as dramatic as in the shock programs. The case for income policies is much weaker in these cases.

Tight fiscal policy and a strong nominal anchor are two critical components for the success of a heterodox program. The need to maintain a

strong fiscal position certainly goes beyond the first stage and is particularly important during the flexibilization period. In the failures of both eras, the budgetary situation had already deteriorated by the time controls were removed. This is specially clear in the Cruzado plan in the eighties and in Uruguay in the sixties where a relaxation in the fiscal stance during the period of the freeze led to a sharp acceleration in inflation later on. There is also a need to maintain a strong nominal anchor throughout the program. Price and wage controls and the exchange rate freeze provide enough strong nominal support at the beginning. Countries found it more difficult to maintain the nominal anchors during the flexibilization stage. In Israel, for example, the exchange rate had the role of main nominal anchor during the flexibilization period and while it helped to prevent a rekindling of inflation it was at the cost of overvaluation of the currency.

A central message emerging from this paper is that the flexibilization period is the most critical time in a heterodox stabilization program. The available evidence indicates that policy makers do not perceive that this is the case. In the Austral plan, for example, the initial freeze was preceded by careful planning including a sophisticated mechanism to avoid wealth redistribution resulting from the sharp and unexpected reduction in inflation (the desagio). Likewise, the Cruzado plan included an elaborate arrangement to avoid large disparities in real wages across sectors. There was no planning, on the other hand, on policies to support stability or on a strategy to get out of the freeze. An additional message is that there is not much point in putting effort in designing a sophisticated program if there is no determination to support

it with sound fundamental policies. The failures in both eras did not result from poor design on the income policies part of the package. They failed because of lack of persistence on the fiscal side.

In a previous paper we argued that orthodox stabilization programs represent a costly and difficult approach for stopping inflation in chronic inflation countries. Are heterodox programs the alternative? On the basis of this paper we are inclined to favor their use, although we now understand better that the costs of disinflation under this approach are larger than we originally thought. We also learned that the misuse of heterodox programs is very common and that the costs of failure are likely to be greater than under orthodox programs. While there is no easy way to achieve price stability, the heterodox approach can be effective if fiscal discipline is maintained and there is persistence in sustaining the stabilization effort. In fact, there are reasons to believe that in high, chronic inflation countries the heterodox approach has an edge over orthodox. Heterodox programs usually have smaller costs initially, while the costs that they face in the later stages associated with overvaluation of the currency are very similar to those observed in exchange rate based orthodox programs.

VI. References

Barro, Robert J. (1986). "Reputation in a Model of Monetary Policy with Incomplete information," Journal of Monetary Economics, Vol 17, January, pp. 3-20.

Barro, Robert J. and David Gordon (1983.a). "A Positive Theory of Monetary Policy in a Natural Rate Model," Journal of Political Economy, Vol 19, August, pp. 589-610.

_____ (1983.b). "Rules, Discretion and Reputation in a Model of Monetary Policy," Journal of Monetary Economics, Vol 12, pp. 101-21.

Blejer, M. and Liviatan, N. (1987),"Stabilization Strategies in Argentina and Israel, 1985-86", IMF Staff Papers, Vol. 34, no3, pp.403-38.

Blejer, Mario I. and Adrienne Cheasty. (1988) "High Inflation, Heterodox Stabilization and Fiscal Policy," World Development, Vol. 16, No.8, August, pp.867-881.

Bruno, M., G. Di Tella, R. Dornbusch and S. Fischer (1988). Inflation Stabilization, Cambridge: MIT Press.

Calvo, Guillermo (1983). "Staggered Contracts and Exchange Rate Policy," in Exchange Rates and International Macroeconomics, Jacob Frenkel editor, University of Chicago Press, pp. 235-55.

Calvo, Guillermo (1987). "On the Costs of Temporary Policies," Journal of Development Economics, Vol 27, pp. 245-62.

Cardoso, Eliana and Albert Fishlow (1988). "The Macroeconomics of Brazilian External Debt," mimeo.

Cardoso, Eliana and Rudiger Dornbusch. (1987) "Brazil's Tropical Plan," American Economic Review Papers and Proceedings, May.

Cukierman, Alex and Nissan Liviatan (1989). "Optimal Accommodation by Strong Policy Makers Under Incomplete Information," The Foerder Institute for Economic Research, Working Paper No. 13-89, May.

Cumby, Robert and Maurice Obstfeld (1983). "Capital Mobility and the Scope for Sterilization: Mexico in the 1970s," in Financial Policies in the World Capital Markets: The Problem of Latin America, P. Aspe, R. Dornbusch and M. Obstfeld editors, Chicago: University of Chicago Press, pp. 245-76.

De Pablo, Juan Carlos (1972). Politica Anti-inflacionaria en la Argentina 1967-1970. Buenos Aires: Amorrortu Editores.

De Pablo, Juan Carlos (1974). "Relative Prices, Income Distribution

and Stabilization Plans: The Argentine Experience, 1967-1970," Journal od Development Economics, Vol.1, pp.157-89.

Dornbusch, Rudgier (1986). "Money, Interest Rates and Stabilization," Review of Economic Conditions in Italy, Vol.3, pp. 439-53.

Dornbusch, R. and M. Simonsen (1987), "Inflation Stabilization with Incomes Policy Support, A Review of the Experience of Argentina, Brazil and Israel", Group of Thirty, New York.

Dornbusch, Rudiger and Sebastian Edwards (1989). "Economic Crisis and the Macroeconomics of Populism in Latin America: Lessons from Chile and Perú," mimeo.

El Trimestre Economico, (1987) "Planes Antinflacionarios Recientes en la America Latina" Mexico: Fondo de Cultura Economica.

Estudios Economicos (1987). "Programas Heterodoxos de Estabilizacion," Mexico: El Colegio de Mexico.

Finch, M.H.J. (1979). "Stabilization Policy in Uruguay since the 1950s," in Inflation and Stabilization in Latin America, R. Thorp and L. Whitehead Eds., New York: Holmes & Meier Publishers, pp.144-180.

Fischer, Stanley (1977). "Long Term Contracts, Expectations and the Optimal Money Supply," Journal of Political Economy, Vol 85, No.1 (Feb), pp. 191-205.

_____, (1983). "Indexing and Inflation," Journal of Monetary Economics, Vol 12, November, pp. 519-42.

_____, (1987). "The Israeli Stabilization Program 1985-86," American Economic Review Papers and Proceedings, May.

Fishlow, Albert, (1973). "Some Reflections in Post-1964 Brazilian Economic Policy," in A. Stepan, ed. Authoritarian Brazil, New Heaven: Yale University Press.

Foxley, Alejandro, (1980). "Stabilization Policies and Stagflation: The Cases of Brazil and Chile," World Development, Vol 8, pp. 887-912.

Foxley, Alejandro, (1983). Latin American Experiments in Neo-Conservative Economics, Berkely: University of California Press.

Friedman, Milton, (1974). "Monetary Correction," in H. Giersch et al., eds. Essays on Inflation and Indexation, Washington DC: The American Enterprise Institute.

Helpman, Elhanan and Leonardo Leiderman (1988). "Stabilization In High Inflation Countries: Analytical Foundations and Recent Experience," Carnegie Rochester Conference Series on Public Policy, No. 28, pp. 9-84.

Heyman, Daniel. (1987), "The Austral Plan", American Economic Review, Vol.77, No 2 pp. 284-87.

Kafka, Alexandre. (1968) "The Brazilian Stabilization Program 1964-66," Journal of Political Economy, Vol. No. pp.596-634.

Kiguel, Miguel A. (1989). "Inflation in Argentina: Stop and Go Since the Austral Plan," PPR Working Paper, No. The World Bank.

Kiguel, Miguel A. and Nissan Liviatan (1988). "Inflationary Rigidities and Orthodox Stabilization Policies: Lessons From Latin America," The World Bank Economic Review, Vol. 2, No.3 September, pp.273-298.

Kiguel, Miguel A. and Nissan Liviatan (1989.a). "Implications of Policy Games for High Inflation Economies," Mimeo, The World Bank.

_____ (1989.b) "The Inflation Stabilization Cycle After the Austral and Cruzado Plans," mimeo, The World Bank.

Krieger Vasena, Adalbert (1987). El Programa Economico Argentino 1967/69: Un Ataque Global y Simultaneo a la Inflacion, Buenos Aires: Academia Nacional de Ciencias Economicas.

Liviatan,N. and S.Piterman (1986),"Accelerating Inflation and balance of Payments Crises: Israel 1973-1984", in The Israeli Economy, Yoram Ben-Porah Editor. Cambridge: Harvard University Press, pp.320-46.

Liviatan, Nissan (1988), "Israel's Stabilization Program: A Three year Perspective," PPR Working Papers, The World Bank, No. 91, September.

Malan, Pedro S. and Regis Bonelli (1977), "The Brazilian Economy in the Seventies: Old and New Developments," World Development, Vol. 5 Nos. 1/2, pp.19-45.

Meller, Patricio (1987). "Apreciaciones Globales y Especificas en torno del Plan Cruzado," El Trimestre Económico, Vol 54. September, 275-92.

Modiano, Eduardo M. (1988). "The Cruzado First Attempt: The Brazilian Stabilization Program of February 1986," in Inflation Stabilization, Bruno et. al. editors, pp. 215-58.

Pazos, Felipe (1969). Medidas para Detener la Inflación crónica en America Latina, Mexico: CEMLA

Persson, Torsten and Sweder Van Wijnbergen (1988). "Signalling, Wage Controls and Monetary Disinflation Policy," Mimeo, The World Bank.

Simonsen, Mario Henrique (1974), "The Anti-Inflation Policy," in The

New Brazilian Economic, Mario Henrique Simonsen and Roberto de Oliveira Campos editors. Rio de Janeiro, Brazil: Crown Editores Internacionais.

Solimano, Andrés (1989). "Inflation and The Costs of Stabilization: Country Experiences, Conceptual Issues, and Policy Lessons," The World Bank, PPR Working Paper No. 226, July.

Taylor, John. (1979) "Staggered Wage Setting in a Macro Model," American Economic Review Papers and Proceedings, vol. 69, pp. 108-13

Viana, Luis (1988). "The Stabilization Plan of 1968," mimeo, Banco Central del Uruguay.

Table 1

Brazil. Macroeconomic Indicators 1962-1975

	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
1. Inflation and Official Devaluation (Percent in annual terms)														
a. CPI Inflation	51.1	70.8	91.4	65.9	41.3	30.4	22.0	22.7	22.3	20.2	16.5	12.7	27.6	29.0
b. Official Devaluation	43.6	48.3	117.8	51.6	16.9	20.0	27.5	20.0	12.7	15.1	12.2	3.2	10.8	19.7
c. CPI Inflation (Dec to Dec.)	55.8	80.2	86.6	45.5	41.1	24.5	24.0	24.2	20.9	18.1	14.0	13.7	33.8	31.2
d. Official Devaluation (Dec to Dec	35.9	28.3	98.2	19.5	0.0	18.6	32.8	12.8	13.1	13.0	9.8	0.1	17.9	20.1
2. Monetary Statistics														
a. M1- Percent of GDP	17.5	16.1	15.0	17.5	16.0	16.1	16.3	16.2	16.3	15.9	15.7	15.1	14.0	13.6
b. M2- Percent of GDP	18.5	16.8	15.6	18.0	17.2	17.8	18.3	18.4	18.6	18.4	18.1	16.6	15.1	14.7
c. Seignlorage- Monetary Base	4.8	5.2	5.2	5.1	2.3	2.0	3.2	2.3	1.5	2.2	1.5	3.1	2.1	1.7
d. M1- Percentage Change	70.0	64.7	82.1	76.5	16.7	41.9	43.0	28.6	26.6	21.0	40.5	47.5	34.5	44.4
e. M2- Percentage Change	67.0	63.6	82.8	75.5	22.6	45.6	44.6	32.5	28.0	10.6	44.4	44.6	33.0	44.8
f. Monetary Base- Percentage Change	61.7	71.1	83.7	68.6	26.5	25.5	45.7	29.2	19.0	30.9	21.7	51.5	33.5	29.6
g. Monetary System Domestic Credit	81.3	60.5	76.7	49.4	27.0	58.2	55.6	34.7	29.3	39.3	45.3	50.5	50.7	57.3
h. The Central Bank Domestic Credit	82.5	63.4	78.9	27.0	22.9	37.4	55.2	26.6	16.2	39.8	50.0	55.6	67.9	70.2
3. Aggregate Demand (Percent of GDP at current prices)														
a. Private Consumption	60.0	58.9	58.6	57.1	58.2	62.0	60.8	56.3	58.6	59.6	59.7	57.5	70.7	66.5
b. Public Consumption	12.1	12.6	11.9	10.9	11.2	11.6	11.1	10.8	11.3	11.0	10.8	10.4	9.7	10.6
c. Investment	20.3	18.9	19.0	20.0	19.9	17.0	18.9	22.4	10.5	21.1	21.2	23.2	25.4	26.8
d. Exports	4.0	8.9	6.5	7.7	6.8	5.9	6.0	6.6	7.0	6.4	7.3	8.3	8.0	7.5
4. Economic Activity (Percent Change in Real Terms)														
a. GDP Growth	5.2	0.9	3.5	3.1	4.2	4.9	11.4	9.7	8.9	11.3	12.0	14.0	9.0	5.2
b. Private Consumption	6.6	0.7	3.3	0.7	4.3	9.6	10.2	3.2	15.2	13.6	11.4	12.1	12.5	-0.9
c. Public Consumption	2.0	7.2	-2.5	-6.3	4.7	9.6	5.8	7.7	6.7	8.9	8.5	12.3	0.2	15.2
d. Investment	4.8	-9.5	8.7	10.3	6.6	-5.9	19.5	40.0	-0.2	14.1	16.5	24.6	16.5	10.1
e. Exports	-7.4	28.0	-13.5	3.6	11.6	-3.1	16.1	19.4	6.2	5.5	24.2	14.3	2.3	11.6
5. Relative Prices (1970=100)														
a. Real Wage	110.5	112.6	108.4	103.2	96.8	93.7	96.8	98.9	100.0	103.2	107.4	112.6	112.6	n.a.
b. Real Exchange Rate	121.8	110.0	130.2	118.8	103.7	95.6	102.6	104.5	100.0	102.2	112.6	125.9	126.0	120.5
c. Terms of Trade	86.5	86.5	100.9	95.3	88.5	85.1	88.5	95.3	100.0	98.0	100.3	101.1	74.5	74.5
6. External Sector (Millions of US. Dollars)														
a. Trade Balance	-89.0	112.0	344.0	655.0	438.0	213.0	26.0	318.0	232.0	-341.0	-244.0	7.0	-4690.0	-3540.0
b. Current Account Balance	-389.0	-114.0	40.0	368.0	54.0	-237.0	-508.0	-281.0	-562.0	-1307.0	-1489.0	-1688.0	-7122.0	-6700.0
c. Current Account- Percent of GDP	-2.0	-0.5	0.2	1.7	0.2	-0.8	-1.5	-0.8	-1.3	-2.7	-2.5	-2.1	-6.8	-5.4
d. International Reserves	80.0	69.0	154.0	421.0	380.1	154.5	212.3	611.3	1141.7	1696.2	4132.7	6359.9	5215.8	3980.4
7. Public Sector (Percent of GDP)														
a. Total Expenditure	12.9	13.0	12.4	14.9	12.1	11.2	11.5	11.1	11.4	11.8	12.7	13.5	12.8	n.a
b. Total Revenue	8.6	8.8	9.2	13.3	11.0	9.5	10.3	10.5	11.0	11.5	12.5	13.6	13.5	n.a.
a. Operational Deficit	4.3	4.2	3.2	1.6	1.1	1.7	1.2	0.6	0.4	0.3	0.2	0.1	0.7	n.a.

