

**DEPARTAMENTO DE ECONOMIA**

**PUC-RIO**

**TEXTO PARA DISCUSSÃO**

**No. 333**

**PRIVATE INTERNATIONAL CAPITAL FLOWS TO BRAZIL\***

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Março 1995

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\* Leonardo Rezende, Luciana Sá and Paula de Faro provided excellent research assistance as well as many helpful comments. All errors are ours.

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## **Abstract**

The early nineties have witnessed a revival of capital flows to developing countries. Despite the several unsuccessful attempts to stabilize inflation until the Real Plan of July, 1994, Brazil was a major beneficiary of those capital inflows, the majority of which were composed of portfolio investment. Capital inflows had a good side because they increased the amount of foreign reserves at the Central Bank, thereby making less likely a hyperinflation in the earlier period and opening room for the exchange rate based stabilization that is being currently attempted by the Real Plan. Nevertheless, capital inflows posed major monetary and fiscal problems, which are described and analyzed. The prospects of the Brazilian stabilization are robust to the change in the international environment caused by the Mexican crisis, since they depend more on domestic factors (fiscal and monetary discipline) than on the continuity of capital flows at the previous levels.

**Key words:** Capital Flows, Currency Substitution, Brazilian Economy, Monetary Policy, Financial Economics, Stabilization Policies.

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Latest Version: 03/07/95

## 1. Introduction

Failure to stabilize and difficulties in fitting in the various schemes conceived to reschedule its external debt crisis in the second half of the 1980s have kept Brazil by and large at the margin of the extraordinary growth in foreign capital flows to developing countries for almost ten years. The steady course of liberalization of capital movements in spite of a deep economic crisis with extremely high inflation and in the middle of rather dramatic policy changes, as well as high interest rate differentials opened the way for investors willing to place an early bet in the eventual recovery of the Brazilian economy as the continuous fall in dollar interest rates from 1989 to 1993 raised the prospects for good risk premia.

Thus, as many other countries in Latin America, Brazil from 1991 to 1994 has experienced a revival of the inflow of foreign capital.<sup>3</sup> In 1991, Brazil received net capital flows in the amount of \$5.5 billion (2.7% of GDP). In Latin America, this figure was surpassed only by Mexico (\$ 16.1 billion). Argentina received \$5.1 billion; Venezuela, \$4.8 billion; and Chile, \$1.7 billion (these are gross capital inflows, not directly comparable to the Brazilian net figures). In 1992, the Brazilian net capital inflow increased to \$10.8 billion and in 1993 to \$18.0 billion, with the 1994 estimated figures being slightly lower (see Table 4).

This recent change in capital movements has not been exclusive of Latin America, as illustrated in Table 1 where an idea is shown of the relative importance of developing countries as recipients of the recent capital flows. Table 2 displays the capital flows to Latin America.

Domestic causes for the recent capital movements seem to have varied widely from country to country, but in Brazil the size and the timing of the inflows can be associated with monetary and exchange rate policies, as well as with the generalized hopes that the resumption of economic growth following stabilization is an inevitable scenario for the coming years.

Well before the election of Fernando Henrique Cardoso in 1994 in the wake of the first favorable results of the *Real* stabilization program, changes in the country's growth prospects were attractive to foreign capital. In that sense, the Brazilian case was rather unique in Latin

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<sup>3</sup> See Bacha (1993). Calvo et al. (1992b) estimate that significant flows of \$24 billion in 1990 and some \$40 billion in 1991 have moved into the region. Net inflow has been negative from 1982 to 1991 but are highly positive for 1992 (some \$6.9 billion) according to the UN World Economic Survey - 1993 and will probably more than double this figure for the current year.

America, since in Brazil inflation stabilization was more of a prospect than reality.<sup>4</sup> In fact, in spite of the expected growth of real GDP of around 4%, the Brazilian economy is still rather stagnant as the investment/GDP ratio (at constant prices) is expected to be closer to the recent years' dismal performance of around 15% than to the historical rate of 22%. The control of mega-inflation, which was running at a 40% monthly rate in the first half of 1994, has been the single most important issue of economic policy and thus, after so many unsuccessful experiments, policy uncertainty concerning the nature of the Real Plan<sup>5</sup> has been the dominant feature determining investors' and consumers' behavior.

After the frustrating experience of the last fifteen years, the menu of the foreign investors' nightmares before the Real Plan included price freezes, compulsory deindexation with monetary reform to cancel old contracts, wage and price controls, internal debt repudiation and, after the Argentine experiment, exchange rate based stabilization (both as a "fiscal anchor" as in Argentina and as a price coordination device). Expectations concerning the stabilization set-up have been, therefore, part and parcel of inflation dynamics from the last price freeze of February 1991 (the so-called Collor II program) until the Real Plan, as well as part of investors' decisions concerning the composition of financial portfolios.

Making sense of the survival of the transactions demand for cruzeiros in a country with such a long and troubled inflationary experience has been a true challenge to foreigners as well as nationals. Behind this phenomenon, a complex maze of private and public financial institutions developed in the Brazilian economy which have been almost entirely devoted to the day-to-day supply of indexed substitutes for the domestic currency.<sup>6</sup> This provision of indexed reserves of purchasing power was based on the holding of government bonds of varying maturity while the Central Bank guaranteed that financial intermediates would not go bankrupt whenever inflation expectations deteriorated or depositors exercised their liquidity promises by supplying them the necessary reserves. The financial system has thus been successful in preventing currency substitution that has been the rule in other mega-inflationary experiences (as well as an element in sparking open hyperinflations) but it has done so by allowing the non-financial public to work with very little cash and indexed deposits instead of dollars<sup>7</sup>. In this task of protecting financial wealth denominated in an unsafe currency, the monetary policy was restricted to the daily determination of the open

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<sup>4</sup> In another paper by the same authors (Calvo et al., 1992a) they conclude that external factors have been dominant for the present flows, up to 1992, but there is still ample room for the difference between the nature and stability of the movements from country to country.

<sup>5</sup>The Real Plan was launched on 7/1/94, but its main policy measures were previously announced. Section 4 describes the Real Plan main characteristics and evolution.

<sup>6</sup> See Carneiro, Garcia and Werneck (1993) for a brief description of the evolution and characteristics of this system.

<sup>7</sup>See Garcia (1994) for a formal model of this domestic currency substitute regime.

market interest rate, that is the rate at which federal bonds were converted into bank reserves. This rate ended up signaling inflation expectations and real interest as well as setting a benchmark for all other financial transactions.

There are thus two challenges for the Central Bank in the context of the Real stabilization plan. The first one is to convince economic agents that this regime has been left behind after the adoption of the new currency. This requires, however, both a deindexation of the economy and a scenario in which the Central Bank is not under pressure to monetize government debt, either federal or provincial.

An equally complicated task is to do so without resorting to full convertibility in a fixed exchange rate regime. In this paper, the basic legislation of foreign capital in Brazil is summarized (Section 2) as well as the essential mechanisms of monetary policy in Brazil as a necessary step to understand the problems created by the recent capital inflow. It is shown how capital flows responded to the combination of stable rules, a stable real exchange rate and continued liberalization in the capital account plus high interest rates policy, thereby aggravating the sterilization problem posed by the release of the cruzados deposits which had been blocked since the Collor I program.<sup>8</sup> Macroeconomic policy was based on a monetary policy stance which tended to perpetuate mega-inflation in its permanent mission to avoid a run of financial investors towards foreign assets (Section 3).

Following the Real stabilization plan in July 1994 a new currency was introduced and for the first time a multi-staged strategy included the announcement of a thorough refurbishing of the Brazilian monetary policy institutions and procedures. In Section 4, the main characteristics of the first six months after the Real plan are reviewed as well as the challenges posed the stabilization attempt by the potentially higher instability of the capital flows in the context of the Mexican economic crisis. After six months of the new currency reform, low expected inflation still prevails as the government strives to define a new monetary and exchange rate regime that will allow stabilization to proceed without having to retreat in the liberalization of capital movements.

## **2. Capital Flows: History, Determinants and Evolution**

Similarly to what happens in most developing countries with a tradition of financial repression, the main objective of the Brazilian legislation regulating capital flows has

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<sup>8</sup>See Carneiro (1991) for a description of the Collor I program.

historically been the repression of capital flight. Recommendations of greater financial openness tends in this context to be typically seen as a lobby for tax dodgers. As domestic financial repression created obstacles to financial products to attract savers, the accumulation of wealth led naturally to an increased demand for foreign assets. Tax avoidance has understandably been at the center stage of the debate around the limits to liberalization of capital movements.<sup>9</sup>

The process of financial liberalization in Brazil started in 1988 when the “floating exchange rate market” was created. Before that, all foreign exchange transactions had to be explicitly and previously authorized by the Central Bank. The idea was to create another exchange rate market besides the “commercial” one (where all trade related transactions and also most financial transactions were conducted) where all non-illegal transactions that used to go through the **black market** could be made. As the liberalization progressed, both rates would **eventually converge to the “floating”** rate. This move was made possible by the resolution of the Latin American debt crisis of the ‘80s.

Another important measure was the liberalization of the gold market. Also, a loophole in the law used to allow Brazilians to send abroad as much domestic currency as they may have<sup>10</sup>. Since Uruguay became a financial heaven, Brazilians started using this country as a means to bypass Central Bank regulations and conduct transactions with the rest of the world. It was just a question of setting a **subsidiary** in Uruguay and exporting domestic currency. In Uruguay the Brazilian currency was easily **converted** into hard **currency**. All those developments contributed to make the Brazilian economy very much financially integrated with the international capital markets in the ‘90s, despite the existing restrictions.

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<sup>9</sup>A folk story illustrates well this idea. A director of the Brazilian Central Bank reacted briskly when, in the discussion of the effects of capital movement, someone invoked the argument of “foreign currency evasion”. “There is no such a thing as foreign currency evasion; there might be tax evasion, but this is the SRF’s (the Brazilian IRS) business, not ours”, he used to say.

<sup>10</sup>Currently there are limits to the physical transfer of cash, as in the U.S.

As far as formal restrictions are concerned, Brazilian individuals and non-financial firms are limited in the amount they may invest abroad. Limits of a similar nature apply to financial institutions. Investments by non-domestic residents in Brazil (both portfolio and direct) are regulated by several laws and norms, which are summarized in the next Sections.

## 2.1 - Capital Flows Data

Table 4 displays the recent capital flows to Brazil.<sup>11</sup> It is remarkable the increase on those flows starting in 1991. Since then, the accumulated capital inflow totaled almost US\$ 45 billion!

Most of the capital inflow was caused by portfolio investments and currency loans. This is a natural consequence of the extremely high real interest rates displayed in Figure 1. After an initial period when the capital inflow was welcome, policy-makers became concerned with the consequences of such massive flows<sup>12</sup>. In the second half of 1993, Brazil started imposing restrictions on capital inflows. First, only fixed income investments were taxed, and since the second semester of 1994 (as described below) stock-market investments are also taxed (1% transaction tax upon entrance). With so many derivative markets operating it is very hard to keep foreign investors from profiting of the very high real interest rates. One of the most widely used operations to transform an investment in stocks in an investment in fixed income is the so-called box operation in the options market. A box operation is a joint trade of four options—two calls and two puts—that produces a return that is known in advance, just like a bond. By an arbitrage argument, this return must equal the interest rate.

Table 5 displays in detail the flows related to direct investment. With variations that had to do with arbitrage opportunities, the net flow has been steadily rising.

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<sup>11</sup>Those figures are net inflows, except for fixed income funds and currency loans.

<sup>12</sup>In the next section we deal in detail with those *policy-makers' concerns*.



Investments in stocks are detailed in Table 6. As mentioned before, some of those were actually directed to fixed income securities. They were registered as investments in stocks to avoid the taxation aimed precisely at avoiding those fixed income foreign investments.

Foreigners were allowed to invest in fixed income (and being taxed differently from investors in stocks), through Fixed Income Funds, created in late 1993. The detailed flows are on Table 7. Those funds did not attract a very significant amount because of the already mentioned taxation and the possibilities of avoiding it through financial engineering.

Table 8 (A) and 8 (B) detail the foreign currency loans. The item that grew the most was the issue of Brazilian bonds. With such high internal rates, Brazilian firms (both financial and non-financial) had a strong incentive to bring funds from abroad. This is one of the paradoxes of Brazilian economic policy that we will discuss in the next section: why did the Brazilian internal debt pay such high a rate (see Figure 1), causing it to rise propped up by capital inflows (see Figure 2)? Why did **not** the government issue its debt abroad, instead of allowing private entities to retain the arbitrage opportunities between external and internal interest rates?

## **2.2 - Historical Perspective**

One thing is to speak of the legal restrictions to capital flows; quite another thing is to evaluate the effectiveness of such legal restrictions. Here expected costs and benefits of abiding by the law are an important determinant of the actual outcome. As an example, limits to capital movements are certainly easier to implement in countries that are more isolated geographically, like Brazil, than in countries with an intense movement of people and goods across the boundaries, as is the case in Europe, for example. The difficulties to enforce legal obstacles to capital flight in Mexico have been clearly evidenced during the external debt crisis of the 1980s and may suggest the reasons why in some countries restrictions to capital movements might survive more naturally than in others. Following the financial liberalization of Uruguay, for example, capital controls in Brazil became much more difficult

to enforce, and thus the way was open to the process of liberalization which has been taking place since 1990. (Noya and Dominioni, 1994) .

A second type of motivation for the legislation concerning foreign capital is of course nationalism. In the early 1960s, when the political strength of economic nationalism reached a peak in the post war years, foreign capital was seen by most influential political leaders at best as unwanted and a necessary evil a poor country would have to live with for a while. Concern with legal means to limit profit remittances of multinationals has been the main motivation for the approval of Law 4131 of 1962, which remains so far as the central piece of legislation regulating the presence of foreign capital in Brazil. The law 4131/62 has been considerably softened by law 4390/65 as well as by decree 557662/65, which increased the limits to the remittances of dividends. As noted by Franco (1990), this institutional setting proved to be robust enough to remain untouched for over twenty-five years. Direct investments in Brazil are, thus, regulated by these pieces of legislation. Currently, profits pay regular domestic corporate income tax (48%), and dividends remitted abroad are taxed on 15%<sup>13</sup>. The result joint tax burden (56%) is high by international standards. Table 5 shows the recent figures for direct investment. As previously noted, net inflows have been rising recently, and expectations for 1995 are of further growth, despite the Mexican crisis. The increase in foreign direct investment will depend on the strength of the privatization process and the public-private partnerships in areas previously restricted to state-owned firms (oil, energy generation, telecommunications, etc.).

