

Implementing Inflation Targeting in Brazil: An Institutional Analysis¹

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1. Introduction

In the New Consensus view, Central Banks (CBs), when following an Inflation Targeting (IT) regime, should direct their monetary policy toward an inflation target quite independently of fiscal policy authorities (Fontana & Palacio-Vera, 2004; Kriesler & Lavoie, 2004). Nevertheless, some of the principal proponents of IT stress that wise CBs must always consider future fiscal and output consequences of their monetary policies (Bernanke *et al.*, 1999; Blanchard, 2004).

We agree with these critics against the separation of monetary and fiscal policies – something formally inevitable following the current mainstream obsession with CB independence, in reality a corollary of the IT proposition – for this divorce of monetary and fiscal policies affect the performance and costs of economic policies, compared to more concerted ones (Mendonça, 2001; Arestis & Sawyer, 2003). In addition, fiscal policies can be used countercyclically, both theoretically and empirically (as in many countries – and the Scandinavian countries are true examples of that), with faster results and lower costs when compared to monetary policies, for a rise in interests implies in higher costs for all the economy while, for instance, planned and countercyclical changes in government spending have no implications over costs or, at least, circumscribe these implications almost only to certain sectors directly affected. We should also not forget, as Keynes (1936:164) taught us long ago, that in times of low marginal efficiency of capital, a decrease in interest rates may not be enough and/or act more slowly than what is needed to produce an increase in investment, production and employment.

As a matter of fact, we can even support IT policies if their targets were seen just as a “focusing device” guiding the economic policy, notwithstanding other targets, as, chiefly – in the short run – output growth, employment and – in the long run – technology and human development (Wray, 1998; Bibow, 2005). However, it is important to highlight that, considering what we currently know, it is not possible to determine if countries which follow an IT have lower inflation *and* output variability than those which follow other policies (Bernanke *et al.*, 1999:6-7).² However, some

¹ I would like to thank Prof. Marcos R. Vasconcelos, to whom this paper is dedicated, for many important observations. I would also like to thank the important contributions of Roberto H. Gremler and Prof. Elton E. Casagrande. However, as usual, all the remaining errors are totally of my responsibility.

² As Mishkin and Schmidt-Hebbel (2002:181, n. 10) explain: “Inferences about inflation targeters’ success are still highly tentative, in view of the ambiguities surrounding the sample definitions for inflation-targeting countries, the possible systemic equivalence of some features of inflation targeting with those of alternative monetary regimes, the relevant potential and counterfactual selection bias, and mutual causation of inflation-targeting adoption and country performance.”

economists, even Post-Keynesians and/or economists who do not belong to mainstream economics (Arestis *et al.*, 2002; Bibow, 2005), try to demonstrate empirically that IT can provide better results than other sets of policies, for instance, in terms of inflation volatility reduction and output-gap fluctuations, despite some opposing data and opinions.³ Mishkin and Schmidt-Hebbel (2002:182-183) affirm that IT helps countries to achieve lower inflation rates than they would in the absence of this regime, in spite of not yielding inflation below the rates of developed countries (DCs), which did not opt for IT; produces stronger capabilities to stand shocks (see also Vega & Winkelried, 2005:12); and reduces inflation persistence, turning expectations and policy making more forward looking and weakening the weight of the past. Vega and Winkelried (2005:12) also point that IT helps to diminish the variance of inflation rates.

Be as it may, in our view, as well as in that an author like Svensson (2005), it is essential that the policies chosen and the corresponding institutional framework must be flexible enough to achieve or approximate full employment, at the same time as they look for low inflation rates. This is why it is also important to stress the different possibilities concerning IT regimes and their institutionality. For instance, one can have headline or core inflation; more or less flexibility in relation to supply and/or demand shocks and output variability; longer or shorter targeting horizons (the period during which expected inflation and inflation targets should be in line); etc. (Bernanke *et al.*, 1999; Arestis *et al.*, 2002). Such variegated possibilities for the institutional framework of an IT regime show us the extreme relevance of studying and understanding its impact on the behavior and performance of economies. Moreover, in most of the IT debate there is a neglect of the relevance of institutional and historical roots of different countries for the design of specific policies **in real cases**.