Notes: Seignorage = MB(t)-MB(t-1)/GDP(t), where MB is monetary base.

Sources: International Financial Statistics except:
5(a) from L. Bacha and L. Taylor, "Brazilian Income Distribution in the 1960s".
5(b) Cottani, "Trend in Real Exchange Rate Behaviour in Selected Developing Countries"
5(c) from the World Bank
7(a,b,c) from A. Lemgruber, "Inflation in Brazil", published in "Worldwide Inflation: Theory and Recent Experience", edited by L. Krause and W. Salant.

Table 2

Uruguay Macroeconomic Indicators 1965-1973

	1965	1966	1967	1968	1969	1970	1971	1972	1973
1 Inflation and Official Devaluation (Percent Change in Annual Terms)									
a. CPI Inflation	56 4	73.6	89 2	125 3	20 3	17 0	24.0	76 5	97 0
b. Official Devaluation	83.9	112.9	58 2	130 1	6 2	0 0	2 0	110 2	61 5
2. Monetary Statistics									
a. M1- Percent of GDP	20.0	14.8	18 2	12 7	15 2	14 6	18 7	1e 0	13 9
f. M2- Percent of GDP	35.2	24.0	27 5	19.1	21 3	21 6	27.3	25 5	21 1
g. Seignorage- M1	n.a.	3.8	8.6	4.8	4 7	1 4	5.8	5 5	5 6
h. Seignorage- Monetary Base	n.a.	3.4	5.7	4.2	4 4	1 6	4.6	5 3	5.5
3. Percent of GDP									
a. Private Consumption	68.7	69.3	70 7	74.0	73 1	74 5	72.3	75.5	72 0
b. Total Consumption	81.9	82.3	84 8	87.0	87 9	89.9	88.6	87 8	86 2
c. Investment	11.4	12.0	14 1	10 1	11 1	11.5	12.6	11 8	12 6
4. Economic Activity									
a. GDP Growth	1.0	3.4	-4 1	1.6	6.1	4.7	-1.1	-3 5	3 3
5. Relative Prices (1968=100)									
a. Real Wage	106.5	115.0	112.1	100.0	111.5	110 0	115 7	95 9	94 3
b. Real Exchange Rate	86.1	116.4	97.4	100.0	90.0	80 6	71 4	99 4	104.2
c. Terms of Trade	114.7	114.7	103.8	99.7	99.7	103.8	104.0	130 6	184.5
6. External Sector (Millions of US. Dollars)									
a. Trade Balance	73.2	58.1	13 4	43.4	29.2	21.0	-6.2	102.9	79.0
b. Current Account Balance	73.2	58.1	-4.2	23.4	-19.1	-45.1	-63.5	58.7	37.2
c. Current Account- Percent of GDP	4.2	3.8	-0.3	1.5	-0.9	-1.9	-2.2	2.5	1.3
d. International Reserves	23.7	30.0	22.3	33.6	19.2	13.8	20.1	69.0	100.6
7. Public Sector (Percent of GDP)									
a. Total Expenditure	15.3	14.2	14.5	13.4	13.4	13.8	16.6	15.0	14 5
b. Total Revenue	13.2	14.4	12.2	12.9	12.2	13.8	14.3	13.5	14.5
c. Primary Deficit	2.1	-0.2	2.3	0.5	1 2	0.0	4.3	1.5	0.1

Note: 1. Seignorage- M1 = M1(t)-M1(t-1)/GDP(t)
2. Seignorage- Monetary Base = MB(t)-MB(t-1)GDP(t)

Sources: International Financial Statistic except:
3(a,b,c), 4(a) and 7(a,b,c) from L. Viana. "The Stabilization Plan of 1968"
5(a) Finch, "Stabilization Policy in Uruguay since the 1960s", published in "Inflation and Stabilization in Latin America", edited by R. Thorp and L. Whitehead.
5(b) Cottani, "Trends in Real Exchange Rate Behavior in Selected Developing Countries".
5(c) The World Bank

Table 3

Argentina: Macroeconomic Indicators, 1964-1973

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
1. Inflation and Official Devaluation (Percent in Annual Terms)										
a. CPI Inflation	22.5	28.0	31 9	29 4	16.1	7 6	13.5	34.9	58.4	61 2
b Official Devaluation	0.0	100.0	0 0	50 0	0.0	0 0	33.3	25.0	0.0	0 0
c. CPI Inflation (Dec.-Dec.)	17.1	33.5	27 8	25.2	9.6	6 9	21 1	34 2	49 3	34 2
d. Official Devaluation (Dec.-Dec.)	0.0	50.0	0 0	33 3	0.0	0 0	25.0	20.0	0.0	0 0
2. Monetary Statistics										
a. M1- Percent of GDP	12.8	12.0	12.3	12 2	13.8	14.2	14 8	13.0	11.0	11 3
b. M2- Percent of GDP	17.8	16.9	17.1	16 8	19.3	20.3	21.6	19.5	16.9	17 7
c. Seigniorage- M1	n.a.	2.8	3 9	3.3	3.4	1 5	2.8	4.3	4.2	7 7
d. M1- Percentage Change	n.a.	29.8	28.2	32 3	30.0	20 1	13.3	25.2	39.4	76 9
e. M2- Percentage Change	n.a.	31.1	26 6	31 3	31.6	24.0	15.5	28.1	43 8	78 4
f. Monetary Base	40.7	39.3	27.2	41 4	13.0	0 9	19.7	28.4	43.0	143 1
g. Consolidated Monetary System's Domestic Credit	38.9	26.7	28.4	24.6	28.9	13.8	18.8	41.9	59.3	94 7
h. The Central Bank's Domestic Credit	36.4	36.7	12.2	15.2	26.4	9.0	8.2	48.1	57.3	56.9
3. Aggregate Demand (Percent of GDP at 1960 prices)										
a. Private Consumption	72.5	72.3	72.0	72.0	71.8	70.3	69.5	69.9	69.6	69 5
b. Public Consumption	7.4	6.9	7.3	7.2	7.1	6.8	6.5	6.5	6.3	6 5
c. Investment	19.7	19.4	17 9	18.2	19.3	21.6	22.0	23.5	23.1	21 4
c. Exports	10.6	10.7	11 7	11.2	10.6	11.4	11.6	10.1	10.0	10.8
4. Economic Activity (Percent Change in Real Terms)										
a. GDP Growth	10.3	9.2	0.6	2.6	4.3	8.5	5.4	3.7	1.9	3 4
b. Unemployment	6.5	5.4	6.0	6.5	5.5	4.7	5.3	6.2	6.9	5.8
c. Private Consumption	11.5	6.9	0.3	2.6	4.0	6.4	4.1	4.4	1.5	3.3
d. Public Consumption	-1.1	1.8	6.8	1.9	2.9	2.7	0.8	5.0	-1.5	5.7
e. Investment	26.0	7.3	-7.2	4.5	10.6	21.4	7.4	10.8	0.4	-4.5
f. Exports	-6.4	9.8	9.6	-1.2	-1.4	16.1	7.2	-9.7	1.5	11.8
5. Relative Prices (1970=100)										
a. Real Wage	83.3	92.1	95.6	95.0	92.1	96.4	100.0	103.4	93.8	106 1
b. Real Exchange Rate	65.6	106.0	83.9	98.6	84.5	81.0	100.0	100.4	70.6	48.8
c. Terms of Trade	105.5	111.2	106.8	101.3	98.6	101.3	100.0	109.0	107.2	121.5
6. External Sector (Million of US$)										
a. Trade Balance	457.0	431.0	598.0	494.0	333.0	217.0	274.0	87.3	256.0	1288 3
(i) Exports	1410.0	1493.0	1593.0	1464.0	1368.0	1612.0	1773.0	1740.0	1941.0	3266 0
(ii) Imports	953.0	1062.0	995 0	970.0	1035.0	1395.0	1499.0	1652.9	1685.0	1977 7
b. Current Account Balance	457.0	222.0	259.0	130.0	-53.0	-230.0	-163.0	-390.2	-226.9	710.5
c. Current Account- Percent of GDP	1.8	1.2	1.2	0.6	-0.2	-0 9	-0.7	-1.6	-0.5	1 0
d. International Reserves	82.0	170.0	132.0	643.0	650.6	402.8	532.6	192.4	313.3	1148 7
7. Public Sector (Percent of GDP)										
a. Total Expenditure	35.8	32.7	35.3	37.9	37.1	36.1	39.5	38.7	38.0	41 5
b. Total Revenue	30.2	29.8	31.6	36.0	35.4	34.9	37.5	34.1	31.9	32.9
c. Operational Deficit	5.6	2.9	3.7	1.8	1.7	1.3	2.0	4.6	6.1	8.6

Note: 1. Seigniorage = M1(t)-M1(t-1)/GDP(t)
2. Unemployment is the rate of unemployment in urban area.
3. The domestic credit of consolidated monetary system is line 32 (IFS).
4. The Central Bank's domestic credit is total claims on the government and the private sector less government deposit.

Sources: International Financial Statistic except:
2(a,b,d,e) from FIEL
4(b) C. Sanchez and O. Giordano, "Exchange Rate Policies and the Structure of the Labor Market".
(3), 4(c,d,e,f), and 5(a) from Estudios, Fundacion Mediterranea
5(b) from Cottani, "Trends in Real Exchange Rate Behavior in Selected Developing Countries".
5(c) from the World Bank
2(f) and 7(a,b,c) from De Pablo, "Macroeconomic Policy Crises and Long-Term Growth"

