Escola de
ECONOMIA
de São Paulo

Textos para Discussão

158

Abril
de 2007

INFLATION TARGETING IN BRAZIL: A KEYNESIAN APPROACH

LUIZ CARLOS BRESSER-PEREIRA AND CLEOMAR GOMES DA SILVA

FGV
EESP

INFLATION TARGETING IN BRAZIL: A KEYNESIAN APPROACH

Luiz Carlos Bresser-Pereira and Cleomar Gomes da Silva

RESUMO

O regime de meta de inflação se tornou dominante na formulação de políticas dos bancos centrais nos últimos 15 anos. A teoria subjacente, particularmente a regra de Taylor, pode ser vista como uma competente generalização desse comportamento. De um ponto de vista keynesiano, ele será aceitável se encararmos a taxa de juros de equilíbrio como apenas uma 'convenção variável' e se a combinarmos ou com uma taxa de câmbio ou com uma meta de emprego. No caso do Brasil, porém, além dessa ressalva teórica e da condição do duplo mandato, o regime de metas de inflação enfrenta um problema de incoerência. Esta é uma política que se destinava a ser utilizada na 'administração' da política monetária, não na 'mudança' do 'regime de política monetária'. A política de metas de inflação foi introduzida no Brasil em 1999 como um substituto para a âncora cambial, que havia sido usada desastrosamente entre 1995 e 1998. Durante muitos anos, o país havia enfrentado uma armadilha de alta taxa de juros / taxa de câmbio valorizada e, portanto, precisava mudar seu regime de política monetária antes de eventualmente adotar o regime de meta de inflação. Essa mudança, que começou com a flutuação de janeiro de 1999, deveria ter sido completada com reformas específicas (fim da indexação dos serviços públicos e dos próprios juros básicos). No entanto, em lugar de desenvolver uma estratégia para reduzir a taxa de juros, o governo continuou a definir a inflação como o principal problema a ser enfrentado e adotou uma política formal de metas de inflação. A conseqüência é que desde 1999 essa política se tornou o obstáculo que a economia brasileira enfrenta para escapar da armadilha da taxa de juros.

PALAVRAS CHAVES

Política monetária, metas de inflação, taxa de juros, taxa de câmbio

CLASSIFICAÇÃO JEL

E4 (Money and Interest Rates); E5 (Monetary Policy, Central Banking, and the Supply of Money and Credit)

ABSTRACT

Inflation Targeting become dominant in central banking policymaking over the last 15 years. The theory behind this framework, particularly the Taylor rule, may be seen as an able generalization of such behaviour. On a Keynesian point of view, it will be acceptable if we see the equilibrium interest rate as just a 'changing convention', and if we combine it with either an exchange rate or an employment target. In the case of Brazil, besides this theoretical caveat and the double mandate condition, inflation targeting faces an inconsistency problem. This is a policy designed for the purpose of 'managing' monetary policy, not for 'changing' the monetary policy regime. Inflation targeting policy was introduced in Brazil in 1999 as a substitute for the exchange rate anchor, which had been disastrously used between 1995 and 1998. For years, the country had been facing a high interest rate/evaluated exchange rate trap, and, so, needed to change its monetary policy regime before eventually adopting IT. Yet, instead of developing a strategy to reduce the interest rate, the government continued to define inflation as the main problem to be faced, and adopted a formal inflation targeting policy. The consequence is that, since 1999, such policy has been the obstacle that the Brazilian economy faces to escape from the interest rate trap.

KEY WORDS

Monetary Policy, Inflation Targeting, Interest Rate, Exchange Rate

1 Inflation targeting in Brazil: A Keynesian approach

Luiz Carlos Bresser-Pereira and Cleomar Gomes da Silva[♣]

Since the beginning of 1999, when the floatation of the Real implied the abandonment of the exchange rate anchor, monetary authorities have adopted inflation targeting (henceforth IT) as the new nominal anchor, as if Brazil could not dispense with an anchor. Usually seen as a successful policy in so far as the inflation rate has been kept reasonably under control, IT policy has shown problems related to the achievement of its objectives and, principally, to the high fiscal and development costs involved. These problems are due to two main reasons. On one side, the Taylor rule in which is based (a rule that relates the inflation target with the interest rate given the product gap) can only be accepted if it is combined with the consideration of other variables such as exchange rate and employment rate. The argument that the central bank can only have one target because monetary authorities have only one instrument is neither reasonable nor realist. In practice, central banks do not work in this way. The second one is related to a grave inconsistency dilemma. An IT policy is designed to 'manage' monetary policy, not to 'change' the 'monetary policy regime': it orients the policymaker to define the interest rate within a limited range, not to face an interest/exchange rate trap, characterized by an extremely high interest rate and an overvalued Real, prevailing in Brazil for many years. An IT system implies in itself a monetary regime, and, so, it could be viewed as a 'regime', but we reserve the expression to designate inflation, interest rate and exchange rate patterns and the correspondent policies used to control such variables that possess a reasonable internal consistency. Monetary policy regimes persist for some time, but, in given moments, must undergo changes in order to deal with internal problems, or because new structural facts impose changes. The IT system was adopted in Brazil,

[♣] Luiz Carlos Bresser-Pereira is emeritus professor of Getulio Vargas Foundation; Cleomar Gomes da Silva is a PhD student at the Foundation's São Paulo School of Economics, and a researcher at the Center for International Economics (CEPE). We thank Edwin Le Heron, Emmanuel Carré and a referee for the comments.
E-mails: lcbresser@uol.com.br ; cleomargomes@gvmail.br .

in 1999, ignoring that a previous reform of the monetary policy regime was required involving the end of indexation of public services and the de-linkage between the short and the long term interest rate. The result is that the government does not have any clear strategy to reduce the interest rate and it is far from starting a serious reform package and a deep fiscal adjustment. This makes IT performance problematic, as it does not have the tools to circumvent the monetary traps, which are difficult – but not impossible – to be overcome, as we will see in this article.

Several works have analyzed the IT framework in Brazil. For instance, Bogdanski, Tombini & Werlang (2000) wrote about the phase prior to implementing the plan itself and its first steps. Figueiredo, Fachada & Goldestein (2002) examined the conduct of monetary policy in Brazil and the relationship among three important elements: inflation targeting, public debt management and open market operations. Minella et alli. (2003) studied the Brazilian inflation targeting policy and argued that emerging market economies may show high volatility in their main economic variables (exchange and interest rates, output growth rate and inflation rate), which brings problems to the system as a whole. As a result, conducting monetary policy in these countries is closely related to challenges such as: trust building, reduction of the inflation rate, resolution of fiscal, external and financial dominances. As inflation in 1999, after the exchange rate floatation, was smaller than many predicted, the quoted authors conclude that "the Brazilian experience has been a successful stress test for the inflation targeting framework." It means that they credited to the IT policy adopted in July (when the inflationary effects of the depreciation had already worked out) an outcome that was not due to the IT being implemented. This practice of overestimating the outcomes of the IT policy has been usual among conventional-orthodox economists who commemorate the low inflation indexes without considering that such results depend heavily on the overvaluation of the Real. Actually, the countries that adopted IT systems did achieve neither better nor worse outcomes than the countries that do not use such tool (Ball & Sheridan, 2003; Arestis, Paula & Ferrari Filho, 2006).

The aim of this paper is to offer a brief overview of the conduct of monetary policy in Brazil under IT, from the date of its implementation until the end of 2006, and to show that it was adopted in an inadequate moment. Secondly, we will criticize the IT framework, which in Brazil is part of a macroeconomic policy that is keeping the economy quasi-stagnant, and show that it

has been misused by our monetary authorities. It is not the aim of this paper to pursue a theoretical discussion of the IT system. Regarding this, we can say that, on a Keynesian point of view, IT will be acceptable if we see the equilibrium interest rate as just a 'changing convention', i.e., if we theoretically see it as an empirical generalization of the way central banks work. And, on practical terms, if we combine the inflation target with either an exchange rate or an employment target – in the case of a small country like Brazil,[1] an exchange rate parameter might work better. In other words, in the framework of a pragmatic IT policy, the central bank is supposed to have a double mandate.[2]

Although IT was able to keep inflation relatively low, our claim is that it did that with extremely high fiscal and development opportunity costs.[3] Nowadays, inflation could be smaller and growth rates much higher in Brazil if the government had not hastened to import a monetary policy institution before the appropriate conditions had been materialized. Thus, we are not going to discuss what usually is discussed in relation to IT: how ambitious should the targets be, which inflation index to use, which period to take into consideration, etc. These are management problems. We are not even debating if some kind of exchange rate target should be added, although it obviously should. Here, we will argue against the timing chosen for the adoption of the IT policy, and which are the pre-conditions for its success. We will also be offering some indications of how to get out of the interest/exchange rate trap in which the Brazilian economy remains immersed. The following section reviews the theoretical approach related to the IT

[1] Small as it represents around 1% of the world GDP.

