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Inflation Targeting in Brazil: Reviewing Two Years of Monetary Policy 1999/00

Pedro Fachada

Banco Central do Brasil[1]

Abstract

In July 1999, Brazil implemented a formal inflation-targeting framework for monetary policy, less than six months after moving to a floating exchange rate regime. This work evaluates the initial years of the Brazilian experience with inflation-targeting. During the period the inflation rate remained in the targeted range, despite the several external and domestic adverse shocks that hit the Brazilian economy. The new monetary framework proved to be fundamental to enhance transparency and to guide expectations, thus preventing transitory inflation surges to develop into permanent inflation increases.

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Inflation Targeting in Brazil:
Reviewing Two Years of Monetary Policy 1999/00

Pedro Fachada / Banco Central do Brasil

I. Introduction

In July 1999, Brazil implemented a formal inflation-targeting framework for monetary policy, less that six months after a dramatic move to a floating exchange rate regime. In addition to the exchange rate sharp devaluation, a series of adverse shocks hit the Brazilian economy in the last two years including the gradual adjustment of government-managed prices, the surge in international oil prices and the hike in external interest rates. The introduction of the new nominal anchor was paramount to enhance transparency and to guide expectations, thus preventing temporary inflation increases from recurring.

This work evaluates the still brief Brazilian experience with inflation targeting. The paper is structured in four sections, after this short introduction. Section II discusses the economic background before the move to inflation targeting, going back to the 1994-1998 period, when the exchange rate anchored the price system. It also analyses economic policy in the transition to the new regime (March-June 1999), when post-devaluation inflation expectations were reversed. Section III discusses the rationale and the institutional aspects of the inflation targeting framework, as well as the transmission mechanisms of monetary policy to prices in Brazil. The following section sheds light on the monetary decisions from July 1999 on. This section is rather descriptive, associating the monetary management in each sub-period to the domestic and external economic environment and evaluating policy results. Section V presents the final remarks.

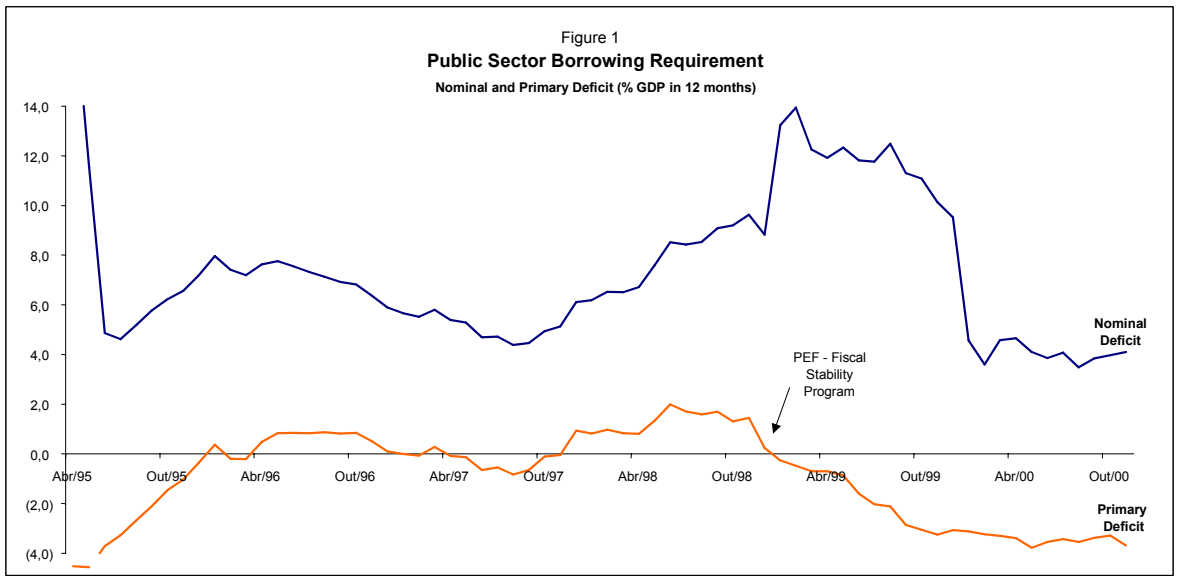
II. Economic Policy in the Transition to Inflation Targeting

II.1 From the anchor to the devaluation: 1994-1998

The analysis of the initial years of the inflation targeting regime should begin in the monetary reform program of July 1994 (the Real Plan), which reduced the monthly inflation rate from around 45% before stabilization to 2% at that year-end, followed by decreasing annual inflation rates until 1998.

The Real Plan has been supported by a program of structural reforms, including the trade liberalization, with tariff reductions and elimination of quantitative barriers to imports; liberalization of capital accounts; privatization of public companies in several sectors such as steel, petrochemicals, mining, fertilizers and transports; and restructuring of the financial sector, with introduction of new supervision norms, closing of unsound financial institutions, and privatization of state-owned banks.

A fiscal adjustment effort paved the way for stabilization, assuring a consolidated public sector primary surplus of 5.1% of GDP in 1994. This result has been made possible by a constitutional amendment that established the Social Emergency Fund (FSE), an instrument that dissociated budgetary endowments from tax revenues. However, the primary surplus has been drawn back to negative from 1995 to 1998 (Figure 1). The inflation decline unveiled the structural imbalance of the government's accounts due to the elimination of the inverted Olivera-Tanzi effect (reduction of real spending due to postponement of non-indexed public expenditure).[2] Wage increases in the public administration and growth of pension payments worsened the fiscal outlook.



Regarding the exchange rate policy, the Real Plan introduced an asymmetric band, where the upper limit for the exchange rate was fixed at parity but no lower limit was established. Capital inflows, favored by high domestic interest rates, led to a substantial exchange rate appreciation. Combined with the growth in domestic demand, trade surpluses eroded by the end of 1994.

[2] Bacha (1998) provides a comprehensive discussion of the Real Plan imbalances.

In response to capital outflows that followed the Mexican crisis, the Central Bank altered the exchange rate policy in March 1995, introducing a purely referential wide band, together with an inner-band that defined its effective intervention limits. In practice, this scheme translated into managed exchange rate devaluations of about 0.6% per month, with two major implications. First, there was an incentive to short term capital inflows, as devaluation was lower than the interest rate differential, adjusted to the risk premium. Second, the exchange rate anchored the price system, given the competitive prices of imported goods engendered by trade liberalization.

Therefore, the exchange rate anchor and the inflow of foreign funds were imperative for the stabilization process. Despite the Social Emergency Fund, conditions for a sustained fiscal adjustment were not created, especially concerning the constitutional reforms: the tax reform, the establishment of limits for public spending in the several administration levels and the social security reform for both the private and public sectors. The lack of political agreement around the constitutional reforms pushed up the public sector debt and the current account deficit, increasing Brazilian vulnerability to confidence shocks.

A first confidence crisis followed the international turmoil triggered by the Southeast Asia currencies devaluation in the second half of 1997. Capital outflows forced a prompt reaction from the Central Bank, and the basic interest rate jumped to 43.4% per year at the end of October. Besides the monetary tightening, the government announced a wide fiscal program including spending cuts and tax increases, aimed at recovering confidence. However, the so-called *Package 51* was not fully implemented, especially the measures related to spending cuts.[3] The basic interest rate would only return to pre-crisis level in July 1998.

The Russian default in August 1998 met a much-deteriorated fiscal outlook due to the exchange rate defense policy. The sharp loss of international reserves in September and October forced a new domestic interest rate hike. The stand-by agreement signed with the IMF, the improvement of external liquidity conditions after the Federal Reserve interest rate cuts, and the announcement of the new Fiscal Stability Program (PEF) calmed the markets down and prolonged the exchange rate policy until December.

Expectations deteriorated again at the end of the year after Congress rejected a bill to increase social security contributions for civil servants and its extension to pensioners. Uncertainties regarding the commitment of the recently elected state governors to the fiscal adjustment efforts aggravated the domestic scenario.

[3] The name 'Package 51' resulted from the fact that it consisted of 51 different fiscal measures.

With drained capacity of sustaining the exchange rate, the Central Bank tried to promote a controlled devaluation of the real in the second week of January 1999. Nonetheless, the continuing loss of reserves and the substitution of Central Bank's Governor made the market bet massively against the new arrangements. Without alternatives, the monetary authority allowed the exchange rate to float. The dollar value quickly moved from R$ 1.21, prior to the devaluation, to near R$ 2.00 at the end of January (Figure 2).

The exchange rate devaluation had an immediate impact on tradable goods prices at the wholesale level, fuelling expectations of a permanent rise in consumer inflation. The Wholesale Price Index - IPA increased 7% in February, the highest monthly rate since 1994, and 2.9% in March. Consumer price inflation also rose, although less, to around 1% per month in February and March.