Table 4

Argentina: Macroeconomic Indicators, 1980-1988

	1980	1981	1982	1983	1984	1985	1986	1987	1988
1. Inflation, Devaluation, and Interest (Percent in annual terms)									
a. CPI Inflation	100.8	104 5	164 8	343.8	626 7	672.1	90.1	131.3	343.0
b. Official Devaluation	39.5	139.7	488.8	306.2	542 4	789.6	56.7	227.6	308.0
c. Interest Rate on Loans	98.6	207.1	213.8	682.4	748.0	512.3	117 8	227.8	407.8
d. CPI Inflation (Dec. to Dec.)	87.6	131.3	209.7	433.7	688.0	385.4	81.9	174.8	387.7
e. Official Devaluation (Dec. to Dec.)	80.5	296.2	484.8	364.6	652.3	398.0	51.4	190.4	271.3
2. Monetary Statistics (Percentage Change)									
a. M1- Percent of GDP	6.2	4.9	4.7	3.8	3.4	3.6	4.9	5.2	3.8
b. M4- Percent of GDP	24.7	25.4	20.7	13.6	13.2	12.7	15.4	17.2	15.4
c. Seigniorage- M1	4.8	3.5	7.8	8.6	7.1	6.5	3.4	4.0	7.1
d. Rate of Change in M1	119.5	51.6	165.9	281.4	550.6	683.7	158.3	107.1	327.8
e. Rate of Change in M4	123.3	95.3	124.7	216.0	603.2	603.5	132.0	131.3	452.3
f. Consolidated Monetary System Domestic Credit	111.3	209.3	224.0	400.8	538.0	n.a.	n.a.	n.a.	n.a.
g. The Central Bank Domestic Credit	371.8	268.4	557.8	400.8	501.2	n.a.	n.a.	n.a.	n.a.
3. Aggregate Demand (Percent of GDP at constant prices)									
a. Total Consumption	83.2	85.4	80.3	81.0	83.7	82.1	83.8	83.1	80.6
b. Investment	23.7	19.4	16.4	14.3	12.4	10.3	11.6	13.2	12.5
c. Exports	11.4	12.9	14.1	14.7	14.3	16.8	14.8	14.4	16.6
4. Economic Activity (Percent Change in Real Terms)									
a. GDP Growth	2.4	-6.6	-4.6	2.8	2.6	-4.5	5.7	4.1	-5.2
b. Unemployment	n.a.	4.8	5.3	4.7	4.6	6.1	5.2	5.9	6.3
c. Total Consumption	7.7	-4.3	-10.7	3.8	5.9	-6.2	7.7	2.0	-6.8
d. Investment	9.2	-23.4	-19.7	-10.7	-11.1	-20.0	18.2	16.1	-8.2
e. Exports	-5.1	5.6	3.5	7.8	-0.7	12.5	-7.0	-6.4	12.1
5. Relative Prices (1980=100)									
a. Real Wage	100.0	112.6	115.9	175.4	180.7	140.0	143.0	143.1	136.2
b. Real Exchange Rate	100.0	110.5	217.6	219.8	187.8	216.1	197.4	211.2	450.1
c. Terms of Trade	100.0	106.7	89.1	86.6	93.4	81.2	69.0	65.2	na
6. External Sector (Millions of US. Dollars)									
a. Trade Balance	-2519.2	-287.0	2285.9	3331.8	3522.7	4551.9	2127.9	556.0	3629.0
(i) Exports	8021.4	9143.0	7823.1	7836.0	8107.4	8396.1	6851.7	6356.0	8952.0
(ii) Imports	10540.6	9430.0	5537.2	4504.1	4584.7	3844.2	4723.8	5800.0	5323.0
b. Current Account Balance	-4768.0	-4714.0	-2358.0	-2461.0	-2391.0	-953.0	-2859.0	-4238.0	-1615.0
c. Current Account- Percent of GDP	-3.1	-3.8	-4.1	-3.8	-3.2	-1.5	-3.6	-2.5	-2.2
d. International Reserves Change	-2493.0	-3559.0	-6166.0	-2572.0	-1744.0	-556.0	-2075.0	-4100.0	-1381.0
7 Public Sector (on Cash Basis, Percent of GDP)									
a. Total Expenditure	na	na	na	29.3	26.0	25.4	23.5	24.9	23.5
b. Total Revenue	na	na	na	20.5	18.0	21.0	21.5	20.6	18.6
c. Operational Deficit	na	na	na	-8.8	-8.0	-4.4	-2.0	-4.3	-4.9
d. The Central Bank Deficit	na	na	na	-11.0	8.6	4.7	3.2	5.0	5.0
e. Total Deficit	na	na	na	-19.8	-16.6	-9.1	-5.2	-9.3	-9.9

Note: 1. Seigniorage = M1(t)-M1(t-1)/GDP(t)
2. Real exchange rate in 1986-87 is obtained by interpolation.
3. Consolidated monetary system domestic credit is line 32 in IFS.
The Central Bank's Domestic Credit is total claims on government and private sector less government deposit.
4. Operational Deficit = Revenue - Expenditure
Total Deficit = Operational Deficit + Central Bank Deficit.

Sources: 1(a,b), 2(f,g), 3(c,d), and 6(d) from IFS
2(a,b,d,e), 4(a,b), and 5(a) from De Pablo, "Macroeconomic Policy Cris
1(c), (3), 4(c,d,e), 5(c), 6(a-d) and 7(a-d) from The Central Bank of Argentina
4(b) from Fundacion Mediterranea
5(b) from Hyde (1989), "Real Exchange Rate Trends, 1960-1987".

Table 5

Brazil Macroeconomic Indicators, 1980-1988

	1980	1981	1982	1983	1984	1985	1986	1987	1988
1. Inflation, Devaluation, and Interest (Percent in annual terms)									
a. CPI Inflation	82.8	105.6	97.8	142.1	197.0	226.9	145.2	224.8	684.6
b. Official Devaluation	95.6	76.7	92.8	221.4	220.3	235.5	120.2	187.9	568.7
c. Interest Rate on Deposits	n.a.	58.4	65.9	82.2	96.9	108.4	40.0	115.9	n.a.
d. Inflation (Dec. to Dec.)	86.3	100.6	101.8	177.9	208.7	248.6	63.5	432.3	1037.6
e. Official Devaluation (Dec. to Dec.)	43.6	66.9	69.6	126.7	119.0	117.8	32.3	385.1	889.4
2. Monetary Statistics									
a. M1- Percent of GDP	10.8	10.3	9.7	7.8	7.1	8.0	11.9	8.1	7.3
b. M4- Percent of GDP	29.3	35.6	38.6	39.3	47.0	52.0	37.5	50.8	76.8
c. Seigniorage- Monetary Base	2.0	2.0	1.6	1.3	2.4	2.3	3.5	2.5	3.3
d. M1- Rate of Change	70.2	87.2	81.7	97.4	201.8	304.3	306.7	127.5	571.7
e. M3- Rate of Change	72.3	120.1	100.9	170.2	250.1	269.8	124.9	276.9	1045.7
f. Monetary Base- Rate of Change	56.9	62.8	63.6	79.8	264.1	257.3	293.4	181.5	622.3
g. Consolidated Monetary System's Domestic Credit	80.7	95.1	108.6	179.4	178.6	301.9	n.a.	n.a.	n.a.
f. The Central Bank's Domestic Credit	78.6	53.9	97.7	177.0	69.1	417.4	n.a.	n.a	n.a.
3. Aggregate Demand (Percent of GDP)									
a. Private Consumption	70.8	69.0	70.0	72.3	69.7	67.2	66.2	65.1	n.a.
b. Public Consumption	9.0	9.2	10.5	9.6	8.2	9.7	10.2	12.2	n.a.
c. Investment	22.4	22.3	20.2	15.4	16.5	18.0	20.5	19.5	17.0
d. Exports	8.9	9.3	8.0	11.3	13.5	12.0	8.8	9.8	11.2
4. Economic Activity (Percent Change in real terms)									
a. GDP Growth	9.1	-3.3	0.9	-2.5	5.7	8.3	8.2	3.6	-0.3
b. Unemployment	7.2	7.2	5.5	6.8	6.8	5.0	3.3	3.8	3.9
c. Total Consumption	5.9	-4.3	3.7	-1.6	1.0	7.1	11.6	3.4	3.8
d. Investment	8.5	-13.3	-5.4	-17.0	4.1	11.6	12.0	-3.1	-11.2
e. Exports	22.6	21.3	-9.2	14.3	22.1	-2.0	-23.6	14.7	13.0
5. Relative Prices (1980=100)									
a. Real Wage	100.0	115.0	122.9	116.4	118.1	135.0	154.6	143.4	n.a.
b. Real Exchange Rate	100.0	87.2	81.7	102.4	114.3	117.4	107.1	95.8	112.2
c. Terms of Trade	100.0	88.5	85.5	79.0	85.1	83.5	105.6	96.9	n.a.
6. External Sector (Million of US$)									
a. Trade Balance	-2823.0	1202.0	817.0	6472.0	13068.0	13450.0	8304.0	11164.0	19070.0
(i) Exports	20132.0	23293.0	20213.0	21900.0	27005.0	25639.0	22349.0	26225.0	33782.0
(ii) Imports	22955.0	22091.0	19396.0	15428.0	13937.0	12189.0	14045.0	15061.0	14712.0
b. Current Account Balance	-12807.0	-11734.0	-16311.0	-6837.0	45.0	-241.5	-4476.0	-1458.0	n.a.
c. Current Account- Percent of GDP	-5.3	-4.4	-6.1	-3.3	0.0	-0.1	-1.7	-0.5	n.a.
d. International Reserves	5769.3	6603.5	3927.9	4355.1	11507.9	10604.6	5803.0	6299.0	n.a.
7. Public Sector (Percent of GDP)									
a. Operational Deficit	3.6	5.6	8.3	4.8	2.7	4.3	3.6	5.5	4.3
b. Domestic Public Debt	13.1	17.4	25.2	20.2	19.5	21.1	21.1	32.6	n.a.
c. Foreign Public Debt	18.7	10.0	23.3	30.0	31.6	29.3	30.4	24.8	n.a.

Notes: 1. Seigniorage = MB(t)-MB(t-1)/GDP(t), where MB is monetary base.
2. Interest rate on deposits is discount rate on 91-day notes.

Sources: 1(a,b,c), 2(a,b,c), 4(a,b), 5(a), 6(a,b,c) from Conjuntura Economica
5(b) from Hyde (1989), "Real Exchange Rate Trends, 1960-88".
3, 4(c,d,e), 5(c), 7(b,c) from The Central Bank of Brazil
6(c) from International Financial Statistic
7(a) from IMF Report

Table 6

Israel Macroeconomic Indicators, 1980-1988

	1980	1981	1982	1983	1984	1985	1986	1987	1988
1 Inflation, Devaluation and Interest (Percent in Annual Terms									
a CPI Inflation	60 0	116.8	120 4	145.6	373 8	304 6	48 1	19 9	16 3
b Official Devaluation (Average, Shekels/$)	66 7	120 0	118 2	133 3	423 2	302 4	26 2	7 2	3 0
c Real Interest Rate on Loans	4 2	16 9	3.6	6 2	28 9	16 4	8 3	18 9	13 8
d Real Interest Rate on Deposits	-23 7	-6 2	-24 0	-32 4	-6 7	-7 3	-2 0	1 3	-4 0
e CPI Inflation (Dec. to Dec)	133 0	101 5	131 5	190.7	444 9	185 2	19 6	16 1	16 4
f. Official Devaluation (Dec to Dec , Shekels/$)	113 5	108 0	116.0	219 9	492 5	134 8	-0 9	3 5	9.5
g. Official Devaluation (Dec to Dec , Basket of Currencies)	n a.	n a	n a.	206.0	462 0	154 0	6 0	13.9	0 8
2. Monetary Statistics									
a. M1- Percent of GDP	4 9	3 8	3.4	2.9	2 3	2 3	3.7	5.1	5 4
b. M2- Percent of GDP	6 5	5 9	6.8	6.8	6 2	9 5	14 2	17 8	17.8
c. M3- Percent of GDP	21 2	19 2	19.6	24.4	26 8	22 2	23 4	23 7	23.3
d. Seigniorage- Percent of GDP	2 1	2.0	1.7	2 1	3 2	6 9	1 8	2 4	-1 5
e. M1- Percent Change	44 2	93 2	100.4	113.5	225 1	351 5	169 4	60.3	32.3
3. Aggregate Demand (Percent of GDP)									
a. Private Consumption	51 1	53.0	54.5	55 7	52 1	55.4	58 4	59 7	59 3
b. Public Consumption	30 2	30.2	30.0	29 4	30 0	27.0	24 9	25 0	25 6
c. Investment	21 9	20.4	22.2	22.2	20 9	17 7	18 5	18 4	17.2
d. Import Surplus (excludes defence imports)	3 2	3 5	6.7	7.3	3 0	0.1	1 8	3 0	2.0
4. Economic Activity (Percent Change in Real Terms)									
a. GDP Growth	3.1	4.3	1.0	2 6	2 3	3 9	3 6	5.2	1 6
b. Private Consumption	-1 3	12.6	7.7	8.3	-6 8	0.5	14 2	8 4	3.0
c. Public Consumption	3.5	2.0	2.9	2.2	1 3	-0 8	-2 9	2.8	2.8
d. Investment	-15 2	-5.2	14 8	10.0	-7 1	-10 6	10 4	3 3	-2.1
e. Exports	6 3	4 3	-3.2	2.1	13 5	7 6	4 9	10 7	-2.3
f. Total Domestic Uses	-4 5	6.5	7 2	7 0	-4 7	-2 1	8 7	6 1	2 1
g. Real Disposable Income (includes transfers from abroad)	1 7	14.2	-2 6	2 8	8 7	-10 7	3 4	7.1	5.4
h. Total Productivity (Business sector)	-1.9	3	-1	-0.2	-0 3	4 2	3 4	3.5	-0 1
i. Unemployment (Percent)	4 8	5.1	5.0	4.5	5 9	6 7	7 1	6 1	6.4
5. Relative Price Indices (1980=100)									
a. Real Wage									
(i) Private and Public Sector	100 0	109 8	111.0	109 9	116 3	101 1	112 9	123.2	127 8
(ii) Industrial Wage Per Unit of Output in terms of Exports	100 0	109.5	121 1	133.4	121 1	108.6	132.3	138.7	152 0
b. Real Exchange Rate									
(i) Industrial Prices	100 0	97 7	93 1	87 8	91 5	104 4	97 5	94.1	84 8
(ii) Export Price	100 0	97.6	94 1	90.4	91 1	91 5	80 4	75.9	74 2
(iii) Import Price	100 0	98.3	90 8	84.0	86 0	93.1	81 3	78.9	73 7
c. Terms of Trade	100.0	102.0	107.0	111.0	107 0	107 0	110.0	107.0	112.0
6. External Sector (Million US$)									
a. Trade Balance	-2324 0	-2264.1	-2742 1	-3271 1	-2204 4	-1547 2	-2030 9	-2903.1	-2497.2
(i) Exports	5215.2	5238.5	4907.2	4822 9	5566 2	6002 1	6875.8	8137 3	9361 1
(ii) Imports	7539.2	7522 6	7649 6	8094 0	7770 6	7649 3	8906 7	11040 4	11860.3
b. Current Account Balance	-907.0	-638 0	-2003.0	-2145 0	-1620 0	1096.0	906 0	-235.9	-195.0
c. Current Account- Percent of GDP	-4.3	-4.0	-8.3	-7.9	-6 8	4 8	2 9	-0.8	-0.5
d. International Reserves	3526.0	3814.0	4317.0	3780 4	3255 2	3793 6	4867 5	5961 7	4755.7
7 Public Sector (Percent of GDP)									
a. Total Expenditure	76 3	74.5	72 5	67.4	73 3	71 2	65.5	62 7	62 8
b. Total Revenue	60.1	59.0	59 2	59 3	54 5	68 6	67 4	61 4	58.2
c. Operational Deficit	16.1	15.5	13 3	8 1	18 9	2 6	-1 9	1 3	4 6
d. Domestic Public Debt	120.8	120.9	123.6	118.0	123.6	133.2	121 1	113 5	110 7
e. Foreign Public Debt	36.4	37.3	37.5	40.8	49.3	51.0	39.8	31.4	29.0

Notes: 1. Seigniorage = MB(t)-MB(t-1)/GDP(t), where MB is base of money.
2. Real interest rate is nominal interest rate deflated by CPI inflation (Dec. to Dec.)
1(c) is coverage short-term bank loans.
1(d) is time deposits CDs etc.
3. 5b(i) is based on the ratio of industrial prices of trading partners to those of Israel multiplies by official exchange rate
5b(ii) is based on the ratio of export prices to prices of domestic uses multiplies by official exchange rate.
5b(iii) is based on the ratio of import prices to prices of domestic uses multiplies by official exchange rate
4 7(c) domestic plus foreign
5. 1980-84 and 1985-88 are based on simple averages.