### **2.3 - Portfolio Investment Current Legislation**

The institutional stability has been affected by the recent movements starting in 1990, in favor of a higher degree of financial openness. The liberalization move was made possible only after the peak of the external debt crisis had past and the all-time high uncertainty

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<sup>13</sup> The 48% tax rate is the actual tax rate paid by a large U.S. oil firm in Brazil. There are other tax rates.

concerning the rule presiding financial contracts in the domestic economy had been achieved following the Collor stabilization plan in March 1990.

After 1991, the legislation concerning foreign investment began to change towards being more receptive. Currently, there are several channels through which foreign investors may invest part of their portfolios in Brazil. We summarize below the current legislation related to foreign portfolio investment. The legislation related to foreign direct investment was already reviewed in the previous Section.

a) *Sociedades de Investimento - Capital Estrangeiro* (Investment Companies - Foreign Capital):

These Companies were created and regulated by the Annex I of Resolution 1289 of the National Monetary Council, dated 03/20/87. These Companies may be composed of individuals or legal entities resident, domiciled or with head-offices abroad, with the aim to invest in Brazilian variable income securities. The investments have to be managed by a Brazilian financial institution authorized by CVM (the Brazilian SEC).

As Companies they are regulated by the appropriate law of public companies (*Lei das S.A.*), which is very demanding for an investment fund. All investments shall be subject to registration at the Central Bank to allow for later repatriation of cash dividends and capital gains. The minimum percentage invested in shares or debentures convertible into shares is 50%. Capital gains are exempted from income tax, but cash dividends and monetary payments are currently taxed at a 15% rate.

The total amount of funds in these Companies is quite small, US\$ 105 million (August/94).

b) *Fundos de Investimento - Capital Estrangeiro* (Investment Funds - Foreign Capital):

These Funds were created and regulated by the Annex II of Resolution 1289 of the National Monetary Council, dated 03/20/87. These funds may be composed of foreign individuals, corporations or other collective investment entities organized abroad resident, domiciled or

with head-offices abroad, with the aim to invest in Brazilian securities. These Funds shall be managed solely by an investment bank, brokerage house or securities house authorized by the CVM.

All investments are subject to registration at the Central Bank to allow for later repatriation of dividends and capital gains. The minimum percentage invested in stocks is 70%. Capital gains are exempted from income tax, but actual payments are currently taxed at a 15% rate.

The total amount of resources in these funds is also small, US\$ 648 million (August/94).

Besides (a) and (b), the Resolution 1289 in its Annex III created and regulated the *Carteira de Títulos e Valores Mobiliários* (Bonds and Securities Portfolios maintained in Brazil). Currently, this option is hardly used. The total amount invested through Annex III<sup>14</sup>, Funds of Foreign Capital Conversion and Privatization Funds - Foreign Capital amounts to US\$ 405 million (August/94).

c) *Carteiras de Valores Mobiliários* (Securities Portfolios for Institutional Investors):

These portfolios are the most widely used instrument to invest in Brazilian stock and derivative markets. They were created and regulated by the Annex IV of Resolution 1289. Annex IV was actually enacted by Resolution 1832, dated 05/31/91. Only foreign institutional investors may invest in those Portfolios. Examples of institutional investors that qualify for the use of the Annex IV are Pension Funds, portfolios belonging to Financial Institutions, Insurance Companies, and Foreign Investment Funds.

The management of the portfolio will be undertaken by the institution operating in Brazil and granted authorization by the CVM. Through Annex IV, Foreign Mutual Funds were able to invest in the Brazilian stock markets, each one forming its own portfolio. Previously they would have to invest in other mutual funds. Also, American mutual funds are forbidden from investing in other mutual funds, to avoid fraudulent schemes.

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<sup>14</sup>Mainly the Brazil Fund, traded at the New York Stock Exchange.

All investments are subject to registration at the Central Bank to allow for later repatriation of dividends and capital gains. Currently, these portfolios cannot invest in fixed income securities, except in very restricted ones. Those rather restrictive fixed income investments are subject to a 15% withholding income tax. The idea is that all foreign investment in fixed income securities be made through Fixed Income Funds (item (e) below). These Fixed Income Funds pay a 9% "entrance" tax, while the Variable Income Portfolios pay 1%.

Capital gains are exempted from income tax, but monetary payments are currently taxed at a 15% rate. Until the end of 1994, there was a special 0.25% tax on the total investment (*IPMF-Temporary Tax on Financial Transactions*).

The total amount of funds in these portfolios is US\$ 20,241 million (August/94). This option is by far the most widely used entrance to foreign investment in variable income financial instruments.

d) *Depository Receipts (D.R.):*

Depository receipts are a way to have domestic stocks traded at international stock exchanges without having to go through the time consuming listing process. The Annex V of Resolution 1289, enacted by Resolution 1927, dated 05/18/92, regulates the issuance of the DRs. Until now, DRs have not yet become a widely used option, but their importance is likely to grow in the future as a source of cheaper capital for corporations.

e) *Fundos de Renda Fixa - Capital Estrangeiro (Fixed Income Funds for Foreign Investors):*

Only through these funds may foreign investors invest in Brazilian private and public fixed income securities. They were created and regulated by Resolution 2034 of the National Monetary Council, dated 12/17/93, and by Circular Letter 2388 of the Central Bank.

These funds may be composed of corporate legal entities domiciled or with head-offices abroad with the aim to invest in Brazilian fixed income securities, as well as foreign mutual funds. The management of these funds may be handled by a multiple bank with an investment

portfolio, an investment bank, a stocks and securities brokerage house, or a stocks and securities dealership, under direct responsibility and supervision of the administration of the institution.

At least 35% of the fund's assets have to be invested in papers issued by the National Treasury or Central Bank bonds, and no more than 20% may be invested in fixed-income papers or acceptances by financial institutions. All investments have to be recorded at the Central Bank to allow for later repatriation of yields and capital gains.

Capital gains associated with stock and futures market operations are not subject to withholding tax. All income (except capital gains on stocks) are subject to 10% withholding income tax. All fixed income investments are currently subject to a 9% tax (*IOF* - Tax on Financial Transactions). This tax was conceived to deter the capital inflow attracted by the large interest rates in Brazil. Until the end of 1994, there was a special 0.25% tax on the total investment (IPMF-Temporary Tax on Financial Transactions).

The total amount of funds in these funds is US\$ 2,187 million (August/94).

f) *Contratos de Fechamento de Câmbio e Carta Circular nº 5* (The Exchange Liquidation Contract and The Central Bank Circular Letter #5 - Foreign Investors Accounts):

The Exchange Liquidation Contract as well as the Circular Letter # 5 are instruments that foreign investors may use to participate in Brazilian financial and capital markets. The regulations on those options are very lax, but they are not very widely used because they subject the investors to a 25% (variable real income) and 30% (fixed real income) tax, much more than options (c) and (e), the most widely used. Until the end of 1994, there was a special 0.25% tax on the total investment (IPMF-Temporary Tax on Financial Transactions). A tax on short term (less than 16 work days) financial transactions (IOF) also applied. These are the only ways foreign retail investors were allowed to participate in Brazilian markets.

Retail foreign investors were kept out of the other options (mainly Annex IV) because of the incentives to domestic investors to disguise themselves as foreigners in order to profit from the tax exemption on capital gains given by Annex IV.

### **2.3 - Financial Innovations**

The long experience with high inflation has given rise to a very sophisticated financial system in Brazil. The spreading of cash management activities demands expertise in arbitrage operations, as securities (private and public) have to be traded daily in the open market as well as in exchanges. The possibilities of capital gains attract good analysts and specialized agents with open eyes for arbitrage opportunities, and a keen interest in the latest financial management techniques. In high inflation regimes, capital gains opportunities tend to dominate rates of return considerations, and this fact is aggravated when inflation is high and with a large variance as the "signal" sent by real rates changes are distorted by the "noise" of inflation variability.<sup>15</sup>

The experience in trading securities in a high inflation environment opens space thus for the spread of sophisticated financial techniques which are one way or another incorporated into the box of tools of managers and analysts and are bound to generate some kind of permanent financial culture as techniques generated by the speculative activity spillover to other activities. One example is futures trading.

As analyzed by Parcias (1990), futures trading used to be confined mainly to agricultural commodities markets (especially coffee and cattle). In 1960, 92% of the contracts referred to grains and cattle and already in 1983 financial contracts corresponded to 38% of the traded contracts.

Started in 1986, the BM&F (Futures and Commodities Exchange) is today ranked as the sixth futures exchange in the world in number of traded contracts (See Tavares, 1992). In 1993, the

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<sup>15</sup>The issue of indexation of financial assets in Brazil is described by Barbosa (1993).

BM&F traded an average of 197,292 contracts each day, of which 34% referred to future contracts of interfinancial deposits, an instrument of hedge against interest rate variations. Table 3 displays the volume of derivative contracts traded at the BM&F per year. The trading volume grew 25 times from 1986 to 1990.

Although the spurt of market for derivatives (options and futures) has been motivated by the high inflation environment, their availability constitutes a financial innovation in the technical sense that they alter the demand for securities and the way risk is allocated in the economy. The long run implications of such innovations are hard to establish, but in all likelihood they will be useful instruments in a more financially open economy as they permit a wider choice of risk to asset holders and therefore they may contribute to lower the costs of intermediation—and therefore to lower the cost of capital—in a more stable economy. The existence of such active futures markets is expected to have a favorable impact on the volatility of the capital flows since they provide insurance to those activities which depend on the holding of foreign exchange positions.

Another implication that became clear with the attempts to curb capital inflows to invest in high-interest-domestic debt is that derivatives significantly harm the effectiveness of capital controls. Svensson (1993) calls attention to the fact that the existence of forward and futures exchange rate markets make speculative attacks against currencies much harder to defend. Without those markets, speculative attacks must be conducted through the sale of spot positions on the currency. With the forward and futures markets, volumes many times higher (virtually unbounded) may be sold for future delivery. By arbitrage, the spot rate tends to move in the same direction, making the speculative attacks much more powerful.



### **3. Capital Flows and Monetary Policy**<sup>16</sup>

In this Section we describe the main features of the monetary policy regime of 1991/1994 as well as the challenges it has faced by the inflow of foreign capital. Among its characteristics, the very small size of the monetary base before the Real Plan stood out as generating peculiar obstacles to interest rate targeting, which tended to be aggravated by the increased capital inflows. The main motivation for the detailed description is that after six months of the monetary reform, essentially the same procedures of monetary policy had been retained.

With inflation running as high as it did in Brazil until the Real Plan, money holdings have been reduced to a minimum. This is shown in Figure 4: M1 in the months immediately previous to the Real Plan was only around 1.5% of GDP, with the monetary base being roughly half of this figure. This is less than 10% of the M1/GDP ratio in the US, for example. In other words, money velocity used to be more than one order of magnitude higher in Brazil than in the US.

How did such a system work? After all, in principle, the monetary services required **per unit of GDP** were roughly the same in Brazil and in the US. That is, when a household buys a refrigerator, it must use **about** the same amount of M1, be it in Brazil or in the US. The same applies to firms, government, etc.. Since the ratio M1/GDP is so low in Brazil, flows of **comparable** magnitude must have much greater impacts in the Brazilian monetary market than **in the US's**. That is exactly what we will show below, with special emphasis on the monetary flows generated by the capital inflows. First, however, we must introduce a description of the institutional framework underlying the Brazilian monetary system. The description below refers to the institutional framework before the Real Plan, although not many aspects have changed since then. We will describe those changes in the next Section.

With high inflation, interest targeting by the Central Bank required that nominal interest movements tracked current inflation movements as close as possible, so that interest accruing

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<sup>16</sup>This section draws heavily from Carneiro and Garcia (1994)

to assets that were seen by wealth-owners as close money substitutes were able to keep such accounts competitive to dollar holdings. The basic instruments for interest rate targeting were the interest rates accepted in the weekly auctions of Central Bank Bonds (BBC's) and the daily open market interventions of the Central Bank which determined the cost of borrowing reserves by the banking system.

Everyday, before the open market begins to operate at 9 am, the Brazilian Central Bank makes an estimate of the net bank reserves position of the banking system. This position varies a lot because the Brazilian Treasury must hold all its accounts directly at the Central Bank. This obligation creates huge movements in banks reserves whenever payments are made to or by the Treasury. Secondly, because the Central Bank used to impose limits to the holding of foreign exchange reserves by banks, short run movements in the demand for foreign assets, such as those prompted by an expected change in the devaluation policy or a change in interest rate policy, were immediately reflected in the market for bank reserves. These limits also jeopardized the use of foreign assets as buffers against unexpected movements in bank reserves' demands. Currently, those limits no longer exist for long positions on foreign currency (although all excess over \$50 million per bank must be deposited at the Central Bank). However, given the large interest rate differential, most banks hold net short positions in foreign currency.

Let us illustrate how the smallness of the monetary base compounded with other characteristics, as the tax and loans accounts at the Central Bank, creates obstacles to the interest targeting procedure. Take the example of tax collection. Taxes are usually paid by agents to banks, who keep them for two days before passing them to the Treasury. The final payment to the Treasury by the banks is made by debiting the banks' reserves accounts (and crediting the corresponding amount in the Treasury account at the Central Bank). Since the amounts involved in tax collection are usually large compared to the monetary base (because the latter is so small), flows generated by tax collection create a substantial need for bank reserves by the whole banking system. This is because the banks must fulfill reserve requirements which are determined by their past deposit record (lagged reserve requirements),

and those do not vary when the taxes are transferred to the Treasury account at the Central Bank.

Therefore, in a given day when taxes must be credited to the Treasury, most banks that perform tax collection become short in reserves. When the banking system as a whole does not have enough reserves to fulfill the aggregate reserve requirement, the Central Bank must provide those reserves, usually by means of open market purchases of government securities. When this situation happens, the Central Bank is said to be **oversold**. The discount window in Brazil is seldom used by private banks because before the Real Plan the Central Bank adopted the so-called Rieffler doctrine. That is, the resort to the discount window automatically prompts an inquiry into the bank's books in order to prevent solvency problems.

When the reverse situation happens, that is when the whole banking system is long in reserves, the Central Bank is said to be **undersold**. In this case, the Brazilian Central Bank usually conducts open market operations to mop up the excess liquidity in order to prevent interest rates to fall below targets. That is, the Central Bank sells government securities with repurchase agreements (usually overnight). By doing so, the banks keep their liquidity intact without incurring the opportunity cost of carrying excess reserves and unduly depressing the nominal interest rate.

Throughout a typical trading day, the Central Bank conducts several go-arounds to achieve its objective of providing liquidity (when it is oversold), or withdrawing liquidity (when it is undersold). The idiosyncrasy of the Brazilian Central Bank is that, before the open market closes at the end of the day, it always provides banks with a last opportunity to obtain the reserves they need, or to purchase government securities overnight. Those trades used to involve a rather small penalty in terms of interest rates (which increased substantially after the Real Plan). This automatic clearing of the bank reserve market has been widely used throughout the years of high inflation, and is still used after the currency changeover that introduced the Real (July/1/1994).