[2] We are speaking of a 'parameter', not a target, because it would not be explicit, but conventionally followed by the central bank and acknowledged by the financial market. Just to include explicitly the exchange rate in the model and opt for a long term inflation target, as proposed by Ball (2000), counting that, in this time, the movements of the exchange rate will be offset, is not enough.

[3] The GDP growth rate of Brazil between 1999 and 2006 was just 2.3% on average – a rate substantially smaller than the one achieved by similar medium income countries.

framework. Section two presents an overview of the IT system in Brazil. Section three discusses the reason behind the high short-term interest rate in the country. Section four talks about the interest-exchange rate trap faced by the monetary authorities. Section five offers some solutions to the trap. A final section concludes the article.

1.1.1 INFLATION TARGETING POLICY

After a decade of frustrating attempts to adopt a monetary rule to control inflation, central banks in rich countries realized that a more practical policy had to be used in order to control directly the basic interest rate aiming at a low rate of inflation. This practical policy was IT. It started to be adopted by a number of countries in the beginning of the 1990s. New Zealand was the first inflation targeter, in 1990, followed by Canada (1991), UK (1992), Sweden and Finland (1993), Australia and Spain (1994). After that, many other nations implemented the policy, including Brazil in 1999. Although IT was adopted for pragmatic reasons, as a consequence of the failure of the monetarist model base on monetary targets, the theoretical approach often argued by orthodox economist to justify it is New Classical 'credibility theory' (Kydland & Prescott, 1977; Barro & Gordon, 1983). Under this theory, if monetary authorities neglect the observation of rules, there will be a lack of credibility in their decisions and, therefore, higher inflation rates. Consequently, a reliable central bank is needed in order to eliminate the so-called inflationary bias found in the conduct of monetary policy. Yet, this theory does not correspond to the practice of central banks. Adopting a historical instead of a hypothetical approach, Le Heron (2003) sees in the Canadian case the foundation of a new consensus on monetary policy – a Keynesian one. According to him, IT is in conflict with the credibility literature because it is actually based on confidence. There is an opposition between 'credibility' and 'confidence'. The credibility approach needs the full independence of the central bank, while IT requires just an operational independence, with the inflation target determined by elected politicians. Instead of emphasizing 'rules versus discretion', confidence emphasizes the anticipations of the economic agents, the behavior of financial markets and the price of assets. In a second paper (Le Heron & Carré, 2006), the authors emphasize that central bankers do not just follow rules assuming that they, and all economic agents, know the true model. Instead, central bankers gain confidence in so far as they act reasonably, sometimes just following the rule, sometimes changing it and offering

justifications that economic agents understand, but always considering that structural shocks may require changes. In the whole process, communication and understanding are crucial to achieve confidence. Alan Greenspan was an example of a central banker who thought and acted according to the 'confidence' and not the 'credibility' principle (Blinder & Reis, 2005; Aglietta & Borgy, 2005).

Some of the institutional arrangements underlying full-fledged IT are as follows: *i*) an explicit quantitative inflation target, as well as tolerance intervals established on the basis of a widely known price index and decided by the National Monetary Council; *ii*) a clear operating procedure implemented by the central bank; *iii*) a high degree of transparency and accountability (inflation reports, speeches and minutes) (Svensson, 1998); *iv*) institutional commitments with price stability in line with the primary objectives of a long run monetary policy goal. For Brazil, specifically, in case of target misses, an open letter must be issued by the central bank explaining the causes of the breach, the measures to be adopted to ensure that inflation returns to the tolerated levels, and the period of time needed for these measures to have an effect.

But a simple target for inflation is not a solution for monetary policy actions. A set of rules is needed in order to detail the main guidelines for reaching the objective with as much economic stability as possible. These rules must use interest rates as the main monetary policy instrument, make sure exchange rate is flexible and also care for any significant changes in product or inflation.

Regarding both the optimal inflation and interest rates, what is commonplace nowadays is to analyze a central bank following Taylor's (1993) original formulation – the pragmatic equation known as Taylor Rule:

$$r = p + .5y + .5(p - 2) + 2 \qquad (1)$$

Where '*r*' is the federal funds interest rate, '*p*' is the inflation rate and '*y*' is the output gap.

In a more general form, the Taylor Rule can be the following:

$$i_t - \pi_t = \overline{r} + b(\pi_t - \pi^*) + c(\ln Y_t - \ln \overline{Y}_t) \qquad (2)$$

where i_t is the nominal interest rate, π_t is the inflation, $\ln Y_t - \ln \overline{Y}_t$ is the output gap and π^* is the target for inflation. In this case, $\overline{r}_t$ is the real interest rate that prevails when $Y_t = \overline{Y}_t$; thus, it is the equilibrium interest rate that is by assumption considered constant. Thus, this interest rate rule says that the central bank should raise the interest rate above its long run equilibrium level when inflation exceeds its target and when output exceeds its natural rate. Some argue that a monetary policy rule under IT can be jointly attached to targets for other variables, such as the exchange rate, as long as they have a long run consistency with the inflation target. The reason for such concern is that an appreciation of the exchange rate, just like an increase in the interest rate, reduces the interest rate but dampens economic activity (Romer, 2001).

IT theory was not the outcome of a concern for credibility, or of a neoclassical hypothetical-deductive reasoning about inflation, but it is the generalization of a historical experience: of how central banks are behaving in order to control inflation after they gave up monetary targets. Good macroeconomics adopts a method that is dominantly historical (Bresser-Pereira, 2006), the Taylor rule, which is central in IT policy, has clearly this historical and pragmatic origin. On its turn, central banks' behavior is also pragmatically based on a combination of several inflation theories and findings, among which the Philips curve and an obvious confidence or credibility requirement.[4] Neoclassical credibility theories were added to the central bankers' and Taylor's intuition to make IT consistent to the neoclassical vision, but nothing prevents us from adding other features to make it consistent with Keynesian macroeconomics.

[4] Credibility theory is either obvious or wrong. It turns wrong when policymakers offer the 'credibility' of their policies as a substitute for economic fundamentals. This was what happened, for instance, in the classical Latin American Southern Cone stabilization experiments of the late 1970s (Diaz-Alejandro, 1981), or in the 1992 IMF sponsored stabilization program in Brazil.