Figure 2
Exchange Rate: January 1998 - December 2000
(R$ per US$)

II.2 Recovering confidence: monetary policy in the transition to inflation targeting (March/June 1999)

At the beginning of March, a new Board of Directors took office at the Central Bank. The policy guidelines set by the new team had two aims: to control inflation expectations and reduce the degree of uncertainty in the short-run; and to adopt formal inflation targets. Actually, a discretionary monetary policy did not seem feasible due to volatile inflation expectations. A fundamental decision, however, was related to the appropriate timing for the new policy. Given the post-devaluation inflationary uncertainties, a formal IT regime was not advisable in the short-run. At the same time, the new framework required a deep research effort and institutional changes to ensure monetary autonomy to the Central Bank. The new regime also required fiscal

improvements to conquer some credibility. Hence, the adoption of the IT policy was left to the second semester.

In relation to fiscal policy, a series of reforms were in course, despite - or perhaps due to - the exchange rate crisis. In January, Congress approved an increase in social security contributions for working and retired civil servants (the same bill that had been rejected one month earlier), as well as the 1999 budget. In March, the bill extending the CPMF (Provisional Contribution on Financial Transactions) was approved, though with a five-month delay in relation to the government's original schedule.

To compensate for the loss of revenues caused by the delay in voting the CPMF and to ensure strict adherence to the fiscal targets (consolidated public sector primary surplus of 3.1% of GDP in 1999), the government acted resolutely and announced in the first quarter new temporary tax increases and spending cuts. These included the increase from 2% to 3% in the turnover tax (COFINS) and its extension to financial institutions; the increase from 8% to 12% in social contribution on net profits (CSLL); and a marginal 0.38% increase in tax on financial operations (IOF) in investment fund deposits and credit operations.

As a result, the public sector primary surplus reached 4.1% of GDP in the first quarter, by far outstripping the government's annual target. As highlighted in Figure 1, the PEF and the emergency measures approved to compensate for the CPMF delay effectively meant a turnaround in the primary fiscal results. This reversal was imperative to recover confidence in economic policy.

The Central Bank's new board strongly endorsed the commitment to the fiscal targets and to price stability, as emphasized in the explanatory note released after the March Monetary Policy Committee (Copom) meeting:[4]

> *"The primary objective of the Central Bank is to maintain price stability. In a floating exchange rate regime, price stability is guaranteed by sustained fiscal austerity together with a compatible monetary austerity. As fiscal policy is given in the short run, the control over inflationary pressures should be exerted by the interest rate."*

[4] The Monetary Policy Committee was created in June 1996, having as voting members the Central Bank's Governor and all Deputy Governors. The first Copom meeting with the new Board occurred on March 4, the same day the Board took office. For the Copom schedule and interest rate decisions, see Annex I – *Review of Copom meetings and short-term interest-rates, March 1999 – December 2000.*

Hence, the Monetary Committee decided to rise the short-term interest rate (Selic rate) from 39% to 45% per year. The new interest rate level had to be sufficiently high to ensure perception of positive real returns, not a trivial task in the face of the high dispersion then observed in the different inflation measures and in inflation expectations. The interest rate level for end-of-March future contracts (43.5%) probably benchmarked Copom's decision.

The Committee also decided to eliminate the interest-rate band scheme (TBC and TBAN)[5], and introduced the bias concept, giving the Central Bank's Governor the right to alter the Selic rate at any time before the next regular meeting. This prerogative, far from trying to suggest a trend, intended to enable changes in the short-term interest rate whenever the uncertainties that justified the bias dissipated. In fact, as the Copom attributed the origin of the inflation upsurge to the exchange rate overshooting, the downward bias was an instrument to cut the interest rate if the exchange rate returned consistently to lower levels. In this case, keeping the interest rate unchanged until the next meeting would be unjustified.

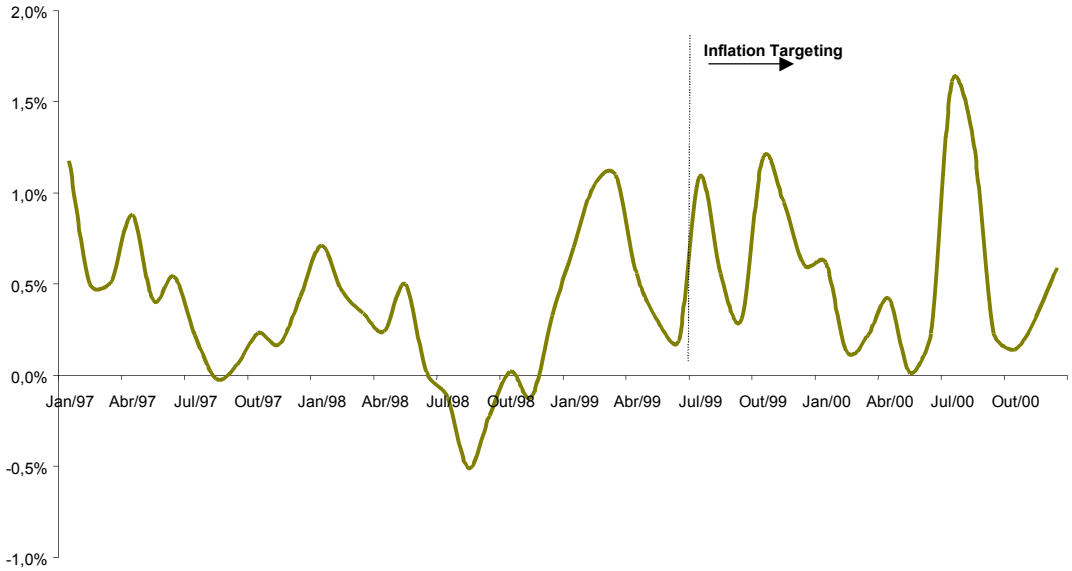
Following the interest rate hike, the government adopted other measures to reverse expectations and correct the exchange rate overshooting. Regarding capital inflows, the National Monetary Council (CMN) reduced from 2% to 0.5% the tax on financial operations and exempted Foreign Capital Fixed Income Funds (FRF-CE) from income tax. These measures were temporary, proposed to last until the end of June. Regarding liquidity conditions, the Central Bank raised the remunerated reserve requirement on time deposits from 20% to 30%. Also important was the endorsement to "limited unsterilized intervention (...) to counter disorderly market conditions"[6], included in the first review of the stand-by agreement with the IMF, and the voluntary commitment of foreign banks to sustain their exposure to Brazil.

All those initiatives succeeded in bringing the exchange rate down from R$ 2.20 in the first week of March to R$ 1.66 at the end of April. Strong evidences of declining inflation were also registered in April, as a result of the overshooting correction and the low passthrough of the exchange rate devaluation to consumer prices. The positive seasonal impact of the new crop on food prices reinforced the inflation downward trend. The Wholesale Price Index, in which tradable goods have a larger weight, registered negative rates in April (-0.3%) and May (-0.8%). The deceleration was also perceived in consumer inflation, with IPCA (Broad Consumer Price Index) variation falling to 0.6% in April and 0.3% in May (Figure 3).

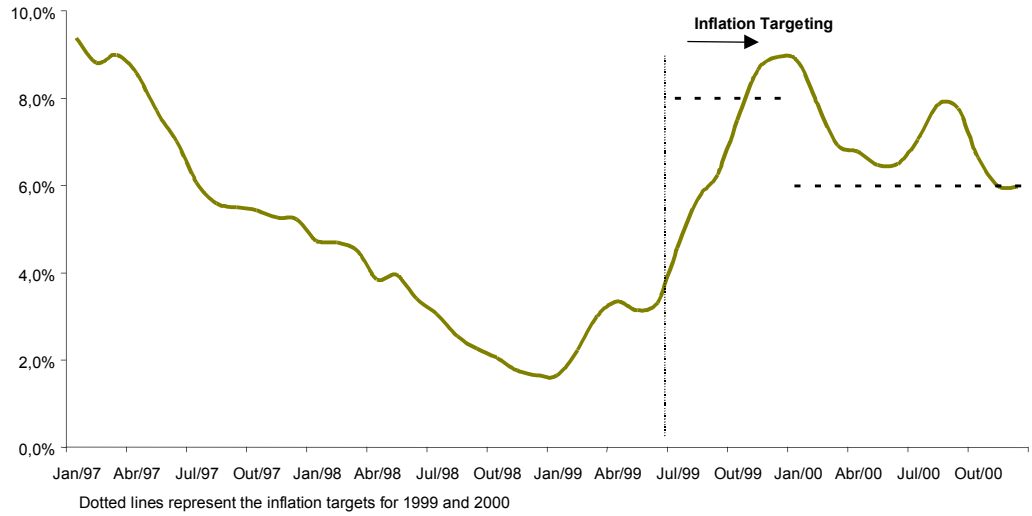
[5] TBC (basic interest rate) and TBAN (rediscount rate), both set up in 1996, established a rediscount band system and were the main Central Bank's operational benchmarks until March 1999.
[6] Brazil Memorandum of Economic Policies, March 8 1999.