The rationale behind this mechanism is that it gives the Central Bank an almost complete control over interest rates especially when it is oversold. By automatically clearing the reserve market at the end of the day, the Central Bank significantly controls the risk taken by banks in their daily supply of cash to the economic system. Banks are always trading bank reserves for government securities. Given the high opportunity cost of holding excess reserves under very high inflation, very often banks were short of reserves to fulfill their obligations, and, therefore, could potentially incur in substantial capital losses. This was especially true if interest rates swung wildly, as it was feared to happen if the Central Bank did not monitor the reserve market so closely.

The Brazilian Central Bank's monetary policy regime was thus (and still is) to target interest rates. Before the Real Plan, the procedure to compute the targeted level aimed at minimizing the cost of rolling over government debt without jeopardizing the real yield paid to final savers. In order to achieve such objective, the Central Bank was always willing to clear the excess reserves within a narrow band around the targeted interest rate. By acting in this fashion, the Central Bank kept the interest rate at the desired level, and also limited the potential losses and gains of financial institutions. Therefore, when the variance of expected inflation increased, the targeting of interest rates became more complex.

If exchange rates were allowed to absorb part of the energy set off by such unforeseen reserve movements, as it may happen in a more stable regime, the overvaluation of the exchange rate could be a stabilizing element in the presence of capital inflows. As it will be explained below, this is what happened after the Real Plan. High uncertainty concerning the response of capital flows, for example, has prevented the Central Bank to let prices do their part in the adjustment until the Real Plan, either through decline in interest rates or through a smaller devaluation. The Central Bank's monopoly as a holder of foreign reserves defined this way another policy objective before the Real Plan: to maintain the alignment of the real exchange rate so as to avoid sending discomfoting signals to exporters and investors. This was radically changed with the Real Plan, as we will see in the next Section.

The rationale for this behavior of the Central Bank before the Real Plan may be understood by the experience of the '80s and early '90s. In the presence of high overall policy uncertainty, the apparent comfortable position of the monetary authorities provided by the combination of large foreign reserves and steady demand for domestic financial assets rested on a fragile and potentially self-destructing foundation: the maintenance of a high interest rate to compensate domestic asset holders for the high risk, and the maintenance of an indexed exchange rate as a means to offer exporters a guaranteed real income. As a result of this double guarantee, foreign investors were offered a permanent opportunity for arbitrage gains: the higher the risk perceived by domestic asset-holders, the higher the gains for arbitrage.

Figure 5 illustrates the point. It displays the covered interest rate differential (CIRD), which is the relevant measure to access the attractiveness (and the risk) of (partially) segmented markets. The CIRD computed in Figure 5 is the Brazilian interest rate on one-month Brazilian Government bonds (in CR\$) minus the sum of the US interest rate on one-month T-bills (in US\$) and the CR\$ depreciation with respect to the US\$ implied by the futures market.<sup>17</sup>

Frankel (1989) argues that CIRD is the most suitable measure for perfect mobility. He shows that CIRD performs empirically better in measuring the degree of capital mobility than plain real interest rate differentials (RIRD). CIRD, which is also called **country premium** has in fact been eliminated among major western countries. The result is that a **currency premium**<sup>18</sup> remains, consisting of an exchange rate risk premium plus expected real currency depreciation. This means that for the major western countries, even with the equalization of covered interest rates (CIRD is basically zero), large differentials in **real** interest rates remain (RIRD is not zero). For countries not perfectly financially integrated, Frankel (1989) shows

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<sup>17</sup>Given the high interest rates in Brazil, all calculations use compound interest, not simple interest as used in this example.

<sup>18</sup>Forward discount on a given currency minus the excess expected inflation of the country vis-à-vis the other country.

that positive violations to CIRD are an indication of barriers to capital inflow, while negative violations to CIRD are an indication of barriers to capital outflow, i. e., financial repression.

As Figure 5 makes clear, starting at the end of 1991, CIRD has been highly positive in Brazil. This has attracted a substantial amount of foreign capital, as shown by the large accumulation of foreign reserves at the Central Bank until the Real Plan (Figure 2). The capital inflow was so large that, in mid-1993, the Brazilian government started imposing taxes on capital inflows, as described in the previous section. The Brazilian government decided to curb foreign investment for two reasons: fiscal and monetary. The fiscal reason is that the government was accumulating an increasingly large amount of foreign reserves (which paid very low interest) while it paid extremely high interest rates on its domestic debt. That is, the differentials show in Figures 1 and 5 were the costs of the foreign reserves. Those costs were (and still are) indeed very high. Just to provide a rough calculation, with US\$ 40 billion in reserves before the Real Plan and with a 20% interest rate differential, the Brazilian government was paying around US\$8 billion per year to maintain the foreign reserves at that level! We now turn to the monetary reason.

### **3.1 - Sterilization in the Context of High Uncertainty**

The above description of the institutional framework underlying monetary policy in Brazil before the Real Plan emphasizes the idea that interest rate targeting in Brazil requires a much more active role from the Central Bank than in other countries. This happens because flows of magnitudes comparable to those in other countries (per unit of GDP) impact a much smaller monetary base. As a consequence, the price in the market for bank reserves (the interest rate) becomes much more volatile, forcing the Brazilian Central Bank to intervene much more often to guarantee the stability of interest rates at the desired level. As a consequence, in order to prevent interest rates movements to send undesirable signals as to the government's views concerning expected inflation, the monetary base becomes highly volatile. The tradeoff between quantities and interest rates in the context of high inflation and

policy uncertainty is replaced by a conflict between variances and the choice is almost certainly to try to control the variance of interest rates. In the context of an open economy subject to large capital movements, the Central Bank must also take into account the costs associated with the variability of the exchange rate.

The recent literature spurred from the European experience with exchange rate bands seems to be changing the practical implications of fixed interest vs. fixed exchange rates regimes.<sup>19</sup> There seems to be more room for autonomous monetary policy in the case of exchange rate bands as evaluations of the European experience suggests. However, in the case of mega-inflation, the trade-off between exchange rate variability and interest rate variability may acquire additional dangerous options. Since the monetary policy regime we have been describing stresses the importance of policy uncertainty, agents must give an extra importance to phenomena which may prompt policy changes.<sup>20</sup> In other words, this configures a case of the so-called peso problem: all expectations during that period were formed with the fear that a change of regime (of unknown format) was likely to happen, although none actually did happen during that period. Therefore, accepting a higher variability of the exchange rate, for example, might have implied accepting the risk that the fall in export revenues might have turned the balance of payments untenable in the policy horizon, thereby prompting a change in policy regime. The room for the precarious maintenance of stable inflation in high rates might thus have become even smaller, in the presence of volatile foreign flows (see Figure 3).

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<sup>19</sup> See, for example Svensson (1992).

<sup>20</sup> In the Brazilian experience, such changes have traditionally brought about serious changes in rules presiding over financial transactions. The most widely used financial change is the de-indexation of financial assets. With abrupt and unexpected disinflations, the maintenance of previously agreed nominal interest rates would originate enormous wealth transfers from debtors to creditors. This would happen because, before the disinflation, much of the nominal interest rate just compensated for high inflation, the expected real rate being much smaller than the nominal rate. If inflation falls abruptly (as with a temporary price freeze, for example), the inflation compensation will turn into a much higher real interest rate. This could break many firms, and, because of the public debt, would mainly harm government finances. Because of that, stabilization plans have traditionally used conversion factors in an attempt to preserve the expected real rates that prevailed before the plan. These conversion factors typically reduce substantially the nominal interest rates. The first such scheme we are aware of was implemented after the first recorded hyperinflation during the French revolution (Veld and Sargent, 1990).

Figure 6 displays the magnitude of the movements that impact the monetary base. What is different in the Brazilian economy is that the potentially de-stabilizing effects which may be associated with the size of the movements in bank reserves lead the Central Bank before the Real Plan to try to keep real interest rates from varying too much and thereby sending wild signals concerning expected inflation. Figure 6 displays the ratios of the oversold position to total bank reserves (scale on the left hand side), and of oversold position to monetary base (scale on the right hand side). The picture shows that is not infrequent for the Central Bank to have to borrow or lend reserves in one single day in an amount greater than the entire monetary base. Movements of such relative dimension are unthinkable in countries with low inflation, where the inflation tax has not reduced the monetary base to a bare minimum.

The smallness of the monetary base would not mean much *per se* if expected inflation were not so dominant in movements of the targeted interest rates. Fluctuations induced in interest rate movements by flows that affect the monetary base may have a de-stabilizing effect on expected inflation.<sup>21</sup> Agents look at the targeted rate in order to form their inflation expectations. Therefore, if the Central Bank let the interest rates vary in a wider band, it would incur the risk that agents might read upward movements as increases in Central Bank's expected inflation. With overall indexation, a higher expected inflation could turn into a higher actual inflation. On the other hand, abrupt significant downward movements in interest rates would make impossible for banks to offer inflation indexed demand deposit accounts, which were the main deterrence to hyperinflation (Garcia, 1995).

Note in Figure 6 how the undersold position of the Central Bank increased significantly as the Real Plan approached. The massive undersold position meant that the larger part of the public internal debt was being rolled over with resource to repurchase agreements, that is, most of the debt (10% of GDP) had only one day maturity. This procedure was adopted by the

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<sup>21</sup> Of course if the daily interest rate has a more important role as a determinant of the correction of nominal values the phenomenon is still more complex, but this argument will not be considered here.



Central Bank to avoid having to pay a substantial risk premium as the new and previously announced stabilization plan approached.

We now turn to the way foreign capital flows have recently impacted the monetary base with many consequences to monetary control.

In the precarious control of mega-inflationary process we have been describing so far, expected inflation plays a very important role. The combination of price de-regulation with forward-looking indexation in the context of the potential monetization of the blocked financial assets<sup>22</sup> led to a general view by policy-makers that eventual errors on the "high" end of interest rates targeting would not be as serious as if expected inflation were underestimated in the definition of interest rate targets, since the latter could spark hyperinflation. The very high real interest rates the Central Bank began to set after October 1991 together with the policy of keeping the real exchange rate fairly constant, plus the increasing confidence of investors on the irreversibility of the liberalization of capital movements had the effect of inducing a very large capital inflow, especially linked to interest arbitrage operations intermediated by banks and to institutional investors in the US taking a stake in the Brazilian stock market. The result of such movements can be seen by the upward trend in foreign reserves from December 1991 to August 1992, shown in Figure 2, as well as in the inflow of external resources detailed in Table 4.

In an attempt to avoid the explosion of the very small monetary base, the Central Bank engaged in a policy of massive sterilization<sup>23</sup> of both flows (the foreign capital and the released cruzados novos deposits frozen in March 1990). Figure 2 displays the evolution of the internal government debt, that grew enormously until the Real Plan. It shows that the accumulation of domestic debt was almost all accounted for by the transformation of compulsory into voluntary savings (the unfreezing of the cruzados novos deposits) and the

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<sup>22</sup> In August of 1991, the Brazilian government began to unfreeze the blocked financial assets of the Collor I Plan. It unfroze around US\$ 1.5 billion on average for the 12 following months.

<sup>23</sup> We will later qualify the use of the term "sterilization"

accumulation of foreign reserves (capital inflows and current account surpluses). The first layer in Figure 2 represents the mere replacement of compulsory financing (the blocked deposits) by voluntary financing by private investors. The second layer represents the foreign reserves accumulation. The highest line is the domestic debt accumulation. Almost all growth in outstanding debt can be accounted for by the release of the cruzados novos and the capital inflows, as shown in Figure 2.

The restoration of the market for government debt which took place after the first quarter of 1991 was a positive signal that at least some confidence was recovered after the blocking of 80% of all financial assets in March, 1990, but the costs of this recovery may be seen from the data on the determinants of the evolution of the monetary base. Figure 7 displays the accumulation of five of the factors affecting the monetary base. Those are aggregates of accounts on the asset or liability side of the Central Bank balance sheet, excluding the monetary base. Since the algebraic sum of all accounts in a balance sheet must be zero, the variations of those accounts may be interpreted as factors affecting the monetary base. Six series are displayed. As for those increasing the monetary base, two major movements can be detected. First, the unblocking of the cruzados novos deposits, which started in August, 1991. It grows steadily until August 1992, when almost all savings previously frozen have already been unfrozen. Second, the impact of balance of payments through the accumulation of foreign reserves at the Central Bank (*External Sector*), starting in November 1991. Note that those two flows add up to more than US\$ 20 billion in the 12-month period starting in August, 1991. Since the monetary base in that period was around \$4 billion, the Central Bank faced a huge sterilization task. This can be seen by the behavior of the series *Bills* in Figure 7, which corresponds to the contractionary effect on the monetary base of sales of Treasury Bills (mainly the BBCs). Note that the accumulation of foreign reserves until the Real Plan was almost of the same amount of the accumulation of the real value of the monthly variations of the monetary base.

One can also see from Figure 7 that the *Treasury* (this is the account the Treasury has at the Central Bank) did not exert expansionary effect in the recent period, except for a few months.

This last statement, however, must **not** be taken to mean that a significant fiscal adjustment had taken place, since fiscal repression was by and large obtained by letting inflation erode the real value of fixed nominal expenditures. The treasury had never played a determinant role in monetary expansion in the period studied.<sup>24</sup>

As we have previously emphasized, the process of capital inflows in Brazil was generated by the large spread between external and internal rate of returns, and the financial instruments that paid such very high interest rates were government securities. Therefore, *strictu sensu*, capital inflows were not sterilized once they entered the country; they entered the country in order to purchase government securities and profit from the large spread. The word sterilization gives the wrong timing idea; it suggests that after the funds entered the country, government securities were sold to mop up liquidity and avoid the inflationary consequences of monetary expansion. That was not the case in Brazil. The word sterilization also suggests that the government has to raise interest rates in order to sell its securities. That is also false for the Brazilian case. Had the Central Bank not intervened by selling more domestic bills at low prices (high interest rates), domestic interest would have fallen in the presence of capital inflows and those inflows would have diminished, causing only the limited monetary expansion required to equalize domestic interest rates to foreign interest rates plus a risk premium. Therefore, although capital inflows were the main expansion factor of the monetary base for the three years that preceded the Real Plan, it does **not** follow that had capital not flown into the country, inflation would not have been so high. The majority of the capital inflows only passed through the monetary base in their way to domestic government bills.

