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Stabilization policies and adjustment: The Brazilian economy in the Eighties

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1. Introduction

The purpose of this paper is to review the Brazilian experience with stabilization policies since the second oil shock. As the most indebted country in the Third World at the beginning of the present decade, Brazil has called the attention of economic analysts throughout the world in the past three years by the insistence of its government that untrammeled economic growth is the only acceptable way towards repayment of its external debt. In spite of the difficulties of International trade and financial markets in those years, it has so far displayed a highly favourable record: redemocratization has proceeded without major political crisis, economic growth was re-established as the main objective of governmental policy without impairing Balance of Payments prospects, and the country has been accumulating foreign exchange reserves without resorting to international banks for new money. Since 1984, its performance has helped overcoming scepticism of the financial community, that has gradually been convinced that orthodox policies may not have any essential role to play in the design of ajustment policies aiming at an acceptable prospect for the major foreign debt indicators for the rest of the decade and beyond.

In order to understand how the present State of affairs was possible we have to briefly recall the story of the removal of the fopeign exchange constraint since the first oil shock, as well as try and evaluate the role of stabilization policies in this experience. Since each particular pattern of macroeconomic policy is not, the result of rational choice operating in a vacuum of political constraints, but is actually the product of cojnplex intertwining of social forces defining the feasible choice set of macro-decisions, the nature of the main forces operating in the Brazilian scene will be considered in section 2 below, before the basic elernents of the Brazilian economic model are described in section 3 and, in section 4, the record of stabilization attempts in the recent years is reviewed, up until the IMF experience of 1982/84. As a result of domestic responses to external shocks and of accomodating distributive effects, inflation remained the most important menace to the continuity of recovery after 1985. In Februaxy 1986, the Sarney government adopted a radical change in stabilization policy by promoting the so-called “heterodox shock”, that is a monetary reform eliminating indexation and decreeing a general price freeze whose main elernents are described in section 5. Finally, in section 6 projections for some crucial variables for the period 1986/90 are analysed in a “basic scenario” for external exogenous variables and in two alternative scenarios corresponding respectively to the so-called “hard landing” and “co-operative” scenarios described by Stephen Marris (see Marris [1985]).

2. Socio-political Constraints to Stabilization Policies

In spite of being one of the most dynamic economies in the capitalist world, Brazil remains one of the countries where poverty and social inequality stand up as a remarkable feature in its income group, according to the World Bank classification. In the "miracle" years of the early seventies the debate over the inequalizing nature of the Brazilian growth model occupied the centre stage of most evaluations of the experience. Both the stabilization of the mid-sixties and the fast growth of the 1967/74 period seem to have resulted in more inequality. Although concern with "social pressures", in the beginning of the present decade, spread even among the conservative military who feared that a peaceful transition to democracy could be under menace if wages bore the main burden of stabilization, efforts at improving the lot of the poor do not show up in main social indicators, according to Abreu (1985). Life expectancy at birth is similar to that of the Phillipines, that has about one third of the Brazilian per capita, income infant mortality is more than twice that of South Korea, that has around the same levei of per capita income, and adult illiteracy is one of the highest of its income group. According to the same author, basic social indicators have not only been extremely unsatisfactory in comparative terms, but also have shown little improvement in the past twenty years. That means that growth alone has not been sufficient to guarantee the proyision of the basic needs of the population in terms of food, health, education or housing, althpugh the present size of the economy, measured by its producttye capacity is larger than those of Spain or Australia, for example, or equiyalent to around 70% of Italy's or 80% of Canada's.

The pressure of demographic growth has been pointed out by many conservative analysts, inclusive of those in International agencies, as the main obstacle to the improvement of social indicators. Such analyses, however, tend to minimize the effects of the unequal character of to Brazilian growth and concentrate on the defense of general adoption of demographic control, while ignoring the decline of 25.9% in fertility rates that has occurred between 1960/70 and 1975/80, according to Carvalho (1984).

In terms of income distribution, it should suffice to recall that at the beginning of the present decade, the poorest 20% received only 2% of total income, that is, less than the correspondent share in Indonesia, Egypt, South Korea, Argentina, Mexico, Thailand or Yugoslavia, while the richest 20% of the population received a higher share than their counterpart in any of the above countries.

"Grow first, distribute later", has been the usual conservative answer to the critics of unequal growth in the late sixties and early seventies. By the time of first oil shock, however, the military establishment added to the conservative tenet the requirement that social unrest should not impair a peaceful transition to democratic rule. In practical terms it meant that resort to wage Controls was not a feasible strategy for dealing with, inflationary pressures, as it happenned to be in the mid-sixties

stabilization experience. The upsurge of inflationary pressures in 1973/74, originated from both the overheating of the demand and the rise of import prices, would not thus be appeased by a fali in real wages. In fact, most criticisms of the stabilization of 1964/66 concentrated on the wage control formula then adopted, that replaced the usual attempts at recovering the peak of real wages by trying to maintain the average real wage between adjustments. In particular, critics pointed to the systematic underestimation of future inflation as a means to punish workers for any acceleration of inflation beyond the target implicit in wage adjustment parameters. To make sure that workers of the organized labour market would not bear the burden of inflation control in the future, President Geisel's government, which took over in 1974, adopted a new formula by which eventual underestimation of future inflation in wage adjustment parameters would be corrected in the following adjustment. In consequence, underestimation of expected inflation led to corrections above the past increases in cost of living indices.

The second practical consequence of the "concern with social unrest" came when the stabilization attempt of mid 1974, coordinated by Mario Simonsen, then Minister of Finance, was virtually abandoned in the beginning of 1975. The basic feature of the plan was a combination of traditional monetary restraint via reduction in the real growth of the monetary base with the adoption of stricter control over the marking-up process af industrial prices formation. Twelve-month inflation rates were reduced. from a peak of 35.2% in 1974 to 22.1% in May 1975, but signs of industrial recession represented by a rapid deceleration of industrial growth from 14 to 0,8% became politically unbearable for the government, especially after the parliamentary elections of November 1974 made clear that it would face a stiff opposition in Congress for the first time since the military coup in 1964. The opposition party (MDB – Brazilian Democratic Movement) had displayed its intention of availing of any space provided by the lifting of control over the press to voice the discontent that had been accumulated among workers and the urban middle-class during the worst years of political repression (1968-73).

As a consequence, the new limits defined for the design of stabilization policies following the first oil shock pointed to pre-eminence of issues of self reliance upon the achievement of low inflation, and of making use of the available foreign finance to design a long-run strategy for overcoming balance of payments problems. "Growth-cum-debt" was therefore the line of least resistance available to the Geisel government. By the end of 1975, a new five-year development plan (II PND) was approved by Congress defining the essential lines of this strategy. An ambitious programme of investments was directed towards the improvement of the trade-balance in the long run by means of irnport substitution in crucial sectors like intermediate inputs and capital goods, and of promoting exports both through diversifying recipient markets and better exploring the resource base of the economy. After the oil shock, the economic content of the recently discoyered mineral riches,

especially in the Amazon, had been enhanced by the availability of abundant hydroelectrical potential that favoured the production of aliminium and other non-ferrous metais, as well as induced investments downstream in the production of exportable manufactures.

On the other hand, conflicts between the private and the public entreprises were to be softened as a clear complementarity could be explored between private and public production, the public sector engaging in the production of cheap inputs for private industry as well as in the provision of infra-structure of transportation and energy. Although the debate upon the appropriate role of the State in a capitalist society has been a favorite topic of Brazilian industrialists', there seems to be no evidence that the expansion of the Brazilian State enterprises has hampered the growth of the private industry. In fact, due to the strategic localization of the state companies in the structure of Brazilian productive sector, one important argument that is generally omitted in the discussions over private vs. public capital is that of the complementary nature of public investmerit in Brasil. Even in those sectors that haye been especially characterized by the presence of both types of companies (such, as the petrochemical, on,e of the sectors that grew more rapidly after the investment programme of the II PND), the division of tasks between public and private enterprises tends to favour the latter, as the subsidiaries of Petrobrás concentrate on the provision of first generation inputs and private companies in the final stages of production.

Another important element pertaining to the social inter-relationships of the strategy was the provision of savings for the new investment programme. Higher domestic savings were hard to be obtained via higher income concentration in the private sector, due to the above mantioned distributive and political considerations. On the other hand, compression of government consumption and subsidies could not be obtained without either aggravating the social indicators or weakening the stimuli to private investment in view of the higher plateau of 30 to 40% of annual inflation rates. In fact, after the first oil shock the harnessing of private interest to the new government strategy required an increase in government transfers to the private sector to induce the maintenance of a high level of investment. The government increased subsidies for consumption with the decision of both not promoting a real devaluation and not fully adjusting domestic oil prices after the shock. It also increased its transfers by setting ceilings on nominal interest rates applying to public credit lines directed to the new favoured sectors, as well as abdicated, future tax revenues in order to stimulate new export activities.