We will deal theoretically (Strachman & Vasconcelos, 2001) and empirically with this disregard when presenting some of the main characteristics of IT implementation in Brazil (in July 1st, 1999 – Bogdanski *et al.*, 2000). Just to mention what may be the most important aspect, we underscore the high interest rates **long before and after IT implementation**, in an example of predominance of financial interests producing the highest real interest rates in the world for a long time (even now, in September 2005). Thus, very ambitious – i.e., low – inflation targets seem not to be adequate to a still quite indexed economy (chiefly when considered privatized utilities prices – Fraga *et al.*, 2003), with very liquid financial assets (mainly public debt), fiscal dominance and liable

³ Arestis *et al.* (2002:540-544), Muscatelli *et al.* (2002:495-496,521). As Greenspan (2004) explained, “presumably, we will not know for sure the significance of formal inflation targeting as a tool until the world economy is subjected to shocks of sufficient magnitude to assess the differential performance of those who do not employ formally announced inflation targets. To date, inflation has fallen for formal targeters, but it has fallen for others as well.” And then he adds “that the actual practice of monetary policy by inflation-targeting central banks now closely resembles the practice of those central banks, such as the European Central Bank, the Bank of Japan, and the Federal Reserve, that have not chosen to adopt that paradigm.” See also Bernanke *et al.* (1999: 282-283).

to external (Balance of Payments – BP) shocks. This implies in a pernicious bias toward a mix of very high interest rates (to achieve the inflation targets and to manage some of the BP problems), huge public debt and its service (interests) costs, with, paradoxically, little attention to this fiscal dominance and to the possibility of a more coordinated procedure among fiscal and monetary authorities (Central Bank of Brazil, 2000:91; Mendonça, 2001; Fraga *et al.*, 2003; Galvão, 2005). This requires tough fiscal policies in order not to be subject to an explosion of fiscal debt in relation to GDP, in a society not institutionally prepared to resist some special interests (Safatle & Galvão, 2005).

The paper is structured as follows. In Section 2, we consider the main aspects of IT regimes, their rationality and the evidence supporting (or not) the preference for this kind of regimes – in any of its possible forms – or alternatives. Section 3 explains the main logic behind the adoption of IT in Brazil, since July 1st, 1999, and the specific institutional framework build for it. In Section 4, we present some consequences of these choices. In Section 5, we conclude briefly.

2. The Main Aspects of IT Regimes

In spite of remarks of many (monetary) policy makers, e.g., Bernanke *et al.* (1999:IX), that “monetary policy is notoriously an art rather than a science...”, many practitioners insist to be excessively rigid in their prescriptions and, worse, in the very policies which they follow when in government or a CB position (Greenspan, 2004). Would that be because of a flaw of the theories – as we saw, more art than science – would demand strictness for some authors and/or practitioners, since one paradoxically might try to equalize strictness to the pretense to be or seem scientific as a result of a feeble science? Or would that be a consequence of the general (institutional) environment in which these policies are implemented, with some environments requiring, for many reasons, much more stringency than others? And in the specific case of IT? Why do some countries try to achieve very low inflation rates despite many obstacles and lots of “market imperfections”, making this pursuit a serious hindrance to economic growth and development? We should also keep in mind that the very commonsensical trade-off between inflation and growth is just not always true (Bibow, 2005). In this paper, we will try to give some answers or at least hints for these questions. We will focus in the analysis of IT regimes, **not in monetary policy in general**, for this would be beyond the scope of this paper. First, we need to know what is IT.

“Inflation targeting is a framework for monetary policy characterized by the public announcement of official quantitative targets (or target ranges) for the inflation rate over one or more time horizons, and by explicit acknowledgement that low, stable inflation is monetary policy’s primary long-run goal. Among other important features of inflation targeting are vigorous efforts to

communicate with the public about the plans and objectives of the monetary authorities, and, in many cases, mechanisms that strengthen the central bank's accountability for attaining those objectives.”(Bernanke *et al.*, 1999:4; see also Svensson, 2005:1). However, observe that these same important supporters of IT regimes stress that IT is a **framework** not a **rule** for monetary policy, meaning that IT gives leeway to discretion – to **constrained discretion** – in contrast with immutable rules, as, moreover, what ought to be the conduct of all monetary authorities (Bernanke *et al.*, 1999:5-6; Greenspan, 2004). **Constrained discretion** shall be understood as “**a conceptual structure and its inherent discipline on the central bank, but without eliminating all flexibility, [thus] inflation targeting combines some of the advantages traditionally ascribed to rules with those ascribed to discretion.**”(Bernanke *et al.*, 1999:6, emphases in the original).