1.1.2 INFLATION TARGETING IN BRAZIL: AN OVERVIEW

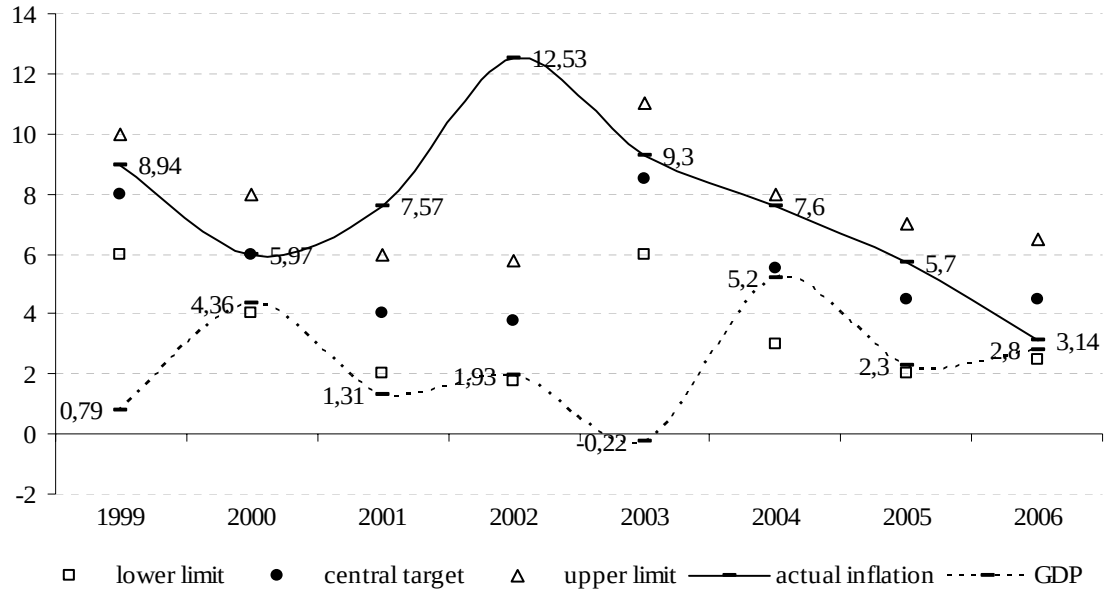
The Brazilian economy changed abruptly when the Real Plan started in 1994. It was able to neutralize the inertial mechanism that kept inflation high despite weak demand. Although this neutralization was the real cause of the high inflation stabilization, an exchange rate anchor was additionally adopted. Keeping a quasi-fixed exchange rate from the middle of 1994 up to the beginning of 1999 made the country run high current account deficits and, so, highly dependent on the inflow of international capital and extremely vulnerable to external shocks. Such weakness was confirmed when several crises hit the country, causing a rapid outflow of capital as a result of chain reaction in the international market. The continuous loss of reserves forced the Brazilian government to float and accept the depreciation of its exchange rate, in January/1999.

The floatation of the Real led policymakers, who had been used to seeing the exchange rate as a monetary anchor of the Brazilian economy since 1994, to fear the return of high inflation. They sharply raised the interest rate, despite it being very high.[5] The fear of inflation was not confirmed by the facts. Indeed, the increase of the inflation rate after the floatation was much smaller than conventional economists expected. Nevertheless, the Brazilian monetary authorities started to work on achieving two main goals: *i)* a severe control of inflation in order to calm down financial market expectations and construct credibility; *ii)* the implementation of an IT framework as a new nominal anchor for our economic policy.

[5] After the implementation of the IT regime there was a reduction of the real interest rate, but, already in 2001, when its real level continued very high, it was increased again.

1.1.2.1.1.1.1Figure 1

1.1.2.1.1.1.2Actual Inflation Rates, Targets, Tolerance Intervals and GDP (1999-2006)



Source: Ipeadata

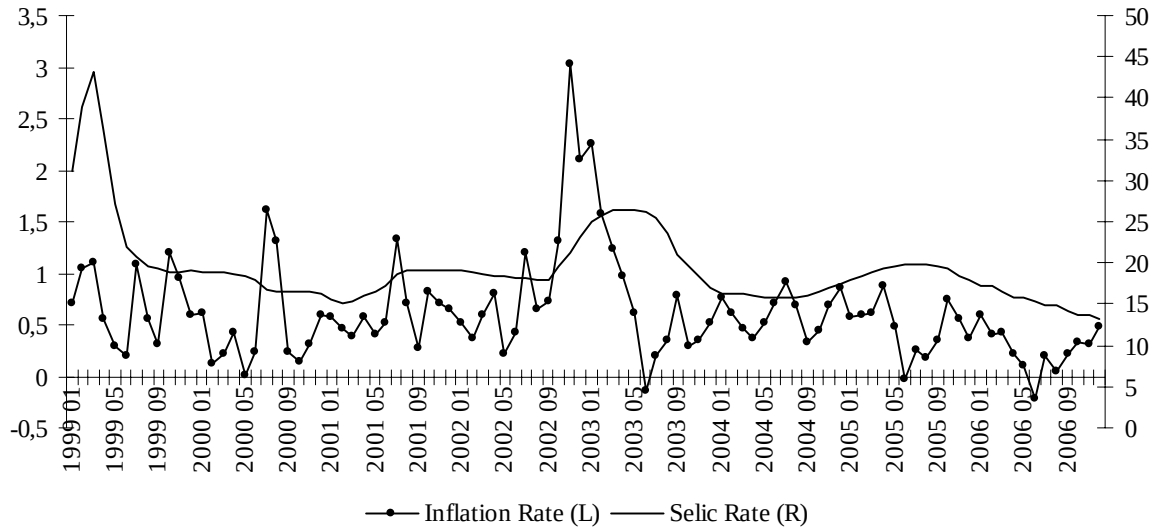
Thus, six months after the adoption of a flexible exchange rate, the Central Bank of Brazil (CBB) put into operation a formal IT framework and set the targets for 1999 (8%), 2000 (6%) and 2001 (4%) (Figure 1). The Broad Consumer Price Index (IPCA)6 was selected as the reference measure for the targets because it could be affected by seasonal factors as well as by temporary shocks. The overnight Selic rate (or short-term interest rate) was chosen as the policy instrument and its target became a responsibility of the National Monetary Council. Tolerance

[6] The selected price index – IPCA – covers a sample of families with personal income between 1 and 40 minimum wages and has a broad geographical basis (Bogdanski, Tombini & Werlang, 2000).

intervals of 2% percentage points7 were allowed to take into account the importance of uncertainty about our inflationary process and also some unexpected temporary shocks and/or seasonal factors. In this way, they continued to see the control of inflation as their main goal, not acknowledging that an extremely high basic interest rate was also a serious obstacle to a real macroeconomic stabilization. In other words, it was a mistaken policy agenda once the main problem of the Brazilian economy had ceased to be inflation to become the perverse combination of high interest rate and low exchange rate. But the policy was maintained, and the low increase in inflation in 1999 was attributed to it, although it was just beginning to be adopted. We will discuss these issues in more detail in the following sessions.

Figure 2

Short-Term Nominal Interest Rate (Selic Rate) and Inflation Rate (CPI)



Source: Ipeadata

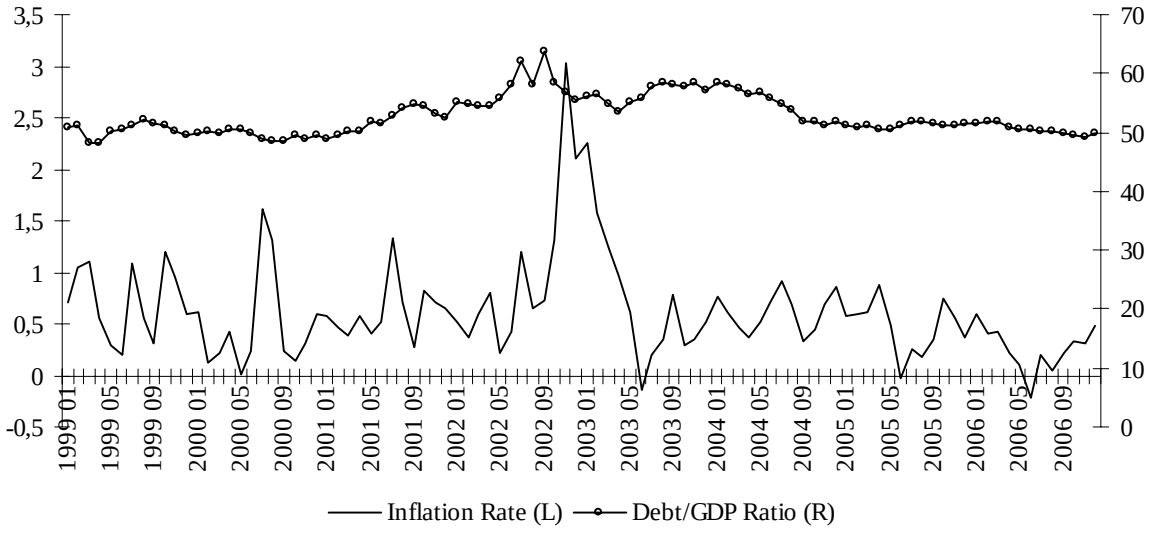
[7] The tolerance intervals were widened to 2.5 percentage points after 2003.

The exchange rate devaluation coincided with a period of slow economic growth, and this partially explains the behavior of inflation (Figure 2). The fact that indexation had been eliminated in 1994 is the main explanation for the fact. On the other hand, a reasonable control of government expenditures, and an increase in taxes led to a rapid growth of the primary surplus, which achieved 3.2% of GDP in 1999. This was combined with a strict monetary policy conduct. These facts, together with other important indicators, resulted in an inflation rate of just 8.9% in 1999 (Pinheiro, Giambiagi & Moreira, 2001).