Finahly, tbe Brazilian public sector played an increasingly important role as financial intermediary, assuming the risks involved with the full indexation of domestic assets and guaranteeing external borrowing whereas setting limits to the monetary correction applied to the National Development Bank (BNDE)'s credits; the idea was to prevent borrowers' risk of financial fragility in presence of uncertain inflation, from limiting the private sector will to invest. As a

consequence of this process, the strictly defined public sector (that is without State enterprises) disposable income declined from 16.8% of GDP in 1973 to around 8.7% of GDP in 1983, both due to the decline in gross taxation (-2% of GDP, mainly due to the decrease in indirect taxes) and to an increase in subsidies and transfers (by around 5% of GDP in the same period) as seen in table 3.1 reproduced from Werneck (1986). Of course a large portion of this increase in transfers occurred through an increase in public internal debt from 5.5% to 10% of GDP in the same period[1].

It should be evident by now who were the main actors that have defined the reasonable limits for the choice of stabilization policies in Brazil in the past ten years. The military, who set the procedures for the political transition towards democratic rule; the urban workers and the middle-class who could express their preferences in the polls and have somehow definod what became "the public opinion", which the politicians had to cultivate; the private investors, both industrialists and rentiers, whose asset preferences set the limits to feasible indexation schemes behind the intermediation of the savings/investment process; and the government who had to absorb the burden of the inconsistencies in the resulting intermediation process. The lowest income strata that account for the poor performance of the social indicators served as the main argument for gathering support of the "relevant majority" to the strategy of rapid economic growth, although they clearly played no direct political role in the discussion or definition of the strategy.

Table 2.1

Brazil: Government Disposable Income (1973-1983)

Components	As a % of GDP			Decomposition
	1973	1983	Change	
	(A)	(B)	(A-B)	%
Gross Taxation	26.52	24.44	-2.08	.-25.46
Direct Taxes	(10.91)	(11.95	(1.04)	(+12.73)
Indirect Taxes	(15.61)	(12.49)	(-3.12)	(-38.19)
Other Current Revenues (net)	-0.16	-1.22	-1.06	-12.97
(-) Subsidies	-1.23	-2.27	-1.04	-12.73
(-) Transfers	-8.29	-12.27	-3.98	-48.72
Government Disposable Income	16.84	8.67	-8.17	100.00

Reproduced from R. Werneck – "Poupança Estatal, Divida Externa e Crise Financeira do Setor Público", Texto para Discussão n° 121, PUC-Rio – Departamento de Economia, jan 1986, p. 12.

[1] For a detalled account of the effects of this process on the evolution of the financial situation of the Brazilian government see Werneck (1986). Carneiro (1986b) presents a homogeneous series for public sector debt and deficits for the period, 1970-1984.

When, at the beginning of the Figueiredo period (1979-84), the second oil shock and the increase in international lending rates checked the continuity of the (longer than anticipated) structural adjustment provided by the II PND. investment programme, a new wave of inflationary pressures signalled an aggravation of the internal inconsistencies. The feasible set of stabilization policies defined by the interplay of the above summarized actors tended to narrow down. As part of the military strategy towards democratization, trade unions were allcwed to organize strikes for better wages and a new attempt at adopting austere demand policies to deal with inflationary Dressures resulted in the resignation of Mario Simonsen, then at the Ministry of Planning. After Delfim Netto moved from the Ministry of Agriculture to replace Simonsen a new wage law was approved in November 1979, reducing the period between wage atdjustments from twelve to six months and introducing nominal increases above those in cost of living for the lowest income groups (up to three times the minimum wage) thereby strengthening the indexation of wages at a time when inflation rates were moving from the 40% per year plateau of the Geisel period to around 100% per year.

Table 2.2

Brazil: selected data on external accounts (1971-78)

	1971	1972	1973	1974	1975	1976	1977	1978
Exports (US$ billion)	2.9	3.9	6.2	7.9	8.7	10.1	12.1	12.7
% GDP	5.8	6.7	7.8	7.5	7.0	6.6	6.8	6.1
Imports (US$ billion)	3.2	4.2	6.2	12.6	12.2	12.4	12.0	13.7
% GDP	6.4	7.2	7.8	12.0	9.8	8.1	6.8	6.5
Trade balance (US$ billion)	-0.3	-0.3	0.0	-4.7	-3.5	-2.3	0.1	-1.0
Terms of Trade (1977=100)								
Total	82	87	95	78	76	85	100	86
Non-oil	65	72	82	78	76	85	100	84
Growth of World Imports (%)	5.9	8.9	11.9	3.7	-4.8	11.7	5.3	5.8
Net exports (goods and Services)								
US$ billion	-0.9	-0.9	-1.0	-6.2	-5.1	-3.8	-1.5	-2.8
% GDP	-1.8	-1.5	-1.3	-5.9	-4.1	-2.5	-0.9	-1.3
Interest payments (US$ billion)	0.3	0.4	0.5	0.7	1.5	1.8	2.1	2.7
% Exports	10.4	9.2	8.3	8.3	16.8	17.9	17.4	21.2
Interest rates (average)	7.4	7.4	9.6	10.6	12.3	10.6	10.8	10.9
Net Debt / Exports	1.7	1.4	0.9	1.5	1.9	1.9	2.0	2.5
Real Exchange Rate (1977 = 100)	167.1	159.9	143.6	123.7	115.8	107.7	100.0	92.6

Sources of raw data: Boletim do Banco Central (several issues)
National Accounts Tables (FGV)
International Financial Statistics (several issues)

Table 2.3

Brazil: growth, inflation, real wages, monetary ans fiscal data (1971/78)

	1971	1972	1973	1974	1975	1976	1977	1978
GDP[1]	12.0	11.1	13.6	9.7	5.4	9.7	5.7	5.0
Industrial output[1]	-	14.0	16.6	7.8	2.1	11.9	2.2	6.1
Inflation[2]	19.8	15.5	15.7	34.5	29.2	46.4	38.7	40.9
Agricultural prices[2]	24.7	22.3	16.7	31.2	33.7	67.0	34.2	47.6
Industrial prices[2]	16.7	15.4	16.4	35.6	29.2	40.3	35.5	39.9
Industrial real vages[3]	63.6	68.1	73.3	74.3	82.1	84.7	89.3	96.7
Monetary Base[1]	5.6	10.3	16.7	9.4	-3.9	2.6	13.0	5.2
Money Supply[1]	8.4	11.7	27.9	7.5	4.0	-0.3	-3.5	-1.2
Financial Assets[1]	18.4	28.1	37.0	7.5	14.4	9.5	53.6	7.5
Loans to Private Sector[1]	24.5	30.2	36.8	20.5	22.4	12.7	7.6	8.3
Loans from Monetary Authorities[1]	17.0	19.3	31.8	46.8	40.2	13.2	7.4	2.8
PSBR/GDP[4]	1.7	5.9	3.9	1.9	2.4	3.1	5.1	4.6
Adjusted Deficit/GDP[4]	1.5	5.7	3.0	0.8	1.6	2.0	4.0	2.9
Average nominal interest rates[5]	20.6	17.9	15.3	18.2	21.1	36.8	40.8	44.5

Notes: [1]Real rates of growth
[2]December to December
[3]Deflated by the General Prices Index (IGP-DI), 1979 = 100
[4]Author's estimates. For details see Carneiro (1986a)
[5]Short term (91 days) govemrnent bilis (LTN's), annual averages

Sources of raw data: Boletim do Banco Central (several issues)
Conjuntura Econômica (several issues)
FTBGE – Indicadores da Indústria (several issues)

3. Essential elements of the Econoinic Model

In, this section the basic characteristics of the operatlon of the Brazilian economy are summarized. The objective is to provide a background fot the description of stabilization policies following the second oil shock, that will be the object of the next section.

The main characteristics of the Brazilian economy fit the pattern of a semi-industrialized economy featuring the co-existence of a ""modern" sector, usually identified with manufacturing industry, and a "traditional" primary sector, of the type described in Okun (1975), Bacha (1982) and Taylor (1982), for example. The distinction is based upon different rules for price determination and does not mean that it is believed that all of agriculture activity is "traditional" in other senses. In fact, one increasingly important portion of agriculture, especially that directed towards the production of exportable commodities and industrial inputs, may be as "modern" as it can be, both in the technological sense of the pattern of input use and with respect to price formation. The distinction between the two "sectors", however, helps emphasizing the relevance of differences in downward

flexibility of prices, for example, in response to excess supply.