One of the authors of that much referenced book, wrote a few years after, in other company (Mishkin & Schmidt-Hebbel, 2002:174), that “full-fledged inflation targeting is based on five pillars: absence of other nominal anchors, an institutional commitment to price stability, absence of fiscal dominance, policy instrument independence, and policy transparency and accountability. **While the second through the fifth of these pillars are necessary for effective conduct of monetary policy under any regime, they are particularly important prerequisites for effective policy under inflation targeting.**”(our emphases). For Mahadeva and Sterne (2002:624, n. 12) other definitions of IT also underline the absence of other explicit targets. Nevertheless, Svensson (2005:1-3) includes at least an explicit concern with output stability and growth besides the more obvious one with a low and stable inflation, as well as explicit decisions over **projections of target variables** (“forecast targeting”) and the **instrument rate** (the short nominal interest rate) to reach those targets.

The rationale supporting IT regimes – chiefly for supporters of mainstream – rests on three main arguments: 1) economists and policy-makers are less confident in the capability of monetary policy (and economic policy, in general) to soften short run fluctuations in the economy, without bad effects in the long run, with the exception of cases of huge oscillations. Therefore, when monetary policy-makers determine that a low inflation rate is their main goal they would just be accepting the reality of what monetary policy can or not do, according to mainstream; 2) there is now **almost** a consensus that even moderate rates of inflation can be very harmful to economic growth and efficiency, and, consequently, that low and stable rates of inflation are important for attaining other economic aims, in addition to being a prerequisite for an economic growth commanded by the private sector (a market-driven growth – Arestis *et al.*, 2002:528); and 3) IT would propitiate a simpler framework for the policy-makers to communicate their intentions and measures with the public as well as to provide “some degree of accountability and discipline on the central bank and on the government itself.”(Bernanke *et al.*, 1999:10).

An IT would then serve as a nominal anchor for monetary policy⁴ – for example, it would consider only secondarily goals other than short run inflation stabilization and thus the policy makers would need to present “consistency and rationality... that they might not otherwise exhibit.”(Bernanke *et al.*, 1999:11). Moreover, IT can convey *transparency*⁵ and also *flexibility*⁶ to the general public (Svensson, 2005:1-2,15-17,20). Of course, one main issue is to combine these two characteristics of economic policies which are most of the time contradictory, since the most transparent policies are by and large non-contingent, in the sense that a sudden need to change policies because of a demand or supply shock must lead to precise and previously specified actions and be clearly transmitted to the public. However, on the other hand, flexibility requires that the CB ought to devise good measures to respond to some unforeseen events (Bernanke *et al.*, 1999:26-27; Greenspan, 2004), i.e., transparency relates mainly with how to treat *ex-ante* events, while flexibility concerns how to respond wisely *ex-post* to these same occurrences.

We can append two comments to these three arguments: a) why should monetary or economic policy be constricted to the short run with no results in the long period? Why accept this friedmanian statement that Phillips curve has an upward slope in the short run, but is vertical in the long run at NAIRU or at a similar supply-side concept, as the output gap (Bernanke *et al.*, 1999:13-14; Kriesler & Lavoie, 2004)? For, as we see in point 2, if inflation is harmful in the short run but meaningless in the long run, why would a policy maker bother with policy-making, since in the long run everything would reach its natural equilibrium, even the growth rate? But which are these natural rates? Those, for instance, of Brazil – a little more than a 2% annual average economic growth rate, over a decade of low inflation rates or even considering the last 25 years – or those of China – something close to an average annual growth of 9 to 10% over the same period, depending on the data source? Does these data not make it clear that the long run may be the result of successive “short runs”? It is inevitable to remember Keynes, since the outcome of this almost consensual view about

⁴ As explained by Bernanke *et al.* (1999:19-21), “in a paper-money system there is a need for some additional constraint on monetary policy, called a *nominal anchor*, to tie down the price level to a specific value at a given time.(...) Conducting monetary policy without a firmly established nominal anchor is possible but risky.(...) An effective commitment to long-run price stability is just such a nominal anchor, since (given the current level of prices), a target rate of inflation communicates to the public the price level the central bank is aiming to achieve at specified dates in the future.”(italics in the original).