The year 2000 was more favorable to the Brazilian economy, despite the concerns regarding external factors. As a result, the 6% target was reached successfully even though there was a continuous realignment of monitored prices by the government (Figure 5) and some economic growth (Figure 1). Such expansion was due to the improvement of consumers and firms confidence, and due to credit expansion. The latter became possible with the reduction of tax on credit transactions, on loan rates and on bank spreads. The public debt/GDP ratio (Figure 3) improved in comparison to 1999 but, even so, reached the percentage of 49.43%, which was still a considerable amount (Figueiredo, Fachada & Goldestein, 2002).

Figure 3

Inflation Rate (CPI) and Debt/GDP Ratio



1.1.2.1.1.1.3

Source: Ipeadata

In 2001, the Brazilian economy was hit by a series of unfavorable shocks, such as, the energy crisis, the end of the speculative bubble in stock market throughout the world, Argentina's crisis and the terrorist attacks in the USA. These shocks caused a great impact on international market expectations and, despite the high interest rates, it was difficult to attract foreign capital. On the other hand, the deficit was even magnified by the outflow of capital, which was larger than foreign direct investment. Given this scenario, the CBB's action was related to limiting the propagation of the disturbances faced by the economy, mainly related to exchange rate depreciation and increases in the monitored prices. In this moment, the Central Bank, which had correctly been lowering the interest rate since 1999, made the mistake of increasing it, even though it was around 9% in real terms. In this way, the monetary authorities proved to be weak as they acknowledged more than it should the external vulnerability of the Brazilian economy, called the attention foreign creditors and opened room to the balance of payments crisis that would happen in the end of 2001. Besides its actions on the market itself, through the interest rate, monetary authorities began to work with a more restrictive monetary policy, attempting to keep annual inflation within the tolerance interval set by the policymakers. However, such effort was in vain and the inflation rate reached a yearly percentage of 7.7% (Figure 2), which meant that the target was breached. This rise in the CPI was not the outcome of excess demand.

Directly, it was related to the exchange rate pass-through to the prices, and indirectly, to the rise of administered prices. The fiscal side of the economy deteriorated in 2001, despite the government primary surplus (3.75% of the GDP).

In 2002, it was clear that the Worker's Party candidate, Luiz Inácio Lula da Silva, would be elected president. But there were some problems. First, the market did not know his real intentions. Second, there was the fiscal dominance problem related to the new increase in the interest rate. Third, there was a persistence of a high external vulnerability expressed in a high foreign debt/exports ratio. All these together led to a rise on the probability of default on foreign debt.[8] As a result, there was a sharp increase in the interest rate on Brazilian government dollar-denominated debt. The Real depreciated considerably against the dollar, which led to more inflation.

As for the fiscal dominance phenomenon, it was due to our great dependence on foreign capital, which tends to flow into emerging market economies when the interest rate is high. Nonetheless, as real interest rates continue to raise, even those investors who trust on the country's fundamentals start thinking twice. Consequently, new exchange rate depreciation can materialize. For that reason, an attempt to appreciate the exchange rate has an opposite effect, and this characterizes the so-called fiscal dominance (Bresser-Pereira & Nakano, 2002, Gomes & Aidar, 2004). According to Favero & Giavazzi (2005), Brazil's experience has shown how default risk may have a deleterious effect on the IT framework once the economy can move from a regime of monetary dominance to one of fiscal dominance. Under that condition, responding to higher inflation with real interest rate increases leads to a real exchange rate depreciation and, consequently, to a further increase in inflation. If this is the case, the right instrument to decrease inflation is fiscal (not monetary) policy.

After Lula's election, in October 2002, the government decided to maintain and deepen the previous monetary and fiscal policies, and also to continue microeconomic institutional reforms. The new administration's plans included a primary surplus objective and

[8] The increase in exports and the improvement of the national accounts was beginning in this year but only became clear to creditors in 2003.

announcements of a reform of the social security system. As the market assessed that there would not be any significant policy change, there was a decrease in the probability of default, an appreciation of the Real, and a decrease in inflation (Blanchard, 2005).

In 2003, with the new government in power and the orthodox conduct of monetary policy, Brazil's creditors started to calm down. By the mid of the year, the improvement of the country's foreign accounts and the recovery of confidence in public authorities opened an opportunity to the administration to engage in a strategy of lowering the short-term interest rate. Yet, the inverse decision was taken. The only concern was to signal to the financial markets that the priority continued to be the control of inflation. According to Favero & Giavazzi (2005), after taking office in the beginning of 2003, Lula announced a restrictive fiscal policy, and this was enough to bring the economy back to 'normal conditions', with a rapid reduction of the country risk, stabilization of the exchange rate and, consequently, stabilization of inflation expectations, inflation itself and public debt dynamics. The interest rate, however, continued in its absurdly high level, and the economy stagnated, despite the extremely favorable international conditions.

The targets for the inflation in 2003 were changed from 4% to 8.5%, and, in 2004, from 3.75% to 5.5% (Figure 1). In addition to that, the tolerance intervals were modified from 2% to 2.5%. The target horizon was also lengthened to two years in order for the supply shocks to be smoothed as much as possible. According to the CBB, the new targets would be more suitable for the Brazilian economy as they would help bring interest rates down, given that the cost related to the former targets was quite high in terms of public debt and economic growth. However, the decrease in the Selic rate was not enough to make the economy grow as much as it needed.

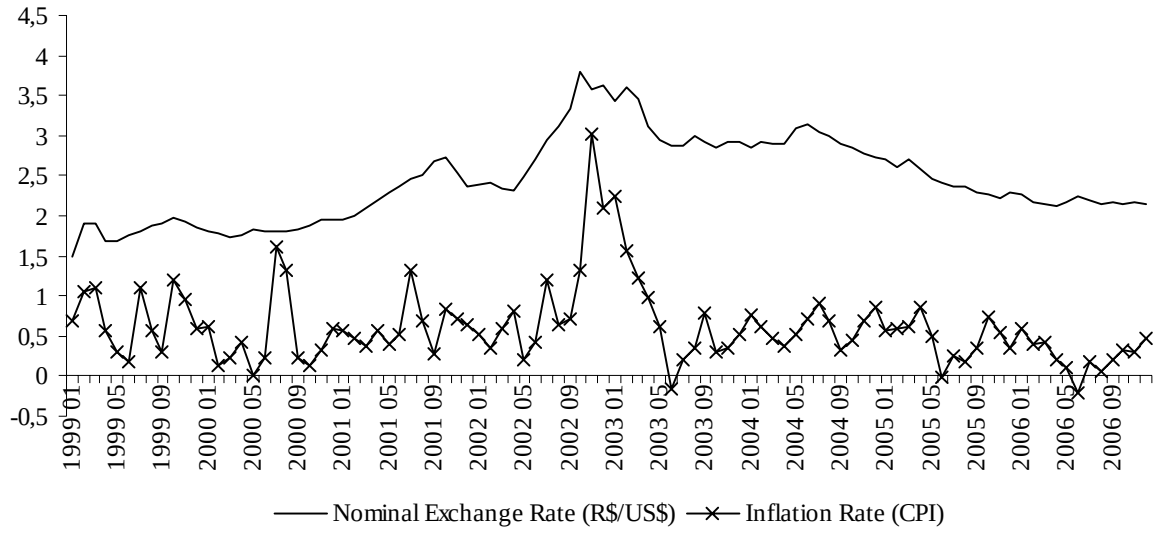
In 2004, the Brazilian economy grew considerably (Figure 1), which was again attributed by the economic authorities to the 'correct' economic policies. In fact, it was the outcome of a major external adjustment that the economy underwent between 1998 and 2004 due to the joint effects of the depreciation of the Real as a consequence of the 1998 and 2002 balance of payment crises, and of a great increase in the prices of Brazilian exported goods. The economy transited from a current account deficit of 5% of GDP in 1998 to a 1% surplus in 2004, while the

investment rate was kept constant around 19%. Thus, there was an extraordinary substitution of domestic for foreign savings.[9] Yet, as it was to be expected, the maintenance by the CBB of the interest rate in its high level plus the increase in exports caused an appreciation of the exchange rate (Figure 4), which helped lower the inflation rate and reach the target (Figure 1).