Sources: Bank of Israel

Table 7

Mexico Macroeconomic Indicators, 1980-1988

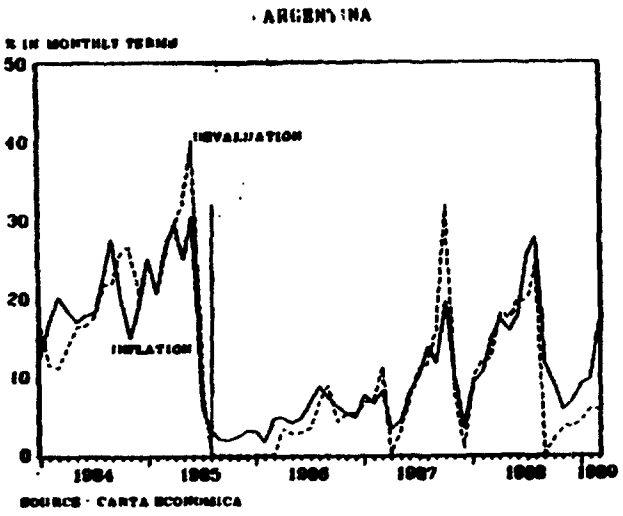
	1980	1981	1982	1983	1984	1985	1986	1987	1988
1. Inflation, Devaluation and Interest (Percent in Annual Terms)									
a. CPI Inflation	26 3	28 0	58 9	101 9	65 5	57 7	86 2	131 8	114 2
b. Official Devaluation	0 9	6 5	130 2	112 9	39 7	53 2	137.9	123 5	64 7
c Interest rate on loans	20 7	28 6	40 4	56 6	51 1	56 1	80 9	86 7	67 6
d CPI Inflation (Dec. to Dec)	29 8	28 7	98 9	80 8	59 2	63 7	105 7	159 2	51 7
e. Official Devaluation (Dec to Dec)	2 2	12 6	268 3	49 1	33 8	93 0	148.5	139 3	11 5
2. Monetary Statistics (Percent)									
a. M1- Percent of GDP	11 2	10 8	10 9	8 4	8 1	7 6	7 3	6 5	5 6
b. M3- Percent of GDP	30 1	33 6	37 4	33 2	33 7	31 2	35 9	37 8	31 4
c. Seigniorage - M1	2 7	2 7	4 2	2 4	3 0	2 5	2 9	3 5	2 1
d. M1- Rate of Change	33 4	33 3	54 1	41 4	62 3	53 8	72 1	129 7	58 1
e M3- Rate of Change	45 6	53 7	78 6	61 4	70 4	46 7	100.2	159 4	69 0
f Monetary Base	41 1	45 1	90 4	58 1	54 1	17 5	47 7	70 3	42 3
g Consolidated Monetary System Domestic Credit	39 0	48 8	100 9	56 4	51 2	69 2	101 0	104 2	n a
h. The Central Bank Domestic Credit	37 0	43 5	157 6	41 7	31 1	49 0	61 3	13 7	n a
3. Aggregate Demand (Percent of GDP at current prices)									
a Private Consumption	65.1	64 4	61 6	60 9	63 1	64 5	68 2	65 6	n a
b. Public Consumption	10 0	10 7	10 5	8 8	9 2	9 2	9 1	8 7	n a
c. Investment	24 8	26 4	22 9	17 5	18 0	19 2	19 4	18 9	20 4
d. Exports	10 7	10 4	15 3	19	17 4	15 4	17 2	19 7	n a
4. Economic Activity (Percent Change in Real Terms)									
a. GDP growth	8 3	7 9	-0 6	-5 3	3 7	2 8	2 0	1 4	1 1
b. Unemployment	4 5	4 2	4 1	6.7	6 0	4 8	4 3	3.9	3 6
c. Private Consumption	7 5	7 4	-2.5	-5 4	3 3	3 3	-2 8	-1 4	n a
d. Public Consumption	9 5	10.3	2 0	2.7	6 6	0 9	2.1	-1 0	n a
e. Investment	14.9	15 2	-16 8	-28.3	6 4	8 2	-12.0	-0.7	n a
f. Exports	6 1	11 6	21 8	13.6	5.7	-4 0	1.5	12 2	n a
5. Relative Prices Indices (1980=100)									
a. Real Wage	100 0	101 8	93 5	74 7	73 8	68 8	63 0	59 1	n a
b. Real Exchange Rate	100 0	84 2	115 2	123 7	102 5	98 5	145 1	157 5	130 3
c. Terms of Trade	100 0	106 5	103 2	96 5	97 2	96 3	63 8	n a	n a
6. External Sector (Million of US$)									
a Trade Balance	-2830 0	-4099 0	6795 0	13762 0	12941 0	8451 0	4599 0	8433 3	1754 3
(i) Exports	16066 0	19938 0	21230 0	22312 0	24196 0	21663 0	16031 0	20656 2	20657 6
(ii) Imports	18896 0	24037 0	14435 0	8550 0	11255 0	13212 0	11432 0	12222 9	18903 4
b. Current Account Balance	-8162 0	-13899 0	-6218 0	5419 0	4238 5	1236 7	-1672 7	3966 5	-2901 2
c. Current Account- Percent of GDP	-4 4	-5 8	-3 7	3 8	2 5	0 7	-1 3	2 7	-1 6
d. International Reserves Change	1151 0	1012 0	3188 0	-3117 0	-3384 0	2423 0	-132 0	6929 4	-7127 0
7 Public Sector (Percent of GDP)									
a. Total Expenditure	33 5	39 7	44 5	41 0	39 3	39 2	44 8	45 0	39 0
b. Expenditure excluding Interest Payments	30 0	34 7	36 3	28 6	27 4	27 7	28 3	24 7	22 4
c. Total Revenue	26 9	26 7	28 9	32 9	32 2	31 2	30 3	30 6	29 8
d Total Deficit	6 6	13 0	15 6	8 1	7 1	8 0	14 5	14 4	9 2
e. Operational Deficit	5 6	11 7	8 3	1 3	0 6	3 3	5 7	-0 3	na
f. Primary Deficit	3 1	8 0	7 4	-4 3	-4 8	-3 5	-2 0	-5 9	-3 4
f. Domestic Public Debt	8 6	10 7	12 6	16 5	18 0	16 6	18.2	20 0	n a
g. Foreign Public Debt	18 8	20 0	38 9	43 0	36 8	37.0	55 9	48 7	n a

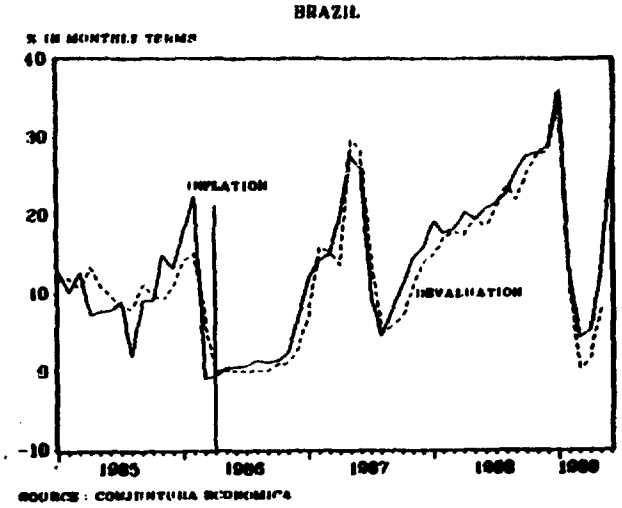
Note:
1. Seigniorage = M1(t)-P. (t-1)/GDP(t)
2. Real wage is the purchasing power in relation to the overall consumer price index
3. Interest rate on loans is the average cost of funds compound annually
4. Consolidated monetary system domestic credit is line 32 in IFS
   The Central Bank domestic credit is total claims on the government and private sector less government deposit
5. Primary Deficit = 7(b)-7(c)

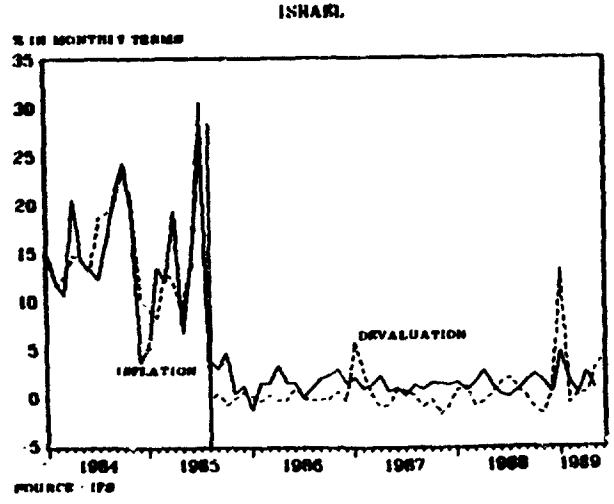
Sources: Banco de Mexico except
4(b) CEPAL
4(c,d,e,f) from The World Bank, National Account Data Base
5(a) Mexico National Minimum Salary Commission
6(a) IFS
7(e) The World Bank
5(c) the World Bank
2(e,f) and 6(d) IFS
7(f,g) Informe Anual 1987, Banco de Mexico

Figure 1-A

CPI Inflation and Official Devaluation







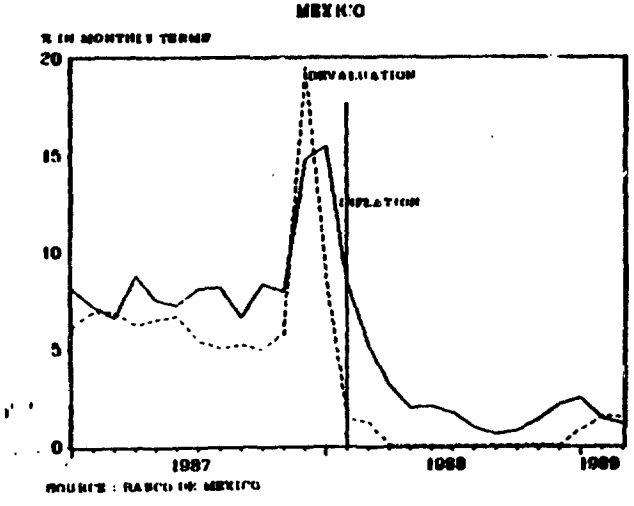
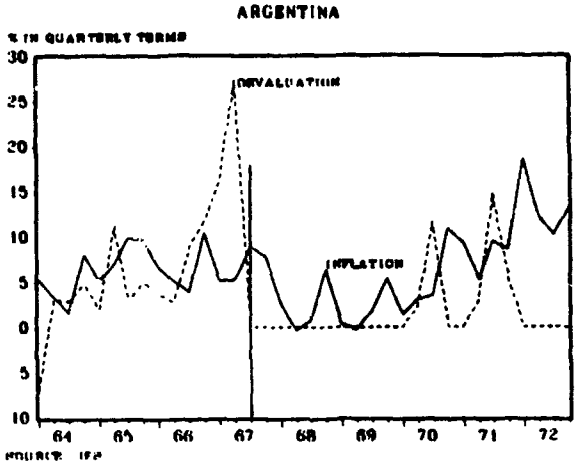
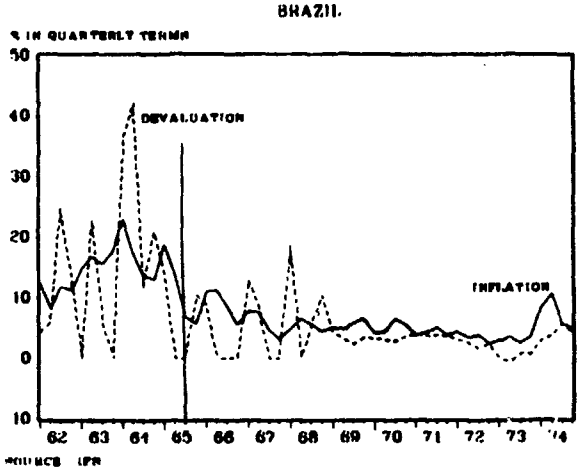