As we will develop in more detail in the next Section, the monetary expansion role of capital inflows change substantially with the Real Plan (July/1/1994), since the exchange rate was allowed to float. Note how the *External Sector* factor becomes negligible in Figure 8, that covers the period after the Real Plan.

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<sup>24</sup>The fiscal accounts in the '90s in Brazil were in equilibrium by the operational deficit concept.

#### **4. Capital Flows and Macroeconomic Stabilization: The Real Plan**

Following the abandonment of price controls in 1991 onwards and the deepening of liberalization of international trade and finance relations, foreign capital inflows responded favorably to the signals of a more liberalized economy, and there was a substantial accumulation of international reserves (see Figure 2). There was a general belief that a Brady-type agreement with private creditors was around the corner and that a new boom in economic growth was about to start. In the meantime, avoidance of open hyperinflation through deficit repression, repeated promises of fiscal reform to curb explosive inflation expectations and the maintenance of positive real interest rates became the central aim of economic policy. Short run management of public debt was still the instrument used to prevent currency substitution from decreeing the final abandonment of the national currency.

In spite of the political crises of 1992 and 1993 and the high uncertainty associated with a 40% monthly rate of inflation in the first half of 1994, year of general elections, optimism concerning growth prospects was generalized. Hopes for economic and political recovery were dominant after the traumatic impeachment of President Collor and after the Congress inquiry's recommendation that 19 congressmen should lose their seats following charges of inappropriate behavior in the all powerful Congressional Budget Committee. These hopes admittedly required a scenario in which government action will be modernized, privatization of state companies will continue, trade and financial liberalization will proceed and that the fight against poverty will not impair private investors' incentives. This positive scenario, however, must be feasible if successful stabilization is to be achieved.

##### **4.1 - Pre July 1994**

Beginning May 1993, a stabilization strategy was being prepared when an economic team was formed under the leadership of senator Fernando Henrique Cardoso, then Ministry of Foreign Relations. The new economic team was summoned in the middle of a political

turmoil prompted by the resignation of President Itamar Franco's third minister of Finance in less than six months.

The announced strategy was stated as a multi-stage game plan, involving first a refurbishing of the budgetary process, including the promotion of a sharp distinction between Treasury and Central Bank accounts. Then the following steps would follow: the preparation of a Constitutional reform aimed at increasing the federal government's command over tax revenues, a program to remove public tariff artificial repression, and an extra effort to increase current tax revenues by means of a frontal attack on tax evasion. Eventually, a final monetary reform by means of which a *coup de grâce* on the over-indexation of the price system was to be expected.

The game plan was only partially successful in its first moves. Tax evasion was reduced, so that with the help of a significant recovery of economic activity tax collection increased by more than 30% above inflation. Public tariffs were corrected in spite of the inevitable cost push effect reflected on a 10 p.p.(monthly rate) increase in monthly inflation rates in the second half of 1993. In September 1993, a reform of the Central Bank accounts substantially reduced the ambiguity of the Treasury's financial position, thereby increasing the visibility of the fiscal deficit opening room for a better control of monetary and fiscal policy. But the constitutional reform scheduled for the beginning of 1994 turned out to be a total failure as only an emergency stop gap arrangement could be approved. There was only a gain in flexibility of federal government spending, which is actually a permission to circumvent otherwise mandatory budget expenditures, up to the end of 1995.

#### **4.2 - The Real**

In July 1994 a new currency was adopted, the **real**, with a ban on short run indexation of contracts, the definition of targets for the evolution of the monetary base until the first quarter of 1995 and a ceiling for the exchange rate establishing a parity of one real for a dollar,

backed on an estimated US\$ 40 billion foreign reserves position. Popular approval of the new currency was far beyond expectations thus the third phase has been quite successful in reducing inflation, even if economic agents are yet to be convinced that now the Central Bank has new instruments of monetary policy.

Considering that the only outcome of Constitutional reform was the creation of a temporary fiscal fund, additional measures to reinforce the Federal Government fiscal position were signaled in the Provisional Legislation. Since the fiscal regime of the past four years has been admittedly precarious due to the aforementioned failure to define the political basis for a new fiscal regime, it will be the first challenge of the new president in 1995. For the remainder of the 1995 fiscal year, expenditures will continue being repressed by the Treasury. In the wake of the monetary reform, public tariffs cannot be increased until mid 1995 and the indexation of contracts was prohibited for less than a year.

Instruments of monetary and exchange policy bore the most significant innovations. In the previous regime, instruments were directed to control acceleration of inflation and curb the process of currency substitution which characterized hyperinflation. Signaling of positive real interest under increasing expected inflation and the indexation of exchange rates were the only instruments to prevent hyperinflation. Such practices led to the continuous piling up of foreign exchange reserves, which became the main asset to run the stabilization under a precarious fiscal regime.

The automatic purchase of reserves to keep the real level of the exchange rate was halted by the new program. As the Central Bank stopped mopping up the excess of foreign exchange in the market, there was an immediate trend to overvaluation. At first, this was seen as temporary and due to an excessively high nominal interest rate (of around 8% per month) in view of a low trend of inflation in the new currency (see Figure 1 for the US\$ Brazilian interest rate). In order to curb a credit creation spree which could fuel the growth of consumption expenditures in the wake of the sudden fall of inflation tax, banks reserve requirements were increased to 100% of the growth of demand deposits and of 20% of time

deposits. The immediate fall of the dollar value of the real, to less than 0.92 was a perfect instrument to increase the risk of smart money operations preventing that the short run gains from interest arbitrage increased the volatility of foreign reserves.

Monthly inflation rates were not as low as expected (between 1 and 3%), even after the elimination of statistical residues since August, since seasonal effects of agricultural prices have been particularly unfavorable. Other pressures on monthly indices stem from the prices of services, where demand is less responsive to prices, housing, and of course from the increased demand for proteins (meat and beans) due to the favorable income effect of a sudden reduction of an estimated inflationary tax equivalent to an annual flow between US\$ 18 and 20 billion due to low inflation. In spite of the pessimistic forecasts which followed the October figures (around 3%), expectations have calmed down in the fourth quarter, as monthly inflation declined or less than 2% and expected inflation for the first months of 1995 has also been revised downwards in response to measures to prevent excess demand to bring back a seller's markets almost everywhere in the economy. Two kinds of measures were announced. On the demand side, a general imposition of reserve requirements covering virtually all banks liabilities, as well as some kinds of loans to prevent the expansion of bank credit to add steam to consumers' spree which seemed to be following an explosive path as Christmas' season approached. In order to further reduce excess demand, several steps were taken to facilitate imports: import tariffs were cut on durables specially on automobiles and the purchase of small items through the mail were exempted from import duties thereby increasing the supply in time to prevent a seasonal price rise which could have signaled an early end to the popular enthusiasm with the new currency.

Poor results were obtained in the domain of monetary control, in spite of the institutional reforms which were announced in the monetary reform legislation. The innovations were left behind as immediate results in the control of the supply of credit were given precedence to the strengthening of monetary instruments. Therefore the monetary authorities followed basically the same procedures as described in section 3 above, when the excess of provincial debt overburdened some state banks, of which the most important was the huge Banespa (the

State of São Paulo Bank, the third largest commercial bank in the country) and the Central Bank had to provide financial assistance far in excess of the monetary base targets which were fixed at the launching of the program in July.

Credibility of the stabilization attempt was thus challenged precisely in the domestic front, and the Central Bank couldn't help but keeping high overnight interest rates far beyond what was required to signal positive real rates. In order to prevent high nominal rates to signal high expected inflation, the instrument left to sustain the deindexation of the economy was the management of the exchange rate, which tended to overvalue in response to the high differentials between international lending rates and domestic interest.

The macroeconomic outcomes for an economy undergoing such policy dilemmas may be summarized with the help of the two-entry table below. We may roughly classify the credibility problems under "domestic" (reflecting essentially the government's ability in exhibiting a convincing multi-year consistent budget) and "external" (reflecting the country's balance of payments prospects). Combinations of high and low credibility scenarios give thus rise to the four possibilities shown in the table. The clear success stories are easy to model, as well as their counterpart clear failures. Successful outcome would allow the decline of the real interest rate at the same time the exchange rate could fall reflecting the country's wealth gains with the world's willingness to finance part of its investment effort. Aborted stabilizations have required ultimately higher interest rates to compensate for internal debt risk as well as exchange rate devaluations to restore balance of payments equilibrium with low credibility.



### Policy Credibility: Interest Rates and Exchange Rates

EXTERNAL	Low	High
DOMESTIC		
Low	Failure: $r\uparrow, E/P\uparrow$	$r\uparrow, E/P\downarrow$
High	$r\downarrow, E/P\uparrow$	Success: $r\downarrow, E/P\downarrow$

Under this simplified framework, we might classify the Brazilian situation at the end of 1995 after six months of the Real Plan as a combination of high confidence in the external equilibrium and a low confidence in the domestic equilibrium. This combination of prospects explain the need to keep high real interest rates in the domestic market while the exchange rate experiences a continuous pressure to overvalue.

#### 4.3 - Possible Results

Are there reasons to believe that the present effort will give rise to a reasonably sustainable stabilization? Two reasons for optimism and one for pessimism can be advanced. Pessimism derives from the failure to promote a permanent control of the fiscal deficit. The medium run success depends on the cash-flow-based control over Treasury disbursements, at least until

the budget can be seen as balanced from an intertemporal perspective. In other words, in the long run, it is necessary to promote a fiscal reform that will allow the country to live without inflation. But this important step towards the consolidation of low inflation scenarios will be a task of the new government starting January 1995.

One of the reasons for success is that in response to the adverse capital flows after the debt crisis in the eighties, the external accounts were over adjusted: the large trade surplus of the late eighties and early nineties are now far beyond what is needed for stable foreign reserves. Before stabilization, the exchange rate was thus compatible with overall surpluses in the balance of payments, in spite of the fact that the economy was in frank recovery since 1992 and that imports have increased around 25% in 12 month figures since 1990 trade liberalization. Figure 9 shows what happened to the effective dollar exchange rate using as deflators the Brazilian Wholesale Price Index and the US Consumer Prices. Except for the periods of extreme uncertainty and exchange scarcity as in the height of the debt crisis of the early eighties, the dollar exchange rate measured in December 1994 reais remained in the interval between .80 and 1.00 under external (as well as domestic) conditions much more unfavorable than the present one faced by the Brazilian economy.

So there are a few arguments favoring an overvaluation of the exchange rate without threatening the long run balance of payments equilibrium. It is admittedly hard to estimate now the "correct" level of exchange rate that would be consistent with a reasonable economic growth and equilibrium in the external accounts. One can expect that, in case of successful stabilization, Brazil will be able to attract a substantial inflow of risk capital, as well as exhibit significant gains in productivity in the next years sustaining a moderate (say of 1.5% of GDP, corresponding to approximately US\$ 7.5 billion) deficit in the current account **corresponding to the excess of total investment to domestic savings**, which is likely to occur under a non deteriorating income distribution scenario.

Finally, political support to carry out the deeper changes in the ways and modes of government action is expected to follow the first gains scored by the stabilization program,

especially those associated with the benefits of low inflation in the first twelve months or so. Similarly to what happened in other countries, the new government may make use of the political support stemming from successful stabilization, as an important source for complementary measures leading to deeper changes in the present political arrangement which solves conflicts by means of monetary expansion. Such changes are essential to sustain economic stability. A general sensation of fatigue after so many years of adaptation to high inflation is thus an asset which the government will have to count on in the years to come if economic stability is to be seen by the Brazilian political system as a permanent goal.

#### **4.4 - Have capital flows been a factor of instability?**

Following the monetary reform of July 1st, 1994, the sudden fall in expected inflation coupled with the imposition of a 100% marginal reserve requirement on demand deposits provoked, as expected, a substantial increase in the monetary base. In the first six months, the total increase in the monetary base (currency plus bank reserves) accumulated 388% (calculated on daily averages for each month), whereas bank's total reserves increased by 687% (because of the 100% marginal reserve requirement) and currency held by the public, by 266%.

The exam of the factors behind this monetary growth leads to the conclusion that repurchase of federal debt held by the public was dominant (see Figure 8). Contrary to fears that high interest rates designed to avoid a run into the goods markets might attract a substantial flow of foreign money which might in turn create obstacles to post-reform monetary control, total purchase of foreign exchange corresponded to less than 4% of total monthly base increase in the first three months of the new monetary regime (see Figure 8). From October to December 1994, most of monetary base increase was due to net repurchase of federal bonds and liquidity loans to banks; Treasury accounts as well as foreign sector ended up being a factor of contraction of the monetary base: besides a cash surplus in Treasury operations there was a loss in foreign exchange reserves in November and December (see Figure 8).

In the beginning of the program, the effects of the expected overvaluation of the exchange rate on trade-related flows were very important. Figure 9 displays the effective exchange rate. The 15,6% accumulated (basic, i.e. *SELIC*) interest rates between July and September created an incentive to the anticipation of exports revenues by exporters, as well as a postponement of dollar expenditures by importers to take advantage of the implicit interest arbitrage opportunities.

Thus, following a strong fall in exports in July under the unexpected impact of the overvaluation, with a trade surplus of US\$ 875 millions (the lowest figure in 15 months) the recovery of export revenues in August and September led to monthly surplus above US\$ 1 billion in spite of a sharp increase in imports, which showed a record high level since January 1991.

Financial flows followed a symmetric path as capital repatriations took advantage of the current overvaluation. After a modest decrease of the demand for foreign exchange in July, financial outflows have substantially increased after August. Net **financial** flows have been negative from July to September, then recovered in October and November when fears spread that the monetary targets would be jeopardized by capital flows. In December and January, however, they were sharply reversed after the expected effect of seasonal profit remittances was aggravated by the unexpected effect of the Mexican crisis.

Looking closer into the components of the trade-related exchange flows, one realizes that there seems to be some changes in those movements since October. The first one corresponds to a **slowdown** of exports that resulted in smaller net inflow. In October, the government imposed a 15% required reserves on export-based financial advances and limited the maximum period to 90 days (it used to be 180 days). The slowdown of export contracts coupled to higher imports, due to Christmas and smaller import taxes, enacted as a mean to increase supply, made net trade-related inflows reach the lowest levels since 1991. These combined effects led to net outflow of foreign exchange in November, and December.

Preliminary unofficial data indicate that the overall Balance of Payments surplus estimated in US\$ 17 billion in the first nine months was reduced to US\$ 12.9 billion at the end of the year, thanks to the combination of a sharp reversal of the current account in the last quarter with a substantial capital outflow in November and December.

The resulting pressure of this varying behavior of the exchange flows over the exchange rate signaled that the conflicts between monetary targets and the need to prevent an excessive overvaluation would be harder than anticipated by the monetary authorities. The curious result, however, is that whereas fears of excessive inflows have been at the center of evaluations of the future prospects for the stabilization program up to the end of 1994, fear of capital flight in the wake of the Mexican crisis has been the rule in the beginning of 1995.