Figure 3

Inflation rate - IPCA ***(%)***



Inflation rate - IPCA ***(% over year ago)***



Dotted lines represent the inflation targets for 1999 and 2000

Accompanying the inflation decline and the exchange rate appreciation, inflationary expectations came down rapidly in the period. The median of market forecasts for consumer inflation was revised from 13% in March to 7.7% at the end of May.[7] Conditions for a gradual reduction of interest rates were created, in tandem with the Copom's diagnosis that inflation was triggered by the exchange rate overshooting. Coherently, the interest rate was reduced 8 times before the Committee's June meeting, bringing the Selic rate down to 22% in the period.

Despite the positive domestic scenario, uncertainties emerged from the external front in May, after the Federal Reserve adopted a monetary tightening stance. Expectations of higher external interest rates potentially undermined risk premiums and capital flows to emerging markets. Brazil's risk also worsened as a result of market jitters regarding the electoral process and the currency board sustainability in Argentina. The concern about the external scenario would be, from that point on, a recurrent constraint for the Monetary Committee and was explicitly recognized in the minutes of the May meeting:

> *"The persistence of positive aspects suggests consolidation of the favorable scenario (...) In the external front, the main feature is the fragility of some emerging economies. The adoption of an upward bias by the US Federal Reserve affected these countries and reflected also on the Brazilian economy (...) Due to uncertainties in the external scenario, the Committee's decision should be conservative."*[8]

In the May-June period, the exchange rate moved upwards to the R$ 1.75-1.80 range. The reversal, far from surprising, reflected not only the external environment deterioration but also three other factors: the high concentration of private sector external debt amortization payments in the period; the gradual reduction of domestic and external interest rate differentials; and the withdrawal in June of the temporary tax incentives on capital inflows introduced in March. The financial market thus began a sequence of tests to infer the Central Bank's intervention band in the foreign exchange market - if any, considering its constrained capacity of action as a result of the floor for net international reserves set up in the IMF agreement.

Summing up, the policy response to the crisis triggered by the exchange rate devaluation consisted of fiscal and monetary tightening, and was successful in subduing inflation expectations. Although an inflation-targeting framework had not been formally

[7] The Central Bank's Investor Relations Group (GCI) collects market inflation forecasts daily, sampling 70 financial institutions and consulting companies. The survey is updated daily and available at the Central Bank's homepage at: www.bcb.gov.br.
[8] Minutes, 35th meeting of the Monetary Policy Committee, May 19 1999.

implemented, the Central Bank already justified its monetary policy decisions as if it had. The short-term interest rate was the main instrument to attain the inflation objectives and, with inflation expectations under control, was cut by half in less than four months.

III Inflation Targeting in Brazil: main characteristics

III.1 Basic modeling and operational framework

According to Mishkin and Savastano (2000), inflation targeting comprises five main features: (i) the public announcement of medium-term numerical targets for inflation; (ii) an institutional commitment to price stability as the primary goal of economic policy, to which other objectives are subordinated; (iii) an information-inclusive strategy, encompassing the use of several variables and models, to enable the monetary authority to set policy instruments; (iv) a transparent monetary policy strategy that ascribes a central role to communicating to the public the plans, objectives and rationale of the central bank decisions; and (v) mechanisms for making monetary authorities accountable for achieving the inflation targets.

Inherent to these features, the design of an IT strategy requires a sequence of steps, including the choice of a reference price index; definition of numerical (central point, range or ceiling) targets and time horizons; development of forecasting models; and institutional arrangements to ensure the operational independence and accountability of the central bank, the transparency of monetary policy and the compatibility with other government's policy actions. Due to its preemptive nature, the inflation targeting strategy also requires a careful assessment of the inflation rate trends and the development of models for the transmission mechanisms of monetary policy to prices.

As advantages, inflation targeting is easily understood by the public, helping to guide expectations; reduces uncertainties of the private sector regarding the future evolution of monetary policy, interest rates and inflation; and it hinders the monetary authority from straying from the inflation objectives, reducing political pressures to pursuit any other economic policy goal.

Unsurprisingly, there were several phases before implementing the inflation-targeting framework in Brazil. The Central Bank had little experience with indirect control of inflation. To enhance credibility, the government opted for a rigid, full-fledged inflation-targeting regime based on the UK and Sweden experiences, which required deep research and development efforts. The international experience with inflation

targeting in emerging markets was also narrow and there was no agreement on how to implement this regime in economies with chronic inflation histories such as Brazil. Masson, Savastano and Sharma (1997), for instance, stressed that the prerequisites for a successful IT framework – the ability to carry out an independent monetary policy, free of fiscal dominance or of commitment to any other nominal anchor as the exchange rate, and a quantitative framework linking instruments to inflation – were largely absent in emerging countries.

A challenging feature in the implementation of inflation targets refers to the development of inflation forecasting instruments. The instruments developed by the Brazilian Central Bank include[9]: (i) structural models for the transmission mechanism of monetary policy to prices; (ii) non-structural short-term time-series VAR and ARMA models; (iii) surveys of market expectations for inflation and other macroeconomic variables; (iv) measures of core inflation; and (v) estimation of leading inflation indicators. Among these, the group of structural models is fundamental for the dynamic simulations of the transmission mechanism of monetary policy.

According to the structural models, the aggregate demand, exchange rate and expectations channels are the most important transmission mechanisms of monetary policy to prices in the Brazilian economy. It is conceivable, however, that the credit channel acquired an increasing role in the last two years due to the successive reductions of reserve requirements on demand deposits - from 75% in October 1999 to 45% in June 2000. The modeling of the transmission mechanisms enables the Central Bank to simulate the effect of interest rate changes on aggregate demand and, consequently, on prices, in addition to the direct effect on the exchange rate and tradable goods prices.

The main results of the modeling indicate that interest rate changes affect aggregate demand in a period of 3 to 6 months. Furthermore, changes in the output gap have an impact on inflation in around 3 months. Hence, the total impact of changes in short-term interest rate on inflation through the aggregate demand channel has an estimated lag of 6 to 9 months. For the exchange rate transmission mechanism, the effect of interest rate changes on prices is instantaneous, due to the impact on prices of tradable goods.

Another important feature in the development of the IT framework in Brazil is related to the interaction between the choice of scenarios and the decision-making at the Central Bank. Based on the hypotheses and associated risks for key exogenous variables defined by the Monetary Policy Committee, the Central Bank technical staff simulates the behavior of the main macroeconomic variables and presents the results as probability

distributions. These simulations help focusing the policy-makers' discussions in Copom meetings and are very instrumental to communicate and explain policy decisions. The inflation trend and the probability distributions are disclosed to the public in an inflation fan chart, assuming the short-term interest rate constant for all the period under consideration.

III.2 Institutional aspects and market feedback

The inflation-targeting regime was formally introduced in Brazil by the Decree No. 3.088 of June 21, 1999. The decree attributed to the National Monetary Council the responsibility for the definition of the inflation targets and respective tolerance intervals, as well as for the choice of a reference price index. The Central Bank was attributed the responsibility for conducting monetary policy in order to achieve the targets. In case the inflation target is breached, Central Bank's Governor has to write an open letter to the Finance Minister that should contain the reasons for the breaching as well as the measures required to bring inflation back to target and their expected timing. Regarding transparency, the decree determined that the Central Bank should issue a quarterly Inflation Report to assess monetary policy and discuss inflation perspectives.

On June 30, CMN established the inflation targets for 1999 through 2001 and their tolerance intervals. The targets were referenced to annual variations of the Broad Consumer Price Index (IPCA) calculated by the National Bureau of Geography and Statistics (IBGE). For 1999, the inflation target was set at 8%, with tolerance intervals of ±2%. For the following two years, the targets were 6% and 4%, respectively, with the same ±2% tolerance intervals. The targets for subsequent years must be released at least two years and a half in advance. Accordingly, the target for 2002 was established in June 2000: 3.5% with a ±2% tolerance range.

The definition of declining multi-year targets for the 1999-2002 period had a twofold aim: in addition to the usual objective of nominal anchor, it also endeavored to coordinate the relative prices realignment process triggered by the exchange rate shock. On the other hand, the tolerance intervals may seem wide, but they were chosen taking two factors into consideration. First, the Central Bank has only imperfect and indirect control of inflation, especially in a transition period to a new steady state. Second, the reference for the target is the headline inflation, whose measure may vary substantially depending on the magnitude of the shocks that hit the economy.

[9] Bogdanski, Tombini and Werlang (2000) present a comprehensive analysis of these instruments.