3.1. GDP and the Balance of payments

Potential output of the long run gtowth, rate of the economy is determined by past behaviour of investment, both public and private, and by its productiyity. The latter tend to depend on the quality of public investment, rather than on its size, and on the pattem of technology transfer from abroad embedded in the imports of capital goods. Private investment decisions are of course volatile, but may be influenced by the disposition of goyernment as announced in plans that identify priority sectors. For these, the guarantee of a steady flow of inputs and the provision of basic infrastructure and of special credit lines and incentives help directing the flow of private funds to privileged activities. Short-run interest rates are unlikely to have a significant effect on private investment levels, since long run financing by private capital markets is virtually non-existent.

Monetary policy however may influence private investment decisions by affecting the uncertainty over the future behaviour of interest rates, by attracting private firms' retained profits towards short-run financial assets or still signalling adversely as to the behaviour of the costs of working capital. This effect tends to be important when monetary control is spasmodic.

In the short run, the level of capacity utilization is determined essentially by the level of domestic absorption and by the Balance of Payments or reserve level constraint. The usual story is told by the interplay of the so-called domestic canstraint (or investment/saying balance) and the feasible Balance of Payments. Given the foreign exchange supply, higher levels of capacity utilization increase imports and decrease ventfor surplus exports, thereby decreasing the trade balance. On the other hand, high net exports tend to raise investment relatively to domestic savings, leading to high levels of capacity utilization, provided instability of strong acceleration effects is ruled out (see Taylor [1985]). In short-run considerations, imports are essentially non-competitive, but the non-competitive import coefficient may be influenced in the long run by government policy concerning privileged sectors and by exchange rate policy. The same applies to the supply responsiveness of exports. These assumptions are consistent with the decision of not promoting real devaluation after the first oil shock, for example, but of directing investment towards import-substitution activities and granting fiscal and credit incentives to investment in export generating sectors.

3.2. Prices

The basic assumptions concerning price formation in the Brazilian economy reflect the main character of an indexed economy, and will here suimmarize the basic model developed and estimated

in Modiano (1985a).

Nominal wages are determined by wage adjustment formulas that relate present adjustment to past cost of living behaviour, and by the level of capacity utilization. Empirical evidence points to a low coefficient of demand in wage determination (see, for example, Resende-Lopes (1981), Lemgruber: (1973) Contador (1979) and (1981) and Modiano (1 983)). The actual level of wage indexation depends on the coefficients of current and past inflation (see Lopes-Bacha (1983) and on the interval between adjustments (Modiano (1983) and (1985b)). Until 1974, wage adjustments were promoted once a year for each category. From November 1979 on the wage corrections were made once every semester and negotiations concerning productivity gains were made once a year.

A typical wage equation using some form of Okun's law would look like:

$$w = \alpha_0 + \alpha_1 p + \alpha_2 p_{-1} + \alpha_3 (y^* - y)$$

where w, p and p_{-1} are logs of one plus the rates of change respectively of nominal wages, contemporary and lagged price indices, y^* is the log of potential GDP and y is the log of actual GDP, with $\alpha_1 + \alpha_2 = 1$ and $\alpha_3 < 0$, small but statistically significant.

The nominal value of the exchange rate is pegged to past inflation and has usually been fixed at uncertain intervals during most of the period. Until December 1979, the main direction of exchange policy was the maintenance of the purchasing power against the dollar, so that the value of minidevaluations was more or less equal to the difference between past domestic inflation and the US inflation rates. In the beginning of 1979 the government announced its intention to devaluate by increasing the frequency of exchange corpections and in December promoted a devaluation of 22% aboye past inflation. Trying to control expectations that led, to speculation against the cruzeiro, the government announced that nominal devaluation of the cruzeiro in 1980 would be limited to 45%. This target was abandoned in the middle of the year and the average exchange rate in real terms turned out to appreciate by about 3% relatively to the preyious year.

In February 1983, another maxi-devaluation was promoted, with a correction of the exchange rate by 30% above past inflation, and to control expectations of further devaluation the government pledged to make monthly devaluations equal to the previous month change in the General Price Index, a rule that was kept practically until the monetary reform of February 1986. For practical purposes, therefore, the exchange rate may be taken as indexed and linked to the dollar, except for the two episodes of maxidevaluation, which may be considered then as “shocks” on the exchange rate regime.

Industrial prices are determined by mark-up rule over prime costs defined by wage costs and imported inputs prices. Mark-up factors may be affected by the levei of activity but signs of this influence are uncertain, both theoretically and empirically. There is some eyidence of perverse

mark-up behaviour: in response to under-utilized capacity for annual price equations but these effects tend to be small due probably to a tradition of price Controls based on fixed mark-up rules in the Brazilian economy, as may be seen in Modiano (1985a), Carneiro (1977) and Camargo (1984). Fixed mark-up models don't behaye badly empirically and are easier to use as a general hypothesis. In the analysis of stabilization policies, it may be assumed that mark-up factors may jump in response to changes in interest rates, to those variations of activity levels that are perceived as "permanent" by the industrial sector, or to changes in risk premiums due to high levels of uncertainty in financial markets.

Agricultural prices are of two types. The prices of food products and of inputs to industry tend to be flexible and respond to signs of excess demand. Therefore, control over domestic supply of food turns out to be an essential element in the maintenance of a stable inflation. The government tends to intervene in food markets by several means: by holding stocks of basic Staples, by guaranteeing minimum prices to producers, by granting special credit facilities (sometimes highly sübsidized) for the production of some goods and by authorizing imports to prevent shortages due to climatic disasters or other shocks. Remarkable agricultural supply shocks occurred in 1978, as an effect of a drought that led to a decrease of 10% in non-coffee crops; and in 1983 when occurred a combination of shortages in urban food markets due to floods and a substantial increase in the prices of imported inputs for agriculture due to the devaluation. The second type of agriculture price is that of exportables (such as coffee, soybeans, sugar, cocoa and orange that account for around 20% of total exports), which tends to reflect international prices and the behaviour of the exchange rate, and are by and large unrelated to domestic demand.

The most important element of price flexibility to demand management turns out to be agriculture, especially food prices, completing the "dual" character of price formation hypothesized in structuralist models of the Brazilian economy. Given that the weight of agricultural prices in the General Price Index is around 30%, the reduced form effect of demand variables on the determination of the general level of prices turns out to be rather small when we consider the levels of inflation experienced by the Brazilian economy in the past years. According to some estimates, a ten percent decrease in utilization capacity could result in some ten percent points reduction in inflation rates, which have been in the 200% range since 1983.

The main conclusion is that the indexation schemes, that have been gradually introduced in the Brazilian economy since the sixties, as part of the process of minimizing the effects of inflation over the normal functioning of the economy, led to a fantastic downwards inflexibility of the rate of inflation. The basic determinant of the current rate of inflation became the level of past inflation plus or minus "shocks". Furthermore, as inflation increased to each new plateau, expectations elements and formal indexation rules tended to increase the dowwards rigidity of inflation, and to diminish the

possible effectiveness of demand measures. The phenomenon of generalized indexation became gradually a rule for price adjustments throughout the economy, as a defensive element in every agent in the priyate or the public sector and gave rise to the assumption of "inertial inflation" as analysed by Lopes (1984). The importance of inertial elements in the determination of inflation rates has become one crucial point of divergence between orthodox and non-orthodox prescriptions to deal with inflation and a major cause for the failure of demand policies to control it.

3.3. Financial Markets

Brazilian financial markets do not fit either the developed paradigm of industrialized countries or the repressed capital market scheme that is usual in modelling developing countries financial sector. Ever since the financial reform of 1964/65, a somewhat sophisticated diversification of assets and of organizations was developped, opening room for the non monetary financing of government deficits and to the rise of specialized institutions, like investment banks (would-be providers of médium andllong-run finance to the private sector) and savings and loan associations (designed to capture popular savings thtough indexed passbook savings deposits and to finance housing construction, and preserying the space of financial companies that supply consumer credit. Commercial banks, which before the reform were the main suppliers of credit were confined to short-run markets (see, for exmaple, Sochaczewski (1980), for an account of the main elements of the financial reform). One may say that before the second half of the seventies, the institutional model conceived by the reformers was basically at work, with the exception of the optimistic views on the development of long-term capital markets, that remained essentially in the hands of the government. From 1975 onwards, investment banks became one of the most important intermediaries to capture foreign loans in international markets and pass them along to private firms.