Figure 1-B

CPI Inflation and Official Devaluation





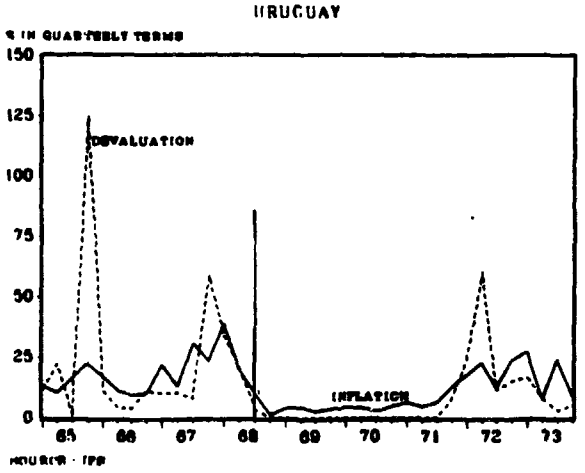
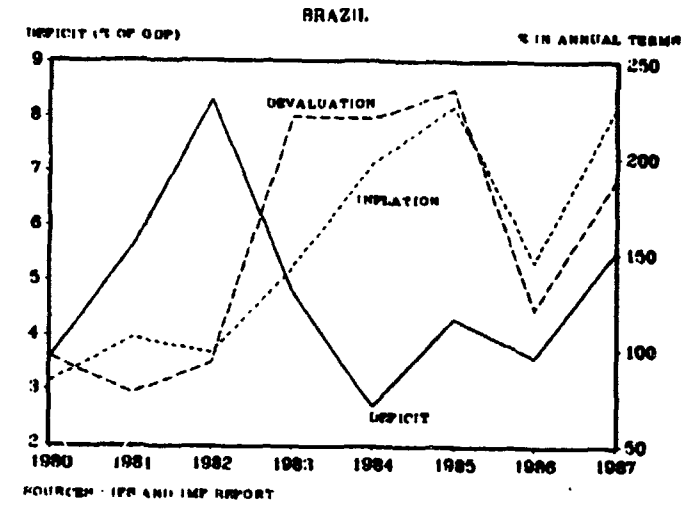


Figure 2

Fiscal Deficit, CPI Inflation and Official Devaluation



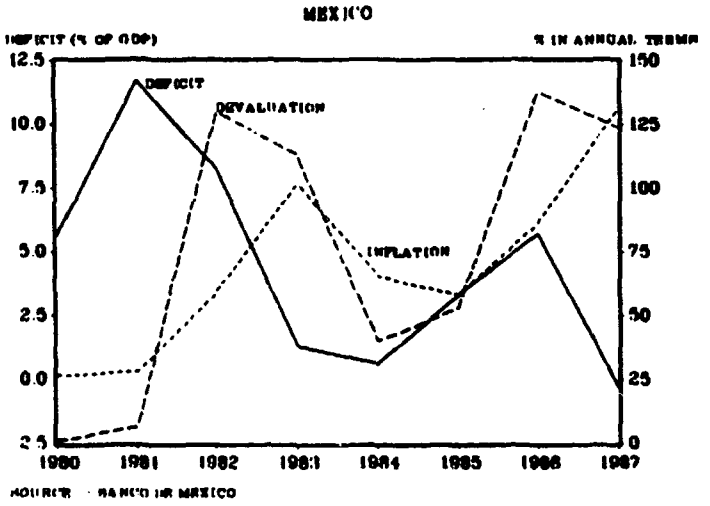
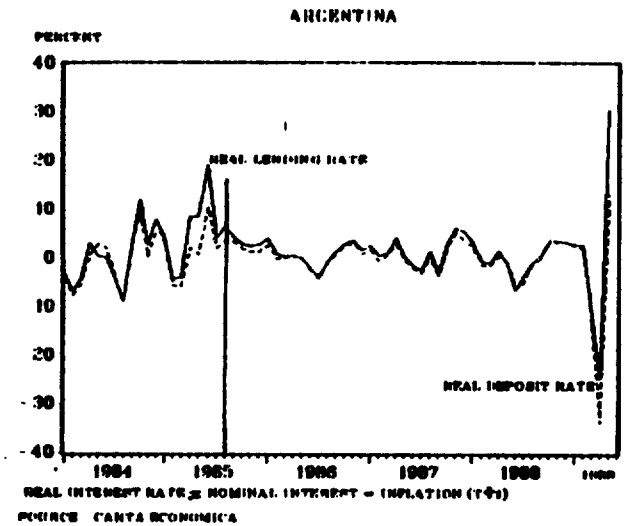
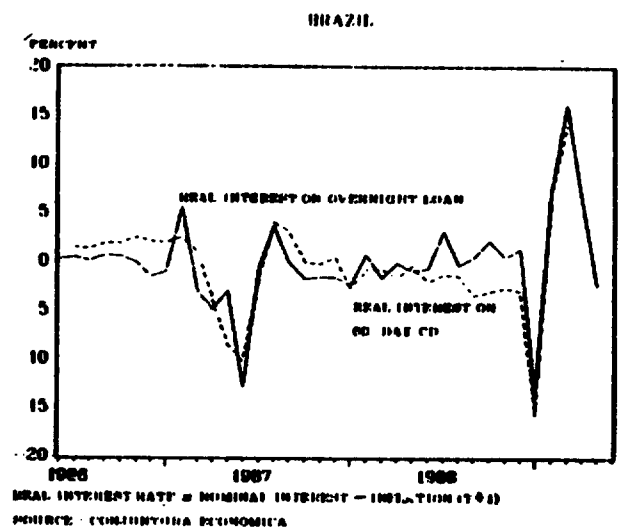
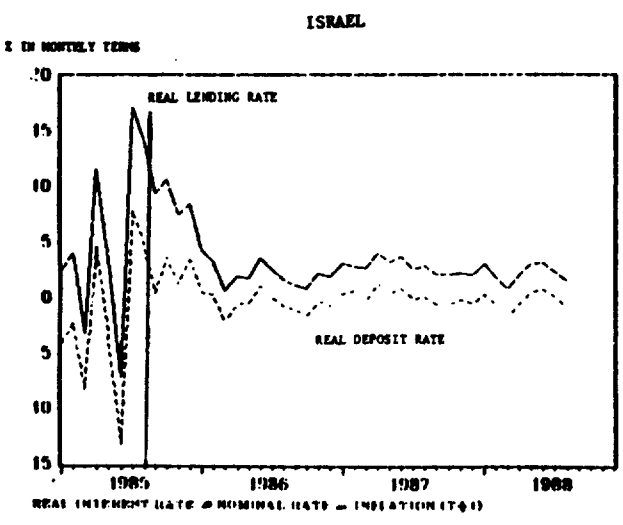


Figure 3

Real Interest Rates on Loans and Deposits







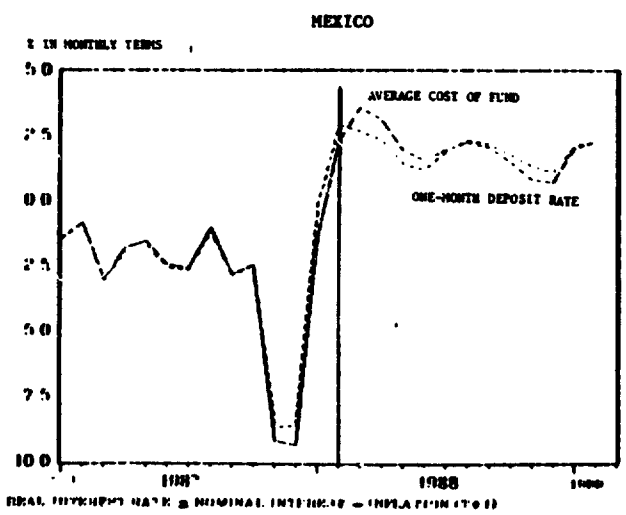
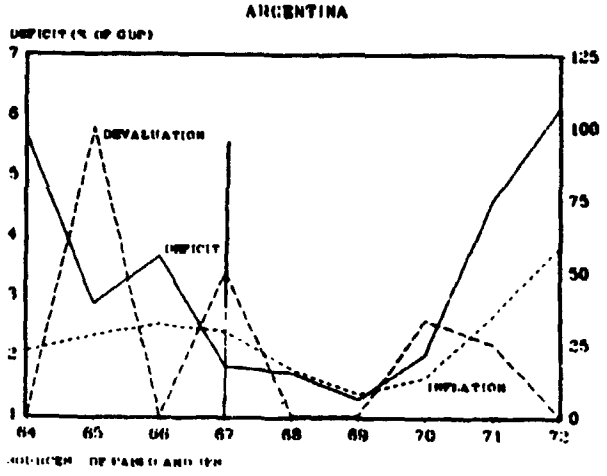
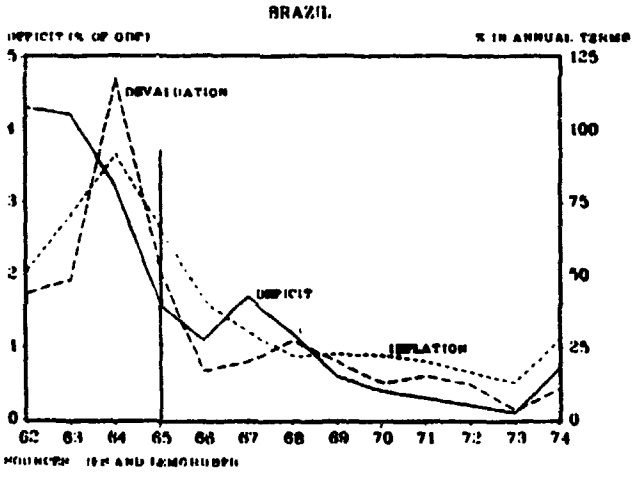


Figure 4-B

Fiscal Deficit, CPI Inflation and Official Devaluation





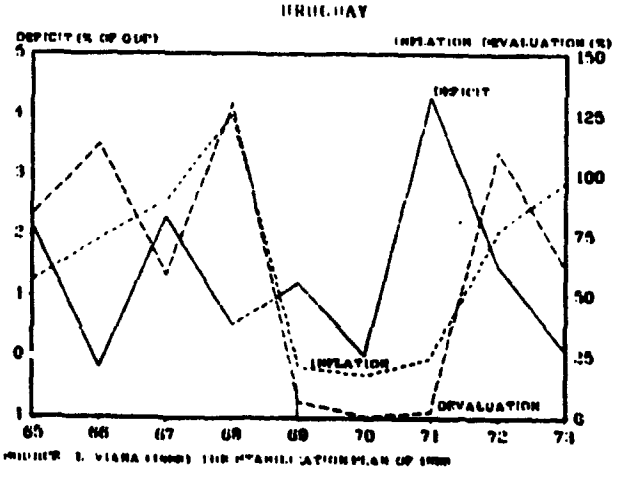
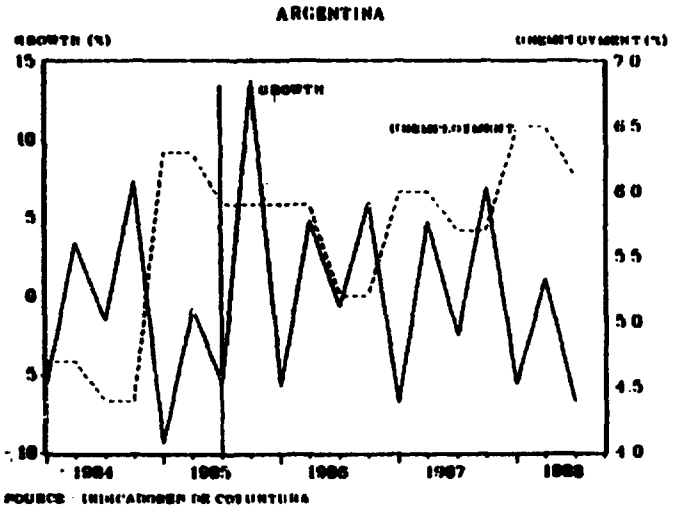
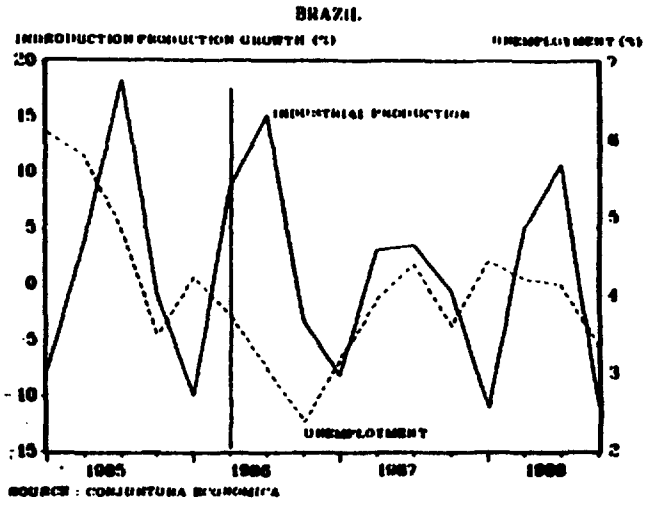
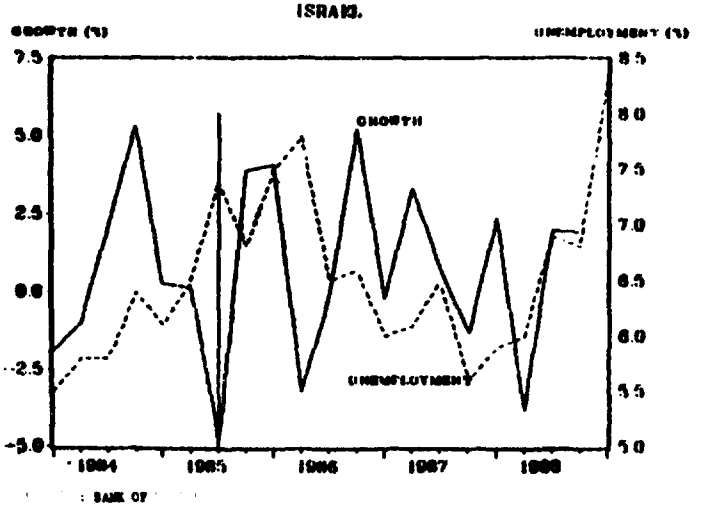