In this choice was implicit a trade-off between tighter targets and tolerance intervals with the use of escape clauses and/or core inflation measures, as in most countries that adopt IT, or looser targets with the use of a headline inflation rate. The later alternative (headline inflation) was chosen because there were no measures of core inflation in Brazil. Also because, given the historical background with purged inflation rates, any initiative in this fashion would not be advisable for a policy that required credibility and transparency above all.

Although positive, the initial reaction of market analysts to the inflation targets was influenced by the optimistic disinflation environment of the period. Actually, a recurrent criticism was the choice of 'loose' targets for 1999 and 2000, considering that:

(i) the 8% target for 1999 was comparable in magnitude to the IPCA inflation in the first semester (8.1% annualized), despite the substantial exchange rate shock. It also disregarded how low inflation was (4.3% annualized) in the second quarter;
(ii) the 6% target for 2000 was still above the inflation levels recorded in 1997 and 1998;
(iii) the 1999/2000 targets were higher than market inflation expectations surveyed by the Central Bank, at that moment at 7.2% for 1999 and 4.5% for 2000;
(iv) tolerance intervals were too lax and fixed in nominal terms, thus increasing their relative weight along the years. For example, in 2001 the upper limit for inflation is 200% higher than the lower limit.

Another recurrent criticism pointed out that the timid target setting would establish a floor for the inflation rate, encouraging price-makers to raise prices by at least 8% in 1999, as well as driving up wage demands by unions.

As a matter of fact, considering the substantial supply shocks that hit the Brazilian economy in the second half of 1999 and in 2000, the definition of less risky targets proved to be an accurate economic policy decision.

IV Monetary Policy under Inflation Targeting

IV.1 July/August 1999: resetting government-managed prices

The first Copom meeting under the new monetary regime, on June 23, figured out that the domestic scenario remained favorable, while the external scenario was the main reason for concern due to expectations of tighter US monetary policy and pressures on emerging markets sovereign risk. Taking into account the baseline scenario and

associated risks, Copom decided to reduce the Selic rate from 22% to 21%, maintaining the downward bias and emphasizing that, if it was not for the external uncertainties, there would be room for further interest rate cuts.

The Committee also released in June the first issue of the *Inflation Report*, in accordance with the transparency commitment of the IT regime. The *Report* presented the inflation fan chart assuming a fixed interest rate at 21% per year for the whole forecasting period, highlighting an optimistic view of the inflation trend. According to the *Report*, the central inflation projection stood at 8.3% for 1999 and 3.9% for 2000 (Table 1).

Table 1

SUMMARY OF COPOM´s INFLATION FORECASTS PRESENTED IN THE INFLATION REPORTS

	Inflation Forecasts - IPCA					
	1999		**2000**		**2001**	
	central	50% confidence interval	central	50% confidence interval	central	50% confidence interval
Jun/99 (Selic rate - 21% p.y.)	8.3%	6.3% - 10.2%	3.9%	1.1% - 6.7%	-	-
Sep/99 (Selic rate - 19% p.y.)	7.4%	6.7% - 8.0%	4.6%	2.4% - 6.8%	-	-
Dec/99 (Selic rate - 19% p.y.)	8.9%	8.6% - 9.3%	5.8%	3.8% - 7.9%	-	-
Mar/00 (Selic rate - 19% p.y.)	-	-	6.3%	4.6% - 8.0%	3.3%	0.5% - 6.1%
Jun/00 (Selic rate - 17.5% p.y.)	-	-	5.6%	4.2% - 7.0%	3.9%	1.4% - 6.5%
Sep/00 (Selic rate - 16.5% p.y.)	-	-	6.7%	5.6% - 7.8%	3.7%	1.4% - 6.0%
Dec/00 (Selic rate - 15.75% p.y.)	-	-	6.0%	5.7% - 6.4%	3.9%	2.2% - 5.6%

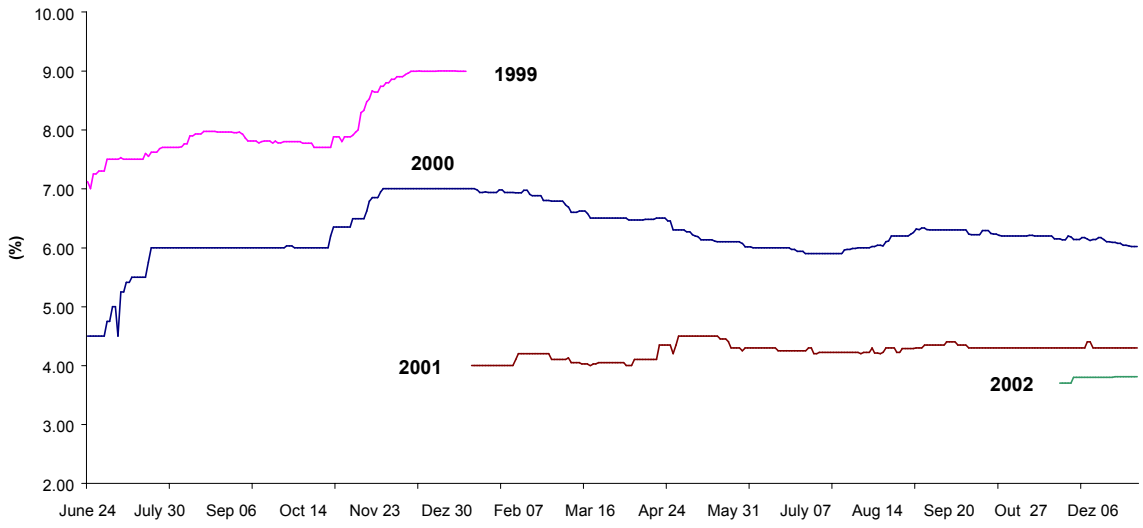
Expectations, however, deteriorated significantly during the first two weeks of July due to an inflation shock triggered by the adjustment of government-managed prices. This adjustment started in June and comprised oil by-products, public utilities (electricity, telecom and water and sewage fees) and urban transportation prices. To a certain extent, this was caused by the passthrough of the exchange rate devaluation, as public utilities

were submitted to concession contracts and their prices indexed to general price indices; for oil by-products, the adjustment also responded to the external oil prices rise.

The impact of the government-managed prices rise on several inflation measures was differentiated according to the methodology and the price collection period, contributing to the market misunderstanding of the magnitude of the shock. For the IPCA, for instance, the impact was negligible in June, when the smallest monthly inflation for the year was recorded (0.2%). In July, IPCA variation accelerated to 1.1%. However, the impact was sharper for wholesale prices: after registering negative rates in April and May, IPA rose 1.4% in June and 2.0% in July, as shown in Annex 2.

This temporary inflation increase, however, was perceived as a permanent rise by the market, steering up IPCA expectations for 1999 and 2000, from 7.2% and 4.5% at the end of June to 8.0% and 6.0% in the beginning of August (Figure 4). This kind of response of long-term inflation expectations to current inflation behavior would be observed throughout the whole year, suggesting that market inflation forecasts were still more backward than forward-looking.[10]

Figure 4
Market Inflation Expectations
median of IPCA for 1999, 2000, 2001 and 2002
(daily figures: June 24, 1999 to December 30, 2000)



Source: Investor Relations Group / Banco Central

[10] This behavior is not striking as the IT strategy was still new to everyone. Nonetheless, as the regime consolidated, the degree of forward-lookingness in market expectations tended to mount, as discussed in the article "*The Role of Expectations in Determining Current Inflation*", published in the March 2000 *Inflation Report* (pg. 100-101). This article also discusses the other way round, that is, the effects of backward or forward-looking expectations on current inflation.

Despite market concerns, the adjustment of government-managed prices apparently had already been incorporated into Copom's inflation forecasts, leaving them unchanged. Hence, in the July meeting, the Monetary Committee reduced the Selic rate to 19.5% and removed the downward bias for the first time since March. In view of the subsequent controversy, it is worth reproducing Copom's rationale for cutting the short-term interest rate:

> *"No significant qualitative alteration was made in the baseline scenario. The shocks can be summarized as the direct impact of public utility and fuel price rises on the third quarter inflation rate, coupled with expectations of new increases in US fed funds. (...) One concludes that there is room for an interest rate reduction without jeopardizing inflation targets for 1999, 2000 and 2001, even when due account is taken of the considerable uncertainties prevailing on the external scene (...). The inflation trend up to the end of 1999 remains valid given the lag of approximately six months between monetary policy alterations and their impact on inflation, even with interest rates of less than 21% per year"*[11].

In other words, Copom's decision leaned on the aggregate demand transmission channel of monetary policy and the estimated six to nine months lag from interest rate changes to prices. The accommodation of the government-managed prices shock through monetary policy would have low effect on inflation in the short run, restricted to the exchange rate and expectations channels. Therefore, the inflation rate for 1999 was already outlined - except for the supply shock that would occur in October/November. Considering the 3.9% IPCA central projection for 2000, below the tolerance interval floor, Copom agreed on lowering the Selic rate.