With the acceleration of inflation after 1979, the growing financial fragility of the non-bank financial institutions became evident. A process of concentration through acquisitions and mergers gave rise to a new system that: is based essentially on financial groups organized around a large commercial bank, (typically without industrial linkages) although this institutional framework is yet to be officially recognized. In practice, the financial system during the past ten years evolved essentially around the process of providing assets that are basically near-money, in the form of selling government bonds and private banks certificates of deposits with daily repurchase agreements. Given the acceleration of inflation and generalized indexation, the private sector held only short-run assets, typically overnight deposits, and the risk of capital losses due to interest rate changes was taken by the financial intermediary. In order to avoid major waves of bankruptcy in the financial sector generated by any frustrated speculative movement or by attempts at monetary control, Central Bank

intervention was called forth in order to limit losses and with the inevitable consequences of encouraging the next speculative move. In order to offer a hedge against devaluation and prevent capital flight, dollar denominated government bonds were issued and indebted firms and banks were allowed to deposit their dollars in the Central Bank. Needless to say, at the height of the debt crisis of 1982/83, exchange rate speculation became one major determinant of nominal interest rates.

With the acceleration of inflation and the existence of indexed govemmental debt, the nominal value of the public sector borrowing requiriroent was dominated by the monetary correction of the previously existent debt and increased, as a proportion of GDP, frcm around 1% in 1974 to 7,3% in 1983. Misreading of this figure led many an analyst, inclusive of those of intemational agencies like the IMF, to point to the extraordinary grcwth of PSBR as a major cause of inflation acceleration in the first of the eighties. Nominal PSBR as a proportion of nominal GDP went from 2.4% in 1975 to 11.3% in 1984, but this of course has nothing to do with the "soaring public deficit" view of the orthodox diagnosis, if appropriate account for inflation is not taken into consideration. ünless a major shift occurs in private sector asset demand away from govemmsnt bonds there are no reasons to expect that such nominal increases in borrcwing requirements stimulate aggregate demand.

4. Orthodox stabilization

Between 1980 and 1984 Brazil has undergone two at orthodox stabilization during the Presidency of General João Figueiredo (1979-84): in 1981/82 without IMF supervision and in 1983/84 under an IMF agreement. The objective of this section is to outline the major characteristics of both programmes, briefly evaluate their consistency, and compare their respective outcomes.

By the third quarter of 1980 it was clear that the Figueiredo government would have to undertake the second major reversal in macroeconomic policy, abandoning its attempt since Simonsen's ouster at maintaining a high level of economic activity and proceeding with the structural adjustment in order to adapt the economy's external accounts to the new International conditions. Two facts were behind this change in outlook. First, the pre-announcement of monetary and exchange correction limits at 40% and 45% that followed the devaluation of December 1979 had failed to reduce inflation, both because expectations weren't that easy to control and because actual indexation had been increased by the new wage law that had passed Congress in November 1979. Expected inflation was not brought down, and as the annualized rate of 101.3% of the second semester of 1979 was projected, into consumers', producers' and asset holders' decisions, partial de-indexation, of financial markets meant cheap credit for consumption and working capital, negatiye real rates for pgssbook savings and indexed government bonds, a windfall subsidy granted to jnortgages and the Development Bank's debtors, cheap imports and so forth. As a result, holding of financial assets fell

in real terms by 13.2%, sales of durable goods soared and non-oil imports increased by over US$ 2 billion. Secondly, International bankers had decided to review their role in the "debt-cum-gpowth" game as higher oil prices, accelerating inflation and the rise in interest payments (from US$ 2.7 billion to US$ 6.3 billion from 1978 to 1980) signalled the fragility of both domestic and external positions. In consequence, by the end of the year the increase of almost US$ 3 billion in the current account deficit had to be financed by a drop in foreign reserves. Furthermore, the new level of international interest rates and prices raised doubts as to the feasibility of the long-run adjustment implicit in the investment programme of the previous government, since its completion would still require some US$ 100 billion of new investments, both from domestic and external sources, and probably three to four years to mature.

As we have pointed out elsewhere (Carneiro (1986a)) the most important consequences of the failure of Delfim's non-recessive policy of 1979/80 to deal with inflation and the current account deficit was the lack of confidence it generated in the short-run management of the economy, opening space for criticism of the accomodating character of the adjustment since the first oil shock and leading the government to adopt, at the level of the official discourse at least, the basic lines of macroeconomic orthodox. On the other hand, the increase in international lending rates, the second oil shock and the world recession had aggravated the external constraint to the Brazilian economy and probably the feasible path of adjustirent for the following years would be more unfavorable even without the worsening of the domestic constraints. Ihat is to say, improvements in the trade balance would only be feasible at lower levels of capacity utilization as long as the fall in import coefficients allowed by the maturation of the investment programmes had been delayed by the new increase in oil prices. The actual fall in import coefficients became noticeable in aggregate terms after 1983 when most projects started to produce results.

Furthermore, it should be noted that regardless of foreign bankers' opinion of Delfim's 1979/80 policies, the increase in intemational lending rates and the accumulation of external debt had led to sharp increases in interest payments, from US$ 2.7 billion in 1978 to US$ 9.1 billion in 1981. As the average rate of interest paid by Brazil (defined as net interest payments divided by net external debt at the beginning of the year) increased from 13.8% in 1978 to 20% in 1980 and gave no sign of receding, the risk of insolvency by itself could be seen as a menace to the continuity of "growth-cum-debt" strategy, especially under grim prospects for world trade growth. Finally, it should be remembered that according to the counterfactual exercises of Díaz-Alejandro (1983), in the "prudent planner's scenario" Brazil does not fare much better than under Delfim's wild experiments, suggesting that worsening external conditions of trade and financial markets would have been sufficient to explain the deterioration of external debt indicators.

Ftom the adoption of restrictive mensures at the end of 1980 to the explosion of the debt crisis

in 1982, the basic strategy of the Brazilian government was to control domestic absorption in order to reduce foreign exchange needs. The idea was that the fall in capacity utilization for domestic needs would render export activities move attractive at the same time it reduced intermediate imports and consumption. The success of such strategy in reducing the real resource gap as a proportion of GDP depends on the resulting fall in output.

The smaller the fall in GDP for a given reduction in domestic absorption the lesser the need of real resources from abroad, hence the value of expenditure switching policies for more efficient adjustments. In the case of Brazil, raising the domestic price of oil derivatives was important to enhance direct substitution efforts, since investment in the production of alternative fuel (alcohol or coal) was already under way reinstatement of fiscal incentives to export activities, that had been cancelled after the devaluation, operated in the same direction.

In spite of the continuing deterioration in terms of trade, a significant reversal in the trade balance was obtained, with a gain of 0,5% in the export/output ratio and a reduction of one percent point in the import coefficient. Interest payments increased by almost US$ 3 billion in 1981 and by another US$ 2 billion in 1982, and at the end of the second year of restrictiye policies the current account deficit was almost US$ 6 billion above the figure for 1980, at a level of 5,8% of GDP.

After two years of restrictíve demand policies, the Brazilian economy was ready for another round of orthodoxy, this time under IMF surveillance and motivated by the sudden halt of voluntary lending in International financial markets that followed the Mexican moratorium. The character of both experiments, their differences in scope and in internal and external conditions will be the subject of the next subsection.

4.1. The Two Orthodox Experiments Compared

Table 4.1 summarizes the essentials of the two programmes, and facilitates the comparison with respect to their diagnosis, aims and instruments. Differences in motivation are clear, though both aim in principie at controlling external borrowing, since in 1980 there was still room for increasing lending from the part of private banks. The diagnosis was then that, if the private sector could be induced to borrow, a mere show of fiscal austerity would be sufficient to bring bankers back in to the game. Another important difference, however, was the fiscal restraint implied by both programmes. Since the autochthonous orthodoxy recognized the need to proceed with investment projects designed to promote structural adjustment, it concentrated on credit restrictions, monetary policy and selective allocation of credit and impopts with an eye on the need to preserve space for priority investments in energy substitution and export activities.

