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**Working Paper**

## Inflation and external debt problem in Latin America

Texto para discussão, No. 129

**Provided in Cooperation with:**

Departamento de Economia, Pontifícia Universidade Católica do Rio de Janeiro

*Suggested Citation:* Lopes, Francisco (1986) : Inflation and external debt problem in Latin America, Texto para discussão, No. 129, Pontifícia Universidade Católica do Rio de Janeiro (PUC-Rio), Departamento de Economia, Rio de Janeiro

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DEPARTAMENTO DE ECONOMIA

PUC/RJ

Junho/1986

TEXTO PARA DISCUSSÃO

Nº 129

INFLATION AND EXTERNAL DEBT PROBLEMS IN  
LATIN AMERICA

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Junho de 1986

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Esta publicação foi impressa  
com a colaboração da ANPEC  
e o apoio financeiro do PNPE

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## 1) Introduction

Since 1981 Latin America's economic growth rate has been significantly reduced by historical standards while inflation has been accelerating: This paper argues that this poor economic performance is a direct consequence of the policies that have been used in response to the external debt crisis. It starts by considering the question of why did Latin America overborrowed in the seventies. It follows by pointing the recessionary-inflationary nature of the orthodox external adjustment policies of the early eighties. This leads to a discussion of the new heterodox policies which are being used in Argentina, Brazil and Peru to stop inflation.

## 2) The Origins of Latin America's Indebtedness

In august 1982 Mexico's announcement of a temporary external debt payments moratorium made it clear to latin american governments, and to international organizations and comercial banks that the region had overborrowed in the previous decade and that a general payments crisis (which for latins looked more like an insoluble dead end) was on. Why did it

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happen? Why did these countries borrowed more than they should, on an a posteriori evaluation?

International capital markets were inhabited from the thirties to the sixties, basically by international organizations (such as the IMF and the World Bank) and by export-import agencies or banks from the advanced countries. By the late sixties, however, commercial banks were already a strong presence, and with the coming of the oil crisis in 1973 they amplified their role as the financial link between the surplus OPEC countries and other developing countries. The international capital market expanded, with low real rates of interest, making it possible for these developing economies to assume the larger share of borrowing. For latin america countries the environment looked very favourable with such easy and cheap credit. Not borrowing had to sound as an absurd option. It was as if suddenly all foreign exchange constraints had disappeared putting the fancy of a rapid jump into development at hand distance.

Take the case of Brazil for example. In the period 1968-73 it had, on average, annual growth rates of GDP of 10%, inflation rates around 20% per annum, rapid import growth, trade balance surpluses, small current account deficits and a substantial accumulation of foreign exchange reserves. While external debt increased fourfold to US\$12 billions, half of it was hold as reserves, and the country was able to sustain its industrialization effort (with industrial output growing an average of 14% per annum). Brazilian exports managed to grow (at 24% per annum) faster than world trade (at 18% per annum)

producing an increase in the share of brazilian exports in world markets from 0,86% in 1967 to 1,18% in 1973. It seemed that the potentialities of export driven growth were unlimited.

This rosy situation was menaced in 1973 by the first oil shock, but the brazilian reaction was to keep on growing while most of the developed world was going into recession. Public investment surged as an ambitious plan for import substitution of capital goods and basic inputs (mostly in metallurgy and heavy chemistry) was launched. As a result in the period 1974-78 GDP growth was sustained at about 7% per annum at the expense of a fourfold increase in current account deficits (to annual figures around US\$6 billions) and a piling up of external debt to US\$53 billions. After 1979 with the second oil shock and the interest rates upsurge the picture became even worse, with current account deficits above US\$10 billions and the external debt moving to US\$90 billions by 1982, with some 70% of it having been contracted under floating interest rates. Tough GDP growth proceeded at an average of 3% in the period 1979-82, at this stage oil imports were already accounting for about one half of total imports. The brazilian response to the crisis of the seventies had clearly made the country even more vulnerable to external conditions and international capital market disturbances by the early eighties.

The same effect was produced in Mexico, to take another example, by a different process. For this country the oil shock came as a boom, and seemed to indicate a fast way to riches through the development of its fuel reserves. External borrowing made it possible to develop offshore oil

production without reducing domestic consumption. About 40% of mexican imports in the seventies were of consumption goods. Current account deficits and external debt piling up resulted inevitably from a combination of mineral investments, sustained consumption of imported goods and a fall in non-oil exports, which eventually lead to the moratorium of 1982.

In some countries, such as Argentina and Chile, the easiness of external borrowing seems to have stimulated an indiscriminate opening of exchange markets which permitted perverse capital flights later on. In Argentina the period 1978-81 was the time of the neo-liberal experiments in economic policy, which introduced high capital mobility in a context of overvaluing exchange rate and falling terms of trade. Capital flight became pervarsive in this period, with the consequence that external debt was accumulated without any domestic capital counterpart; its main effect was to increase the holding of external assets by argentinians.