[9] When a country follows the growth *cum* foreign savings strategy, large inflows of foreign capitals take place, the exchange rate appreciates, and (if the investment opportunities are not particularly favorable), the rate of substitution of foreign for domestic savings is high (Bresser-Pereira, 2004; Bresser-Pereira & Gala, 2007). In this case, given the depreciation of the Real, the opposite occurred.

Figure 4

Inflation Rate (CPI) and Nominal Exchange Rate - R$/US$



The monetary authorities started 2005 with a similar monetary policy if compared to the previous year, and the target was achieved. Presently, the inflation target is already defined by the National Monetary Council up to 2008: 4.5% yearly, and everything indicates that such target will be achieved. It is an inflation rate a little higher than the average of other similar medium income countries like Brazil, but the difference is small and can be explained by the still existing indexation of utilities, of wages when decided by the Labor Justice, by the policy of increasing the minimum wage, and by the relatively closed character of the Brazilian economy (Werlang, 2006). Among these factors, administered prices are the main responsible for the inflation above international levels. According to Figure 5, between 1999 and 2003 these prices increased more than inflation, and after that they stabilized.[10] In 2005 and 2006, the inflation rate fell, and the target was achieved (Figure 1). In the end of 2006 the inflation rate was around 3% a year, and this rate was commemorated by conventional orthodoxy as its 'victory' against inflation.

[10] This behavior (high increase and stabilization) was mainly due to the use of the General Price Index (IGP), instead of the Consumer Price Index, to define prices administered by contracts. Part of the IGP comes from wholesale price changes, which is highly related to exchange rate fluctuations.

Actually, this low rate was the result of exchange rate populism, since it was achieved due to a substantial appreciation of the Real. Given the fall in the inflation rate, the nominal interest rate fell, but the real interest rate remained above 10% in the beginning of 2007. Not surprisingly, the GDP growth rate presented a dismal rate of 2.8% (according to the last estimates of January 2007). This is certainly a quasi-stagnant rate for the Brazilian economy given the 1.5% population growth.

1.1.3 THE HIGH INTEREST RATE

The previous overview of IT in Brazil gives us the tools necessary to make an analysis of the Brazilian economy in the period. We will discuss two main issues: *a*) the reasons why the interest rate is so high; *b*) the interest rate/exchange rate trap. Along with these topics, some others will be analyzed: *i*) the inconsistency faced by the IT system; *ii*) the indexation of public services; *iii*) the indexation of the basic interest rate (the Selic rate); *iv*) fiscal policy in Brazil; *v*) monitored prices; *vi*) economic growth and unemployment. In addition to that, we will propose some solutions to the traps.

1.1.3.1.1.1.1Table 1

1.1.3.1.1.1.2Selic interest rate - in real terms (a.a.)

	Nominal Selic Rate (%)	Inflation (Broad CPI)	Real Selic
1999	19.00	8.94	10.06
2000	15.76	5.97	9.79
2001	19.05	7.67	11.38
2002	24.90	12.53	12.37
2003	16.32	9.30	7.02
2004	17.74	7.60	10.14
2005	18.00	5.69	12.31
2006	13.25	3.14	10.11

Source: Banco Central do Brasil

Before we discuss interest rate in Brazil, we must define 'the interest/exchange rate trap' that our economy has been facing since the 1994 Real Plan. In very simple terms, it means that the short-term basic real interest rate does not go down below 9% a year in real terms (Table 1).[11] It means, additionally, that long-term interest on federal bonds pays the same Selic interest rate in so far as the National Treasury Bonds (LTNs) are indexed by the Selic rate and are often higher than the interest paid by Brazilian bonds abroad.[12] Third, it means that the capital inflows, stirred up by this high rate, press down the exchange rate, overvaluing the Real: whenever the exchange rate depreciates, as it happened in the 1998 and in the 2002 balance of payment crises, it will soon appreciate again. It is a trap because monetary authorities fear to lower the interest rate below a given threshold. The IT policy reinforced the trap in the moment that it defined the equilibrium interest rate in its model as being around 9% a year in real terms, thus formalizing the threshold. When monetary authorities begin to reduce the interest rate, the exchange rate starts depreciating and inflation rises. It increases much before the lower interest rates could cause demand pressures, but, nevertheless, the CBB stops reducing the interest rate.

Why is the interest rate so high in Brazil? Essentially because the interest/exchange rates trap prevents it from being reduced. A secondary cause is the high level of state expenditures compared to the level of income per capita of the country. Third, because our monetary authorities increase the Selic rate, trying (unsuccessfully) to lengthen the debt maturity (to build a long-term domestic credit market). Fourth, and this is probably the key reason, because the Selic indexes most of the public debt as it links the short term interest rate, the Selic, to the federal Treasury bonds (Barbosa, 2006). This is an inheritance of the times of high inflation that pushes policymakers to keep high the short-term interest rate for fear of not being able to rollover the debt. In behaving in this way, they ignore that the players in the market – the banks particularly – do not have alternative but to apply their short-term resources in government bonds. As Keynes

[11] Only in 2003 it went down, averaging 7.02%. This was a recession year that followed the 2002 balance of payment crisis. The interest rate fell not due but despite the central bank monetary policy.

[12] In other words, they are often higher than the interest rate on T bonds plus the Brazil risk, plus the difference between the American and the Brazilian interest rate.

showed in the volume 2 of his *Treatise on Money*, for monetary policy to work properly, an adequate yield curve must exist, so that policy decisions related to short-term interest rates can be transmitted to the interest rates that actually influence private agents' behaviors. In Brazil, instead of that, the Selic rate directly defines the long run interest rate, i.e., the rate that Brazil Treasury bonds pay, which is the same as to say that there is not a long-term interest rate. There is, however, a proxy of it: the interest rate paid by first class Brazilian corporations abroad equals the risk Brazil plus the interest rate on US Treasury bonds. Presently, this rate is around half (around 5) of the real Selic interest rate (10%). Fifth, the Selic rate is high because the CBB uses it as a tool to solve other sorts of problems, besides controlling inflation. For instance, it is used to: *i*) attract foreign capital; *ii*) reduce the current account deficit when it is increasing continuously; *iii*) increase public savings. Sixth, we have a political economy cause, which plays a major role in explaining the abusive short-term interest rate in Brazil. The Selic rate is high because, since the end of the 1980s, the CBB has been 'captured' by rentiers who make profit with high interest rates, by the financial sector who make their living out of commissions/bonuses coming from rentiers, and by multinationals that increase their envoys of profits with an overvalued Real. Seventh, we have an ideological hegemony cause: Washington, and specifically the IMF, strongly supports the current Brazilian monetary policy – what is not surprising: the conventional orthodoxy that this agency and the international financial markets use to press medium income developing countries is essentially a tool to neutralize their growth (Bresser-Pereira, 2005, 2007).

However, what government authorities should be doing is to make the term structure of interest rates be the consequence of credit flows due to responsible macroeconomic policies. Some of them are the following: *i*) a rigid inflation control (as they are doing); *ii*) a more competitive exchange rate; *iii*) no current account deficit; *iv*) reduction of the debt to exports ratio; *v*) interest rate cut; *vi*) reduction of the public deficit with consequent reduction of the public debt to GDP ratio; *vii*) and, principally, de-linking the Brazilian Treasury bonds from Selic through a financial reform. These issues will be discussed more thoroughly in the fourth session.

There are other explanations. Economists, usually related to financial markets, offer a series of arguments for the high interest rate that remember the fable of the wolf and the lamb.

The classical explanation for our high inflation rate was that Brazil's country risk was too high. Yet, since 2002, Bresser & Nakano (2002) showed that this was false: countries with the same or worse risk classification had much smaller interest rates. Today, after the fall of Brazil's country risk, which has been taking place since the beginning of 2003, the short term interest rate paid by the CBB, which indexes the whole public debt, is higher than the long term interest rate paid by Brazilian enterprises. A second argument is that the interest rate is high because the country has a large public debt. But such public debt is not particularly high by international standards. It is only extremely high if we calculate the debt of the other countries discounting their nominal value by the Brazilian interest rate, and in this case we fall back in the interest rate trap. A third is that our interest rate is high because of the high budget deficit, which is not high by international standards. Another explanation is that our interest rate is high because it is necessary to fight inflation. There is no doubt the interest rate is the right instrument to do that. But the Selic rate does not fluctuate between 0 and 3% in real terms, as it happens in rich countries, and not even between 2 and 5%, as it happens in countries with similar risk classifications. Table 1 shows the real Selic rate for Brazil and Table 2 reports some basic interest rates of selected countries, which confirms what has been said.