Table 4.1

Two Orthodox Programmes Compared

1981/82	1983/84
Diagnosis	
• Excess demand due to monetary and fiscal slackness had led to both inflation acceleration and increase in current account deficit; • Low interest rates and abundant dcmestic credit had led to excess consumption and discouraged private borrowing abroad; • Foreign bankers were unwilling to extend credit unless there was a convincing display of austerity in order to reduce consumption and induce export growth.	• Need to adjust the econary to the new situation in credit markets after the Mexican moratorium; • Control excessive dcmestic absorption to provide roem for interest payments; • Public deficit as a symptom of the need to premote internai adjustment and control inflation.
Aims	
• Reduce demand to show controllability over the current account deficit; • Display of austerity to bring foreign bankers back to finance long-run adjustment prograrrme; • Induce private sector externai borrowing.	• Reduce the need of external credit; • Reduce inflation; • Increase exports.
Hidden objectives	
• Gain more time to permit investments projects directed to self-reliance objectives to mature; • Limit wage control to upper income groups to maintain trade unions under control and minimize "social unrest".	• Reduction of wave indexation.
Instruments	
• Liberalization of interest rates; • Ceilings of 50% on the growth of the monetary base and M_1; • Ceiling on credit aggregates for non-priority sectors; • Reduction of public sector consumption spending in order to open room for the growth of private sector; • Definition of an import budget for state companies; • Tax incentives to manufactures exports.	• Control PSBR, having it cut by 1/2 in nominal terms; • Control domestic credit of the Monetary Authorities; • Promote mild devaluatian by accelerating mini-devaluations; • Liberalize trade.

In Tables 4.2 and 4.3 the basic data on external and domestic varlables for the period 1979/85 are presented in order to facilitate the comparison. of results of both experiments. The sucess of both prograrnmes in obtaining externai adjustment may be read in table 4.2 with the necessary qualifications. Both have succeeded in increasing the trade balance but the success of the first programme tends to be blurred by the unfavourable behaviour of external conditions, especially interest rates, terms of trade and growth of intemational trade. Using Ballassa's procedure to decompose current account changes into external shocks (including retardation of world trade growth, deterioration of terms and interest rate shocks), burden of accumulated debt and domestic policy actions, Bacha (1984) calculates that from 1979 to 1981 domestic policy actions to control the current account were practically ccmpensated by the intensity of external shocks, and that in 1982 and 1983 the effects of domestic policies were overridden by them. On the other hand, the growth of exports in 1984 seems to have less to do with the IMF – sponsored programme in 1983 than with the vigorous

response of manufactures exports to the recovery in world trade led by the OS import outburst that year. In the first quarter of 1983 manufactures exports were still 7,6% below their level one year before.

Table 4.2

Brazil: selected data on external accounts (1979/85)

	1979	1980	1981	1982	1983	1984	1985
Exports (US$ billion)	15.2	20.1	23.3	20.4	21.9	27.0	25.6
% GDP	6.4	8.0	8.5	7.1	10.4	12.3	10.7
Imports (US$ billion)	18.1	22.9	22.1	19.6	15.4	13.9	13.2
% GDP	7.6	9.2	8.0	6.8	7.3	6.3	5.5
Trade balance (US$ billion)	-2.8	-2.8	1.2	0.8	6.5	13.1	12.4
Terms of Trade (1977=100)							
Total	79	65	55	54	53	58	55[1]
Non-oil	81	78	71	69	64	71	69[1]
Growth of World Imports (%)	5.4	1 .0	0.7	-0.3	1 .4	9.0	3.0
Net exports (goods and Services)							
US$ billion	-5.2	-5.9	-1.6	-2.8 '	4.1	11.4	10.5
% GDP	-2.2	-2.4	-0.6	-1 .0	1.9	5.2	4.4
Interest payments (US$ billion)	4.2	6.3	9.2	11.4	9.6	10.1	10.4
% Exports	27.5	31 .3	39.3	56.8	43.6	37.3	40.6
Interest rates (average)	13.2	15.7	19.5	21.1	14.6	13.3	12.7
Net Debt / Exports	2.6	2.3	2.3	3.3	3.5	3.0	3.1

Real Exchange Rate (1977 = 100)
[1]Average of nonthly data: Jan/Nov.

Sources of raw data: Boletim do Banco Central (several issues)
National Accounts Tables (PGV)
International Financial Statistics (several issues)

Following the recovery of the US economy, in the last quarter of 1983 they were up by 19% compared with the last quarter of 1982 and in 1984.4 they were 44% higher than in 1983.4. Finally, in the success illustrated by the behaviour of the trade balance from 1981 onwards, it has to be taken into due consideration the fall in the import coefficient that was made possible by the maturation of import-substitution projects especially in oif-drilling, alcohol, non-ferrous metals and industrial inputs. Increase in domestic production of oil and substitution alone decreased the share of imported oil in domestic consumption from 80% in 1974 to around, 40% in 1985.

Table 4.3

Brazil: growth, inflation, real wages, monetary and fiscal data (1979/85)

	1979	1980	1981	1982	1983	1984	1985
GDP[1]	6.4	7.2	-1.6	0.9	-3.2	4.5	8.3
Industrial output[1]	6.9	9.2	-10.2	-0.2	-5.5	7.0	7.0
Inflation[2]	77.2	110.2	95.2	99.7	211.0	223.8	235.1
Agricultural prices[2]	80.5	138.2	70.7	89.5	335.8	230.5	267.7
Industrial prices[2]	78.8	110.3	99.6	99.8	200.5	233.2	221.1
Industrial real wages[3]	100	96.0	100.1	109.9	94.5	37.3	85.3
Monetary Base[1]	2.9	-15.0	-22.9	-5.4	-23.0	-20.4	2.1
Money Supply[1]	-0.8	-12.2	-21.0	-6.5	-27.7	-24.4	7.9
Financial Assets[1]	1.9	-13.2	-2.2	24.8	0.1	1.2	20.3
Loans to Private Sector[1]	2.1	-12.5	-11.3	7.7	-6.5	-12.3	3.8
Loans from Monetary Authorities[1]	-4.5	-11.8	-24.9	-15.3	-26.9	-37.6	-3.5
PSBR/GDP[2]	4.7	4.1	5.6	6.7	7.4	9.3	-
Adjusted Deficit/GDP4[P]	2.9	1 .8	3.1	2.9	0.1	2.2	-
Average nominal interest rates[5]	41.2	38.3	90.7	115.7	170.1	245.3	248.2

Notes: [1]Real rates of growth
[2]December to December
[3]Deflated by the General Prices Index (IGP-DI), 1979 = 100
[4]Author's estimates. For details see Carneiro (1986a).
[5]Short term (91 days) government bills (LTN's), annual averages.

Sources of raw data: Boletim do Banco Central (several issues)
Conjuntura Econômica (several issues)
FIBGE – Indicadores da Indústria (several issues)

In table 4.3 some of the problems of both orthodox stabilization experiments are more visible. The combined effect of the programmes led to the deepest recession of Brazilian history. From 1980 to 1983 per capita income fell by more than 10%, a figure that certainly underestimates the seriousness of the loss in output, due to the controversial effect of the growth in financial intermediation included in official national accounts computations. Alternative estimates by Lopes and Modiano (1985), show that in the fourth quarter of 1983 seasonally adjusted GDP excluding government and financial Services was some 10% below its level in the fourth quarter of 1980, or a loss in output per capita of around 15%. Real rates of growth of monetary and other financial stocks are strongly negative for the whole period with two exceptions. The first one is the behaviour of total financial assets from 1982 on, due to the increase in government debt due to a mixture of monetary policy (selling bonds to control the monetary base) and asset substitution caused by accelerating inflation. The second exception is the increase in loans to the private sector in 1982 during the mild recovery of economic activity that year.

Attempts at increasing real interest rates are also reflected in the average yield of government

bilis throughout the period, but it does not reveal the intensity of the domestic interest rise in the period. Short term quarterly real lending rates by commercial banks, went up from -0.5% in 1980.4 to 3.04% in 1981.4 and to a peak of 6.39% in 1982.4, a figure equivalent to 28.1% annual real interest. The worst aspects of monetary restraint, however, during the whole period, were related to its effects on the instability of the financial system, giving rise to a period of intense financial speculation. The opportunities of extraordinary capital gains and losses stemming from the successive waves of short-lived announcements of liquidity restraints were inevitably followed by emergency rescue operations designed to avoid generalized bankruptcy, since, as already expained, in absence of long-term holders of government bonds and bills, virtually the whole stock of government debt was held by financial intermediaries which had to capture overnight deposits from the public.