The experiences of Mexico, Brazil and Argentina show different stories that lead to the same final piling up of external debt: Mexico borrowed to consume, Brazil borrowed to industrialize, Argentina borrowed to accumulate foreign assets. In general, however, all over Latin America the abundance of external credit seems to have created the false impression that cheap borrowing was sufficient to sustain economic development indefinitely, generating overoptimistic expectations about the time length through which those extraordinary international capital market conditions could last. In this sense, therefore, it seems fair to say that overborrowing was a result of a sort

of lack of maturity. Latin America countries acted much as teen-agers who tend to overestimate their possibilities, taking too bright a view of the world without adequate consideration of the hard facts of life (such as having to pay back the money you borrow).

On the other hand, however, one should never forget that Latin America's current account deficits were beneficial in the seventies to the general level of economic activity. If the region had not been willing to generate the bulk of the counterpart to the current account surplus of OPEC countries (which amounted to something like US\$250 billions in 1974-79) the world would certainly have gone through a much deeper recession episode. On this we cannot avoid quoting Richard Cooper's remarks, written before the second oil shock (see Cooper, 1979, p. 325):

"What happened was that a number of countries took conscious and, I think, rational decisions to ride out the recession. They choose not to experience it in 1974-75, but to borrow abroad instead, to maintain growth and external demand, and external debt rose accordingly. They took a gamble that I think was rational and that, indeed, was very helpful from the point of view of the world economy as a whole, because they helped to limit the extent of the downturn. But it is a gamble that they essentially lost. The recession was much sharper and much longer than was anticipated at the time, and now these countries face serious decisions as to how much to retrench and how to accomplish it..." (emphasis added).

### 3) The Day After: Recessive Adjustments in the Eighties

The punishment for the "lack of maturity" of the seventies came on the wake of the debt crisis of the eighties in the form of recessive adjustments forced by the severe reduction

of the flow of external resources into the region. (Table 1) At this stage the IMF played a leading role in many countries. Of the seven major economies, Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela, which together account for almost 90% of total output of goods and services, only Colombia did not experience at least one significant annual decline in GDP (Table 2). Even in Colombia, however, the rate of growth of GDP went below the rate of growth of population, producing declines in per-capita GDP. After 1984 growth resumed but in most countries (Brazil is the major exception) at rates below historical averages.

Though each country played its own line there were many common elements in the group behaviour. Exchange rate policies moved swiftly toward devaluation. Argentina, for example, dropped its preannounced exchange rate pegging experiment and in the two years 1981-82 brought the exchange parity back to its 1975 level. Mexico and Chile devaluated in 1982, Brazil in 1983, Venezuela in 1984. Peru and Colombia made more gradual adjustments since 1982.

Another common response to the crisis was fiscal restraint, most notably in those countries that fell under IMF tutelage. In general improvements in the deficit position came from the side of reduced public consumption or increased tax revenues. Brazil, Mexico and Venezuela achieved drastic reductions in their fiscal deficits in this way (Table 3). In some of the other countries, such as Peru, Colombia and Argentina, the retrenchment of public expenditures was more than compensated by surging interest costs on internal and external



government debt, with the result that the budget position even deteriorated.

Monetary policy was restrictive everywhere, as a result of both losses in foreign reserves and domestic credit contractions (Table 4). In Argentina, Brazil and Peru, the real quantity of money had been reduced by 1985 to one third of its 1980 level. Chile and Mexico also experienced severe monetary restraint; Venezuela was the only case of a more or less passive monetary policy.

In most countries a significant fall in real wages was also part of the adjustment process; Colombia, Brazil and Argentina being the three exceptions (Table 5). This resulted from the combination of recession, accelerating inflation and discretionary wage policies.

At a rather impressionistic level we may summarize the whole recessive adjustment process of the Latin American economies in the eighties as follows. The collapse of external finance in conjunction with high international interest rates produced a balance of payments crisis and intensified fiscal budget imbalances. When exchange rate devaluation was used to solve the balance of payments problem it worsened the deficit problem, increasing the domestic currency value of the interest rate charges on the external debt held directly by government and its enterprises. Devaluation also triggered inflation by increasing the domestic prices of imported inputs (which in many countries meant mostly oil derivatives). The balance of payments crisis stimulated quantitative import restrictions producing supply shortages of imported capital and intermediate

goods which by its turn reduced domestic investment and current production. Hence, the first recessive impact came directly through supply bottlenecks of imported inputs.

Though it is true that inflation (or more precisely, its acceleration) acted as a mechanism to transfer real income from workers to the financial sector and to government, recession acted by reducing the tax base, with the consequence that the fiscal deficit threatened to move up, especially because it was also pressed by the high level of interest rates on government external debt. For those countries that had to negotiate with the IMF the only feasible way to straighten the government budget position was by curtailing public investment, which produced more recession. The IMF also required a tight monetary policy, which moved domestic interest rates up, producing more public deficit as a result of the increased interest rate charges on government's internal debt. In the end the combination of falling real wages, reduced public expenditures, monetary restraint and supply bottlenecks could not fail to be tremendously recessive.