Figure 5-A

GDP Growth and Unemployment







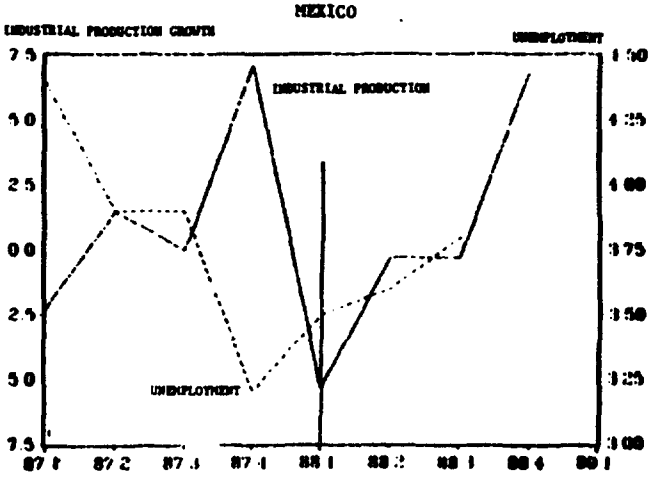
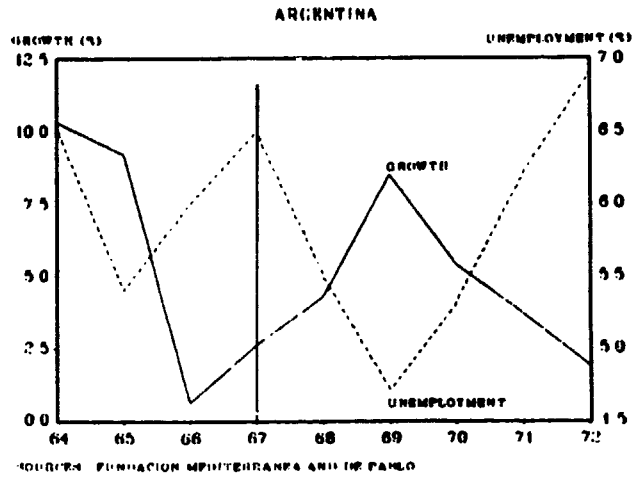
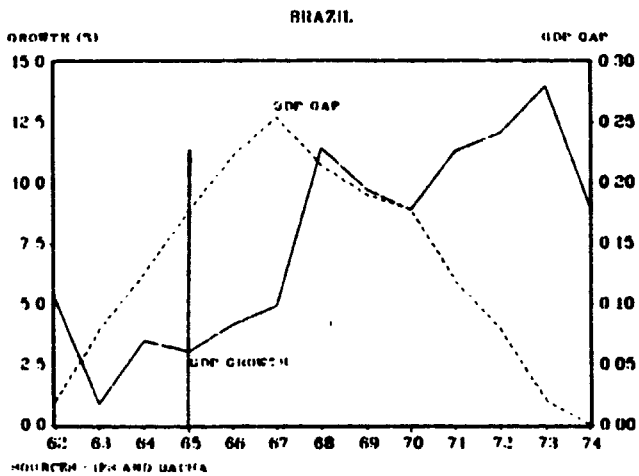


Figure 5-B

GDP Growth and Unemployment





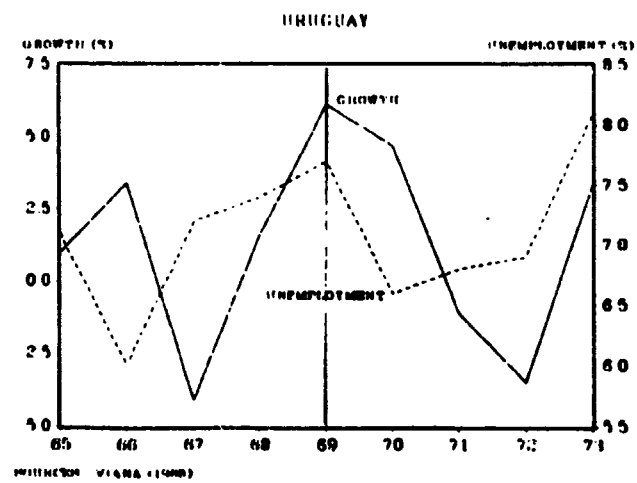
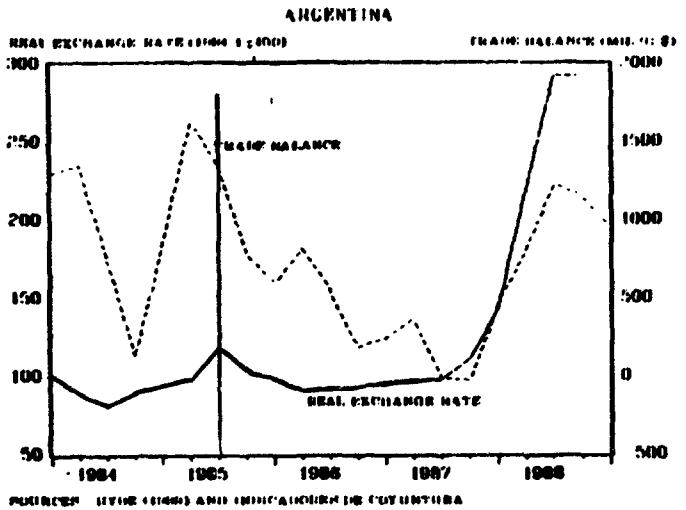
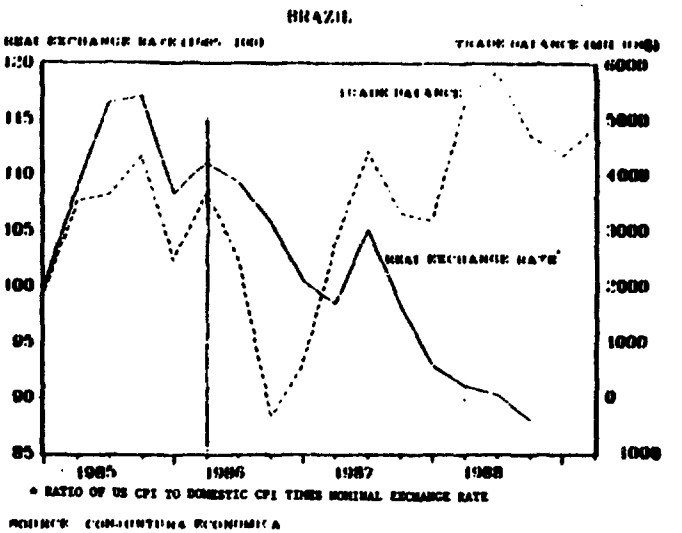


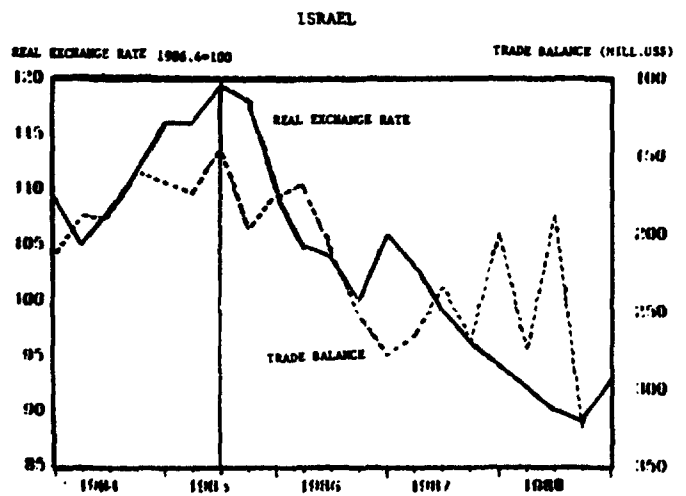
Figure 6-A

Real Exchange Rate and Trade Balance





* RATIO OF US CPI TO DOMESTIC CPI TIMES NOMINAL EXCHANGE RATE



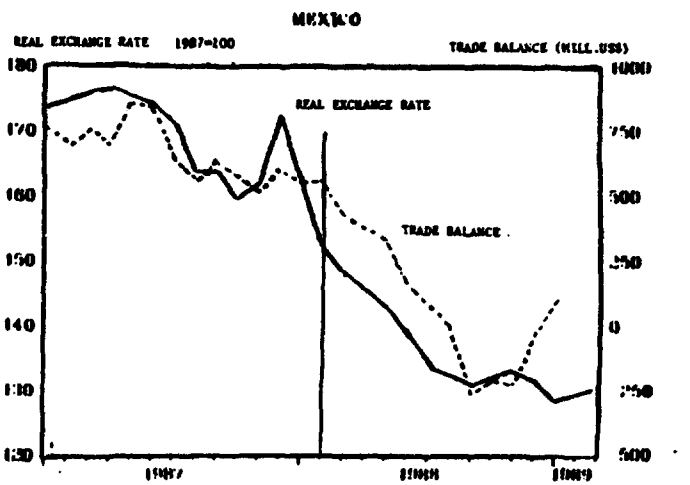
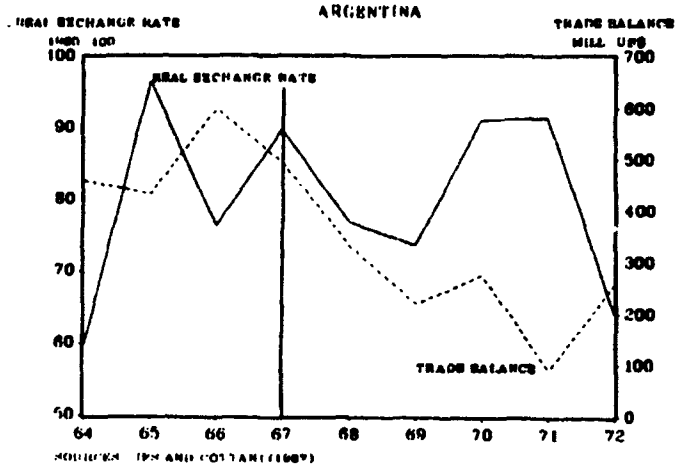
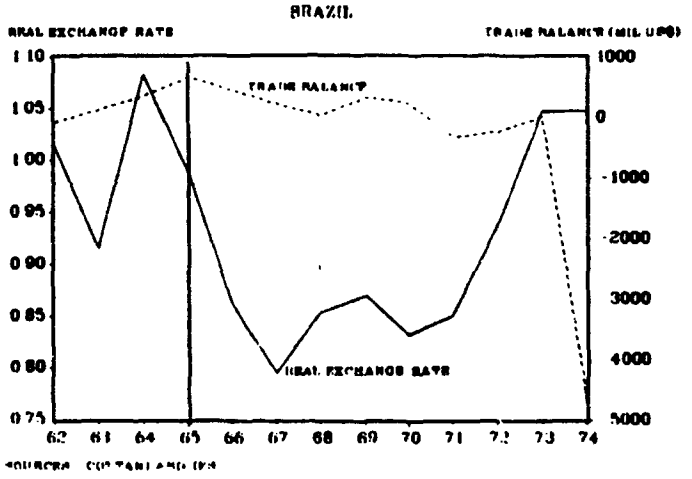