⁵ Transparency can be defined as the “clear and timely communication of policy objectives, plans, and tactics to the public. Among the goals of policy transparency are the heightening of public understanding of what monetary policy can and cannot do; the reduction of economic and financial uncertainty; and the strengthening of the accountability to the government and the general public of the monetary authorities.”(Bernanke *et al.*, 1999:27). See also Svensson (2005).

⁶ “By *flexibility* we mean the ability of central banks to react effectively to short-run macroeconomic developments within the broad constraints imposed by the inflation targeting framework. Over the long haul, these two features [transparency and flexibility] tend to be mutually reinforcing; in particular... transparency often serves to contribute to flexibility of policy over the long run. At the level of day-to-day implementation, however, operational choices that promote transparency sometimes end up reducing flexibility, and vice-versa. Thus, *in the design of an inflation-targeting strategy, often a key issue is the proper balancing of transparency and flexibility.*”(Bernanke *et al.*, 1999: 26, emphases in the original).

the inefficacy of economic policies – at least for those who follow them inadvertently, as is the case of Brazil – may be really not only that “in the long run we are all dead”, but also in the very short run in which we live (Arestis & Sawyer, 2003:11).

As we will see in the next two sections, this should be viewed as more than a coarse joke. We know, of course, the deleterious effects of high inflation rates whether on the short or long runs.⁷ But these do not take us “naturally” to the totally opposite view, i.e., that any inflation rate, even low, is harmful and should be controlled with every effort, even that of permanent low economic growth and development. Indeed, what seems to be undeniable is the death of the commitment, mainly by the mainstream, with full employment, although there is still a commitment – at least by some authors – with a satisfactory rate of employment (Greenspan, 2004). As asserted by Bernanke *et al.* (1999:16): “[t]o forestall confusion: Our criticisms of ‘policy activism’ does not imply that policy-makers should be reluctant to move the policy levers, but rather that doing so in an attempt to maintain continuous full employment is likely to be counterproductive. Indeed, a focus on price stability, as implied by the inflation-targeting approach, may require active manipulation of monetary policy instruments.” Furthermore, economic policies, in general, including monetary policies, have important effects on output and employment, **in the short and long runs**; potential output is not directly observable, making it impossible any rather precise determination of the output gap; investment and the ensuing variation of capacity and capacity utilization are all determined endogenously, as explained long ago by Kalecki; and, finally, there is no NAIRU and no supply-determined natural growth rate (Fontana & Palacio-Vera, 2004; Kriesler & Lavoie, 2004:6-8; Arestis & Sawyer, 2003:12). Instead, any “natural” rate of growth is determined by the actual rate of growth and the combined behavior of demand and supply which make this growth happen.

And b) why is it so important for the monetary policies to be understood by the public, in order to provide “a focus for the expectations of financial markets and the general public”(Bernanke *et al.*, 1999:11)? Certainly it is relevant that the public understands the economic policies which affect their own living, but this is not the same as stressing that this simpler way to create policies and communicate them to the public implies that IT is the policy to be adopted. We are well aware that IT is not the worst policy set in the current macroeconomic theory shelves. For at least in many cases, IT policies – explicit or implicit (Greenspan, 2004) – seem to be theoretically and empirically

⁷ We can mention the diminishing efficiencies of product and labor markets and the less effort to increase these efficiencies, since prices can always escalate; the difficulties in monitoring one’s own costs and also suppliers’ and competitors prices; the reduction in real wages and thus, the distributional effects, for wages are not adjusted as fast as will be needed not to lose part of their purchasing power; the tentative of policy-makers to control inflation through a lasting deflationary policy, with high interest rates and conservative fiscal policies; the curtailment of the terms of financial assets, given the higher uncertainty about the future value of long term debts; the tax distortions and/or governments’ fiscal difficulties; etc.