#### 4) The Inflation Side Effect

Latin America's adjustment to the debt crisis was clearly stagflationary (Table 1). It produced a decrease in the growth rate of GDP (actually, negative rates in 1982-83) coupled with a threefold increase in the average rate of inflation, which reached the 150% per annum mark in 1984-85. Inflation was a result of the need to change some key relative prices; namely

the price of tradable goods (particularly imported energy inputs) relative to non-tradable goods and the real wage, as part of the balance of payments adjustment process. In most cases exchange rate devaluation was the main trigger mechanism, increasing the real domestic prices of imported inputs and thereby making the rate of inflation move up. The same effect, however, resulted from increases in domestic prices of energy inputs in response to higher international prices (as in 1979-80 in the case of Brazil) or from increases in the domestic prices of imported goods that became scarce as a consequence of the foreign exchange bottleneck.

Table 6 shows the behaviour of inflation by country in the last five years. The general tendency was upwards with the exceptions of Colombia, which showed a remarkably stable inflation rate in the period, Venezuela, which had only a temporary inflation surge in 1984, and Chile, which after the 1982 jump showed considerable stability in the rate of inflation. For some countries the upward movement led to three digits inflation, raising worrisome signs of a hyperinflationary trend. Argentina showed an annual rate close to 700% by the end of 1984 (which went up to a peak of 1128% in June, 1985), Brazil surpassed the 200% mark by 1985. Mexico came close to 100% in 1982 but then managed to bring the inflation rate down to 60%.

By comparing the rates of inflation of Table 6 with the rates of devaluation of the real exchange rate in Table 7 we observe that a real devaluation was systematically associated with an inflation acceleration in the same or the following year. In 1982 the devaluations by Argentina, Chile and Mexico seemed to produce a jump in the

rate of inflation in the same year. Something similar happened with Brazil in 1983 and Venezuela in 1984. In Peru the inflation jumps seemed to occur in the year following the devaluation, perhaps because these particular devaluations occurred at year ends.

Though inflation is a complex phenomena and each country had its particular history under different institutional settings, it is hard to avoid the notion that this inflation surge of the eighties was predominantly a consequence of the supply shocks generated by the external adjustment. Brazil gives a clear cut example. In 1983 real money supply fell by almost 50%, the public deficit was cut by one half (from 6.2% in 1982 to 2.7% in 1983, according to BIRF figures) and real wages decreased 9% ; yet the inflation rate jumped by some 100 percentage points. What was the cause? It could only have been the relative price shifts produced by the 30% maxidevaluation of february, 1983, coupled with a foodstuff crop failure. These supply shocks were amplified into a 100 percentage points inflation acceleration by the brazilian indexation mechanisms.

there is no doubt that Latin America's inflation surge of the eighties was predominantly a supply side phenomenon. The interesting question is why did it hit different countries with so different intensities. While Argentina, Brazil and Peru found themselves in 1985 in open three digit inflation processes, Chile, Colombia and Venezuela still showed acceptable (by regional standards) two or one digit figures. How can one explain that comparable exchange rate devaluations in Brazil-1983 and Venezuela-1984 could have had so different inflationary consequences? Why did the exchange rate devaluation in Mexico-1982, which was

twice as large as the brazilian devaluation of 1983, produced a smaller inflation acceleration?

The answer in my opinion has to do with indexation, which is a key element for a correct understanding of any three digit inflation process. Indexation itself is a consequence of chronic inflation. When a society experiences significant inflation for a long period its economic agents develop an indexation technology, a set of techniques which allows them to live under high inflation without suffering too much from it. Brazilians, for example, have traditionally boasted about their ability to live much better under high inflation than americans or europeans (and sometimes we have indeed produced very high GDP growth rates notwithstanding inflation). Nevertheless there is a perverse twist in this situation, because, though indexation is perfectly rational from the point of view of each individual who thrives to survive inflation, the sum of these private rationalities leads to a result that is clearly irrational from the point of view of society as a whole, namely, an open self-sustaining inflation process, that cannot be dealt with by traditional monetary and fiscal policy instruments. The inertia element becomes dominant in inflation and the economic system get caught into a sort of inertial trap, a prisoner's dilemma from which no-one can scape by himself, and which turns (past) inflation into the basic cause of (present and future) inflation.

Indexation sets in because under high inflation economic agents are forced to develop mechanisms to protect

their real incomes from the inflationary erosion. This means linking the price of the good or service he sells (which in the case of a worker would be his wage) as well as possible to an average of the prices of goods and services he buys (which, in the case of a worker, would be the cost of living index). In some countries, such as Brazil, some of these mechanisms were defined by the law: each wage, for example, used to change at six months periods in proportion to the consumer price index. Government regulation, however, is not essential for indexation; it will tend to appear spontaneously even without any regulation\*.