After August 1982 another element of speculation was added to the picture, caused by the risk of an exchange crisis that might lead to a sharp devaluation. From August 1982 to February 1984 Brazilian financial markets were dominated by speculation about the future of the exchange rate. Thanks to the availability of dollar-denominated government bonds, to a tradition of strict control of capital movements and to the practice of high domestic interest rates, capital flight was kept under control, the most pessimistic estimates being under US$ 2.5 billion for the whole period. The International debt crisis, the uncertainties around the IMF agreement in the beginning of 1983, the devaluation in February 1983 and the successive rounds of negotiations between the Brazilian government, the IMF Staff and the International banks during the rest of the year set the stage for exchange rate speculation that lasted until the recovery of export growth in the beginning of 1984 signalled better prospects for the current account.

In 1983 and 1984, the Brazilian government submitted seven letters of intent to the IMF Board and in practically all of them provisional agreements with respect to the future behavior of PSBR and of some targets for monetary aggregates were subject to change. These succesive negotiations reflected first of all the lack of realism of some targets, especially for public deficit aggregates, that at the beginning ignored the difficulties to set nominal target like the halving of the ratio of PSBR over nominal GDP when there is indexed government debt, as analysed by Bacha (1983) and Carneiro and Modiano (1983).

Second, they reflected the total disregard to the peculiarities of the inflation dynamics of a highly indexed economy as spelled out in *section 3* above. Third, the timing of the suspensions of disbursements and the concession of waivers reflected the objective, not written in any of the letters of intent or in publicized technical memoranda of understanding, of promoting a change in Brazilian wage laws in order to reduce wage indexation[2]. Fourth, they reveal that in spite of the basic agreejuent

[2] For analysis of the seven letters and the process of negotiation during this period, see Carneiro (1986c) and Marques (1985).

being directed to "structural adjustment", it absolutely disregarded the need, to complete the investment projects directed to adapt the economy to the new International restrictions. Finally, the negotiations seemed to completely ignore the underlying socio-political constraints to the feasibility of stabilization policies, as summarized in *section 2* above, although the peculiarities of the International scene at the peak of the International debt crisis have certainly played a decisive role in the concession of waivers during the period.

As illustrated by the figures of *table 4.3*, one common feature of both programmes was the complete failure to bring inflation down. The reason is plainly that they used the wrong inflation model, and demand effects were overriden by supply shocks due to devaluation, acceleration of public tariffs designed to control the deficit, and by adverse agriculture price behaviour. The same table presents estimated ratios of PSBR/GDP and Inflation Adjusted PSBR/GDP for the period, reflecting an important difference between the two programmes.

In the 1981/82 experiment, since credit restraint was the dominant instrument for stabilization, externai adjustment was obtained without any reduction in PSBR. When adjusted for the effect of inflation on government debt, the public deficit is found to have remained practically at the same level as in 1979 (the figure for 1980 reflects the gain obtained by the government due to partial de-indexation). In 1983, in spite of the increase in non-adjusted PSBR due to acceleration of inflation, the adjusted figure reflects the fall in public deficit that was obtained mainly via the partial de-indexation of wages in the public sector, obtained as a conseguence of the correction of wages by 80% of the past inflation in the second half of that year.

Besides, the welfare losses usually implied by recessiye adjustments that are reflected in unemployment and real wages, it is hard to present, at this point a reasonable account of the two experiments in comparative terms from the distributive viewpoint. Dearth of data concerning income distribution for the population as a whole for each year does not allow comparison. Available data for the working force, however, indicate that for the period 1979-84 the middle-income groups (from the third to the seventh deciles) have suffered the most significant losses in terms of mean real income. This fact aggrees with a peculiarity of the 1979 wage law that granted wage-earners up to three minimum wages increases 10% above past increases in the cost of living, thus providing some protection against inflationary erosion of real wages relatively to the remainder of the working class, at least for those who managed to keep their jobs. This protection was revoked in March 1983 after the first aggreement with the IMF. After this first change in the wage law, successive attempts to diminish the degree of wage indexation by decree failed to be approved by the Congress, until a major negotiation was obtained by the government in the last quarter of the year when Congress approved a new wage law incorporating some but not all the characteristics originally proposed by the government, that implied a partial de-indexation of wages. The most important consequence of the

changes in wage law that occurred during the year was probably the effect of further reducing the relative wages of public employees, especially of those located at the highest wage brackets.

4.2. Basic elements of a "better" alternative programme

From the above comments on the inadequacies of both experiments, the elements for the alternative counterfactual should be clear.

First, if *explicit* consideration of the need to complete the investment projects had been made, a more rational allocation of external funds could have been tried, even with a complete redressing of investment priorities, without the need of increasing unused capacity as a consequence of aggregate demand cuts.

Second, had the correct inflation model been used, one could have avoided the doubling of the inflation rate in 1983 by means of an administered set of incomes and prices policies designed to operate the relative price changes.

Third, had the evaluation of the role of the public sector in promoting external adjustment in the long run been correct, a policy of increasing taxation and not of decreasing public investment would have been considered more appropriate in order to allow for the maintenance of a higher level of economic activity via, the perservation of public and private investment and the reduction of consumption of upper income groups.

Fourth, a more accommodating monetary policy would have avoided the instability of interest rates that fuelled financial speculation and helped disrupting private investment decisions. Monetary restraint seems to have played no role in the process of adjustment, being powerless to bring down the rate of inflation and unnecessarily increasing internal public debt.

Finally, in an idealized situation, as we are entitled to in hindsight, an adequate evaluation of the foreign exchange needs could have provided, especially in 1981/83, external funds for the completion of the most relevant investment projects, without the terrible instability of financial markets that followed the painful negotiations with the international banks under the coordination of the IMF. Given the peculiar state of the international financial markets since August 1982, however, although the domestic requirements for the IMF seal of approval of economic policy did not contribute to smoothen internal costs of adjustments, it should be recognized the political role of the IMF Executive Director De La Rosière in avoiding the total collapse of external financing which could been the outcome of the free interplay of private markets.

5. An experiment ir non-orthodox stabilization

Improvement in external accounts since the recovery of exports in 1984 defined a new situation for the Brazilian economy by relieving the external constraint for the first time since 1980. The behaviour of the sales of manufactures, especially to the US market, gave rise to a complete reversal of the prospects for Brazilian external accounts. In the first eight months of 1984, industrial exports totalled US$ 11.1 billion, or almost 36% higher than in the same period in the previous year, reflecting the US import boom that benefitted almost every other Latin American country. In the case of Brazil, however, if meant more than a temporary relief.

The short-run effects of this spurt of exports were of two kinds. First, it allowed the upturn of industrial activity, as industrial output in the second quarter of 1984 was 14% higher than in the second quarter of 1983 (the highest growth rate since 1980). Second, reversal of trends in economic activity was not accompanied by an import outburst, as was feared by the analysts who were sceptical of the effectiveness of the long-run adjustment process.

Medium-run developments were more important. The composition of favourable effects of the violent change in agricultural prices in the previous year (see table 4.3) upon the rural sector's demand for industrial inputs with the liberalization of industrial wage adjustinent, as a result of the higher activity level in the industrial sector, helped spreading the boom, leading to a strong cconomic recovery. The output of the industrial sector increased by 6.7 % in 1984 and GDP by 4.5% in spite of the economic recovery, total imports fell by 9.8% (-13.9% in oil and -6.2% in non-oil). The most important consequence, however, was that for the first time in ten years Balance of Payments forecasts pointed to the maintenance of a relatively comfortable external position for the next years, without the need of fresh money from private international banks.

In the beginning of 1985, the seventh letter of intention submitted to the IMF Board by the Brazilian government was rejected due to signs of money and public expenditures growth above the targets of the sixth letter, in the last quarter of 1984. Once again, the criteria concerning domestic variables were the main obstacles to the renegotiation of the foreign debt payments with the private banks, who insisted on the seal of approval of the IMF. During 1985, the new government spent most of its time trying to convince bankers that another round of restrictive policies would do no good to improve the value of their credits to Brazil.

From the viewpoint of the operation of the brazilian economy, the main problem is now to obtain a rescheduling of payments of the external debt. The present profile of maturities due to short-term postponements since 1982 is impossible to be paid, for about one half of the total debt to banks is due in the first year. The banks, however, require the IMF formal approval of brazilian economic policy, and the IMF points to inflation and the size of PSBR as signs that the brazilian external

adjustment will not be long lasting, unless new cuts in govemment expenditures contribute to reduce the fiscal deficit as the only means to stop inflation.

In February 28, 1986 the Brazilian government decided to adopt a stabilization programme that incorporates several elements of the alternative proposals made by critics of the orthodox anti-inflationary policies sponsored by the IMF. The particular set of policies applied is a mixture of the monetary reform proposed by Arida and Lara Resende, the so-called "heterodox shock", with a general freeze proposed by Lopes (1984), of the wage and prices conversion formulae studied by Modiano (1985c) and (1986) and of elements of the Austral plan applied in Argentina under the inspiration of Roberto Frenkel.