This decision, however, was strongly misunderstood by the market, still restless with the upsurge in inflation and the external risks that the Committee highlighted again. The divergence between the monetary authority and the market viewpoints did not refer to the direction but to the size of the interest rate decline.

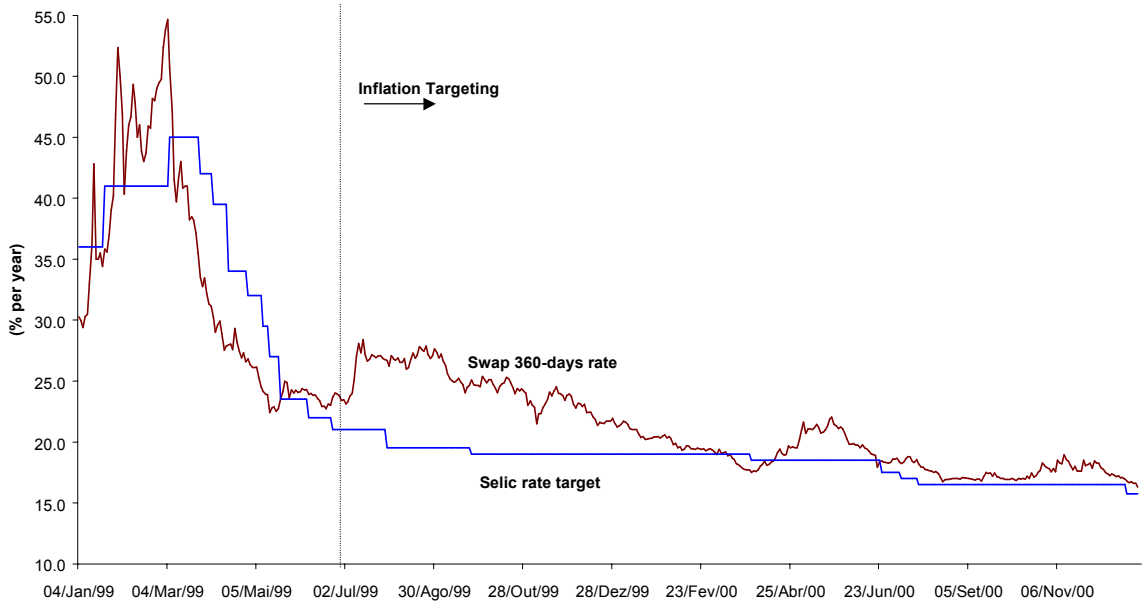
This disagreement had a sharp impact on the yield curve. From March to June, the curve was downward sloped as the short-term interest rate downward bias permanently pressed down medium and long-term rates. Inflation uncertainties in mid-July impacted risk premiums and inverted the yield curve slope. The reference rate for 360-day swaps, for example, jumped 400 basis points throughout the month, to 27% per year. The Selic

[11] Minutes, 37th meeting of the Monetary Policy Committee, July 28 1999.

rate reduction and the downward bias removal at the end of July accentuated the curve slope (Figure 5).

At the open market, inflation concerns made the market run to indexed government bonds. In this environment, the Treasury was forced to cancel the weekly fixed-rate bond auctions, which were placed again only in the third week of August, at 360 basis points above the Selic rate.

Figura 5
Selic x Swap Rates
(daily figures: January 1999 / December 2000)



The foreign exchange market was another focus of anxiety. Given the uncertainties about inflation and the external scenario, the market demanded hedge instruments, especially after the Selic rate fall at the end of July. Due to the shortage of these instruments - the Central Bank was lessening the amount of dollar-indexed securities because, in its understanding, the market should provide protection mechanisms in a floating exchange rate regime - the demand for hedge pushed up spot rates. In mid-August, the exchange rate reached R$ 1.90 for the first time since March (Figure 2).

The difficulty in issuing fixed-rate bonds and the exchange rate pressure were only attenuated in mid-August, when the Central Bank initiated significant offerings of dollar-indexed securities (NBC-E). Consequently, the exchange rate slid to R$ 1.85-1.90 in the first two weeks of September and market tensions moderated.

Market confidence was reinforced by Copom's decision on the September 1st meeting to keep the Selic rate at 19.5%, interrupting the sequence of interest rate cuts initiated in

April. The Committee understood that there were no new factors in the domestic or external scene to justify changes in inflation forecasts, though drawing "special attention" to possible impacts of the exchange rate pressure on prices. The short-term interest rate stability was also favored by the proximity of a non-regular meeting in three weeks (see Annex I). The Committee could then evaluate the improvement in expectations and the effects of the open market policy on the foreign exchange market.

IV.2 September/mid-October 1999: disinflation interlude

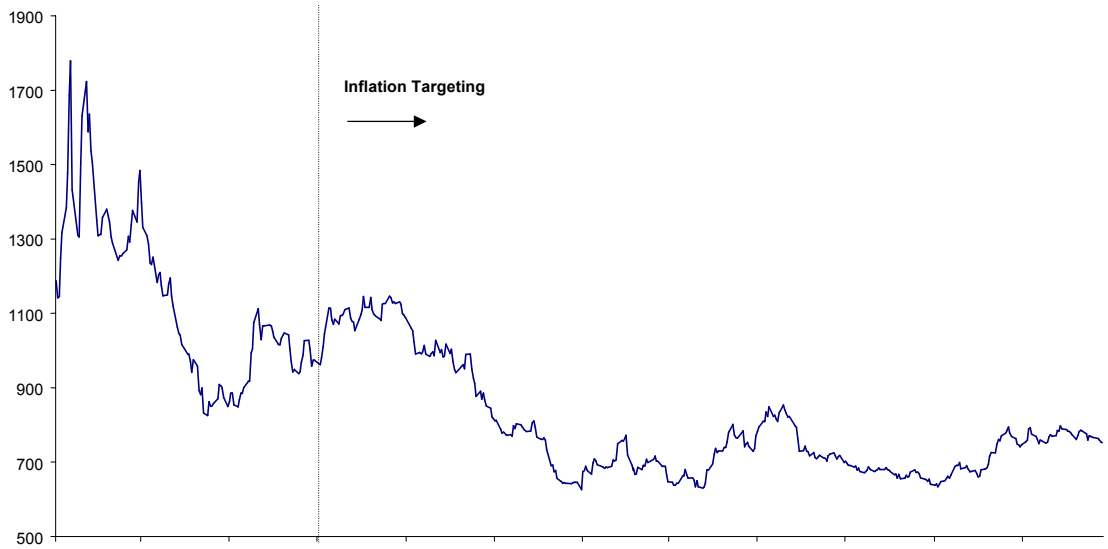
Expectations improved considerably in the first fortnight of September. The IPCA result for August (0.6%) confirmed the Copom's diagnosis about the transitory nature of the July inflation rise. The trend was reinforced in September, with a new reduction of the monthly IPCA rate. Market expectations for year-end inflation also improved - though at a slower pace - coming down from 8.0% to 7.8% during September. The yield curve shifted downwards, with 360-day swap rates falling 3 percentage points, and the Treasury was able to return regularly to the money market.

Market confidence also benefited from news in the fiscal front: the disclosure of the central government's budget for 2000, establishing a 2.65% of GDP primary surplus, in line with the 3.25% target for the consolidated public sector; also the monthly fiscal results for 1999 remained well above the annual target, accumulating a 3.6% of GDP primary surplus up to July.

Also positive, the external scenario improved after a new widely expected rise in the fed funds rate and recovery of confidence in relation to Argentina. As shown in Figure 6, Brazil sovereign spreads initiated at this point a gradual improvement with positive impacts on capital flows, that would only be interrupted in April next year. Oil prices were at this moment the main external concern due to low world inventories and the proximity of winter in the northern hemisphere.

Considering the domestic and external scenarios, Copom decided in the September non-regular meeting to reduce the short-term interest rate to 19% per year, maintaining the neutral bias. This meeting also analyzed the September *Inflation Report*, presenting the Committee's perspectives for inflation: the central inflation projection for 1999 stood at 7.4% and 4.6% for 2000. Comparing to the forecasts presented in the June issue, Copom's reviewed projections for 1999 were more optimistic (down 0.9 percentage point, as shown on Table 1), notwithstanding a lower Selic rate. However, the assessment of risks for inflation incorporated an upward asymmetry.

Figure 6
Sovereign Spread - Brazil
(Embi - b.p. over US Treasury)



A new temporary focus of instability emerged in October after the Supreme Court judged unconstitutional the law that increased civil servants contributions to social security. Copom considered that this unexpected confidence shock could jeopardize future inflation behavior, justifying the maintenance of the Selic rate at 19% per year in the October meeting. However, the downward bias was reintroduced due to a possible fiscal response to offset the loss in revenues caused by the Supreme Court vote.