In a highly indexed economy, inflation becomes predominantly inertial: prices increase because costs increase, and costs increase because prices increase. All prices are going up because all prices have gone up recently. At the bottom of the process we find the main cause for this inertia in a specific pattern of behavior that becomes more and more widespread as inflation goes up. It is a highly defensive backwardlooking behavior in price formation by which at more or less fixed time intervals people try, by means of price increases, to get back that part of the purchasing power of their incomes that has been eroded by inflation since previous price increases. When all economic agents adopt under normal conditions this strategy of periodically resetting their real incomes to their previous peak levels, the rate of inflation

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\* As a matter of fact in most cases government regulations acts more as a restraint on indexation. In the case of Brazil, for example, the wage law kept wage indexation on a semestral basis in 1984-85 when inflation was already going at a six months rate of 80%. Without government regulation wage indexation would have changed to a quarterly or monthly basis, making the inflation process even more unstable. Hence formal indexation acted as a stabilizing element in this case.

tends become sticky: yesterday's inflation becomes today's inflation trend. The economy is caught into an inertial inflationary equilibrium.

But if this is so, how can we explain inflation jumps? The answer is that any inertial inflation equilibrium can be disturbed by large relative price shifts. Theoretically, if the indexation mechanisms were perfect no relative price shift would be possible, and any attempt to produce such a shift would cause inflation to explode to infinity. Indexation mechanisms are built exactly with the intention of not allowing relative price changes, which always benefit some individuals at the expense of others. In practice, however, these mechanisms are never perfect and they can never completely fulfill their goal. Economic agents do not review their prices continuously, and even under very high inflations price corrections occur at monthly or larger intervals. Also, the degree of indexation usually differs among individuals: in Brazil for example one could find semestral and quarterly wage indexation coexisting with monthly industrial prices indexation.

It is precisely because indexation is always imperfect and uneven that relative price shifts can be produced by inflation accelerations. When inflation goes up those prices that are less perfectly indexed tend to lag behind those other prices that are more perfectly indexed. This has long been a well understood fact in Brazil: because most wages were indexed on a semestral basis while most commodity prices changed on a one or two months basis, inflation accelerations (not caused by wage pushes) always produced real wage losses.

If in Brazil wages had been indexed on a quarterly instead of semestral basis, while prices of goods went on changing on a one to two months basis, inflation accelerations would still produce real wage losses, but in this case a given real wage reduction would require a larger inflation increase. This is another fundamental fact about indexation: as an economic system becomes more intensily indexed inflation accelerations become relatively less efficient in producing relative price shifts. In a heavily indexed economy even small relative price changes may require large inflation jumps.

We can understand now why the debt crisis produced such an uneven incidence of inflation in Latin America, even for countries such as Brazil and Chile with comparable real exchange rate devaluation histories. The degree of indexation was very different among its economies, making it possible for some of them (the less indexed ones) to produce the relative price shifts necessary for external adjustment with only moderate or even without permanent inflation jumps while the others (the more indexed ones) had to accept large permanent inflation jumps to produce the same results. Any casual visitor to the region in the early eighties could see that Argentina (with monthly wage indexation and many prices being quoted in US dollars) was more intensily indexed than Brazil (with semestral wage indexation and a lot of price controls). This helps explain why Argentina came closer to hiperinflation than Brazil. The casual visitor would probably find that Peru and Mexico (with some experience with two digits inflation but almost no formal indexation) were less indexed than Brazil but more



indexed than Chile and Colombia. He could also not fail to notice that Venezuela was almost free of indexation.

#### 5) Heterodox Shocks

This understanding of high inflation as a result of formal and informal indexation has been the theoretical basis for some innovative stabilization plans which have been launched in Latin America since 1985: the argentinian Austral Plan of June 85, the brazilian Cruzado Plan of february 86 and, to a lesser extent, the peruvian Inti Plan of august 85. The first results of these plans, as reported in Table 8, have been quite favorable. Though it is still early for a complete evaluation, there is no doubt that the hiperinflation trend has been contained in all of these countries (most clearly in Argentina which was on the edge of it).

The programs have been built on the notion that the economies were caught on inertial inflationary traps resulting from widespread indexation. Their main goal is to erradicate indexation from the economic system, that is to say, to change patterns of behavior in price and wage setting in ways complatible with price stability. In this sense they are programs of cultural change, which will really succeed only if they can eliminate all inflation memories and habits from people's minds. They must undo what the long acquaintance of society with inflation has produced, making economic agents forget their sophisticated techniques for surviving high inflations. They must become as inflation-dumb as common

americans or europeans. That is the only safe way to turn open inertial inflations into closed inflations.\*

We can convey some flavor of what is going on in these stabilization experiments with a very brief description of the brazilian cruzado plan. There is, of course, no need to point that each program is a different individual, being applied under different circumstances in different institutional settings. They do have in common, nevertheless, their heterodoxy and the basic diagnosis that indexation is the main enemy.