The prospects of abundant capital have been helpful in keeping favorable prospects for inflation in the fourth quarter of 1994. In October, monthly inflation rates were projected to be around 3% per month at the end of 1994, despite the fact that most of this increase in prices was attributed to seasonal and inertial factor (as in the case of urban rents contracts). This level would be too high to guarantee that financial indexation had been left behind. In this context, the instability of the exchange flows sets a clear limit to the operation of monetary policy to signal low inflation.

A recent evaluation of the problems caused by capital flows in Brazil before 1993<sup>25</sup> concluded that the Central Bank was able to fully sterilize the effects of reserve accumulation in 1991 and 1992. At the end of 1994, however, in spite of the fact that most analysts debated the limits that exchange instability would pose to monetary control, one couldn't help realizing that the most important reason behind monetary expansion in the second half of

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<sup>25</sup> In a recent MA dissertation, Puga (1995) using an econometric model with data up to 1993 could not reject the hypothesis that the sterilization coefficient was equal to one, but estimates a very high (interest) cost to avoid excessive monetization. In the context of the monetary regime described in section 3 above, however, it is hard to distinguish between the costs of sterilization from the costs of high uncertainty associated with the inflation upsurge that followed the failure of the Collor policy experiments in 1990 and 1991.

1994 were the liquidity problems faced by the provincial banks which had been abused by state governments in their electoral efforts.

In other words, although an important technical challenge faced by the Brazilian Central Bank is how to operate the gradual liberalization of the exchange regime towards convertibility without a firm commitment to a fixed exchange rate, the political control of the state governments use of their banks remained a critical factor determining the prospects for economic stability in Brazil.

## 5 - References

- Abreu, M. de P. (ed.) [1989]. **A Ordem do Progresso: Cem Anos de Política Econômica Republicana, 1889-1989**. Rio de Janeiro: Campus.
- Anbid [1995]. **Investimento Externo**. Jan.
- Andrade, E. [1992]. "Os Bancos Estaduais no Brasil: Do Final dos Sessenta à Crise dos Anos Oitenta", M. A. Dissertation, Departamento de Economia, PUC-Rio.
- Behrens, Alfredo [1978]. "O Papel dos Bancos de Investimento como Instituições de Crédito a Longo Prazo", **Revista Brasileira de Mercado de Capitais**, vol. 4, No. 10, Jan/Apr.
- Barbosa, F. H. [1993]. "La Indización de los Activos Financieros: La Experiencia Brasileña" in Jiménez, L. F. (ed.) **Indización de Activos Financieros: Experiencias Latinoamericanas**, Colección Estudios Políticos y Sociales, CEPAL.
- Barros, J. R. M., M. C. Pinotti and M. C. Barros [1991]. "O Mercado Financeiro em um Cenário de Estabilização", MBE Associados, São Paulo.
- Bodin de Moraes, P. [1986]. "Essays on Stabilization Policies", PhD Dissertation, Massachusetts Institute of Technology, Cambridge, Mass..
- Bodin de Moraes, P. [1990]. "Foreign Banks in the Brazilian Economy in the Eighties", Texto para Discussão N. 241, Departamento de Economia, PUC-Rio.
- Bodin de Moraes, P. [1993]. "Financial Sector in a Highly Inflationary Economy: How to Finance Growth after Stabilization?", Departamento de Economia, PUC-Rio, mimeo.
- Bresciani-Turroni, C. [1937]. **The Economics of Inflation. A Study in Currency Depreciation in Post-War Germany**, George Allen & Unwin Ltd., London.
- Calvo, G. A., L. Leiderman and C. M. Reinhart [1992a]. "Capital Inflows and Real Exchange Rate Appreciation in Latin America: The Role of External Factors", August.
- Calvo, G. A., L. Leiderman and C. M. Reinhart [1992b]. "Capital inflows to Latin America: The 1970s and the 1980s", IMF Working Paper 92/85, Research Department.
- Carneiro, D. D. [1991]. "Plan Collor: los primeros tres meses" in Rozenwurcel (ed.) **Elecciones y Política económica en América Latina**, Cedes-Tesis, Buenos Aires, 1991.
- Carneiro, D. D. [1992]. "O Mercado de Capitais de Longo Prazo e o Papel do BNDES". Departamento de Economia, PUC-Rio, dezembro, mimeo..
- Carneiro, D. D. and P. Bodin de Moraes [1988]. "La Inflación y la Evolución del Sistema Financiero Brasileño", in C. Massad and R. Zahler (eds.). **Deuda Interna y Estabilidad Financiera**, Grupo Editor Latinoamericano, Buenos Aires.
- Carneiro, D. D. and Garcia, M. G. P. [1994]. "Flujos de Capital y Control Monetario bajo Sustitución Doméstica de Dinero: La Reciente Experiencia Brasileña" in Steiner, R. (ed.), **Afluencia de Capitales y Estabilización en América Latina**, TM editores / Fedesarrollo, Bogotá.

Carneiro, D. D. and I. Goldfajn [1990]. "Reforma Monetária: Prós e Contras do Mercado Secundário", in C. Faro (ed.). **Plano Collor: Avaliações e Perspectivas**. Rio de Janeiro: LTC - Livros Técnicos e Científicos.

Carneiro, D. D. and R. L. F. Werneck [1992]. "Public Savings and Private Investment: Requirements for Growth Resumption in the Brazilian Economy", Texto para Discussão n. 283, Departamento de Economia, PUC-Rio, June.

Carneiro, D. D., R. L. F. Werneck and M. G. P. Garcia [1993]. "Strengthening the Financial Sector in the Brazilian Economy", Texto para Discussão n. 307, Departamento de Economia, PUC-Rio.

Cukierman, A. [1992]. **Central Bank Strategy, Credibility, and Independence: Theory and Evidence**. Cambridge, Mass.: The MIT Press.

Cukierman, A., S. B. Webb and B. Neyapati [1992]. "Measuring the Independence of Central Banks and Its Effects on Policy Outcomes", **The World Bank Economic Review**, Vol. 6, N. 3, September.

Dias, G., J. R. R. Afonso, L. C. R. Patury and P. P. Parente [1992]. "A Lei Complementar do Sistema Financeiro Nacional: Subsídios e Sugestões para a sua Elaboração", **Cadernos de Economia**, N. 07, Programa Nacional de Pesquisa Econômica, Brasília.

Dreizen, J. [1985]. **O Conceito de Fragilidade Financeira num Contexto Inflacionário**, BNDES: Rio de Janeiro.

Fonseca, D. S. [1992]. "Rentabilidade dos Bancos Comerciais: Um Exercício de Decomposição", Monografia de Graduação, Departamento de Economia, PUC-Rio.

Frankel, J. A. [1989]. "Quantifying International Capital Mobility in the 1980s." Paper prepared for a National Bureau of Economic Research conference on Maui, January 6-7.

Garcia, M. G. P. [1995]. "Avoiding some costs of inflation and crawling toward hyperinflation: The case of the Brazilian domestic currency substitute", **Journal of Development Economics**, forthcoming.

Giambiagi, F. and A. A. Zini Jr. [1992]. "Renegociação da dívida Interna Imobiliária: Uma Proposta", outubro, mimeo..

Goldsmith, R.W. [1986]. **Brasil 1850-1984: Desenvolvimento Financeiro sob um Século de Inflação**, Harper & Row do Brasil Ltda., São Paulo.

Lohman, S. [1992]. "Optimal Commitment in Monetary Policy: Credibility versus Flexibility," **American Economic Review**, 82.

Marques, M. S. B. and S. R. C. Werlang [1988]. "Moratória Interna, Dívida Pública e Juros Reais", Instituto Brasileiro de Economia, Fundação Getúlio Vargas, mimeo..

Marques, M. S. B. and S. R. C. Werlang [1989]. "Deságio das LFTs e a Probabilidade de Moratória", Escola de Pós-Graduação em Economia, Fundação Getúlio Vargas, mimeo..

Noya, N. and Dominioni, D. [1994]. "El Fortalecimiento del Sector Financiero en el Proceso de Ajuste: Liberalización y Regulación. El Caso Uruguayo", in R. Frenkel (ed.). **El Fortalecimiento del Sector Financiero en el Proceso de Ajuste: Liberalización y Regulación**, Banco Interamericano de Desarrollo, Centro de Estudios de Estado y Sociedad, Buenos Aires



Parcias Jr., C. [1990]. "A Organização dos Mercados, as Instituições e o Processo Inflacionário". M. A. Dissertation, Departamento de Economia, PUC-Rio.

Persson, T. and G. Tabellini [1990]. **Macroeconomic Policy, Credibility and Politics**, Harwood.

Puga, F. P. [1994] "A Entrada de Capitais e o Controle Monetário no Brasil - 1983-1993" M. A. Dissertation, Departamento de Economia, PUC-Rio.

Rigolon, F. J. Z. [1992]. "A Independência do Banco Central: O Caso do Brasil", Departamento de Economia, PUC-Rio, mimeo.

Rogoff, K. [1985]. "The Optimal Degree of Commitment to an Intermediate Target", **Quarterly Journal of Economics**, 100.

Silva, M. R. [1989]. "Estrutura de Mercado: Determinantes e Implicações sobre a Política Monetária" M. A. Dissertation, Departamento de Economia, PUC-Rio.

Svensson, L. O. [1992]. "Why exchange rates bands? Monetary independence in spite of fixed exchange regimes", NBER Working Paper 4207, November.

Svensson, L. O. [1994]. "Fixed Exchange Rates as a Means to Price Stability: What have we learned?". Lecture given at the Eighth Annual Congress of the European Economic Association in Helsinki, August 27.

Swinburne, M. and M. Castello-Branco [1991]. "Central Bank Independence: Issues and Experience", IMF Working Paper, Central Banking Department, June.

Tavares, J. F. S. [1992]. "Mercados Futuros: Um Importante Instrumento". B. A. Dissertation, Departamento de Economia, PUC-Rio.

Vasconcelos, J.R. and R.S. Ogasawara [1992]. "Análise Econômico-Financeira dos Bancos Estaduais", Documento de Política no.7, Instituto de Pesquisa Econômica Aplicada (IPEA).

Velde F. and T. Sargent [1990] "The Macro-economic Causes and Consequences of the French Revolution." Paper prepared for the meetings of the Econometric Society in Washington, D. C., December.

Werlang, S. R. C. and A. Fraga [1992]. "Os Bancos Estaduais e o Descontrole Fiscal: Alguns Aspectos", Ensaio Econômico n. 203, EPGE-FGV, novembro.

Werneck, R. L. F. [1991a]. "Oportunidades Perdidas na Política de Estabilização de 1990", in Faro, C. (ed.). **A Economia Pós Plano Collor II**. Rio de Janeiro: Livros Técnicos.

Werneck, R. L. F. [1991b]. "A Crise Financeira dos Estados", **Carta Econômica**, ANBID, ano X, agosto.

Werneck, R. L. F. [1992]. "Fiscal Federalism and Stabilization Policy in Brazil", presented in the "Seminar on State Reform and Stabilization Policy in Latin America", held in Washington, DC, promoted by the Latin American Macroeconomic Research Network and sponsored by IDRC, Ottawa, Canada.

**TABLE 1**

**INTERNATIONAL CAPITAL MARKET FLOWS**

US\$ billions

INSTRUMENT	1990	1991	1992	1993	1994Q1	1994Q2
Bonds	222,9	308,7	333,7	431,0	127,6	86,6
Equity	7,3	22,4	23,5	40,7	11,2	16,0
Syndicated loans	124,5	116,0	117,9	136,7	23,3	51,8
Note issuance facilities (NIF) and other back-up facilities	7,0	7,7	6,7	8,2	0,2	2,1
Eurocommercial paper (ECP) and other nonunderwritten facilities	66,2	80,2	127,9	152,0	54,5	56,9
<b>Total</b>	<b>434,9</b>	<b>536,0</b>	<b>609,7</b>	<b>818,6</b>	<b>216,8</b>	<b>213,4</b>
Flows to developing countries* (percent)	7,6	9,1	8,0	11,2	11,0**	10,0**

\*Including Eastern European countries

\*\*Estimate

Source: OECD, Financial Market Trends

TABLE 2

KEY INDICATORS FOR SELECTED LATIN AMERICAN COUNTRIES  
(As percent of GDP)

	Latin America										Average of 10 countries	
	Argentina	Bolivia	Brazil	Chile	Colombia	Ecuador	Mexico	Peru	Uruguay	Venezuela		
Capital account*												
1984-1989	-1.6	0.6	-2.3	-1.7	2.0	-6.3	-0.4	-5.3	-2.5	-3.1	-2.1	
1990-1992	2.2	3.3	-0.3	5.9	1.0	-5.1	6.2	-0.3	0.5	-1.0	1.2	
Direct investment												
1984-1989	0.9	0.5	0.5	0.5	1.5	0.6	0.8	-	-	0.1	0.5	
1990-1992	1.8	1.0	0.3	1.9	1.2	0.8	1.6	0.2	-	1.8	1.1	
Investment												
1984-1989	18.1	10.1	17.2	16.0	19.7	18.7	20.1	19.4	12.2	17.7	16.9	
1990-1992	15.1	13.5	15.8	20.1	17.7	20.2	21.7	16.4	13.8	14.1	16.8	
Public consumption												
1984-1989	12.4	11.3	11.1	10.9	10.3	11.6	11.1	9.6	13.7	10.4	11.2	
1990-1992	14.2	11.6	12.4	8.8	10.1	8.4*	10.3	9.0	13.3*	11.1	10.9	

Source: IMF, World Economic Outlook (various issues).

\* Includes errors and omissions.

\*\* Data available only through 1991.