Figure 6-B

Real Exchange Rate and Trade Balance





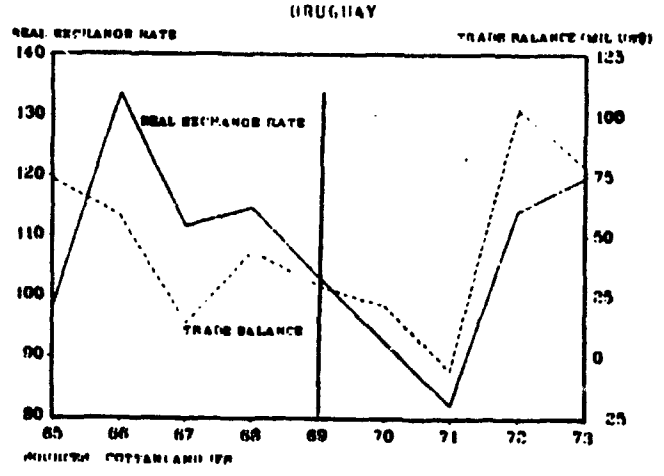
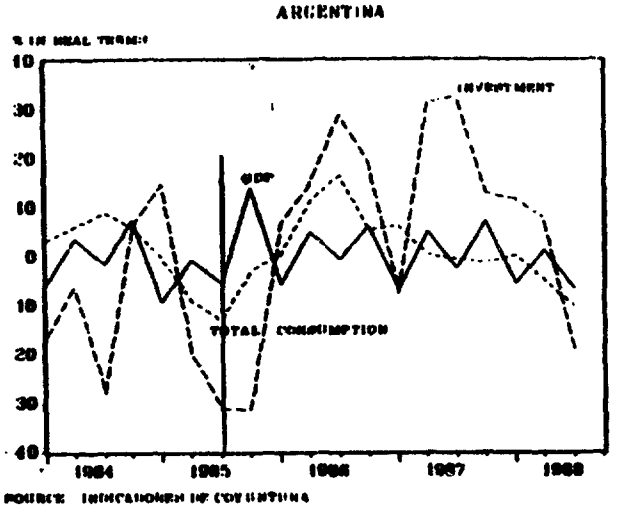
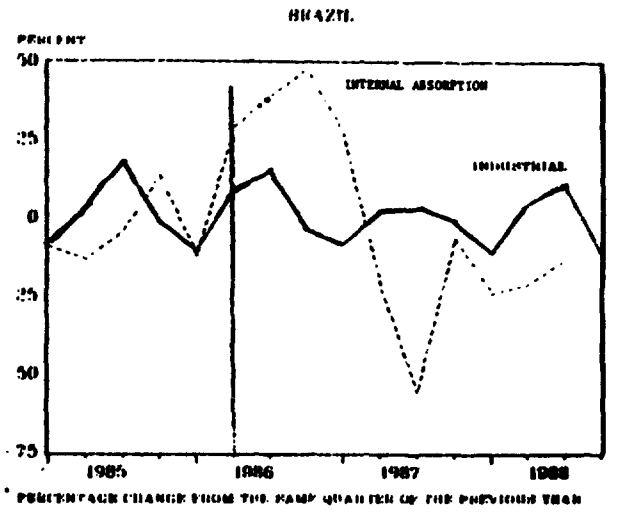
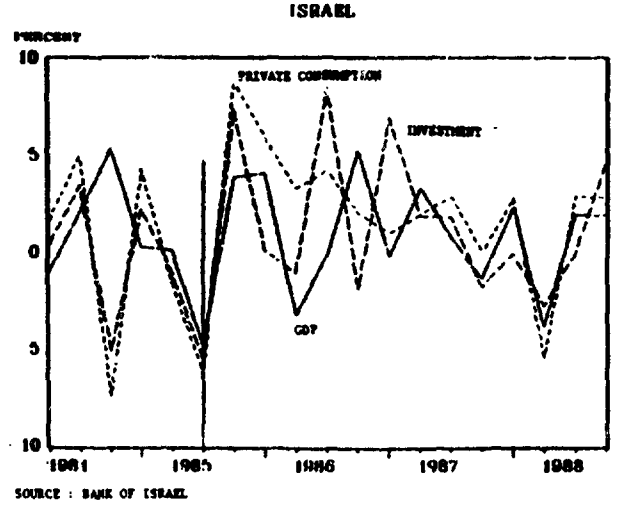


Figure 7-A

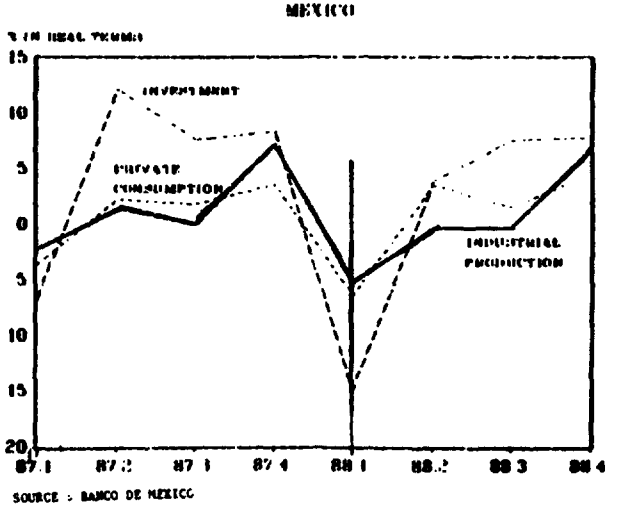
Real Rates of Growth of GDP, Private Consumption and Investment







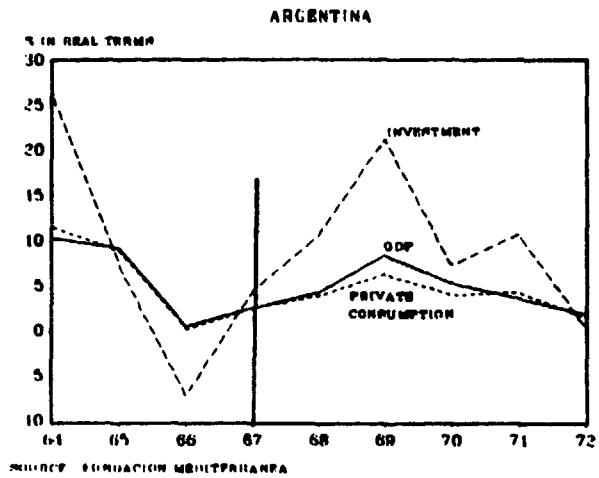
SOURCE : BANK OF ISRAEL

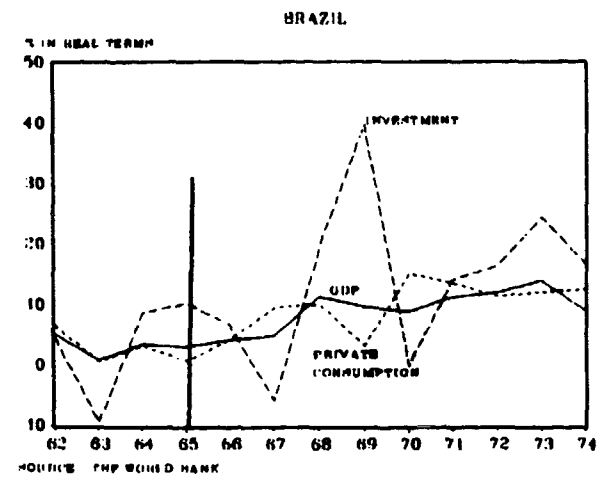


SOURCE : BANCO DE MEXICO

Figure 7-B

Real Rates of Growth of GDP, Private Consumption and Investment





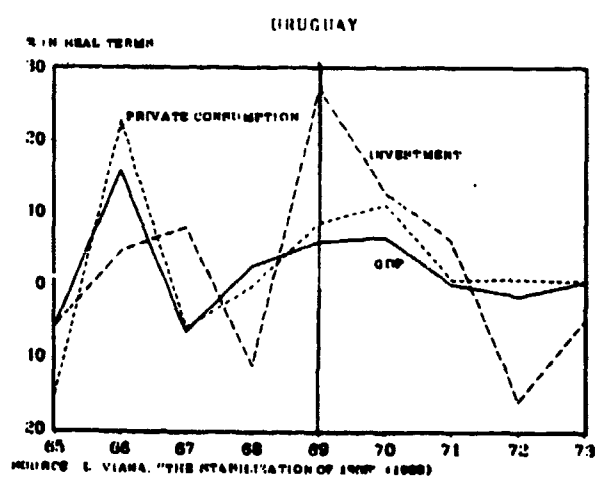
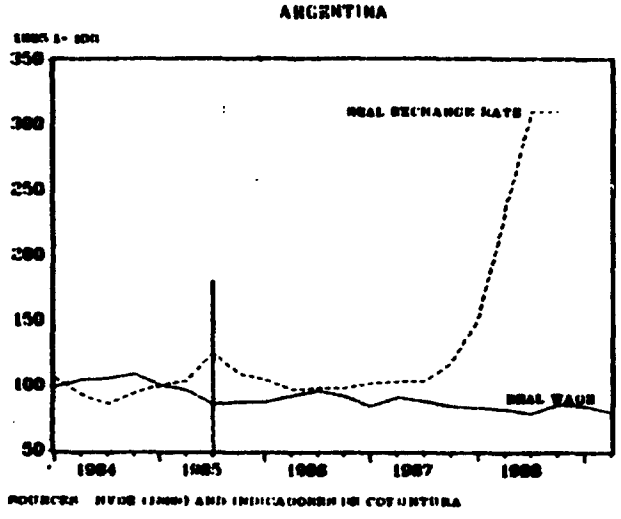
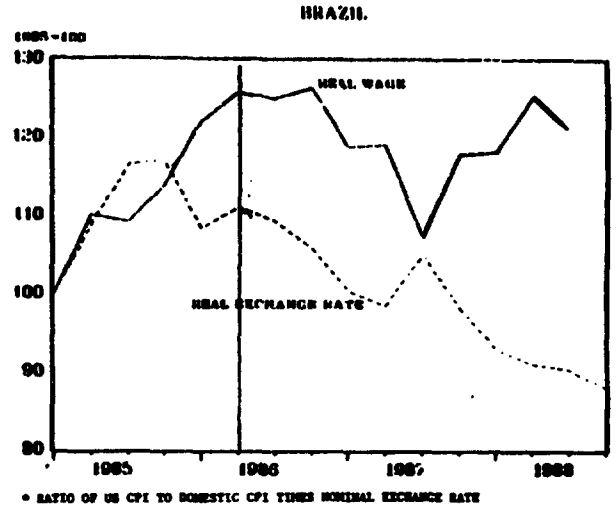


Figure 8-A

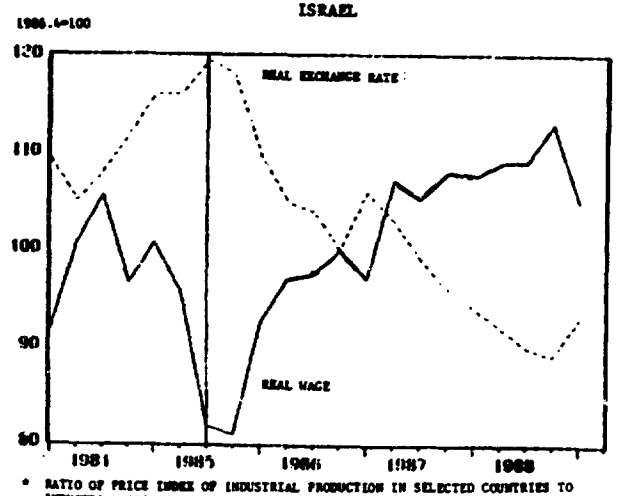
Real Wage and Real Exchange Rate



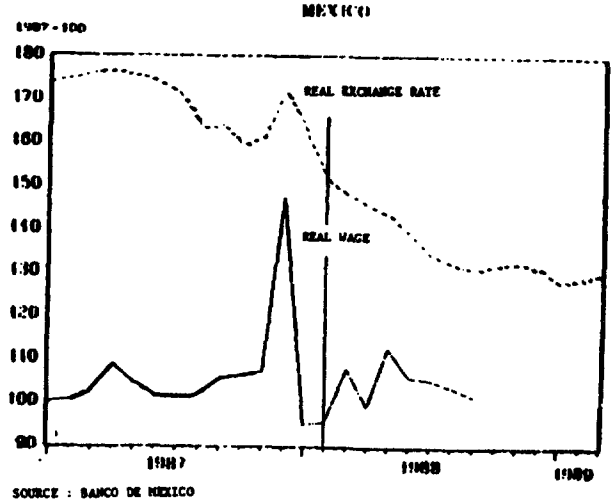


* RATIO OF US CPI TO DOMESTIC CPI TIMES NOMINAL EXCHANGE RATE

SOURCE : CONJUNTURA ECONOMICA



* RATIO OF PRICE INDEX OF INDUSTRIAL PRODUCTION IN SELECTED COUNTRIES TO INDUSTRIAL PRICE IN ISRAEL TIMES THE INDEX OF THE NIS EXCHANGE.