concerned with employment, as, for instance, in the cases of the US and the UK, in stark comparison to the examples of Germany (pre EU), EU and, of course, Brazil (Bernanke *et al.*, 1999; Bibow, 2005; Johnson, 2005, Valor Econômico, 2005). Nevertheless, we could offer a sort of discrete list that would go, on one extreme, from policies explicitly concerned with full employment as their main objective, as in Wray (1998), to policies that follow a kind of double or triple aim (inflation, employment and economic growth),⁸ and to, on the other extreme, IT regimes (almost) entirely focused in inflation rates, etc.

(Parou aqui) In addition to those general themes concerning IT, however, there are also some operational issues, to which we now focus (Bernanke, 1999:26-38). First, what measure of inflation should be used, that is to say, what should be the definition of the target? There are different answers to this question, from supporters of headline inflation to those which are in favor of core inflation. Here again there is a trade-off between transparency and flexibility. A full price index, one with which people are familiar and which is also broad-based and accurate, gives a maximum in terms of transparency – people should not think that the index chosen is a form of the CB guarantying the most favorable outcome.⁹ Nevertheless, an index which excludes price modifications in specific sectors and “one-time price jumps that are unlikely to affect trend or ‘core’ inflation – for example, a rise in a value added tax or in a sales tax”(Bernanke *et al.*, 1999:27), would be the best choice regarding flexibility. Thus, the chosen index should at least be isolated from the first-round effects of price changes in items such as food and energy, because of their vulnerability to supply shocks. This specification *ex-ante* of items which will be outside core inflation has the advantage of allowing no discretion for economic authorities to change prices indexes after a supply shock, preserving credibility. That is why they are more common than escape clauses (Mishkin & Schmidt-Hebbel, 2002:185). Arestis *et al.* (2002:531) show many problems connected with the choice of headline inflation, since in the presence of sticky prices and price shocks, targeting headline inflation can severely destabilize the output growth (“the output gap” – but do not forget our brief critical remarks on this and other widely used concepts). For monetary authorities ought to try to compensate the effects of well known *ex-ante* or *ex-post* price shocks on headline inflation, which shall cause changes in the opposite direction in some of the sticky prices of the economy – normally with important reductions of the supply and/or demand in many markets (of goods, services, work, etc.).

⁸ Mendonça (2001); Svensson (2005). As highlighted by Bernanke *et al.* (1999:21), “inflation targeting does not preclude some degree of policy activism; rather, it provides a framework which allows the pursuit of objectives other than price stability in a more disciplined and consistent manner.”

⁹ Bogdansky *et al.* (2000); Minella *et al.* (2003a; 2003b); Mishkin and Schmidt-Hebbel (2002:185-186). Bernanke *et al.* (1999:28) stress that one way to achieve flexibility and transparency is to choose an index with data compiled by an agency completely independent of CB or the monetary authorities.

Second, what nominal value should the policy-makers choose for the target? One answer, not very practical, since it does not give a clear guidance, is a rate of inflation – as suggested by Greenspan – so low that no agent, business or household, would have to consider it in her/his decisions (Bernanke *et al.*, 1999). However, a zero or very low inflation rate is not recommended for several reasons, as the difficulties to lower nominal interest rates in an eventual recession; risk of real deflation and the ensuing risks of liquidity and solvency problems, for both the productive and financial sectors.¹⁰ This explains the reasons for the majority or all CBs in developed countries target rates from 1% to 3% per annum, i.e., an IT has a ceiling as well as a floor for the inflation rate, and the economic authorities shall heed deflations as well as high inflation rates (Bernanke *et al.*, 1999:28-30; Central Bank of Brazil, 2000:90). Thus, CBs should also not be obsessed to an excessive degree with inflation rates at the expenses of output stability, for this can make it lose the public support (Mishkin & Schmidt-Hebbel, 2002:200).