Still in October the government approved measures to counterweight the estimated 0.2% of GDP loss with the Supreme Court decision, reiterating its commitment to the fiscal targets. The main measures comprised the reduction in investment spending, the non-deductibility of the additional 1% of the turnover tax from the CSLL, the equalization of income tax from capital gains in the money and stock markets, and the introduction of withholding income tax on day trade operations in the stock market.

During this period, the Central Bank introduced a consistent policy aimed at reducing financial intermediation spreads and lending costs. The package of measures announced in mid-October included the elimination of reserve requirements on time deposits; reduction from 75% to 65% in reserve requirements on demand deposits; reduction from 6% to 1.5% in IOF for household loans, same rate as corporate loans; creation of a new credit instrument *cédula de crédito bancário* aimed at submitting non-performing loans to fast-track judicial procedures; creation of a register of "good payers"; and

introduction of mechanisms to enhance competitiveness in the credit market. These measures not only favored the reduction of spreads but also fostered credit supply.[12]

IV.3 Mid-October/November 1999: supply shocks and inflation uncertainties

Despite the transitory exchange rate appreciation at the end of August and beginning of September, new pressures affected the foreign exchange market in October and November, specially due to the high concentration of external debt amortization payments in the period. Consequently, the exchange rate moved to the R$ 1.95-2.00 range by mid-October.

Inflation expectations also deteriorated in mid-October, partly because of the passthrough of the exchange rate devaluation to tradable goods prices. In this regard, the IPA inflation rate remained above 2% during the entire period since July, not repeating the same disinflation trend noticed in consumer prices in August and September.

Moreover, consumer inflation was impacted in October by new unanticipated supply shocks: (i) a food price rise due to the crop and livestock off-season period; (ii) an increase in fuel alcohol prices as a result of international sugar price pressures; (iii) an increase in car prices due to the expiration of the automotive agreement, which had reduced temporarily the manufactured products tax (IPI) rate. Those factors contributed to the IPCA rise to 1.2% in October (the highest rate for the year) and 1.0% in November. Of the accumulated IPCA variation in the period, about half was due to just three items (beef, fuel alcohol and automobiles).

The unanticipated nature of the inflation rise is noticed in the one-off jump in market inflation expectations. The median of IPCA projections rose from 7.8% in the first week of November to 8.6% in the third week, as seen on Figure 4. IPCA projections for the year 2000 also moved up from 6.0% to 7.0%. Again, the temporary adverse shock was incorporated into long-term expectations as a permanent inflation rise, repeating the same behavior seen in July.

In other words, the passthrough of the exchange rate devaluation to tradable prices fuelled consumer inflation and inflation expectations, already impacted by unexpected adverse shocks. Clearly, both the inflation rate and the exchange rate were moving in opposite directions to what was foreseen by Copom in the September *Inflation Report:*

[12] Those measures are extensively analyzed in the study *Juros e Spread Bancário no Brasil*, published by

> *"The recent exchange rate devaluation (...) was caused by internal and external uncertainties (...) not directly linked to economic fundamentals. It is expected a real appreciation of the real in the long run when compared to the current level (...). The effects of the negative supply shock provoked by public utility and fuel price hikes impacted inflation only in the second and third quarters. Projections based on the main scenario contain no expectation of new shocks in the current year."*[13]

An important step to overturn this state of affairs was set up in the fourth review of the IMF agreement, diminishing the floor criterion for net international reserves by US$ 2 billion. Announced at the end of October, this new floor gave the Central Bank more freedom in its operational limits on the foreign exchange market, enabling to sell a total of US$ 425 million in currency auctions during November. This approach was reinforced at the beginning of December, when the Central Bank announced two forward currency auctions with repurchase options, dissipating market concerns about liquidity constraints due to the Y2K effect.

Hence, the Central Bank strategy probably endeavored to reverse the factors that were creating noises in the exchange rate market since August: uncertainties regarding future capital flows (mainly at the turn of the year) and the market perception of low operational capacity of the monetary authority. The Central Bank's attitude, supported by improving external risk perception (as confirmed in Figure 6) and Brazil's return to the sovereign debt market, helped to re-guide expectations, enabling the current exchange rate to reflect the good fundamentals of the Brazilian economy and the positive capital flows widely anticipated for the first half of the year 2000.

Still under the impact of the inflation rate upsurge, the Copom meeting in November held the Selic rate unchanged at 19% and withdrew the downward bias introduced in the October meeting. It should be noticed that the downward bias was linked, in Copom's own words, to "uncertainties regarding the fiscal response to offset the loss of revenues caused by the vote of the Supreme Court". As those uncertainties dissipated, the bias was no more justified.

IV.4 December 1999 /March 2000: regaining confidence

The inflation rate resumed the downward trend in December. The confirmation that the supply shocks represented not permanent but transitory inflation rate increases and the

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the Studies and Research Department of the Central Bank.

Central Bank's stance holding the Selic rate constant to subdue inflation expectations, helped to consolidate the new monetary framework. In fact, Brazil would be the first country to incorporate inflation targets as performance criterion into an economic program supported by the IMF. This initiative removed the inconsistency of the previous review between inflation targets as being a policy guideline, and monetary targets (net domestic assets) as being a performance criterion.

As highlighted above, the reduction of the floor for net international reserves and the Central Bank's operations in the foreign exchange market were fundamental in re-guiding expectations. Still in December, the Central Bank acted again, signaling that it was attentive to any liquidity constraint. The volume traded in four foreign exchange auctions was 60% below November, reflecting the new supply and demand conditions in the FX market. These accelerated the exchange rate appreciation, and the dollar value reached R$ 1.80 by year-end.

The Copom meetings from December to February held the Selic rate unchanged at 19% per year, with neutral bias. As before, this decision intended to confirm that the inflation rise in October/November was due to specific and transitory factors, without denoting a generalized process of price increases. At the same time, the Committee identified the main sources of risk for the inflation rate throughout the year 2000: (i) the evolution of international oil prices; (ii) the adjustment of government-managed prices; and (iii) the external trend towards monetary policy tightening. When holding the short-term interest rate constant in the period, Copom endeavored to react preemptively to the inflation risks foreseen for the second and third quarters of the year, especially the risks associated to oil prices and government-managed prices rises, considering again the 6 to 9 months lag between interest rate changes and the final impact on inflation.

In the December *Inflation Report*, the central IPCA inflation projection up to 2001 sustained the downward trend, with significant drops in the first and fourth quarters of 2000. However, a reduction on the deceleration pace was noticed when compared to the September *Report*. The central IPCA projection for 2000 was reviewed upwards from 4.6% to 5.8%, as presented in Table 1.

The first quarter IPCA results confirmed Copom's expectation of a substantial inflation decline, and 12-month IPCA fell to 6.9% in March, a drop of 2 percentage points compared to the end of 1999. Following the inflation reduction, market inflation expectations for 2000 also diminished - albeit with some lag - from 7.0% in December to 6.5% in March. The gap between Copom's inflation forecast and market expectation,

[13] Inflation Report, pg. 68-69, September 1999.

around 1.2% in the beginning of the year, narrowed to just 0.2% in March. For 2001, the median of market inflation projections remained in the 4% inflation target.

Improved expectations also affected the money, exchange rate and sovereign bonds markets. The yield curve was almost flat for the whole period and in fact turned downward sloped in March for the first time since May 1999. Brazil risk premium sustained the downward trend, despite new rises in external interest rates in February. Finally, the exchange rate appreciation trend was maintained, though at a lower pace when compared to December. By the end of March, the exchange rate was close to R$ 1.70, back to the level of June 1999.

External uncertainties were still an issue of major concern in March, specially regarding oil prices that reached US$ 30 per barrel that month. The new oil price level forced a reevaluation of the impact of government-managed prices on inflation. In the March meeting, Copom held the Selic rate at 19%, introducing however the downward bias, this time directly associated to uncertainties regarding oil prices. With the OPEC´s agreement in end-March to increase output quotas and the subsequent fall in oil prices, the Central Bank's Governor exercised the downward bias, lowering the Selic rate to 18.5% per year, the first move in six months.

Still in March, the Central Bank lowered again the reserve requirement on demand deposits, this time to 55% from 65%. As in the first reduction in October, this measure had a fast impact on intermediation spreads and banking lending costs. Bank spreads fell 12 percentage points in annual terms between October and March, even though in this same period the short-term interest rate remained constant.

IV.5 April/May 2000: new external uncertainties

A new instability cycle hit the Brazilian economy in April and May due to: (i) pressures on US inflation rate, with higher-than-expected hikes in interest rates; (ii) volatility in external stock markets; (iii) new rises in oil prices, reverting the short-lived trend drawn in March in the wake of the OPEC's quotas revision; and (iv) uncertainties about the fiscal impact of the Supreme Court decision regarding the reevaluation of FGTS accounts[14].

[14] The Supreme Court vote on the workers compensation fund (FGTS) was centered on the correction criteria used in past stabilization plans. As the FGTS accounts were indexed to the inflation rate, during those plans transition rules introduced different and controversial adjustment criteria.