A common important characteristic of the Austral and Cruzado plans was that they started with a currency reform\*\*. In Brazil the old cruzeiro, was replaced by the new cruzado on February 28th at the rate of 1000 cruzeiros per cruzado. The idea was that this signaled a once and for all break with the inflation past and the beginning of a new price stability era. One should not minimize this symbolic role of the currency reform. After all if inertial inflation results from the pattern of behavior of economic agents, changing this behavior is to a large extent a problem in social psychology. The monetary reform demonstrates that government has taken the firm decision to launch an ambitious plan for the definitive eradication of inflation. While changing the monetary unit, it also redefines the rules of the old inflation game, making a bet on the stability of prices in the new environment. The bet is made

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\* This open-closed inflation distinction should be clarified. An open inflation has no anchor in price stability; it can perpetuate an inflation equilibrium at any conceivable rate. The process essentially feeds back on itself. A closed inflation is anchored on price stability. Supply shocks produce only inflation bubbles that tend to dissipate over time. The system does not produce stable inflation equilibria; it is stable only on a zero inflation path.

\*\*This was not so in Peru because the new currency, the Inti, had already been introduced by a different government at the beginning of the year (in May). This was unfortunate because it deprived the peruvian plan of this important element of psychological punch. See Espejo (1986).

explicit by the decision to maintain a fixed exchange rate of the cruzado on the dollar, and by the freezing of prices of public enterprises (oil derivatives, steel) and tariffs (energy, communications, post office). Price stability can only be achieved if bets like this are made by a great majority of society, so that strong social and political forces are put to work in the direction of avoiding a resurgence of inflation. By fixing its prices and the exchange rate in the new currency, government takes the lead and sets the example. It should also be noted that for the public at large the introduction of a new monetary unit has a certain magic element (as most people find money a most mysterious entity) which helps to strengthen the message that there is a break with the inflation ridden past and the beginning of a new life under price stability.

The reform has also set the stage for the conversion of the cruzeiro values at the moment of the shock of prices and earnings to new cruzado values consistent with a non-inflationary environment. This was much more of a problem in Brazil than in Argentina because the economy was less indexed. Wages, for example, were indexed on a semestral basis, with the consequence that at the moment of the reform some workers were earning a real wage above their permanent, medium term average; others were earning a real wage below their medium term average. The problem is that in a high inflation environment the real value of any price or earning that is reset only at fixed intervals oscillates between peak and trough values never settling on its average value, even when this average remains constant over time. If we move into a non-inflationary

environment it is obvious that the conversion of prices and earnings should aim at these average values (at least if one wants a distributionally neutral conversion). In practice this meant that some nominal wages had to be reduced when compared with the values that come from the simple 1000 cruzeiros per cruzado conversion used for notes and demand deposits; others had to be increased relatively to the same standard. The program had to set complex schemes for the conversion of wages, rents and all sorts of earnings into average equivalents consistent with price stability, and that was much easier to do in the special "change of rules" climate produced by the monetary reform.

The conversion of the financial sector to a new non-inflationary mode of operation was also made easier by the monetary reform. Financial operations typically involve contracts for the future delivery of money at a certain interest cost. Under high inflation interest rates have a built in charge to compensate for the expected future loss in the purchasing power of money. With the sudden stabilization produced by the shock, existing contracts, which made sense on the expectation that inflation would follow its previous trend, turn out to have exorbitant real interest rates, because in this new situation the expected future loss in the purchasing power of money does not occur. Hence existing financial contracts have to suffer some adjustment to avoid arbitrary (and quite substantial) real income transfers from borrowers to lenders.

The monetary reform solved this problem in both the Cruzado and Austral plans by letting existing financial

operations be liquidated in terms of the old currency as contracted (hence existing cruzeiro obligations remained valid) but defining a rate of conversion between the old and the new currency (the cruzeiro value of the cruzado) that depreciates daily in such a way as to mimic what would happen if the two monies coexisted with inflation following its previous trend in the old money while the new money remained stabilized. The resulting old money-new money conversion table also has a powerful psychological educational effect on the population at large. People use the conversion table to pay their old cruzeiro debts and thereby get an additional reassurance of the stability of purchasing power in the new monetary unit.

The monetary reform and the conversion of prices, earnings and financial charges to values consistent with price stability is the first step in the heterodox shock program. The second final step is wiping out indexation. This can be accomplished by a general (though obviously temporary) price freeze and by the prohibition of indexation links in all sort of financial contracts, wage contracts, rents, etc. Here however there is a delicate element of risk. If indexation is really 100% wiped out, the economy can only operate with a very low inflation rate. If there is a residual two digit inflation after the shock, as happened in the Austral plan, some sort of indexation will have to be reinstated under quite unfavorable psychological conditions, spoiling much of what has been accomplished with the initial shock. A more cautious alternative, which was adopted in the Cruzado plan, is to wipe out only the short term indexation links with time intervals smaller than

one year while retaining some longer term indexation. In the case of wages, for example, there remained an automatic yearly correction for 60% of the change in the consumer price index, and a 100% trigger point mechanism that will go into effect whenever inflation accumulates more than 20% in any twelve months time interval. If inflation in the new money does indeed disappear, this long term indexation will turn out to be irrelevant; if inflation remains, it will help keep the economy operating without the need of a drastic revision in the plan.