Nevertheless, what should be the inflation targets in developing countries (DEVCS)? The same as those in developed ones? For there are many market imperfections in DEVCS, with potential or real shortage of foreign exchange and/or of supply of goods and services in many sectors, which can breed a higher inflation bias than in developed countries (DCs). Furthermore, the process of trying to overcome these supply shortages by means of investment can generate a demand inflation bias which could be tolerated in order not to dampen the very process of economic development. Consequently, the benefits of an obsession with low inflation are unclear, for this is commonly generated by tight monetary policies with severe costs over economic performance and living standards, reducing economic, industrial and employment growths. As Fontana and Palacio-Vera (2004:2) expound, there are theoretical and empirical arguments showing that transitory but frequent changes in the level of aggregate demand may have permanent consequences on output and employment. “Numerous empirical studies suggest that moderate levels of inflation (which, depending on the study, range from 10 to 40 per cent) have little or no cost in terms of economic growth. These studies find that the economic costs of inflation are introduced only at very high levels of inflation (by which is meant inflation rates above 40 per cent per year). It is notable that this conclusion is shared by Robert Barro...”(Chang and Grabel, 2004:185). Hence, there seems to be no costs for inflation rates of under 20% in DEVCS, in terms of long run growth, investment and inflows

¹⁰ “In short, undershooting a zero inflation target (i.e., deflation) is potentially more costly than overshooting a zero inflation target by the same amount.”(Bernanke *et al.*, 1999:30). Moreover, a deflation raises real interest rates – they cannot be negative, and negative interest rates can be a powerful instrument for economic recovering in a recession – what can further induce an economy into more deflation (Bernanke *et al.*, 1999:29,289-290; Central Bank of Brazil, 2000:87).

of FDI. Furthermore, annual inflation rates from 15 to 30 per cent can be sustained for a long time, and Colombia and mainly Brazil are clear examples of this behavior (Chang and Grabel, 2004:186).

The main issue is, notwithstanding, whether and when this inflation rate starts to be uncontrollable and begins to jump to levels above this maximum ceiling of, say, 40 or 50 per cent. In such cases, i.e., after long periods of unrestrained inflation and restrictive economic policies, what should be the target choice or the maximum accepted inflation rate of an IT policy-maker or even of a non-IT one? We agree that after long periods of high inflation it is important to achieve credibility about price stability, in order not to bring back high uncertainty about inflation rates, return on productive and financial investments, real exchange rates and, so, capital (including FDI) inflows and outflows, etc., destabilizing an economy and even directing it to recession. This is well known and was seen many times recently, principally in Latin America. However, DEVCs are still prone to more instability than DCs, for the reasons stated before, to which we should add the quite common foreign exchange crises these countries have been periodically subjected to – for they are the reason of the “irrational” and “very expensive” (in terms of fiscal spending) obsession of others DEVCs, the Asian ones, to hoard large amounts of foreign currencies in their CBs.¹¹ Hence, DEVCs should try to opt for higher inflation targets, be these the central target and/or the admitted range.¹²

Third, what should be the relevant time horizon? Bernanke *et al.* (1999:31) assert that ITs set beyond a range that goes from one to four years are meaningless, since either the time horizon would be too short, not giving enough leeway for the policies to achieve their aims, or too long, imparting

¹¹ As underlined by Minella *et al.* (2003a:24-25), “the level of reserves works as insurance against the occurrence of this bad equilibrium.” It facilitates adjustment to sudden changes in capital flows, reduces excessive exchange rate volatility and raises the supply of exchange rate insurance (see also Minella *et al.*, 2003b:122). One interesting comment in this respect is that the large amounts of US dollars in the CB of China earns **positive** fiscal returns, since they are invested mostly in US Treasury Bills, whose interests are **higher** than those of the People’s Bank of China.