The main outcome was an increase in Brazil risk premium (see Figure 6), affecting capital flows perspectives and the exchange rate market. The yield curve shifted upwards almost instantly, forcing the cancellation of the Treasury's fixed-rate bond auctions, and the exchange rate moved up to R$ 1.85 in May. Despite market tensions, the volatility of the exchange rate in this period was much narrower when compared to previous periods of external instability, particularly the second half of 1999. Also, market instability did not affect short-term inflation expectations. Following positive results for the IPCA in April (0.4%) and May (0%), market inflation forecasts for 2000 fell to 6.1% by the end of May, approaching Copom's central inflation projection.

As happened since December 1999, the Monetary Committee meetings in April and May focused on the inflationary risks of oil and government-managed prices rises. However, a new factor of risk was back on the agenda, related to possible consequences of risk premium pressures on the exchange rate, and therefore on the inflation rate through the exchange rate transmission mechanism of monetary policy. This effect was explicitly stressed by the Committee:

> *"The volatility that has marked the major asset markets of the industrial countries obviously generates repercussions that affect perception of country risk and, consequently, the exchange rate trajectory. Alterations in expectations are passed through the exchange rate channel and simultaneously impact inflation. However (...) the impact of increased international market volatility on the Brazil risk should be limited, given the robustness of the domestic fundamentals."*[15]

Given the external uncertainties, the Monetary Committee held the Selic rate unchanged at 18.5%, introducing however a never-disclosed approach in relation to the long-term equilibrium interest rate:

> *"Copom's position is that the current real interest rate is not neutral or, in other words, it is above the real long-term equilibrium rate for the Brazilian economy. This perception was reinforced by projections for 2001 inflation, which were published in the March Inflation Report. Though current inflation and its expected trajectory are compatible with the targets and fiscal results have proven to be highly positive, the preponderant position at Copom identified risks that should not be ignored."*

[15] Minutes, 46th meeting of the Monetary Policy Committee, April 18/19 2000.

Another novelty at both the April and May meetings was the alternative view by one committee member, stressing that the substantial fall of both current inflation and inflation expectations during the first quarter of the year favored additional short-term interest rate cuts. Copom had for the first time a dissenting vote, reported in the minutes in tandem with the transparency commitment of the monetary regime.

IV.6 June/mid-July 2000: towards lower interest rates

The IPCA rate surprised positively during the whole first half of 2000: accumulated inflation for the period was 1.6%, the lowest variation since IPCA was first released in 1980. This outcome was largely due to the favorable behavior of volatile food and beverage prices, which accumulated a 0.8% negative rate in the period, thus partially reversing the transitory negative shock experienced in the off-season period (October/November of 1999).

In consequence, 12-month IPCA fell to 6.5% in June, a 2.4 percentage points decline in relation to the end of 1999. Actually, the first semester fall in the inflation rate was much faster than expected by the Monetary Policy Committee. According to the December issue of the *Inflation Report*, the Copom's central projection for the 12-month IPCA, at that time, stood at 7.8% for June. This difference attests that monetary policy managed to neutralize the inflation risks anticipated for this period since the end of 1999. Inflation expectations also reacted favorably to the current inflation environment, thus falling to 6% in June, in line with the full year inflation target.

Taking this optimistic outlook, Copom reevaluated the inflation forecasts for the year in its June meeting and decided to lower the Selic rate to 17.5% per year, reintroducing also the downward bias. The bias was justified by the possibility of a clearer external picture after the end-of-June Fed Open Market Committee meeting and the new OPEC´s decision regarding higher production quotas. In fact, the bias was exercised on one occasion in July, with a half-point cut in the Selic rate. Again in its regular meeting in July, Copom decided for an additional half-point reduction, bringing it to 16.5%. In a 30-days period, the short-term interest rate had been lowered 200 basis points, the most significant drop since July 1999.

The June *Inflation Report* presented Copom´s updated inflation forecasts. The reviewed baseline scenario sustained the external oil price and government-managed prices adjustment expected for the year; an above-average increase in food prices in the last

quarter of the year, thus counterweighing the first semester prices drop; and further increases in external interest rates. Notwithstanding, the central projection for the 12-month IPCA was lowered from 6.3% in the March *Inflation Report* to 5.6%, with symmetrically distributed probabilities of deviation from the central estimate. For 2001, the central projection stood at 3.9%.

Still in June, the Central Bank announced a new reduction – from 55% to 45% - of the reserve requirements on demand deposits, thus favoring new drops in banking spreads and lending costs. From October 1999 to June 2000, interest rates on household loans fell on average from 103.0% per year to 77.0%; for corporate loans, interest rates fell from 54.8% to 38.0%.

IV.7 mid-July/August 2000: further negative supply shocks

The inflation downward trend was interrupted in July as a consequence of two factors: first, the adjustment in government-managed prices, including oil derivatives, electricity and telecommunication services, all concentrated in a single month; and second, a new negative supply shock triggered by adverse weather conditions that pushed up food prices, impacting as well gasoline prices through the effect of the sugar cane crop break on fuel alcohol prices. While the first pressure was incorporated in advance into Copom's projections, the second factor was totally unexpected.

As a consequence of the negative shocks, the IPCA inflation rose 1.6% in July, the monthly peak since the adoption of the inflation targeting regime, and 1.3% in August, bringing the 12-month inflation up to 7.8% (Figure 3). The higher-than-expected rise in inflation led to a revision of market inflation expectations for the year to 6.3% in the end of August (Figure 4). However, expectations for 2001 were unaltered, demonstrating this time a different pattern in relation to the negative supply shocks that hit the economy in 1999, when future inflation expectations were reviewed upwards every time current inflation increased.

The inflation rise in the period interrupted the sequence of interest rate cuts experienced in June and July. Regarding the exchange rate, the dollar value reached the lowest level for the semester at the end of July, initiating afterwards a continuous depreciation, aggravated by the new round of external instability that would emerge in the September/November period.

IV.8 September/December 2000: external uncertainties amid falling inflation

The inflation rate for the four-month period from September to December totaled 1.3%, thus bringing accumulated inflation in 2000 to 6%, in line with the inflation target established by the government in June 1999. The inflation fall in this period is partly explained, once again, by the cyclical behavior of food prices. The July-August surge in food prices dampened their marginal contribution on inflation in the off-season period, repeating the same volatile behavior registered in the last quarter of 1999 and first half of 2000.

Despite the fall in inflation, concerns about the external scenario were again a major constraint for the Monetary Committee in this period due to two factors: firstly, the persistently high oil price despite output increases approved by OPEC in March, June and September; secondly, uncertainties regarding the Argentine economy, forcing up the country sovereign risk premium and interest rates. These uncertainties interrupted the Brazil's risk premium downward trend observed since mid-May (Figure 6).

Those external uncertainties were only attenuated at the end of November and beginning of December. On one hand, a new OPEC´s decision regarding oil production quotas in November dissipated fears of supply shortages during the winter in the northern hemisphere, and oil prices fell substantially to around US$ 24 per Brent barrel in December. On the other hand, market confidence recovered gradually in Argentina, following a sequence of events: (i) the measures proposed by the government in October and November, aimed at fostering investment and improving the labor and social security legislation; (ii) the pact between the central government and provinces in relation to fiscal spending limits and the approval of the 2001 budget in November; (iii) and of greater importance, the agreement with the IMF, granting a financial support considered at that time large enough to guarantee the external financing for 2001.

Taking into account the improved external scenario and the positive prospects for inflation in 2001 and 2002, Copom decided in December to reduce the short-term interest rate from 16.5% to 15.75%. This decision was consistent with the updated IPCA central projections for 2001 (3.9%) and 2002 (2.6%) presented in the December *Inflation Report*, both years below the respective inflation target. In fact, the baseline scenario for 2001 and 2002 encompassed a much more favorable outlook when compared to the adversities experienced in 1999 or 2000: lower average external oil prices; possible drops in nominal terms for domestic prices of oil by-products; lower pressures from the set of government-managed prices; and below-inflation rises in food prices.