In a heterodox shock program the traditional instruments of monetary and fiscal policy assume a secondary role, and that is what is mostly heterodox about it. Stabilization is to be achieved by a direct action on the price setting behavior of economic agents, not by indirect restraint on money supply or aggregate demand. All one needs is that the fiscal, monetary and credit parameters be reasonably consistent with a low inflation path. They have a passive rather than active role. In practical terms this means that there is no need to produce a zero deficit or a surplus in the public budget, since many countries in the world have experienced low inflations with deficits of 2 or 3% of GDP and larger. It also means that monetary policy must look at the market interest rate (as in the old keynesian central banking days) rather than at the money supply, since this will have to expand substantially as the stabilization increases liquidity preference and produces a shift from quasi-money to traditional money within the (well defined) monetary aggregate. In Brazil this last effect may cause the monetary base to increase two or three times without producing any excess liquidity.

TABLE 1

## LATIN AMERICA: SOME GENERAL ECONOMIC INDICATORS

Year	Rate of Growth of GDP (%)	Investment- GDP ratio (%)	Export - GDP ratio (%)	Import - GDP ratio (%)	Terms of Trade (%)	Annual Rate of Inflation (%)	Interest Payments- Exports (%)
1977	5.0	25.0	8.2	10.4	102	40.0	11.1
1978	4.4	24.5	8.8	10.9	92	39.0	15.5
1979	6.4	23.8	9.2	11.3	95	54.1	17.4
1980	5.1	25.3	9.3	12.1	100	56.1	19.9
1981	0.4	24.7	9.9	12.2	92	57.6	27.6
1982	-1.5	20.8	9.8	10.2	84	84.8	40.5
1983	-2.5	17.1	10.8	7.6	83	131.1 (b)	35.9
1984	3.2 (a)	17.2	13.2	9.5	86	152.0 (b)	35.7
1985	2.8	n.d.	n.d.	n.d.	84	144.7 (b)	36.0

(a) The rate is 0,8 if Brazil is excluded.

(b) Bolivia not included

Sources: "Anuário estadístico de América Latina 1984", CEPAL.

"Balance Preliminar de la Economía Latino Americana 1985", in Notas sobre la Economía y el Desarrollo, nº 424/425, Dec. 1985.

"Estadísticas Financieras Internacionales 1985", FMI.

TABLE 2

## RATES OF GROWTH OF GDP (%)

Country	1981	1982	1983	1984	1985
Argentina	-6.2	-5.1	2.9	2.0	-3.0
Brasil	-1.6	0.9	-3.2	4.1	7.0
Chile	5.5	-14.1	-0.7	6.0	2.0
Colombia	2.3	1.0	1.0	3.0	2.0
Mexico	8.0	-0.5	-5.3	3.5	3.5
Peru	3.0	0.9	-11.8	3.5	2.0
Venezuela	-0.3	0.7	-4.8	-1.7	0.0

Sources: Banco Interamericano de Desarrollo, CEPAL.



TABLE 3

PUBLIC BUDGET SURPLUS OR DEFICIT AS % OF GDP

	1980	1981	1982	1983	1984
Argentina	-7.6	-15.9	-16.7	-15.7	-12.4
Brazil	-9.1	-7.2	-6.2	-2.7	0.2
Chile	5.5	0.8	-3.4	-2.5	-4.1
Colombia	-2.4	-5.9	-6.8	-6.8	-7.5
Mexico	-7.0	-13.5	-17.6	-8.9	-6.9
Peru	-5.3	-8.4	-9.1	-11.6	-8.1
Venezuela	-13.5	1.3	-3.9	3.0	3.6

Source: Banco Interamericano de Desarrollo.

TABLE 4

INDEX OF THE REAL QUANTITY OF MONEY (1980 = 100)

	1981	1982	1983	1984	1985 (a)
Argentina	75.2	84.0	72.9	55.6	45.3
Brazil	95.5	81.3	56.8	55.9	48.1
Chile	85.8	77.8	79.7	73.3	67.1
Colombia	94.6	95.6	101.3	92.6	83.3
Mexico	103.4	85.7	66.5	66.7	55.3 (b)
Perú	84.9	66.2	57.7	58.9	44.6
Venezuela	98.8	96.7	109.1	114.1	109.4

Source: FMI, Estadísticas Financieras Internacionales, Feb. 1986

(a) June

(b) March

TABLE 5  
CHANGE IN AVERAGE REAL WAGES  
(%)

	1981	1982	1983	1984	1985	1981-85
Argentina	-10.6	-10.4	29.3	26.9	-9.9 (a)	18.4
Brazil	6.0	9.8	-8.6	-0.1	9.7 (b)	16.6
Chile	9.1	-0.4	-10.6	0.3	-6.5 (c)	-8.9
Colombia	1.4	3.7	5.0	7.5	-3.7 (d)	14.2
Mexico	2.4	5.2	-27.7	-4.2	-0.6 (e)	-25.8
Peru	-8.6	2.0	-7.3	-13.5	-20.5 (f)	-40.6

Source: CEPAL, Balance Preliminar de la Economía Latinoamericana 1985.