A fifth explanation was offered by Arida, Bacha & Lara-Resende (2005). They presented as justification for the high 'natural' rate that would exist in Brazil, or for this ''bad equilibrium', the inexistence of long-term domestic credit. The failure is due to what they call 'jurisdictional uncertainty': the judiciary branch would not protect creditors effectively and such action would bring negative consequences to private savings and investment. It is also misinterpreted as a consequence of market failures deriving from restrictions to currency convertibility, artificial term lengthening of public debt, compulsory saving funds, and forced savings through inflation. Thus, the country would have to live with a short run real interest rate above 9% a year up to the moment that a series of institutional reforms solve these problems and create 'jurisdictional certainty'. There is no doubt that a country like Brazil needs reforms. Nonetheless, the absence of them cannot be blamed for mistakes in the country's macroeconomic policy and mainly for our extremely high basic interest rate. In the past, institutions were less developed in Brazil and, nevertheless, the interest rate was much smaller. Besides, the country's institutions are quite

similar, if not better, to those found in countries with equivalent (or worse) risk classification but with much lower interest rates. Actually, the 'jurisdictional uncertainty' argument makes no sense and neither is it sustained empirically. Holland, Gonçalves & Spacov (2006) formulate a methodology based on Arida, Bacha & Lara-Resende's proposal and their results are highly unfavorable to the jurisdiction uncertainty argument. Their findings indicate that "traditional monetary and fiscal factors are far more relevant to explain the level of short-term real interest rates than the binomial jurisdictional uncertainty/ currency inconvertibility is."

1.1.3.1.1.1.3Table 2

Selected Countries: Basic Interest Rates (2005)

Country	Real Interest Rates	Country	Real Interest Rates
Brazil	11,53	Mexico	4,42
Argentina	-3,36	Peru	1,66
Chile	1,22	Philippines	0,71
China	0,29	Poland	3,64
Colombia	1,49	Russia	1,10
Czech Republic	-0,16	Saudi Arabia	4,22
Egypt	5,00	Singapore	2,01
Hong Kong	2,13	South Africa	3,55
Hungary	2,86	South Korea	1,40
India	1,07	Taiwan	-0,55
Indonesia	-3,03	Thailand	-1,30

Israel	2,51	Turkey	7,01
Malaysia	-0,22	Venezuela	-1,77

Source: *The Economist* (Emerging Market Indicators), February 2006.

Real Interest Rates are short-term nominal interest rates minus consumer prices indices.

1.1.4 THE INTEREST-EXCHANGE RATE TRAP

Despite its high level, the movements in the basic interest rate in Brazil are quite similar to what is observed in other countries, that is, it increases in booms and decreases in downturns. However, our monetary authorities have not been able to consistently reduce this rate. And the result is what we call 'the interest rate trap'. Our argument is that the Brazilian economy was not in conditions to adopt an IT framework as a nominal anchor. And, as it ignored such restriction, the trap became stronger.

The interest rate trap can be observed in many ways. Firstly, whenever the CBB starts a process of interest rate reduction, the exchange rate depreciates, and the consequent changes in relative prices cause a rise in inflation. This is a threat to the IT framework, and the CBB reacts increasing the interest rate again. Thus, paradoxically, a supply-side inflation is fought with a policy aiming at demand contraction. Every time the interest rate is reduced and there is some sign of economic growth, as the current account deficit increases,[13] the government authorities try to avoid a depreciation of the exchange rate by raising the Selic rate and, consequently, increasing unemployment rates (Figure 6). Raising interest rates makes both public deficit and public debt to GDP ratio increase (Figure 3) and, accordingly, reduces the country's international credit, unless the primary surplus is correspondingly increased, usually through an increase in the tax burden.

[13] Since 1994, the current account deficit was close to zero in only one occasion - in 2002. This happened due to the exchange rate depreciation and a strong economic recession. However, this depreciation did not occur because of economic policies but because of confidence crisis. In the first half of 2003, the exchange rate started to appreciate again, which might make the current account deficit appear again.

This trap puts the country's economy in a short-term vicious cycle. In the beginning of 2003, for instance, the government decided to go on with the same macroeconomic policy adopted by the previous administration. This attitude was warmly welcomed by the monetary authorities in Washington and the financial market. As a consequence, credit flowed in again, the country risk lowered, and the exchange rate appreciated once more. But, at the same time, the financial market started to notice that there was no economic growth, that there were some social and political disturbances, and that the primary surplus began to decrease again. In other words, there was a clear sign that results coming from the economic policy were not the best ones. As no one dares to discuss the economic theory underlying the Brazilian monetary policy, the solution is to reduce the country's credit with consequences in terms of increases in the country risk as well as in the basic interest rates.

The exchange rate is a particularly strategic macroeconomic price and it is the other side of the coin of the interest rate trap. Exchange rate depreciations can have a deleterious impact on inflation whereas appreciations can affect negatively the national accounts via levels of exports and imports. A real appreciation can make domestic industry less competitive and, therefore, cause deficit in the current account. According to the conventional theory underlying IT, exchange rate targeting is likely to worsen the performance of monetary policy. Nevertheless, it does not mean that central banks are supposed to neglect the effects of the exchange rate movements on inflation and aggregate demand. In this case, the best solution is a transparent explanation of the exchange rate intervention as a way of mitigating potentially destabilizing effects of abrupt price changes (Mishkin & Schmidt-Hebbel, 2001).

A high interest rate makes the exchange rate go down in dollar terms (or makes the real exchange rate appreciate) because the former is an inverse function of the latter, via uncovered interest parity theory. It took two balance of payments crises for the country to find a way out of this trap. The first one was in 1999 and the second in 2002, as discussed in Session 1. In both cases, the increase in inflation was moderate, much lower than the expected, and more importantly, it decreased as soon as there was a stabilization of the exchange rate. In 2003, this phenomenon was observed again. Although the government attributed the inflation decrease to a rise of the Selic rate, it was the appreciation of the exchange rate the main cause of the reduction

in inflation. But it did not last long. Figure 4 shows that the exchange rate has been appreciating since 2004, which can be harmful to the country's economy in terms of exports. When the monetary authorities decided to intervene in the dollar market, and buy reserves, another facet of the interest rate & exchange rate trap turned apparent: given the extremely high real basic interest rate (around 15%) this policy was severely limited by its high fiscal cost.

1.1.5 MONETARY POLICY REGIME

Despite the low inflation rate that prevails nowadays in Brazil, our view is that the IT system is problematic because it contributes to maintaining our economy quasi-stagnant, and because the low growth rates are directly related to the fact that price stability is not the same as macroeconomic stability. Unemployment remains high in Brazil, the basic interest rate is absurdly high, and the exchange rate is overvalued. In addition to that, it co-exists with high interest rate and keeps the exchange rate non-competitive. The economic policy that conventional orthodoxy proposes to medium income countries and that the CBB faithfully adopts implies the overvaluation of the exchange rate. The Dutch disease and the growth with foreign savings policy press the exchange rate up, overvaluating it. A competent macroeconomic policy must look at such tendency, keeping the exchange rate competitive. Yet, as conventional orthodoxy defines macroeconomic stabilization as price stabilization, it uses the appreciation of the local currency to control inflation. It is impressive how the inflation rate accompanies the exchange rate in the Brazilian economy (Figure 4). Instead of viewing IT policy as a success or a failure, we should see it as the central tool that conventional orthodoxy uses to keep the Brazilian economy in the high interest rate – non competitive trap.

The Brazilian economy was not really prepared for an IT framework given the fact that such policy is designed to manage monetary policy, not to change the monetary policy regime. An IT policy will not apply if a country needs to change the monetary policy regime due, for instance, to its high and inertial inflation, as Brazil was between 1980 and 1994, or due to an absurdly high real basic interest rate and an overvalued exchange rate, as the country has been

experiencing since 1994.[14] It must first solve these problems that IT has not adequate to solve. Actually, as argued in the paragraphs above, Brazil has been facing a high interest rate/low exchange rate trap since 1994, which has kept the country out its macroeconomic equilibrium. If the economic authorities believed that IT was a good route to be followed, they had to first face this trap.