TABLE 3

## TRADING VOLUME 1986-1993

MARKET	1986	1987	1988	1989	1990	1991	1992	1993	1994*
Gold Spot (250g)	30,897	254,090	710,888	3,276,299	5,426,310	6,887,054	9,592,931	5,160,851	2,227,070
options	96,254	177,828	1,403,774	6,943,310	6,000,859	7,455,129	7,932,576	9,406,163	6,453,684
futures/forward	64,771	128,109	42,316	71,574	21,832	4,556	1,124	12,080	84,013
option exercise	11,115	5,190	76,279	330,212	373,398	1,034,842	802,402	1,401,370	2,155,968
Gold Market	203,037	585,217	2,233,257	10,621,395	11,822,399	15,381,581	18,329,033	15,980,464	10,920,735
Stock index market	1,550,857	5,339,126	8,931,080	4,219,914	2,540,346	7,838,256	7,287,054	10,374,860	10,558,267
Interest rate market	173,802	160,322	470,723	193,422	711,097	2,607,741	14,072,749	19,254,469	27,530,563
US dollar futures	3,026	2,892	25,202	862,028	608,203	969,788	4,501,952	7,608,631	42,271,168
options	-	-	641	25,325	7,318	140,192	374,441	359,411	642,370
options exercise	-	-	10	-	-	42,380	38,176	50,190	50,905
Foreign currency Market	3,026	2,892	25,853	887,353	615,521	1,152,360	4,914,569	8,018,232	42,964,443
Agricultural commodities	3,025	20,409	1,391	7,459	149	15,365	62,796	1,868,537	4,695,152
Grand total	1,933,747	6,087,966	11,662,304	15,929,543	15,689,512	26,995,303	44,666,201	55,496,562	96,669,160

\*estimate

Source: B.M.F. Annual Report 1993

TABLE 4

## INFLOW OF EXTERNAL RESOURCES\*

(US \$ MILLIONS)

MONTH	STOCKS INVESTMENTS	DIRECT INVESTMENTS	FIXED INCOME FUNDS**	CURRENCY LOANS	TOTAL	STOCKS INV.	PART (%) DIRECT INV.	PART (%) E.I.F.	CURRENCY LOANS
1989	-57	350	.....	.....	35	NA	NA	NA	NA
1990	14	387	.....	1045	861	7.24	19.99	.....	72.77
1991	179	681	.....	4408	5840	10.31	10.13	.....	79.57
1992	1704	1154	.....	7979	10837	15.72	10.65	.....	73.63
1993	6594	397	80	11030	18021	36.59	2.20	0.44	61.21
1994***	5043	2268	2674	7281	14653	34.58	15.55	18.32	49.89
Jan-92	266	309	.....	314	889	29.92	34.76	.....	35.32
Feb	162	487	.....	878	1527	18.45	28.08	.....	55.47
Mar	326	234	.....	892	1452	22.45	16.12	.....	61.43
Apr	235	90	.....	1076.1	1401.1	16.77	6.42	.....	76.80
May	245	57	.....	844.6	1148.6	21.37	4.97	.....	73.66
Jun	134	53	.....	994.1	1181.1	11.35	4.19	.....	84.17
Jul	203	27	.....	418.8	648.8	31.29	4.16	.....	64.55
Aug	36	-26	.....	619.2	573.2	-13.96	5.83	.....	106.00
Sep	36	-26	.....	484.8	494.8	7.28	-5.25	.....	97.98
Oct	241	73	.....	625.4	943.4	25.55	7.74	.....	66.72
Nov	167	21	.....	483.9	671.9	24.85	3.13	.....	72.02
Dec	-232	55	.....	735.6	558.6	-41.53	9.85	.....	131.69
Jan-93	237	101	.....	171	509	45.56	19.84	.....	33.60
Feb	262	27	.....	197	486	33.11	5.86	.....	45.63
Mar	137	58	.....	1626	1821	18.85	62.26	.....	86.72
Apr	252	39	.....	762	1071	23.49	5.00	.....	71.02
May	300	5	.....	587	1001	38.36	2.00	.....	58.64
Jun	182	11	.....	1412	1615	11.89	0.88	.....	87.43
Jul	702	-49	.....	1076	1729	40.60	-2.83	.....	62.23
Aug	1168	18	.....	879	2065	56.58	0.87	.....	42.57
Sep	439	14	.....	1024	599	-73.29	2.34	.....	170.95
Oct	1373	48	.....	865	2286	60.06	2.10	.....	37.84
Nov	899	112	.....	1009	2020	44.50	5.54	.....	49.95
Dec	1417	13	80	1792	3302	42.91	0.39	2.42	54.27
Jan-94	1191	313	82	745	2331	51.09	13.43	3.52	31.96
Feb	1124	119	78	771	2092	53.73	5.69	3.73	36.85
Mar	275	176	106	714	1271	21.64	13.85	8.34	56.18
Apr	396	366	258	932	1950	20.31	18.77	13.13	47.79
May	887	370	300	283	1840	48.21	20.11	18.30	15.38
Jun	535	371	586	305	1797	28.77	20.65	32.61	16.97
Jul	185	189	-70	351	655	25.24	28.65	-10.69	53.59
Aug	122	16	48	349	533	22.89	3.00	6.63	68.48
Sep	-123	134	208	500	719	-1.11	18.94	28.52	69.84
Oct	139	67	1072	97	1205	0.72	16.36	5.32	44.86
Nov	436	149	10	1392	1986	21.95	7.45	0.50	70.09

Source: Banco Central do Brasil

\*Direct Investments, Stocks Investments and Funds Investments correspond to the net inflow of resources.

\*\*Corresponds to the net inflow of external resources to the Fixed Income Funds and Privatization Funds.

\*\*\*Corresponds to gross inflow.

.....Until Nov 1994

TABLE 5

## DIRECT FOREIGN INVESTMENT IN BRAZIL

YEAR/MONTH	INFLOW (US\$ MILLIONS)	OUTFLOW (US\$ MILLIONS)	RELATION INFL/OUTFL	INFLOW INCREASE (%)	OUTFLOW INCREASE (%)
1989	184	524	0,4	-	-
1990	517	230	2,2	180,98	-56,11
1991	695	134	5,2	34,43	-41,74
1992	1.324	170	7,8	90,50	28,87
1993	877	480	1,8	-33,76	182,35
1994*	2032	263	7,7	131,70	-45,21
jan-92	311	2	155,5	-	-
Feb	231	2	115,5	-25,72	0,00
Mar	241	7	34,4	4,33	250,00
Apr	122	32	3,8	-49,38	357,14
May	62	5	12,4	-49,18	-84,38
Jun	74	21	3,5	19,35	320,00
Jul	32	5	6,4	-56,76	-78,19
Aug	38	4	9,5	18,75	-20,00
Sep	26	52	0,5	-31,58	1200,00
Oct	82	9	9,1	215,38	-82,69
Nov	32	11	2,9	-60,98	22,22
Dec	74	19	3,9	131,25	72,73
jan-93	105	4	26,3	41,89	-78,95
Feb	30	3	10,0	-71,43	-25,00
Mar	33	10	3,3	10,00	233,33
Apr	79	20	4,0	139,39	100,00
May	23	3	7,7	-70,89	-85,00
Jun	33	22	1,5	43,48	633,33
Jul	63	112	0,6	90,91	409,09
Aug	51	33	1,5	-19,05	-70,54
Sep	72	58	1,2	41,18	75,76
Oct	68	20	3,4	-5,56	-65,52
Nov	124	12	10,3	82,35	-40,00
Dec	196	183	1,1	58,06	1425,00
jan-94	323	10	32,3	64,80	-94,54
Feb	158	39	4,1	-51,08	290,00
Mar	178	2	89,0	12,66	-94,87
Apr	255	21	12,1	43,26	950,00
May	145	7	20,7	-43,14	-66,67
Jun	275	40	6,9	89,66	471,43
Jul	202	13	15,5	-26,55	-67,50
Aug	66	50	1,3	-67,33	284,62
Sep	156	22	7,1	136,36	-56,00
Oct	89	22	4,0	-42,95	0,00
Nov	185	37	5,0	107,87	68,18

\*Until Nov-94

Source: Banco Central do Brasil

TABLE 6

## FOREIGN INVESTMENT IN THE BRAZILIAN STOCK MARKET

YEAR/MONTH	INFLOW (US\$ MILLIONS)	OUTFLOW (US\$ MILLIONS)	RELATION INFL/OUTFL	INFLOW INCREASE (%)	OUTFLOW INCREASE (%)
1989	149	206	0,7	-	-
1990	171	87	2,6	14,77	-67,48
1991	760	189	4,0	344,44	182,09
1992	3.864	2.180	1,8	408,42	1042,86
1993	14.971	8.377	1,8	287,45	287,82
1994*	19.988	14.945	1,3	33,51	78,41
Jan-96	315	49	6,4	-	-
Feb	242	80	3,0	-23,17	83,27
Mar	395	69	5,7	83,22	-13,75
Apr	398	163	2,4	0,76	136,23
May	381	136	2,8	-4,27	-18,56
Jun	467	333	1,4	22,57	144,85
Jul	407	204	2,0	-12,85	-38,74
Aug	137	217	0,6	-66,34	6,37
Sep	158	122	1,3	15,33	-43,78
Oct	393	152	2,6	148,73	24,59
Nov	345	178	1,9	-12,21	17,11
Dec	225	457	0,5	-34,78	156,74
Jan-97	425	188	2,3	88,89	-58,86
Feb	408	146	2,8	-4,00	-22,34
Mar	561	424	1,3	37,50	190,41
Apr	850	598	1,4	51,52	41,04
May	725	331	2,2	-14,71	-44,65
Jun	957	765	1,3	32,00	131,12
Jul	1.128	426	2,6	17,87	-44,31
Aug	1.909	741	2,6	69,24	73,94
Sep	1.362	1.801	0,8	-28,65	143,05
Oct	2.387	1.014	2,4	75,26	-43,70
Nov	1.969	1.070	1,8	-17,51	5,52
Dec	2.290	873	2,6	16,30	-18,41
Jan-98	1.736	545	3,2	-24,19	-37,57
Feb	2.261	1.137	2,0	30,24	108,82
Mar	1.919	1.844	1,2	-15,13	44,59
Apr	1.243	847	1,5	-35,23	-48,48
May	1.815	728	2,2	29,93	-14,05
Jun	1.672	1.137	1,5	3,53	56,18
Jul	1.188	1.003	1,2	-28,95	-11,79
Aug	2088	1966	1,1	75,76	96,01
Sep	2.331	2.454	0,9	11,64	24,82
Oct	2.375	2.360	1,0	1,89	-3,83
Nov	1.560	1.124	1,4	-34,32	-52,37

\*Until Nov-94

Source: Banco Central do Brasil

TABLE 7

## FIXED INCOME FUND

YEAR/MONTH	INFLOW (US\$ MILLIONS)	OUTFLOW (US\$ MILLIONS)	TOTAL	RELATION INFL/OUTFL	INFLOW INCREASE (%)	OUTFLOW INCREASE (%)
1993	80	0	80	-	-	-
dez/93	80	0	80	-	-	-
jan/94	82	0	82	-	2,50	-
Feb	82	4	78	20,5	0,00	-
Mar	102	2	100	51,0	24,39	-50,00
Apr	119	0	119	-	16,67	-100,00
May	68	0	68	-	-42,86	-
Jun	450	0	450	-	561,76	-
Jul	6	22	-16	0,3	-98,67	-
Aug	81	46	35	1,8	1250,00	109,09
Sep	216	9	207	24,0	166,67	-80,43
Oct	226	0	226	-	4,63	-
Nov	0	0	0	-	-	-

Source: Banco Central do Brasil



TABLE 8 (A)

## FOREIGN CURRENCY LOANS

(US\$ MILLIONS)

YEAR/MONTH	F10	RES. 63	COMM.PAPER	BONDS	SECURITIZATION	RENEWAL	TOTAL
1989	110	0	198	0	0	53	361
1990	405	0	586	54	0	0	1.045
1991	470	6	1.783	1.507	278	364	4.408
1992	922	856	1.190	4.833	30	148	7.979
1993	769	596	338	7.597	675	1.055	11.030
1994*	787	199	177	4.863	221	1.034	7.281
jan/92	44,6	0	88,5	174,6	0	6,3	314
Feb	122,4	5,6	129,6	227,3	0	2,1	487
Mar	41,2	8,7	280,5	559,8	0	1,8	892
Apr	63,1	9	112,8	879,5	10	1,7	1.076
May	35	18,1	154,9	632,3	0	4,3	845
Jun	72,7	87,6	181,3	641,8	0	10,7	994
Jul	88,7	60,6	96,2	170	0	3,3	419
Aug	77,8	144,6	38,7	304,7	0	53,4	619
Sep	83,1	77,2	11,1	303,6	0	9,8	485
Oct	102,9	127,5	48,4	310,7	20	19,9	629
Nov	95,9	242,8	17,8	123,1	0	4,3	484
Dec	94,5	74,4	30	506	0	30,7	736
jan/93	121	7	6	12	15	10	171
Feb	59	44	5	82	0	7	197
Mar	74	162	9	707	213	91	1.268
Apr	17	7	41	653	8	36	762
May	29	14	21	487		38	587
Jun	78	25	55	1145	29	80	1.412
Jul	61	159	21	717	71	47	1.076
Aug	92	114	55	473		145	879
Sep	73	12	18	620	180	121	1.024
Oct	60	16	21	462	70	236	865
Nov	57	7	25	706	10	204	1.009
Dec	48	29	61	1533	79	42	1.792
jan/94	33	4	26	581	10	91	745
Feb	34	1	17	647	0	72	771
Mar	46	29	21	376	4	238	714
Apr	55	24	8	581	81	183	932
May	58	12	14	93	25	81	283
Jun	25	4	12	195	50	19	305
Jul	195	2	0	120	0	34	351
Aug	95	0	19	220	1	14	349
Sep	36	0	15	359	0	90	500
Oct	138	101	21	529	50	100	939
Nov	72	22	24	1162	0	112	1.392

\*Until Nov-94

Source: Banco Central do Brasil

## FOREIGN CURRENCY LOAN

VARIATION RATE (%)