The basic diagnosis that inspires the idea of the programme is the model of inflation in a highly indexed economy as basically described on section 3 above. The aim of the programme is to promote a sudden de-indexation of the economy in order to break the linkages between past and future price increases. The biggest difficulty is to avoid major (and possibly perverse) distributive effects due to the simple fact that at any point in time during an inflationary process some prices and incomes have just been adjusted, and therefore are at monetary peak, and others are about to be adjusted and thus are at a trough of real values. Another difficulty is related to the existence of contracts, celebrated in the past based on estxmated future inflation. A monetary reform opens space for the definition of rules for conversion of future payments based on an expected rate of inflation ínto the new money, hopefully free of inflation histeresis.

The basic ingredients of the stabilization programine were:

(a) A monetary reform introducing a new money unit, the *cruzado*, to replace the old *cruzeiro*, with the publication of a conversion table for the payments in cruzados of debts contracted in cruzeiros. The conversion table assumes that contracts were signed with an expected inflation of 14.5% per month.

(b) Prohibition of indexation clauses for contracts of less than one year, except for passbook savings.

(c) A general price freeze in cruzados at their level of 28 february.

(d) Conversion of wages from cruzeiros into cruzados based on the average real wage of the past six months plus 8%; future wage increases based on free negotiation, once a year, with an automatic adjustment of 60% of past increases (from 28 February on) in the official cost, of living index; and an autcmatic trigger – point wage increase whenever inflation accumulates 20% after the last adjustment.

(e) Government indexed bonds had their nominal value frozen by one year.

(f) Revision of the federal budget for 1986 based on zero inflation expected for the remainder of the year.

(g) Adoption of a special emergency plan to guarantee the supply of basic staple food, granting the federal government the right to carry stocks of basic items to avoid speculation against the programme.

The immediate consequences of the programme were highly favourable. The formal announcement by the President was followed by immediate popular support to the freeze, the mass media helped in the task of explaining the nature of the programme to the population and the black market rates for the dollar fell by around 20%. Some union leaders tried to articulate a general strike against the government plan, but it had to be cancelled for lack of public support.

It is probably too soon to make a definite judgement as to the success of the programme, but in the first month it became clear that most industrial prices could actually go down since they were usually fixed for a period of around three months with an expected inflation that would not materialize. A round of negotiations between wholesalers and retailers gave rise in fact to some important decreases, and in March average consumer prices showed a deflation of -0,5%. These first results, although still insufficient for an appraisal of the success of the programme, were enough to promote a radical change in expected inflation and helped changtng also the defensive behaviour of economic agents that contributes to perpetuate inflation rates.

In a few months it will be possible to know whether the sudden fall in inflation rates will be sufficient to induce international bankers to negotiate a major rescheduling of the brazilian external debt without the liturgy of an IMF agreement. Until then, the brazilian government will face some difficult tasks: reforming the financial system to adapt its institutions to a non-inflationary economy, evaluating the effects of the stabilization programme on government finance and taking complementary measures to show the population that the programme was not a temporary truce but a serious effort to eliminate inflation. On the other hand, if the policy package turns out to be a complete success and a reasonable price stability is achieved, brazilian policymakers will have to face the reality of social inequality that has always been present in the working of the brazilian economy, without the inequivocal help of inflation as a mechanism to conceal the distributive tensions.

6. Prospects for brazilian external accounts (1986/90)

In 1986 the brazilian economy will experiment its third year of recovery since the recession of 1981-83 without any deterioration in its external accounts. Also, for the third consecutive year, the trade surplus will be more than sufficient to pay the interest bill. A reasonable question to ask now is whether under foreseeable circumstances for external conditions, the present situation may be safely projected into the rest of the decade. The object of this section is to compare a base projection explained below with two alternative scenarios for the world economy, with the help of a simulation

model for the growth/balance of payments relationships consistent with the theoretical view explained in section 3 above.

6.1. The simulation model

The core of the simulation model (a more complete version is presented in Modiano (1983)) used in this section is an empirical simplified version of the structure described in subsection 3.1. The basic idea is the simultaneous determination of the growth rate (or capacity utilization) and of net exports of goods and non-factor Services.

The basic equations are a global demand determining output as a function of exports and monetary and fiscal variables, export and import equations.

Imports are disaggregated into oil, wheat and others, essentially industrial inputs. For oil, domestic consumption is estimated from a demand equation (dependent on real prices and income), and domestic production from official projections by Petrobras. Imported quantum is derived as the excess of consumption over production. Wheat imports are estimated from the excess demand over lagged supply. Other imports are estimated from an updated version of the equations derived from Pombal-Dib (1985) and depend on income, on the real domestic price (inclusive of tariffs) of imports and on potential output. Potential output depends on lagged investment to output ratios.

Exports are divided into manufactures, agriculture and minerais. The models for minerals and agriculture are those described in Modiano (1983). The model for manufactures is based on a supply equation depending on relative prices inclusive of subsidies, and on capacity utilization in the industrial sector; the growth of the export quantum is limited to be less or equal to the real growth rate of world imports.

5.2. The basic scenario

The basic scenario incorporates not too optimistic hypotheses for the external data, with flat profiles of the main exogenous variables in order to enhance the effects of the sharp fluctuations of the alternative scenarios. World imports grow at 2% in real terms, manufacture export prices grow at 5% per year from 1987 on, after falling 4% in 1986; US inflation rate is fixed at 5%. Average international interest rates (including spreads) are fixed at 12% from 1986 to 1990. The dollar is supposed to depreciate by 20% in 1986 with respect to SDR and to remain constant at its new value in the following years. Finally, the average real exchange rate is supposed to appreciate by 8% in 1986, and to devaluate according to the parity of purchasing power against the dollar in the remainder of the period. The ratio of investment to output is kept constant at 16%, a low value by brazilian

standards but not too pessimistic in view of the maintenance of large net transfers abroad across the period. Changes in exogenous variables in the various scenarios are described in Table 6.1.

Table 6.1

Values assumed for the exogenous variables in the three scenarios

	1985	1986	1987	1988	1989	1990
International interest rates						
Basic	12,5	11,5	12,0	12,0	12,0	12,0
Hard	12,5	16,9	14,3	11,7	9,1	8,5
Coop	12,5	12,4	11,7	10,4	8,5	8,5
Depreciation of the dollar						
Basic	6,1	6,0	0,0	0,0	0,0	0,0
Hard	6,1	11,1	12,6	12,3	5,7	-0,7
Coop	6,1	7,5	8,1	7.9	3,6	-0,4
US inflation						
Basic	5,0	5,0	5,0	5,0	5,0	5,0
Hard	5,0	5,0	6,5	6,6	5,9	4,6
Coop	5,0	4,6	5,7	5,8	5,3	4,5
Rates of change of world import prices						
Basic	5,0	5,0	5,0	5,0	5,0	5,0
Hard	5,0	8,9	11,5	11,7	8,5	4,6
Coop	5,0	7,1	8,9	9,0	6,9	4,5
Rates of change of brazilian agulcultural export prices						
Basic	19,3	-1,0	5,0	5,0	5,0	5,0
Hard	19,3	13,2	15,1	14,9	9,3	3,9
Coop	19,3	10,2	11,1	11,0	7,4	4,1
Rate of growth of world import quantum						
Basic	3,0	2,0	2,0	2,0	2,0	2,0
Hard	3,0	2,4	-0,2	0,5	2,9	3,6
Coop	3,0	3,4	3,1	3,7	4,1	5,2

In Table 6.2, the results of the basic simulation are presented, in terms of growth (GDP and industrial output) and five ratios: trade balance to GDP, interest payments to GDP, interest payments to exports, net exports of goods and Services to GDP, and net debt to exports. The basic conclusion for the chosen demand policy, which follows the stated objectives of the present government of pursuing a 6% rate of annual growth through the rest of the decade, is that there are no signs of deterioration of the external indicators of the brazilian economy under the assumed scenario for the international economy. In other words, it suggests that the projected rates of growth of GDP are consistent with a substantial improvement of external debt indicators, and that the requirements of transfers abroad

implied by the current levels of interest rates are not inconsistent with the hypothesised scenario. The assumption concerning the rate of investment, on the other hand, implies an increase in capacity utilisation of around 4 percent points along the simulation period, indicating that thanks to the existent slack capacity in the beginning of the period there seems to be no "internal" binding constraint to the projected growth of actual GDP.