In order to put the country on the right track again several changes must be performed. Actually, a full strategy must be put into action. The aim is to reduce the basic interest rate (the Selic rate) so that it oscillates between 1% and 3% in real terms instead of between 9 and 15%. This reduction will only be possible with the end of the linkage of the long to the short term interest rate, with the en of the indexation of the federal bonds by the short term Selic rate. This practice is a peculiarity in Brazil (a heritage of high inflation) and it is the main institutional explanation for the high interest rate used to pay the service of the public debt. While the short and the long term interest rate remained, in 2006, around 12% a year in real terms, a proxy of the long term interest rate (interest on US Treasury bonds plus Brazil risk) was around 5% a year. Instead of conducting reforms to ends such distortions, the administration adopted in 1999 IT, and limits itself to manage it in the framework of an interest rate trap.

Together with reducing the Selic rate, the Brazilian government will have to start a serious fiscal adjustment. We are aware that the country has been obtaining considerable primary surpluses via tax increases – and not via public spending cuts. But this is not enough. While the interest rate is getting out of the trap, the authorities will have to reduce expenditures and, perhaps, generate a surplus. With this adjustment, not only will the government signal its rejection to any sort of populism but it will also control possible inflationary processes coming from a possible demand shock. With the demand controlled, there is no reason in expecting any inflation increase, except the transitory one coming from the exchange rate depreciation. Could a public debt default be caused by the unconformity of domestic creditors with the lower interest

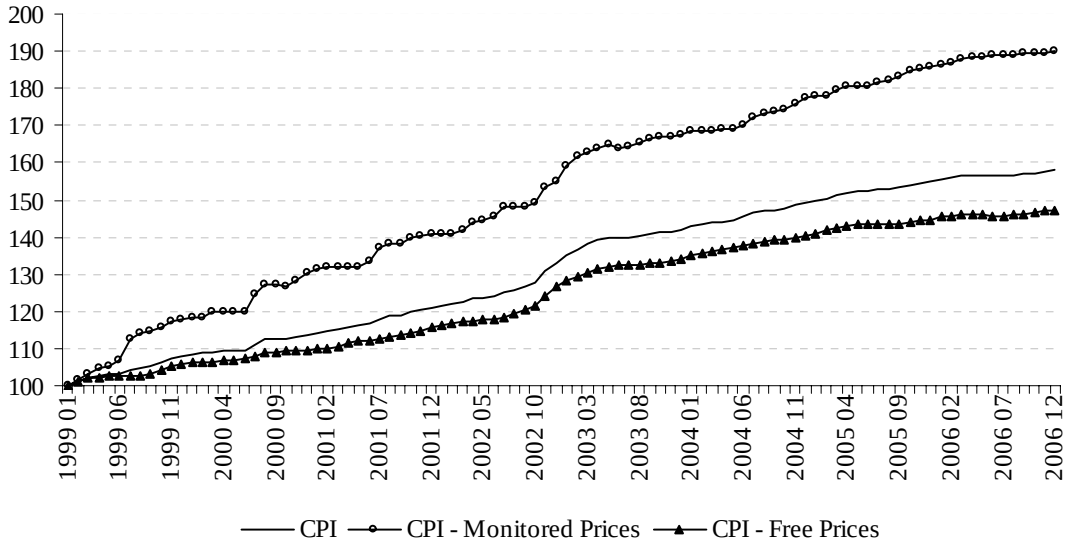
[14] Actually, the real interest rate was high before 1994, but instable, depending on the variations of inflation. On its turn, as inflation was incredibly high, all attention was directed to it.

rates? Such danger is inexistent once the interest rate being reduced is the one related to bank reserves, whose only return on capital possible is the basic interest rate.

Figure 5

Accumulated Inflation Rate (1999:01 = 100)

1.1.5.1.1.1.1



1.1.5.1.1.1.2 Source: Ipeadata

The reduction of the interest rate from its minimum 9% level, and of inflation from its 5% to 6% level will only be reached with another important reform: the end of indexation of public services and, more broadly, the end of any indexation of contracts and administered prices in which the administration is involved as a provider or as a regulator.[15] As already mentioned, the Broad CPI is the price index used for the definition of inflation, and the basket of administered

[15] Administered (monitored) prices are those determined or influenced by government, either directly or through a government agency regardless of market forces. Some products which are part of the basket of administered prices are: water, electricity and sanitary fees, public transport, telephone calls, petrol, public transport, motor licenses and registration, health plans, postage.

prices amounts to 30% of the index. In terms of economic policy action, what is clearly noticed is that policymakers' actions affect considerably the price index variability because of monitored prices. As a consequence, the targets can be reached but there are high social costs involved, low economic growth as well as high interest rates. Monitored prices vary independently of demand factors and, as Figure 5 reports, the accumulated inflation related to the monitored prices increased much more than the other two indices. Therefore, administered prices in Brazil bring a series of problems to the economy. Firstly, the CBB's actions, via its monetary policy instrument, can only affect free prices, which make monetary authorities work on demand shocks that may times do not exist. Secondly, inflation expectations generate a vicious circle in the interest rates and make them extremely high. The result is that monetary policy is very restrictive and severe (Gomes & Aidar, 2004).

Of course, when we say that administered prices should not be indexed, it does not mean that regulating agencies should neglect inflation processes in their price revisions. As their counterparts in other countries, the Brazilian agencies will take inflation into consideration but without referring to a pre-determined price index. Neither does it mean that government would break existing contracts: it would just be strongly motivated to renegotiate them, and institutionally prohibited to make new indexed contracts.

1.1.5.1.1.1.3Figure 6

1.1.5.1.1.1.4Interest rate and Unemployment Rate (RMSP)

1.1.5.1.1.1.5 Source: Ipeadata

The unemployment rate corresponds to the Sao Paulo Metropolitan Area (RMSP) only.

Finally, government authorities should always have in mind that these policies are aimed at bringing economic growth and, as consequence, less unemployment and less social disparities. Monetary policy rules should be seen as a guideline for decision-making and not as a rigid rule. For the unemployment specifically, the relationship between this variable and monetary policy is very important. Contrary to what is argued by some conventional theorists, monetary policy usually has positive and long-lasting effects on real interest rates and, consequently, on economic activity and unemployment. In other words, it influences unemployment rates, more than what has been discussed in the current debate. Figure 6 plots a comparison between the rates of interest and unemployment for Brazil. The graph shows that the unemployment rate in Brazil is high, just like the interest rate, and that any interest rate increase causes more unemployment, meaning that the current monetary policy in Brazil brings a really high social cost (Gomes & Aidar, 2005).

1.1.6 CONCLUSION

This article discussed the current inflation targeting policy adopted in Brazil and the interest rate/exchange rate trap the country is facing due to its high basic interest rate. Firstly, we made a quick overview of the monetary policy in Brazil under inflation targeting, from the date of its implementation until the end of 2005. Secondly, we analyzed the problems faced by the Brazilian monetary authorities under the argument that our inflation targeting system faces some important theoretical problems and, more importantly, it faces an inconsistency dilemma once it was designed to be used for purposes of 'management' of monetary policy , and not for 'changing' the 'monetary policy regime.

The 1994 Real Plan was a successful reform that de-indexed the Brazilian economy and, so, neutralized inflationary inertia. Yet, it was left incomplete in so far as administered prices and the public debt remained indexed. However, instead of working toward this objective, the Brazilian monetary authorities accepted the IMF recommendation and adopted an exchange rate anchor between 1995 and 1998. Its outcome was catastrophic. Nevertheless, an inflation targeting policy was introduced in Brazil in 1999 as a substitute for such exchange rate anchor. This monetary reform ought to have been preceded by reforms that ended with all forms of indexation. Yet, instead of developing a strategy to reduce the interest rate, involving such reforms and the deepening the fiscal adjustment, the government continued defining inflation as the main problem to be faced, and adopted a formal inflation targeting policy. The consequence was that, since 1999, the real interest rate remained incredibly high: the Brazilian economy was unable to escape the interest rate trap.