YEAR/MONTH	F10	RES. 63	COMM.PAPER	BONDS	SECURITIZ.	RENEWAL	TOTAL
1990 (*)	268,2	-	198,0	-	-	-100,0	189,5
1991(*)	16,0	-	204,3	2690,7	-	-	321,8
1992(*)	96,2	14166,7	-33,3	220,7	-89,2	-59,3	81,0
1993(*)	-16,6	-30,4	-71,6	57,2	2150,0	612,8	38,2
1994	2,3	-68,6	-47,6	-36,0	-67,3	-2,0	-34,0
jan/96	-	-	-	-	-	-	-
Feb	174,4	-	46,4	30,2	-	-66,7	55,1
Mar	-66,3	55,4	116,4	146,3	-	-14,3	83,2
Apr	53,2	3,4	-59,8	57,1	-	-5,6	20,6
May	-44,5	101,1	37,3	-28,1	-	152,9	-21,5
Jun	107,7	384,0	17,0	1,5	-	148,8	17,7
Jul	22,0	-30,8	-46,9	-73,5	-	-69,2	-57,9
Aug	-12,3	138,6	-59,8	79,2	-	1518,2	47,9
Sep	6,8	-46,6	-71,3	-0,4	-	-81,6	-21,7
Oct	23,8	65,2	336,0	2,3	-	103,1	29,8
Nov	-6,8	90,4	-63,2	-60,4	-	-78,4	-23,1
Dec	-1,5	-69,4	68,5	311,0	-	614,0	52,0
jan/97	28,0	-90,6	-80,0	-97,6	-	-67,4	-76,8
Feb	-51,2	528,6	-16,7	583,3	-100,0	-30,0	15,2
Mar	25,4	268,2	80,0	762,2	-	1200,0	637,6
Apr	-77,0	-95,7	355,6	-7,6	-96,2	-60,4	-39,3
May	70,6	100,0	-48,8	-25,4	-100,0	0,0	-23,0
Jun	169,0	78,6	161,9	135,1	-	122,2	140,5
Jul	-21,8	536,0	-61,8	-37,4	144,8	-41,3	-23,8
Aug	50,8	-28,3	161,9	-34,0	-100,0	208,5	-18,3
Sep	-20,7	-89,5	-67,3	31,1	-	-16,6	16,5
Oct	-17,8	33,3	16,7	-25,5	-61,1	95,0	-15,5
Nov	-5,0	-56,3	19,0	52,8	-85,7	-13,6	16,6
Dec	-15,8	314,3	144,0	117,1	690,0	-79,4	77,6
jan/98	-31,3	-86,2	-57,4	-62,1	-87,3	116,7	-58,4
Feb	3,0	-75,0	-34,6	11,4	-100,0	-20,9	3,5
Mar	35,3	2800,0	23,5	-41,9	-	230,6	-7,4
Apr	19,6	-17,2	-61,9	54,5	1925,0	-23,1	30,5
May	5,5	-50,0	75,0	-84,0	-69,1	-55,7	-69,6
Jun	-56,9	-66,7	-14,3	109,7	100,0	-76,5	7,8
Jul	680,0	-50,0	-100,0	-38,5	-100,0	78,9	15,1
Aug	-51,3	-100,0	-	199,2	-	-58,8	-0,6

Source: Banco Central do Brasil

(\*) Anual Increase Rate

TABLE 8 (B)

## FOREIGN CURRENCY LOANS

RELATIVE PARTICIPATION (%)

YEAR/MONTH	F10	RES. 63	COMM.PAPER	BONDS	SECURITIZATION	RENEWAL	TOTAL
1989	30,5	0,0	54,8	0,0	0,0	14,7	100,0
1990	38,8	0,0	56,1	5,2	0,0	0,0	100,0
1991	10,7	0,1	40,4	34,2	6,3	8,3	100,0
1992	11,6	10,7	14,9	60,6	0,4	1,9	100,0
1993	7,0	5,4	3,1	68,9	6,1	9,6	100,0
1994*	10,8	2,7	2,4	66,8	3,0	14,2	100,0
jan/92	14,2	0,0	28,2	55,6	0,0	2,0	100,0
Feb	25,1	1,1	26,6	46,7	0,0	0,4	100,0
Mar	4,6	1,0	31,4	62,8	0,0	0,2	100,0
Apr	5,9	0,8	10,5	81,7	0,9	0,2	100,0
May	4,1	2,1	18,3	74,9	0,0	0,5	100,0
Jun	7,3	8,8	18,2	64,6	0,0	1,1	100,0
Jul	21,2	14,5	23,0	40,6	0,0	0,8	100,0
Aug	12,6	23,4	6,3	49,2	0,0	8,6	100,0
Sep	17,1	15,9	2,3	62,6	0,0	2,0	100,0
Oct	16,3	20,3	7,7	49,4	3,2	3,2	100,0
Nov	19,8	50,2	3,7	25,4	0,0	0,9	100,0
Dec	12,8	10,1	4,1	68,8	0,0	4,2	100,0
jan/93	70,8	4,1	3,5	7,0	8,8	5,8	100,0
Feb	29,9	22,3	2,5	41,6	0,0	3,6	100,0
Mar	5,9	12,9	0,7	56,3	17,0	7,2	100,0
Apr	2,2	0,9	5,4	85,7	1,0	4,7	100,0
May	4,9	2,4	3,6	83,0	0,0	6,1	100,0
Jun	5,5	1,8	3,9	81,1	2,1	5,7	100,0
Jul	5,7	14,8	2,0	66,8	6,6	4,4	100,0
Aug	10,5	13,0	6,3	53,8	0,0	16,5	100,0
Sep	7,1	1,2	1,8	60,5	17,6	11,8	100,0
Oct	6,9	1,8	2,4	53,4	8,1	27,3	100,0
Nov	5,6	0,7	2,5	70,0	1,0	20,2	100,0
Dec	2,7	1,6	3,4	85,5	4,4	2,3	100,0
jan/94	4,4	0,5	3,5	78,0	1,3	12,2	100,0
Feb	4,4	0,1	2,2	83,9	0,0	9,3	100,0
Mar	6,4	4,1	2,9	52,7	0,6	33,3	100,0
Apr	5,9	2,6	0,9	62,3	8,7	19,6	100,0
May	20,5	4,2	4,9	32,9	8,8	28,6	100,0
Jun	8,2	1,3	3,9	63,9	16,4	6,2	100,0
Jul	55,6	0,6	0,0	34,2	0,0	9,7	100,0
Aug	27,2	0,0	5,4	63,0	0,3	4,0	100,0
Sep	7,2	0,0	3,0	71,8	0,0	18,0	100,0
Oct	14,7	10,8	2,2	56,3	5,3	10,6	100,0
Nov	5,2	1,6	1,7	83,5	0,0	8,0	100,0

\*Until Nov-94

Source: Banco Central do Brasil

FIGURE 1

Interest Rates on Government Short-Term Bills (BBC)