(a) Manufacture. Jan-Aug 1985

(b) Manufacture. Jan-Jun 1985

(c) Manufacture. Jan-Sep 1985

(d) Manufacture. Jan-May 1985

(e) Manufacture. Jan-Apr 1985

(f) Private Sector in Lima Metropolitana. Jan-Aug 1985

TABLE 6

## RATES OF INFLATION

(12 months % change in December)

	1981	1982	1983	1984	1985 (a)
Argentina	131.2	208.7	433.7	688.8	463.3
Brazil	91.2	97.9	179.2	203.3	217.9
Chile	9.5	20.7	23.6	23.0	26.5
Colombia	27.5	24.1	16.5	18.3	23.5
Mexico	28.7	98.8	80.8	59.2	59.8
Peru	72.7	72.9	125.1	111.5	169.9
Venezuela	10.8	7.9	7.0	18.3	6.8 (b)

Source: Balance preliminar de la economía Latinoamericana 1985.

(a) Nov-85/Nov-84

(b) Oct-85/Oct-84

**TABLE 7**  
**REAL EXCHANGE RATE DEVALUATION**  
 (12 Months % Change in December)

	1981	1982	1983	1984	1985(a)
Argentina	55.8	118.8	-10.1	-2.5	-3.0
Brazil	2.0	-0.1	39.4	6.6	2.2
Chile	-8.2	56.6	-3.2	18.6	18.5
Colombia	-8.6	-4.8	8.6	8.4	21.1
Mexico	-12.5	85.3	-17.2	-16.3	13.8
Peru	-13.9	13.3	1.7	18.4	7.4
Venezuela	-9.0	-6.5	-6.4	47.4	-5.6 (b)

Source: FMI, Estadísticas Financieras Internacionales, Feb. 1986.

(a) Nov-85/Nov-84

(b) Oct-85/Oct/84

TABLE 8

LATIN AMERICA'S HETERODOX STABILIZATION PLANS

MONTHLY INFLATION RATES (%)

	Austral Plan Argentina	Cruzado Plan Brazil	Inti Plan Peru
Average Inflation in the Six Months before the shock	25.9	12.8	10.9
Average After-shock Inflation	3.1 (nine months)	-0.4 (preliminary data - first month)	4.1 (eight months)

REFERENCES

- Bacha, Edmar and Malan Pedro, "Brazil's Debt: from the Miracle to the Fund", november 1984, PUC/RJ.
- Banco Interamericano de Desarrollo (BID), Dívida Externa: Crise e Ajustamento, 1985.
- Comissão Econômica para América Latina (CEPAL), Anuário Estadístico para América Latina 1984.
- \_\_\_\_\_ "Balance Preliminar de la Economía Latinoamericana 1985", en Notas Sobre la Economía y el Desarrollo, nº 424/425, Dec. 1985.
- Cooper, R. "Problems and Prospects for the World Economy: Round Table" in R. Dornbusch and J. Frenkel, (eds.), International Economic Policy, John Hopkins University Press, 1979.
- Espejo, Alberto, "Plan INTI: La Experiencia Heterodoxa en el Peru", mimeo, PUC/RJ, April 1986.
- Ffrench-Davis, Ricardo, "Deuda Externa y Alternativas de Desarrollo en America Latina", December 1984, Estudios CIEPLAN nº 15.
- Foxley, Alejandro, "El Problema de la Deuda Externa Visto desde América Latina", December 1985, Estudios CIEPLAN nº 18.
- Lopes, Francisco, Choque Heterodoxo: Combate à Inflação e a Reforma Monetária, April 1986.
- Rocha, Roberto, "Debt Dynamics: A Survey of the Recente Literature", October 1984, IMF.

Taylor, Lance, "The Crisis and Thereafter: Macroeconomic Policy Problems in México", November 1983. University of California at Santa Cruz.

Zedillo, Ernesto, "The Mexican External Debt: The Cast Decade" February 1984.