Perhaps, the best strategy should have been the search for a long term convergence of inflation. For instance, Chile and Mexico acted that way before introducing their respective inflation targeting policies. They first pursued the equilibrium of their economies and began releasing inflation projections with long-term aims. In other words, they allowed inflation to converge smoothly and the result was a much smaller social cost, when compared to Brazil. In the case of Chile, which is a model of competent macroeconomic policy, the entire strategy started to be analyzed back in 1991. However, the full adoption of a mild form inflation target

policy happened only in 2000, when they started releasing their inflation reports. For the Mexican case, the strategy was similar but in different periods.

In the Brazilian case, there was not a proper preparation of the economy prior to the adoption of the system. In order to adopt the IT policy, authorities should have prepared the key variables of the economy in order for them to converge more smoothly. If they had, first, concentrated in getting rid of the interest rate/exchange rate trap in which the economy was immersed, they could, in a second moment, adopt an IT policy. Instead, excessively concerned with inflation, the authorities hastened to adopt a new nominal anchor. In consequence, the exchange rate remained highly unstable and the economy failed to achieve the inflation target in some years. Worse, the real interest rate by the public debt remained abnormally high – which involved high fiscal and development costs. Therefore, Brazil needs an urgent change in its priorities when regarding to monetary policy. Nowadays, the high interest rate, not inflation, is the main problem to be faced. By only solving this problem, and only lowering the interest rate to levels consistent to its country-risk, Brazil will be able to have international levels of inflation, instead of keeping it around 5% a year. To successfully perform this action, however, the involvement of the entire society and government will be necessary.

1.1.7 REFERENCES

Arestis, P., L.F. de Paula, & F. Ferrari-Filho. (2006) "Inflation targeting in emerging countries: the case of Brazil". In: *Proceedings of the 34th Brazilian Economics Meeting _ANPEC.*

Arida, P., E.L. Bacha, & A. Lara-Resende, (2005) "Credit, interest, and jurisdictional uncertainty: conjectures on the case of Brazil". In: F. Giavazzi, I. Goldfjan, & S. Herrera, eds. (2005) *Inflation Targeting, Debt, and the Brazilian Experience, 1999 to 2003*. Cambridge MA: The MIT Press.

Aglietta, M. & V. Borgy (2005) "L'heritage de Greenspan: Le triomphe de la politique discritionnaire". *Bouletim du Cepii* 251, December.

Ball, L (2000) "Policy rules and external shocks". NBER working paper 7910, September 2000.

Ball, L. & N. Sheridan (2003) “Does inflation targeting matter?” NBER working paper 9577, march.

Barbosa, F. H. (2006) “The contagion effect of public debt on monetary policy: the Brazilian experience”. *Brazilian Journal of Political Economy* 26(2): 231- 238.

Barro, R. J. & D. B. Gordon (1983) “Rules, discretion and reputation in a model of monetary policy”**.** *Journal of Monetary Economics* 12, July: 101-121.

Blanchard, O. (2005) “Fiscal dominance and inflation targeting: lessons from Brazil”. In: Giavazzi, F, Goldfjan, I. & Herrera, S. (ed.) (2005) *Inflation Targeting, Debt, and the Brazilian Experience, 1999 to 2003*. Cambridge MA: The MIT Press.

Blinder, A. & Reis, R. (2005) "Understanding the Greenspan standard". FRB of Kansas City Symposium, Jackson Hole, August.

Bogdanski, J, A. A. Tombini, S. R. Werlang (2000) “Implementing inflation target in Brazil”. *Banco Central do Brasil Working Paper Series 1*, Brasília.

Bresser-Pereira, L. C. (2002) “O Segundo Consenso de Washington e a quase-estagnação da economia brasileira”. *Brazilian Journal of Political Economy*, 23 (3): 3-34.

Bresser-Pereira, Luiz Carlos (2004) “Brazil’s quasi-stagnation and the growth *cum* foreign savings strategy”. *International Journal of Political Economy* 32(4): 76-102. Bresser-Pereira, L. C. (2005) “Macroeconomia pós-Plano Real: as relações básicas”. In: Sicsú, J.; de Paula, L.F & Michel, R. orgs. (2005) *Novo-Desenvolvimentismo - Um Projeto Nacional de Crescimento com Eqüidade Social.* Barueri: Manole; Rio de Janeiro: Fundação Konrad Adenauer: 3-47.

Bresser-Pereira, L. C. (2006) “The two methods of economics”. *Texto para Discussão* da EESP/FGV 148, maio 2006. Trabalho apresentado à XV[a.] Conferência Anual da Sociedade Européia para uma Economia Evolucionária. Maastricht, 7 a 10 de novembro de 2003.

Bresser-Pereira, Luiz Carlos e Paulo Gala (2007) “Why foreign savings fail to cause growth”. *In* Eric Berr, org. (2007) Livro a ser pulicado por Elgar Publishers. Disponível em www.bresserpereira.org.br.

Bresser-Pereira, L.C. & Y. Nakano (2002) “Uma estratégia de desenvolvimento com estabilidade”. *Brazilian Journal of Political Economy*, 21(3): 146-177.

Diaz-Alejandro, C. (1981) "Southern Cone stabilization plans". *In* W. Cline and S. Weintraub, eds. (1981) *Economic Stabilization in Developing Countries*. Washington: The Brookings Institution.

Favero, C.A. & F. Giavazzi (2005) “Inflation targeting and debt: lessons from Brazil”. In: Giavazzi, F, Goldfjan, I. & Herrera, S. (ed.) (2005) *Inflation Targeting, Debt, and the Brazilian Experience, 1999 to 2003*. Cambridge MA: The MIT Press.

Figueiredo, L. F., P. Fachada, Goldestein, S. (2002) “Monetary policy in Brazil: remarks on the inflation targeting regime, public debt management and open market operations”. *Banco Central do Brasil Working Paper Series 37*. Brasília.

Gomes, C. & O. Aidar (2004) “Metas inflacionárias: preços livres e administrados no brasil: uma análise econométrica’. *Proceedings of the 32nd Brazilian Economics Meeting - Brazilian Association of Graduate Programs in Economics (Anpec).* João Pessoa, PB.

Gomes, C. & O. Aidar (2005) “Cinco Anos de Metas de Inflação no Brasil: Sucesso ou Fracasso?” *Proceedings of the 10th Brazilian Meeting of the Political Economics Society*. Campinas - SP. 2005.

Holland, M., F.M. Gonçalves, A.D. Spacov (2006) “Can jurisdictional uncertainty and capital control explain the high level of real interest rates in Brazil? Evidence from panel data”. *Revista Brasileira de Economia*, 2006: 02-28.

Kydland, F. E., E. C. Prescott (1977) “Rules rather than discretion: the inconsistency of optimal plans”. *Journal of Political Economy* 85: 473-492.

Le Heron, E. (2003) “A new consensus on monetary policy?” *Brazilian Journal of Political Economy*, 23(4): 3-27.

Le Heron, E. & E. Carré (2006) “Credibility *Versus* confidence in monetary policy”. *In* R. Wray and M. Forstater, orgs. *Money, Financial Instability and Stabilization Policy*. Cheltenham: Elgar Press (in the process of edition).

Minella, A., P. S. Freitas, I. Goldfajn, M. K. Muinhos (2003) “Inflation targeting in Brazil: constructing credibility under exchange rate volatility”. *Journal of International Money and Finance* 22: 1015–1040.

Mishkin, F. S. & Schmidt-Hebbel, K. (2001) “One decade of inflation targeting in the world: what do we know and what do we need to know?” *NBER Working Paper Series 8397*, Cambridge, MA.

Pinheiro, A.C., F. Giambiagi, M. M. Moreira (2001) “O Brasil na década de 90: uma transição bem sucedida?” *BNDES Working Paper Series 91*, November.

Romer, D. (2001) *Advanced Macroeconomics*. 2nd. ed. New York: McGraw-Hill/Irwin.

Svensson, L. O. (1998) “Inflation targeting as a monetary policy rule”. *NBER Working Paper Series 6790,* Cambridge, MA.

Taylor, J. B. (1993) “Discretion versus policy rules in practice”. *Carnegie-Rochester Conference Series on Public Policy* 39: 195:214.

Taylor, J. B. (2000) *Using Monetary Policy Rules in Emerging Market Economies*. Available on: http:/www.standford.edu/~johntayl/ papers/Bank of Mexico Paper.pdf.

Werlang, S. (2006) “A meta para a inflação de 2008 e a taxa de juros”. *Valor Econômico*, July 10, 2006.