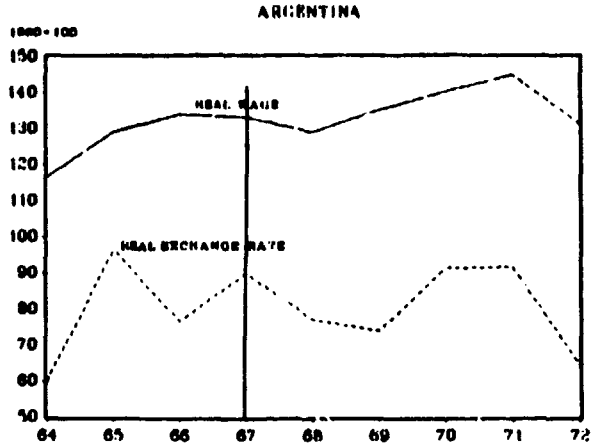


SOURCE : BANCO DE MEXICO

Figure 8-B

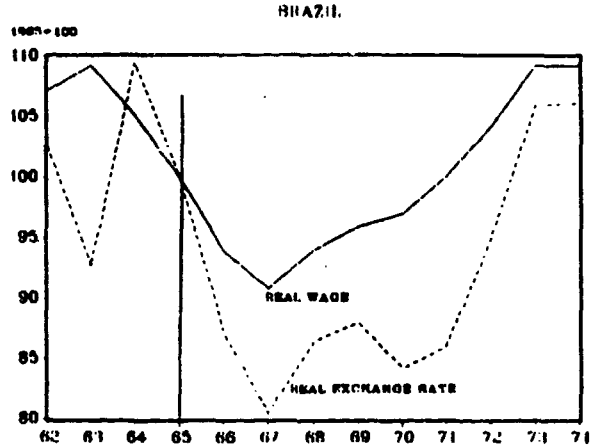
Real Wage and Real Exchange Rate

ARGENTINA



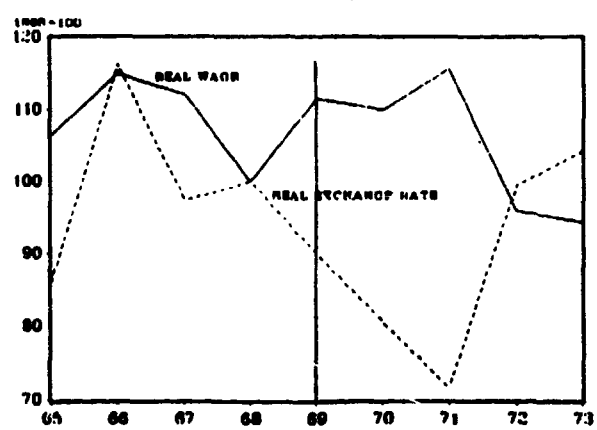
SOURCE: COTTANI (1987) AND FUNDACION MEDITERRANEA

BRAZIL



SOURCE: COTTANI AND L. MACHA AND C. TAYLOR (BRAZILIAN INCOME DISTRIBUTION IN THE 1960s)

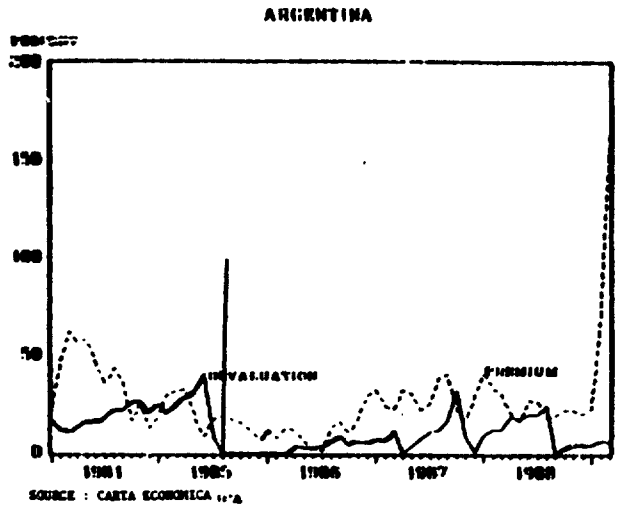
URUGUAY

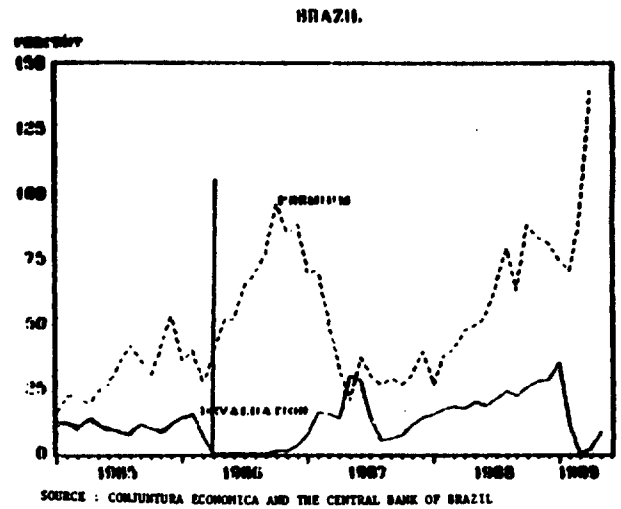


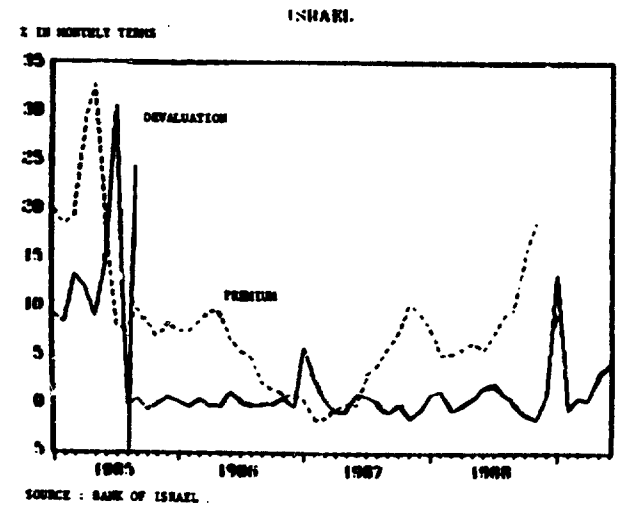
SOURCE: COTTANI (1987) AND L. VIANA (1988) "THE STABILIZATION PLAN OF 1986

Figure 9-A

Official Devaluation and Premium







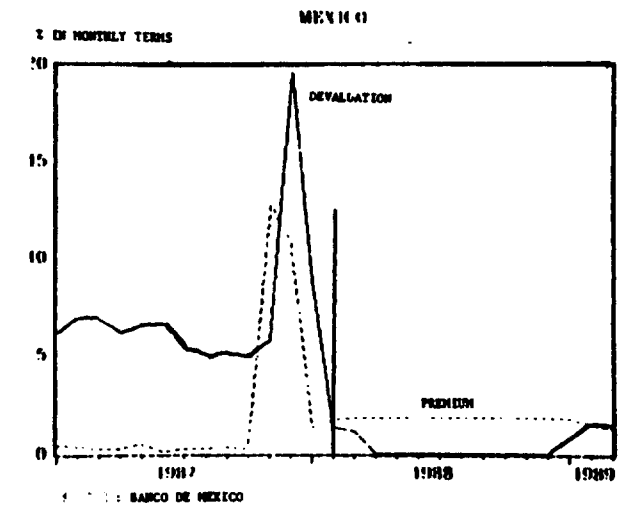
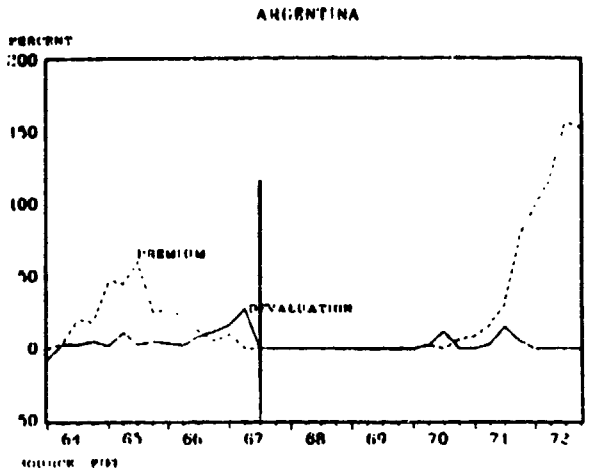
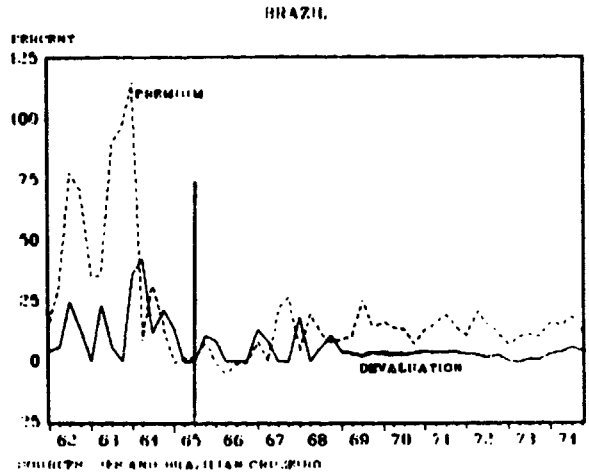
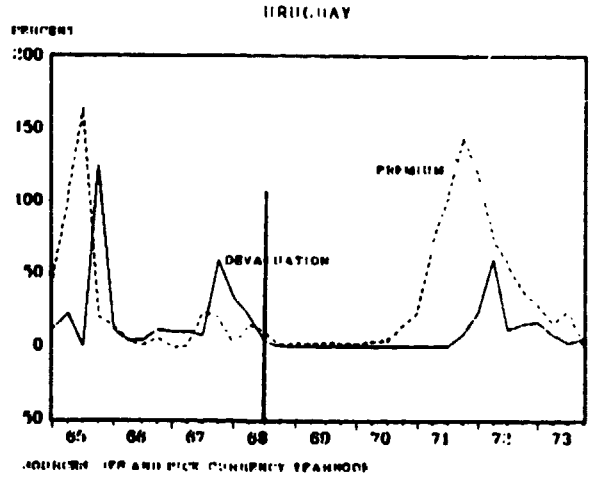


Figure 9-B

Official Devaluation and Premium







PPR Working Paper Series

	Title	Author	Date	Contact for paper
WPS308	Harmonizing Tax Policies in Central America	Yalcin M. Baran	November 1989	T. Watana 31882
WPS309	How to Improve Public Sector Finances in Honduras	Yalcin M. Baran	November 1989	T. Watana 31882
WPS310	A Framework for Macroeconomic Consistency for Zimbabwe	Ali Khadr Klaus Schmidt-Hebbel	December 1989	S. Jonnakuty 61769
WPS311	Macroeconomic Performance Before and After Disinflation in Israel	Leonardo Leiderman Nissan Liviatan	November 1989	R. Luz 61588
WPS312	Improving Public Enterprise Performance: Lessons from South Korea	Mary M. Shirley	October 1989	R. Malcolm 61708
WPS313	The Evolution of Paradigms of Environmental Management in Development	Michael E. Colby	November 1989	C. Evangelista 32645
WPS314	Primary Commodity Prices and Macroeconomic Variables: A Long-run Relationship	Theodosios Palaskas Panos Varangis	November 1989	D. Gustafson 33714
WPS315	Notes on Patents, Distortions, and Development	Julio Nogués		
WPS316	The Macroeconomics of Populism in Latin America	Rudiger Dornbusch Sebastian Edwards	December 1989	R. Luz 61588
WPS317	Price and Quality Competitiveness of Socialist Countries' Exports	Zdenek Drabek Andrzej Olechowski	December 1989	Z. Drabek 72162
WPS318	Sovereign Debt Buybacks as a Signal of Creditworthiness	Sankarshan Acharya Ishac Diwan	December 1989	S. King-Watson 33730
WPS319	Trends in South-South Trade and the Potential in Non-Discriminatory Liberalization of Barriers	Refik Erzan	December 1989	G. Ilogon 33732
WPS320	Protection Facing Exports from Sub-Saharan Africa in the EEC, Japan, and the United States	Refik Erzan Peter Svedberg	November 1989	G. Ilogon 33732
WPS321	Economic and Policy Determinants of Public Sector Deficits	Jorge Marshall Klaus Schmidt-Hebbel	December 1989	S. Jonnakuty 61769
WPS322	Earmarking Government Revenues: Does It Work?	William McCleary	December 1989	A. Bhalla 60359

PPR Working Paper Series

	Title	Author	Date	Contact for paper
WPS323	The Old and the New in Heterodox Stabilization Programs: Lessons from the 1960s and the 1980s	Miguel A. Kiguel Nissan Liviatan	December 1989	R. Luz 61588
WPS 324	Ethical Approaches to Family Planning in Africa	F. T. Sai K. Newman	December 1989	S. Ainsworth 31091
WPS325	Manufacturers' Responses to Infrastructure Deficiencies in Nigeria	Kyu Sik Lee Alex Anas	December 1989	L. Victorio 31015
WPS326	Do Exporters Gain from VERs?	Jaime de Melo L. Alan Winters		
WPS327	Making Noisy Data Sing: Estimating Production Technologies in Developing Countries	James R. Tybout		
WPS328	Europe, Middle East, and North Africa (EMN) Region Population Projections, 1989-90 Edition	Rodolfo A. Bulatao Eduard Bos Patience W. Stephens My T. Vu	November 1989	S. Ainsworth 31091
WPS329	Latin America and the Caribbean (LAC) Region Population Projections, 1989-90 Edition	Rodolfo A. Bulatao Eduard Bos Patience W. Stephens My T. Vu	November 1989	S. Ainsworth 31091
WPS330	Africa Region Population Projections, 1989-90 Edition	Rodolfo A. Bulatao Eduard Bos Patience W. Stephens My T. Vu	November 1989	S. Ainsworth 31091
WPS331	Asia Region Population Projections, 1989-90 Edition	Rodolfo A. Bulatao Eduard Bos Patience W. Stephens My T. Vu	November 1989	S. Ainsworth 31091
WPS332	India: Effective Incentives in Agriculture: Cotton, Groundnuts, Wheat, and Rice	Ashok Gulhati		
WPS333	Secondary Market Prices under Alternative Debt Reduction Strategies: An Option Pricing Approach with an Application to Mexico	Stijn Claessens Sweder van Wijnbergen		
WPS334	Built-in Tax Elasticity and the Revenue Impact of Discretionary Tax Measures: An Econometric Estimation Method with Application to Malawi and Mauritius	Jaber Ehdaie		