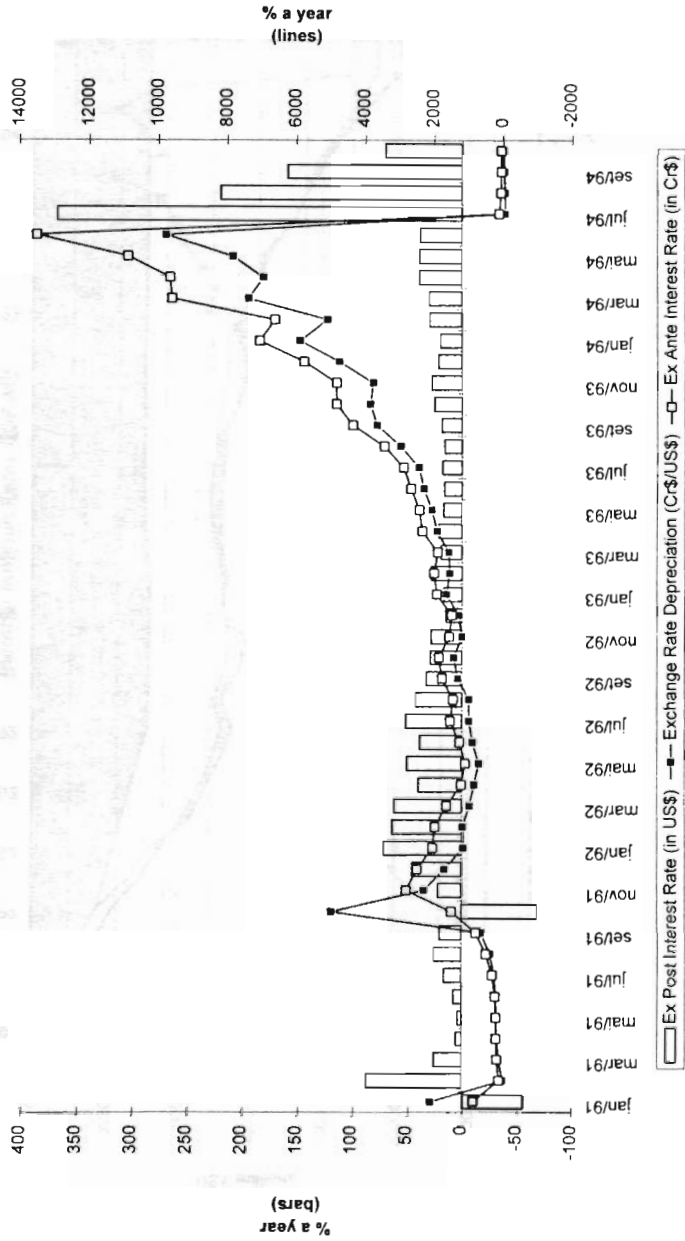


FIGURE 2

### Domestic Public Debt and Foreign Reserves Accumulation

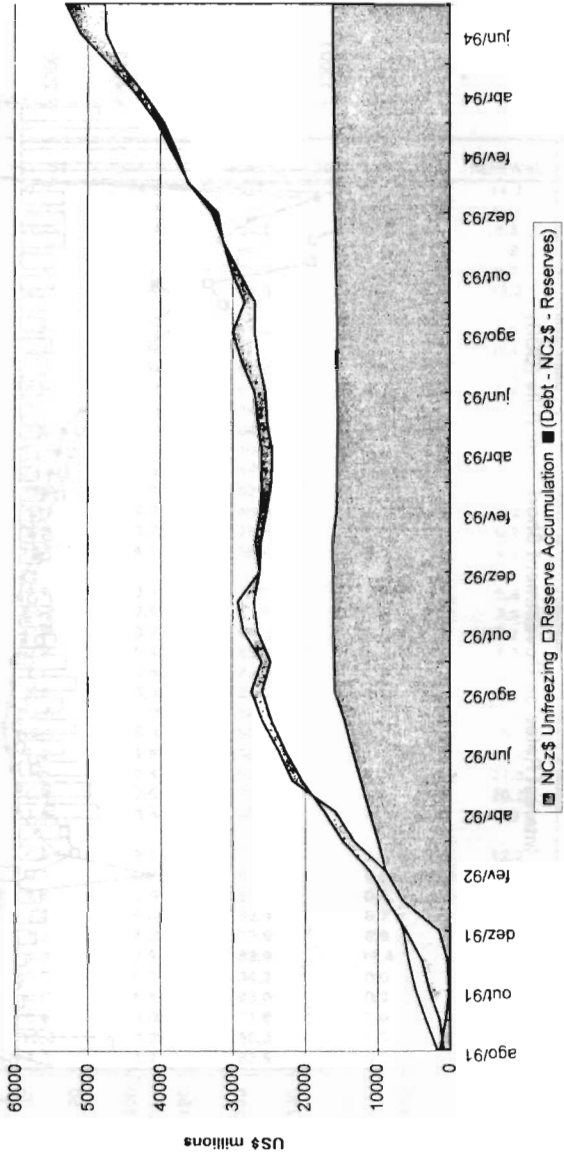


FIGURE 3

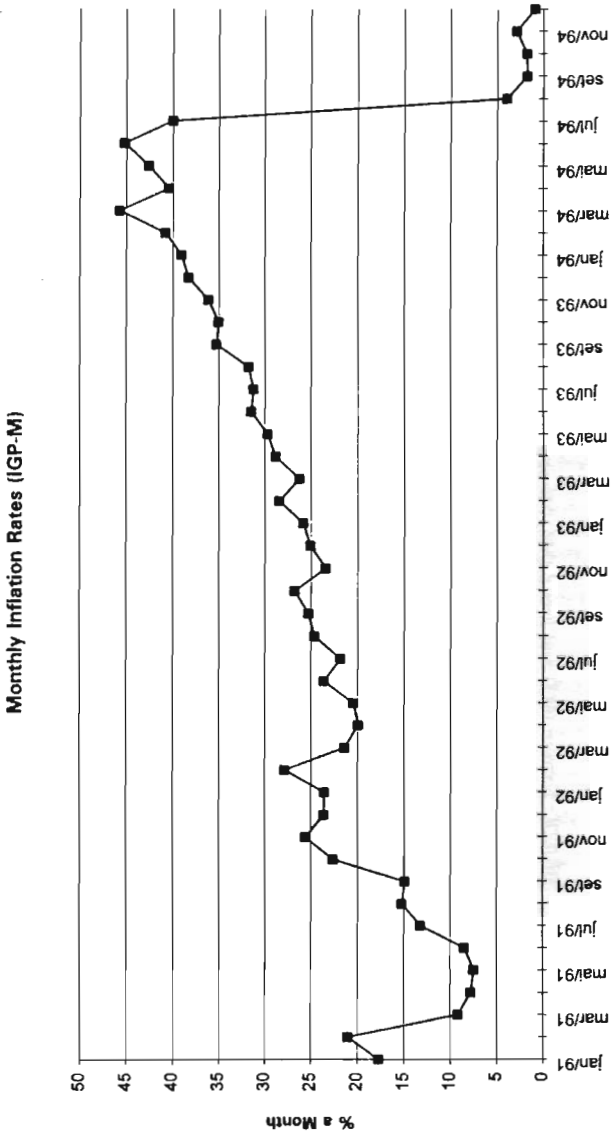


FIGURE 4

BRAZIL: Narrow (M1) and Broad (M4) Money

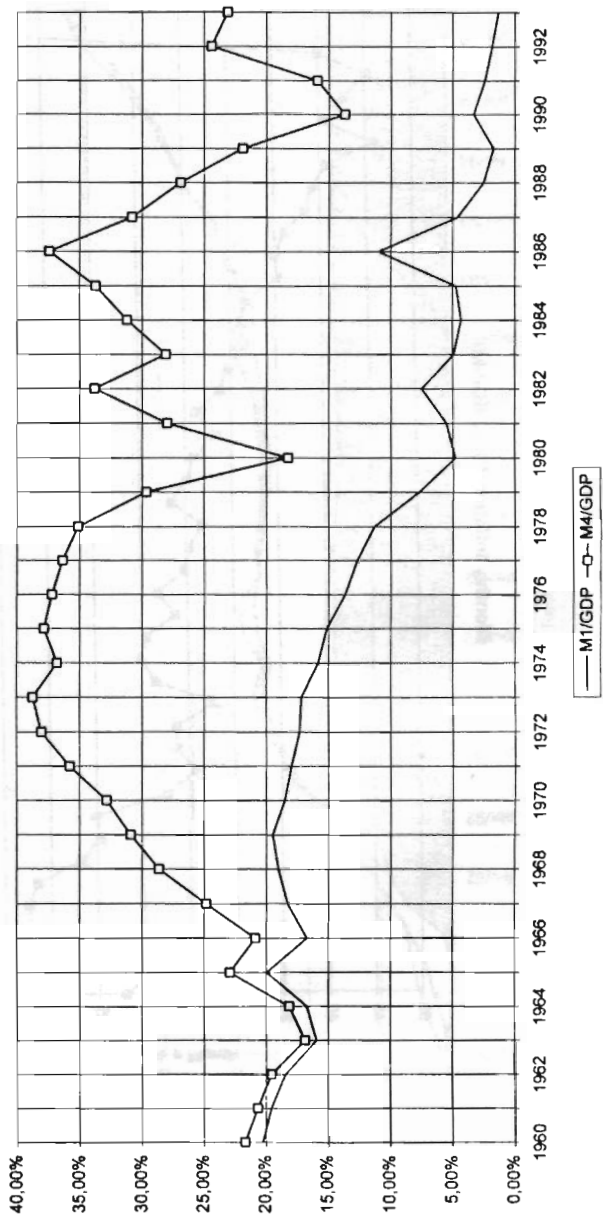
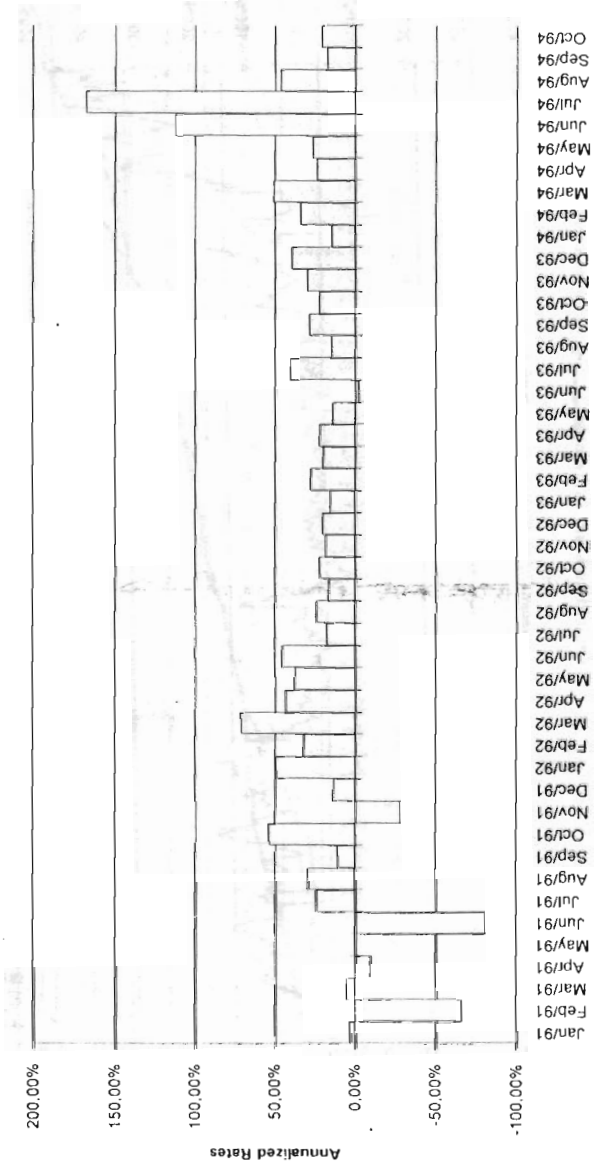


FIGURE 5

Covered Interest Rate Differential between US and Brazilian One-Month T-Bills



Source: Brazilian Central Bank



FIGURE 6

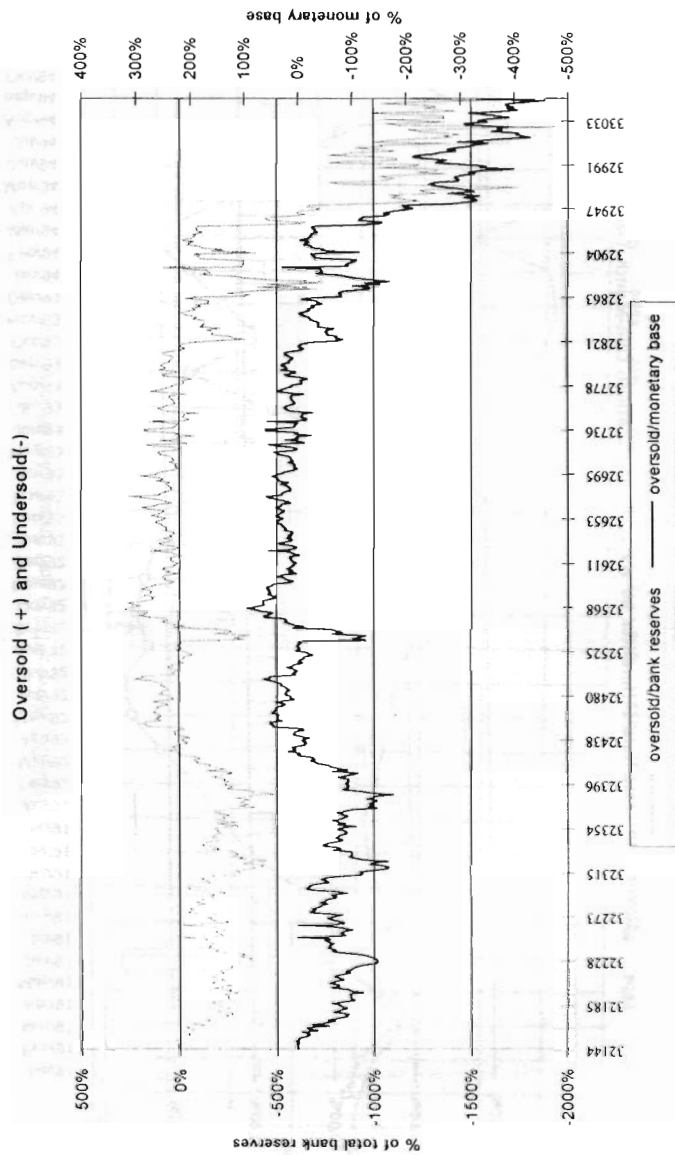
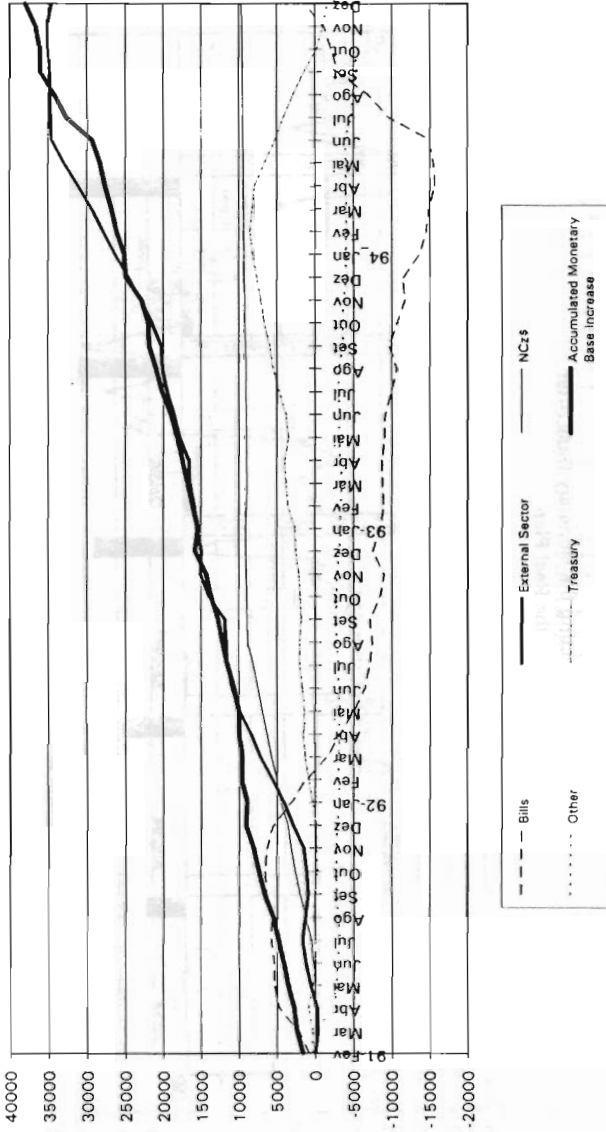


FIGURE 7

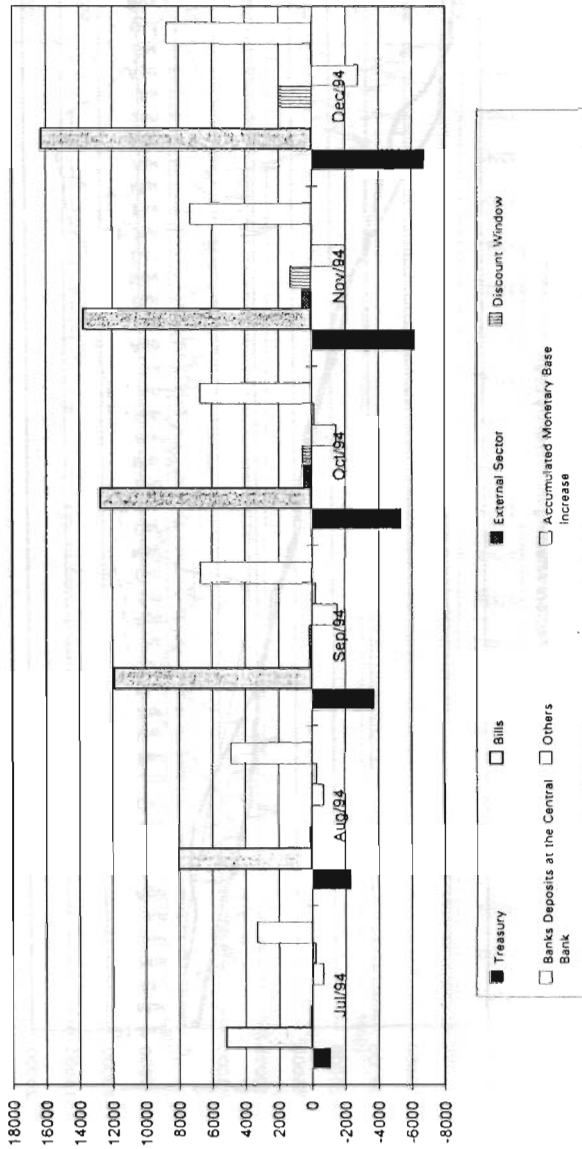
Factors Affecting the Monetary Base



Data in US\$ millions until July 94, after this date data in R\$ Millions  
 Source: Brazilian Central Bank

FIGURE 8

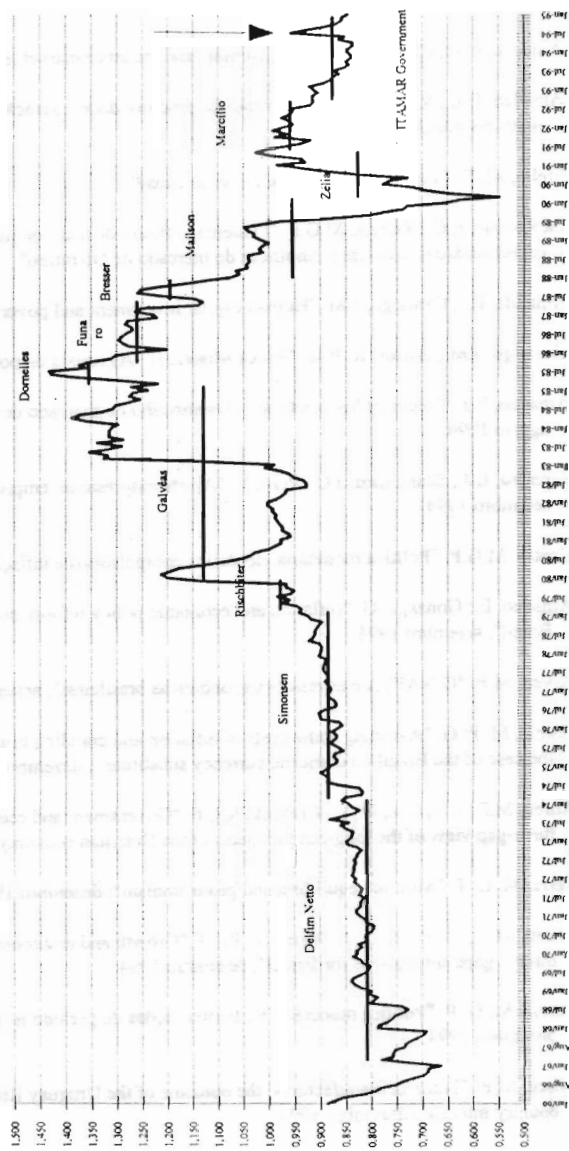
Factors Affecting the Monetary Base After the Real Plan



Source: Brazilian Central Bank

Figure 9

### Effective Exchange Rate - constant prices (Jan/95)



Deflators: IPA-DI (from Jan 66 to Jul 69), IPA-OG-IND (from Aug 69 to Jan 95) and PPI-USA (Producer Prices Index)

Textos para discussão:

315. Amadeo, E.J. ; Camargo, J.M. "Institutions and the labor market in Brazil"
316. Amadeo, E.J. ; Villela, A. "Crescimento da produtividade e geração de empregos na indústria brasileira"
317. Mello, M. F. "Privatização e ajuste fiscal no Brasil" .
318. La Rocque, E.C. ; Garcia, M.G.P. "O mercado futuro de taxas de juros no Brasil: e especificidades teóricas e empíricas do mercado de DI-futuro".
319. Almeida, H. ; Camargo, J.M. "Human capital investment and poverty".
320. Camargo, J.M ; Barros, R. P. de "Porca Miséria II . As causas da pobreza no Brasil".
321. Amadeo, E.J. "Negociações coletivas e desempenho do mercado de trabalho", agosto 1994
322. Amadeo, E.J.; Scandiuzzi, J.C.; Pero, V. "Ajuste empresarial, empregos e terceirização", setembro 1994
323. Garcia, M.G.P. "Política monetária, depósitos compulsórios e inflação", setembro 1994
324. Amadeo, E.; Gonzaga, G. "Inflation and economic policy reform: social implications in Brazil", setembro 1994
325. Abreu, M.P. "O NAFTA e as relações econômicas brasileiras", setembro 1994
326. Garcia, M. P. G. "Avoiding some costs of inflation and crawling toward hyperinflation: the case of the Brazilian domestic currency substitute" , dezembro 1994.
327. Abreu, M.P., Carneiro, D.D., Werneck, R.L.F. "Government and economic growth: a three-gap view of the long-run prospects of the Brazilian economy", dezembro 1994
328. Terra, M. C. T. "Multiple equilibria and protectionism", dezembro 1994
329. Abreu, M.P., Carneiro, D.D., Werneck, R.L.F."Growth and environment trade-offs: three gaps simulations for Brazil", dezembro 1994.
330. Garcia, M. G. P. "Política monetária e cambial: lições do período recente para o real", dezembro 1994.
331. Abreu, M.P. "Trade in manufactures: the outcome of the Uruguay Round and developing country interest". dezembro 1994
332. Abreu, M.P.; Carneiro, D.D.; Werneck, R.F. L. "Brazil: Widening the scope for balanced growth" dezembro 1994.