Table 6.2

Brazil: growth and external accounts – basic simulation

	1985	1986	1987	1988	1989	1990
GDP Growth	8.3	4.4	5.3	6.0	6.1	6.0
Industrial Output Growth	9.0	7.6	4.8	5.8	6.4	6.6
Trade Balance/GDP	5.7	5.2	5.0	4.7	4.4	4.2
Interest Payments/GDP	4.7	3.7	3.4	2.9	2.4	2.0
Interest Payments/Exports	40.6	34.4	32.8	28.6	24.5	20.7
Net Exports/GDP	4.8	4.5	4.2	3.9	3.7	3.4
Net Debt/Exports	3.1	2.9	2.6	2.3	1.9	1.6

Note: See text for explanations.

6.3. Effects of the Marris's scenarios on brazilian external accounts

The objective of the simulation exercises is to evaluate the effects of plugging the hypothesised values of external variables according to Stephen Marris's analysis of the so-called "hard landing" and "cooperative" scenarios into our simulation model. (See Marris (1986)).

The relevant exogenous variables in terms of our model are: the rate of growth of OECD countries as translated into the rate of growth of the quantum of world imports; US import prices (non-oil) translated into the rate of growth of prices of brazilian industrial exports; growth of US import prices as translated into the rate of growth of brazilian non-oil and non-food imports prices (meaning basically machinery and other industrial inputs); real dollar depreciation; change in US price level, defining nominal values for the elements of the current account and for externai debt; US-T-bill rate, translated into the average interest rate applying to Brazilian net external debt.

Besides the self-explanatory nature of the effects of the other variables, a note should be added to the effect of the real dollar depreciation. The only direct effect of the dollar depreciation considered in the model is via its impact on the dollar price of brazilian agricultural exports (mainly coffee, soybean, sugar, tobacco and cocoa), which depends on the level of international interest rates, on the quantum of world imports and on the level of the dollar with respect to SDR (IMF-IFS index) according to the following equation estimafed for the period 1970-1984, using annual data with a dummy for 1977:

$$PAXD = - 326.868 - 624.975\ JUR + 0.293020\ I2Q + 255.332\ \$/SDR$$
$$(-4.16923) \quad (-2.52196) \quad (4.63499) \quad (3.58589)$$
$$R^2 = .90 \quad F = 22.51 \quad DW = 1.78 \quad SE = 23.8230 \quad method = OLS^3$$

The assumed values for the exogenous variables are described in Table 6.1, with the following observations about major changes:

(a) *Interest rates*: The basic scenario assumes interest rates to be 11.5% in 1986 and holds it constant in the following years, at 12%. Since the dollar inflation rate is also held constant in the period at the 5% level, it is assumed a slight increase in real rates in the second year. Therefare, the comparison of Marris's scenarios with the basic one reveals: slightly higher interest rate in 1986, a slightly lower one in 1987 and substantial declines through 1990 in the co-operative scenario; substantially higher rates in 1986 and 1987 and smaller rates in the following years, in the hard landing scenario.

(b) *Dollar depreciation*: The basic scenario assumed a depreciation of the dollar by 6% in 1986 with respect to SDR (annual average values), and constant values in the following years. In both Marris's scenarios, the depreciation is much more pronounced.

(c) *US inflation*: In the basic scenario, change is US price level was kept at 5% per year for the whole period. In the Marris's scenarios US inflation is higher in every year of the simulation period except for 1986 in the co-operative scenario and for 1990 in both.

(d) *World imports*: In the basic scenario world imports were supposed to grow steadily in 2% real terms per annum. The co-operative scenario is more optimistic for the whole period. The hard landing scenario results more pessimistic for 1987 and 1988 only.

(e) *Exogenous import and export prices*: Non-oil import prices grow faster in both Marris's scenarios than the steady 5% rate assumed for the basic one, except for 1990. Prices of Brazilian manufactures exports are supposed to decline by 1% in 1986 in the basic scenario and to grow by 5% per year in the following years. Marris's scenarios tum out to be more optimistic in both cases in every year except for 1990.

[3] Note: data were normalized for model initialization in 1983. JUR = interest rate, I2Q = quantum of world imports, $/SDR = US dollar/SDR exchange rate (annual averages).

Table 6.3

Brazil: growth and external accounts – co-operative

	1985	1986	1987	1988	1989	1990
GDP Growth	8.3	5.1	5.9	6.5	6.3	6.1
Growth of Industrial Output	9.0	8.4	5.4	5.5	5.3	5.2
Trade Balance/GDP	5.7	6.1	6.6	7.0	7.1	6.9
Interest Payment/GDP	4.7	4.0	3.2	2.2	1.3	0.8
Interest Payments/Exports	40.6	33.9	26.7	18.1	10.3	6.1
Net Exports/GDP	4.8	5.3	5.2	6.2	6.3	6.1
Net Debt/Exports	3.1	2.6	2.0	1.4	0.8	0.3

Table 6.4

Brazil: growth and external accounts – Hard Landing

	1985	1986	1987	1988	1989	1990
GDP Growth	8.3	5.0	6.0	6.6	6.4	6.0
Growth of Industrial Output	9.0	8.3	6.1	5.5	5.0	4.6
Trade Balance/GDP	5.7	6.0	6.7	7.2	7.4	6.9
Interest Payment/GDP	4.7	5.4	4.1	2.8	1.6	0.9
Interest Payments/Exports	40.6	47.1	34.2	22.0	12.4	7.4
Net Exports/GDP	4.8	5.2	5.9	6.4	6.6	5.5
Net Debt/Exports	3.1	2.8	2.2	1 .6	0.9	0.4

Note: See text for explanations.

Two sets of simulations were made with the assumptions of each of Marris's scenarios. The results are shown in tables 6.3 and 6.4, under the assumption that domestic demand variables were held at the same levels as in the basic simulation. In these cases, the effect of higher export revenues in both scenarios due to dollar depreciation leads to the acceleration of repayment of external debt, shown in the tables as a fast improvement in debt to export ratios.

An alternative set of simulations was performed, allowing faster output growth to occur by means of more expansionist demand policies. The results are shown in tables 6.5 and 6.6. In these so-called “adjusted scenarios”, the space provided by faster export growth is used to increase domestic absorption, holding the level of the ratio of trade balance to GDP around their values in the basic scenario. As a consequence, higher growth rates of actual GDP are obtained during the whole period of simulation, reproducing a situation close to the experience of the brazilian economy before the first oil shock.

In this case, however, when the ratio of investment to GDP is held at the low 16% of the basic scenario, capacity ütilization increases by more than 10 percent points in both Marris’s scenarios, signalling the need to promote higher rates of investment, which may be difficult to obtain with the

resulting levels of net exports as a proportion of GDP.

Tabçe 6.5

Brazil: growth and external accounts – adjusted co-operative

	1985	1986	1987	1988	1989	1990
GDP Growth	8.3	9.1	9.0	9.8	7.9	6.0
Growth of Industrial Output	9.0	13.4	9.3	9.5	7.3	5.0
Trade Balance/GDP	5.7	5.2	5.0	4.7	4.4	4.2
Interest Payment/GDP	4.7	3.8	3.1	2.2	1 .5	1.1
Interest Payments/Exports	40.6	34.1	27.4	19.7	13.0	10.2
Net Exports/GDP	4.8	4.4	4.2	3.8	3.5	3.3
Net Debt/Exports	3.1	2.7	2.2	1.7	1.3	1.0

Table 6.6

Brazil: growth and external accounts – adjusted hard landing

	1985	1986	1987	1988	1989	1990
GDP Growth	8.3	8.6	10.1	10.2	8.4	5.1
Growth of Industrial Output	9.0	12.8	11.2	10.1	7.6	3.6
Trade Balance/GDP	5.7	5.2	5.0	4.7	4.4	4.2
Interest Payments/GDP	4.7	5.2	3.9	2.7	1 .7	1.3
Interest Payments/Exports	40.6	47.1	35.0	23.9	15.3	11.7
Net Exports/GDP	4.8	4.4	4.1	3.8	3.5	3.3
Net Debt/Exports	3.1	2.8	2.4	1.9	1.5	1.2

As a general conclusion, the results of the Marris's scenarios turn out to be more optimistic for the long-run prospects of recovery for the brazilian economy. Under the second set of simulations the feasible limits to economic growth present fairly high rates of GDP growth before the "savings constraint" is hit, and the simulations seem to point in the direction of very favourable prospects for the Brazilian economy through the rest of the decade.

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