V Inflation Targeting in Perspective

Summarizing at this point the main features of the inflation-targeting regime in its initial 18-months, it is worth noticing that:

a. Fiscal austerity has supported the inflation-targeting regime and, as depicted in Figure 1, the consolidated public sector primary surplus has remained well above the 3% of GDP benchmark throughout the entire period. Also, the consolidated nominal deficit fell substantially to around 4% of GDP after absorbing the effects of the exchange rate devaluation. Fiscal matters were hardly ever a direct concern for the monetary authority, though not neglected in specific occasions when fiscal uncertainties could trigger a confidence shock, as in the Supreme Court decision regarding the social contribution of civil servants (October/1999) and the FGTS adjustment (April/2000). On those occasions, monetary policy intended to strengthen credibility and reinforced the commitment to the inflation targets.

b. The external scenario has been a major constraint for the monetary authority in the period, particularly during the year 2000. The oil price shock, higher external interest rates, confidence crises in some important emerging markets and higher sovereign spreads, all contributed to hinder the trend towards lower real interest rates that was from time to time recognized by Copom: *"the current real interest rate is not neutral or, in other words, it is above the real long-term equilibrium rate for the Brazilian economy".*[16]

c. Annual inflation peaked in December 1999 and decreased throughout the entire year 2000, apart from the July/August inflation spurt. The IPCA inflation for 1999 (8.9%) and 2000 (6.0%) remained within the targeted range, despite the substantial realignment of relative prices that took place: while no-tradable goods in the IPCA were up 4.5% for the accumulated 1999/2000 period, government-managed prices rose 34.7% and tradable goods increased 15.3%.

d. The exchange rate showed low volatility and, after the overshooting correction, remained in the R$ 1.75-2.00 range. As expected, volatility increased in periods of larger external instability. However, as the inflation targeting regime consolidated and gained credibility during 2000, volatility lowered compared to the previous year. At the same time, the exchange rate passthrough to domestic prices remained low, estimated at less than 10% in the contemporaneous quarter and about 15% in a 12-month period.

[16] Minutes, 46th meeting of the Monetary Policy Committee, April 18/19 2000.

e. Inflation expectations also recorded low and diminishing volatility after the implementation of the inflation-targeting regime. Additionally, the degree of forward-lookingness increased as the regime consolidated. For the whole period, price inertia was low and temporary inflation spurts did not contaminate future inflation behavior.

The Brazilian inflation targeting framework received a number of positive analysis. None was as categorical as Mishkin and Savastano (2000) remarks. In their words, Brazil designed the "most comprehensive attempt to established an IT regime in Latin America. What is especially striking about Brazil's move to inflation targeting is how fast it occurred. The first *Inflation Report* was issued in June 1999 (...) with the second, right on schedule in September. The *Reports* not only discuss clearly the conditions prevailing in the economy and the prospects for inflation, but also provide the Central Bank's inflation forecasts under different scenarios – including through the use of fan charts the probabilities of different inflation paths. Many central bankers in the region have been concerned that it might take them a long time to acquire the technical capability to issue an inflation report of this type. Brazil's example suggests that those concerns may be a bit overdone."[17]

[17] pg. 53.

Annex 1

Review of Copom Meetings and Short-Term Interest Rates

March 1999 - December 2000

		Selic rate	
33rd meeting	March 04	45.0%	downward bias
	March 25	42.0%	
	April 06	39.5%	
34th meeting	April 14	34.0%	downward bias
	April 29	32.0%	
	May 10	29.5%	
	May 13	27.0%	
35th meeting	May 19	23.5%	downward bias
	June 09	22.0%	
36th meeting	June 23	21.0%	downward bias
37th meeting	July 28	19.5%	neutral bias
38th meeting	September 01	19.5%	neutral bias
39th meeting	September 22	19.0%	neutral bias
40th meeting	October 06	19.0%	downward bias
41st meeting	November 10	19.0%	neutral bias
42nd meeting	December 15	19.0%	neutral bias
43rd meeting	January 18/19	19.0%	neutral bias
44th meeting	February 15/16	19.0%	neutral bias
45th meeting	March 21/22	19.0%	downward bias
	March 26	18.5%	
46th meeting	April 18/19	18.5%	neutral bias
47th meeting	May 23/24	18.5%	neutral bias
48th meeting	June 19/20	17.5%	downward bias
	July 10	17.0%	
49th meeting	July 18/19	16.5%	neutral bias
50th meeting	August 22/23	16.5%	neutral bias
51st meeting	September 19/20	16.5%	neutral bias
52nd meeting	October 17/18	16.5%	neutral bias
53rd meeting	November 21/22	16.5%	neutral bias
54th meeting	December 19/20	15.75%	neutral bias

. The Monetary Policy Committee scheduled 10 regular meetings for 1999, with 5-week breaks between meetings. After the implementation of the inflation targeting regime, a non-regular meeting was scheduled for September in order to evaluate the third quarter *Inflation Report*.
. In 2000, meetings were held every month, in two-working day periods.

Annex 2

Inflation Rates

	Broad Consumer Price Index		Wholesale Price Index		General Price Index Market		Consumer Price Index - São Paulo	
	IPCA		**IPA**		**IGP-M**		**IPC/FIPE**	
	month	year	month	year	month	year	month	year
Jan/98	0,71%	4,74%	0,75%	6,82%	0,96%	6,89%	0,24%	3,80%
Feb/98	0,46%	4,69%	-0,15%	6,30%	0,18%	6,62%	-0,16%	3,62%
Mar/98	0,34%	4,52%	0,13%	4,77%	0,19%	5,61%	-0,23%	3,16%
Apr/98	0,24%	3,85%	-0,28%	3,93%	0,13%	5,03%	0,62%	3,14%
May/98	0,50%	3,95%	0,13%	3,92%	0,14%	4,95%	0,52%	3,11%
Jun/98	0,02%	3,41%	0,17%	3,84%	0,38%	4,57%	0,19%	1,86%
Jul/98	-0,12%	3,06%	-0,61%	3,30%	-0,17%	4,30%	-0,77%	0,96%
Aug/98	-0,51%	2,55%	-0,04%	3,42%	-0,16%	4,04%	-1,00%	0,72%
Sep/98	-0,22%	2,27%	0,06%	2,54%	-0,08%	3,45%	-0,66%	0,04%
Oct/98	0,02%	2,05%	-0,19%	1,92%	0,08%	3,16%	0,02%	-0,16%
Nov/98	-0,12%	1,76%	-0,20%	0,63%	-0,32%	2,18%	-0,44%	-1,12%
Dec/98	0,33%	1,66%	1,74%	1,50%	0,45%	1,78%	-0,12%	-1,79%
Jan/99	0,70%	1,65%	1,58%	2,34%	0,84%	1,66%	0,50%	-1,54%
Feb/99	1,05%	2,24%	6,99%	9,65%	3,61%	5,14%	1,41%	0,01%
Mar/99	1,10%	3,02%	2,84%	12,62%	2,83%	7,92%	0,56%	0,80%
Apr/99	0,56%	3,35%	-0,34%	12,55%	0,71%	8,55%	0,47%	0,65%
May/99	0,30%	3,14%	-0,82%	11,49%	-0,29%	8,09%	-0,37%	-0,24%
Jun/99	0,19%	3,32%	1,35%	12,80%	0,36%	8,07%	-0,08%	-0,51%
Jul/99	1,09%	4,57%	2,03%	15,80%	1,55%	9,92%	1,09%	1,36%
Aug/99	0,56%	5,69%	2,15%	18,33%	1,56%	11,81%	0,74%	3,14%
Sep/99	0,31%	6,25%	2,30%	20,98%	1,45%	13,52%	0,91%	4,77%
Oct/99	1,19%	7,50%	2,58%	24,34%	1,70%	15,37%	1,13%	5,94%
Nov/99	0,95%	8,65%	3,59%	29,06%	2,39%	18,50%	1,48%	7,98%
Dec/99	0,60%	8,94%	1,60%	28,88%	1,81%	20,10%	0,49%	8,64%
Jan/00	0,62%	8,85%	1,02%	28,17%	1,24%	20,58%	0,57%	8,72%
Feb/00	0,13%	7,86%	0,17%	20,00%	0,35%	16,78%	-0,23%	6,95%
Mar/00	0,22%	6,92%	-0,05%	16,63%	0,15%	13,74%	0,23%	6,60%
Apr/00	0,42%	6,77%	-0,02%	17,00%	0,23%	13,20%	0,09%	6,20%
May/00	0,01%	6,47%	0,69%	18,79%	0,31%	13,88%	0,03%	6,63%
Jun/00	0,23%	6,51%	1,45%	18,91%	0,85%	14,44%	0,18%	6,91%
Jul/00	1,61%	7,06%	2,79%	19,79%	1,57%	14,46%	1,40%	7,23%
Aug/00	1,31%	7,85%	2,56%	20,28%	2,39%	15,39%	1,55%	8,10%
Sep/00	0,23%	7,77%	1,09%	18,85%	1,16%	15,06%	0,27%	7,41%
Oct/00	0,14%	6,65%	0,56%	16,51%	0,38%	13,57%	0,01%	6,22%
Nov/00	0,32%	5,99%	0,38%	12,89%	0,29%	11,24%	-0,05%	4,62%
Dec/00	0,59%	5,97%	0,85%	12,06%	0,63%	9,95%	0,26%	4,38%

Sources: IPCA - National Bureau of Geography and Statistics (IBGE)
IPA & IGP-M - Getulio Vargas Foundation (FGV)
IPC/FIPE - Economic Research Institute Foundation (São Paulo)

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