79. Werneck, R.F. "Uma Análise do Financiamento e dos Investimentos das Empresas Estatais Federais no Brasil, 1980-83".
80. Bacha, E. e P. Malan, "Brazil's Debt: From the Miracle to the Fund".
81. Lara Resende, A. "A Moeda Indexada: Nem Mágica nem Panacéia".
82. Bacha, E. "O Fim da Inflação no Reino de Lisarb".
83. Abreu, M.P. "A Dívida Pública Externa do Brasil, 1824-1931".
84. Arida, P. "Economic Stabilization in Brazil".
85. Arida, P. e A. Lara Resende; "Inertial Inflation and Monetary Reform in Brazil".
86. Carneiro, D.D.; "O Conceito de Liquidez e o Comportamento de Alguns Indicadores para a Economia Brasileira".
87. Arida, P. "Macroeconomic Issues for Latin America".
88. Carneiro, D.D. "Growth Perspectives for Indebted Latin America: A Note on Major Issues".
89. Correa do Lago, L.A. "O Surgimento da Escravidão e a Transição para o Trabalho Livre no Brasil: Um Modelo Teórico Simples e uma Visão de Longo Prazo".
90. Lopes, F.L. e E. Modiano; "Determinantes Externos e Internos da Atividade Econômica no Brasil".
91. Werneck, R.L.F. "A Questão do Controle da Necessidade de Financiamento das Empresas Estatais e o Orçamento de Despesas Globais da SEST".
92. Fraga Neto, A. "German Reparations and the Brazilian Debt Crisis: A Comparative Study of International Lending and Adjustment".
93. Werneck, R.L.F. "Empresas Estatais, Controle de Preços e Contenção de Impostos".
94. Modiano, E.M. "O Repasse Gradual: Da Inflação Passada aos Preços Futuros".
95. Fraga Neto, A. "Price Uncertainty and the Exchange-Rate Risk Premium".
96. Fraga Neto, A. "Indexation and Inflation in Brazil".
97. Bacha, E. "The Future Role of the International Monetary Fund in Latin America: Issues and Proposals".
98. Fraga Neto, A. e A. Lara-Resende; "Déficit, Dívida e Ajustamento: Uma Nota sobre o Caso Brasileiro".
99. Modiano, E.M. "A Inflação e a Moeda Indexada".
100. Bacha, E.L. e R.E. Feinberg; "The World Bank and Structural Adjustment in Latin America".
101. Camargo, J.M. "NRB Products Boom and Industrial Growth in Brazil: 1967-1980".

102. Bacha, E. "Banco Mundial: Um Memorando Brasileiro".
103. Camargo, J.M. "Política de Renda e Ajuste Macroeconômico".
104. Lopes, F.L. "Novo Austral na Argentina".
105. Abreu, M. de P. e W. Fritsch; "Brazil's Foreign Borrowing from Multilateral and Governmental Agencies: An Overview of Past Experience and the Present Challenge".
106. Modiano, E.M. "Repasses Mensais: Uma Alternativa de Política Salarial".
107. Abreu, M. de P. e W. Fritsch; "Latin American and Caribbean Countries in the World Trade System: Past Problems and Future Prospects".
108. Modiano, E.M. e F. Lopes; "Inflação: Análise do Impacto de Mudanças na Política Salarial".
109. Carneiro, D.D. "Long Run Adjustment, Debt Crisis and the Changing Role of Stabilization Policies in the Brazilian Recent Experience".
110. Bacha, E.L. "Preliminary Notes on the Economic Strategy of the New Brazilian Government".
111. Lopes, F.L. "A Medida da Inflação no Brasil".
112. Modiano, E.M. "O Choque Argentino e o Dilema Brasileiro".
113. Modiano, E.M. "A Escala Móvel e o Fio da Navalha".
114. Moraes, P.B., "Uma Nota sobre as Importações Brasileiras de Produtos Manufaturados".
115. Lopes, F.L., "O Problema do Descongelamento".
116. Amadeo, E.J., "Notes on Growth, Distribution and Capacity Utilization".
117. Modiano, E.M., "O Pacto Social: A Experiência de Israel".
118. Amadeo, E.J., "Changes in Output in Keynes's Treatise on Money".
119. Abreu, M. de P. e W. Fritsch; "Condicionantes Externos ao Crescimento Brasileiro: Cenários para a Segunda Metade dos Anos 80".
120. Amadeo, E.J., "Changes in Capacity Utilization in "Fully Adjusted Situations".
121. Werneck, R.L.F. "Poupança Estatal, Dívida Externa e Crise Financeira do Setor Público".
122. Amadeo, E.J. "A Preliminary Essay on Ideology and Economics".
123. Amadeo, E.J. "The Post-Wicksellian Approach to the Theory of Employment and Price Determination".
124. Camargo, J.M. "Margem Bruta de Lucros, Fragilidade Financeira e Nível de Atividade".
125. Carneiro, D.D. "Passivo do Governo e Déficit Público: A experiência da economia brasileira no período de 1970/84".

126. Amadeo, E.J. "On Money Wages: Keynesian and Monetarist Critiques of Keynes's Closure of the Labor Market"
127. Abreu, M.P. "Política Social no Brasil: A Relevância dos Paradigmas Históricos e Comparativos".
128. Moraes, Pedro B. e Luis Serven. "Dollarization and Credibility: An Analysis of the Mexican Experience".