¹² “[T]he Brazilian economy has been hit by frequent and large shocks. Most of them are related to its position as an emergent market economy – high volatility of country risk premium and of the exchange rate – and to some structural transformations that led to a change in relative prices. The volatility of the inflation rate and exchange rate in Brazil is still one of the highest in inflation targeting economies.”(Minella *et al.*, 2003b:131). “Therefore, exchange rate volatility is an important source of inflation variability. The design of the inflation-targeting framework has to take into account this issue to avoid that a possible non-fulfillment of inflation targets as a result of exchange rate volatility may reduce the credibility of the central bank.”(Minella *et al.*, 2003a:29). We also emphasize that the much lower level of reserves of Latin American countries, as compared to Asian DEVCs, is the primary cause of the higher inflation rates and of the inflation targets in these countries, and not their presumed timidity. Besides, DEVCs should not try to achieve very tight inflation targets before they hoard large amounts of foreign reserves, in order not to unstabilize foreign exchange, imports prices and expectations. We stress that the very hoarding will reflect in a bias towards economic, industrial and employment growth – through current account surplus, FDI and hot money controls intended not to permit sudden capital outflows – bringing about all the desired consequences of good economic policies, which will also be accomplished via more modest inflation targets, until a consistent rise in the level of development make possible a “natural” decrease in both inflation rates and targets. Note that the desired consequences of economic development include many results coming from virtuous cycles and cumulative causation – in the sense of Veblen, Myrdal, Kaldor and Cornwall – with economies of scale; development of skills and know-how; cumulative learning; increasing returns; increasing product and process differentiation; increasing specialization and division of labor; etc.; all of these breeding fast raises in productivity and competitiveness (Fontana & Palacio-Vera, 2004:12-13,16). Whoever saw a rapid process of development knows what this virtuous cycles and cumulative causation means.

little credibility to targets, policies and authorities. Or from a different point of view, inflation targets should be long enough to permit the working of monetary policy, including the cases when it works to smooth shocks, and short enough to neutralize as fast as possible any inflationary effect, allow convergence of inflation rates and expectations to the target, and convey credibility to CBs (Fraga *et al.*, 2003). Mishkin and Schmidt-Hebbel (2002:186-187) append that CBs very concerned with output fluctuations would try to approach their long run (also in disinflations) only gradually, but that these long horizons might weaken a CB credibility, mainly if this is not high to begin with. More flexible ways to achieve the targets are not to use calendar years for the inflation rates, but only cumulative months – for instance, the last 12 or 24 months – as in many countries. Furthermore, many CBs choose multi-year annual targets, such that inflation rates can gradually approach the targets (short, medium and long runs). Another alternative is to announce only a long run target and publish short and medium term inflation forecasts for future years, thus describing the expected inflation path toward the long term target, like in some DCs and in Chile. Svensson (2005) supports the idea of, at least in some cases, not fixing a rigid time horizon at which an inflation target should be met, preferring to change it for an explicit intertemporal loss function, which would lead to an aim to minimize *ex-ante* the sum, through a determined period, of a composition between low levels of inflation **and** the lower achievable output gap.

Fourth, should the target be a point or a range? Fontana and Palacio-Vera (2004:18-20) have a strong case in favor of a quite wide range, so that the monetary authorities will choose more inflation volatility and less output volatility, not easily sacrificing output in trade-off for gains in inflation rates. In this sense, Mishkin and Schmidt-Hebbel (2002:186) expound the dangerous effects of a mix of a too short time horizon with a narrow target, resulting in undesired output fluctuations.¹³ However, choosing a very wide range for the target can indicate a feeble commitment of a CB to low inflation rates, reducing its credibility. On the other hand, a too narrow range reduces CBs possibility to respond with minor adverse outcomes (output and employment variation) to unforeseen events, including inevitable errors in controlling inflation in spite of CBs best efforts, which can also drive actual rates outside a very narrow range. Moreover, the damage to credibility of missing an entire range is greater than that of missing a point, albeit these point targets are always accompanied by a range, some points below and above that are totally acceptable for authorities and the general public (Bernanke, 1999:32, 294-295). Thus, through a widening of the target range, CBs convey the unavoidable uncertainty surrounding IT and monetary policy (Greenspan, 2004), uncertainty which

¹³ Mishkin and Schmidt-Hebbel (2002:185-186) give a sad example of this combination conducting the Reserve Bank of New Zealand to an overly tight monetary policy in the end of 1996 (the overnight cash rate reached 10 percent) bringing about a stronger recession in 1997-1998, made even worse by a negative shock on the terms of trade resulting from the East Asian crisis.

would even support, according to some authors, ranges of 5 or 6 percent (Bernanke, 1999:32). Since a range so wide might signal a very feeble commitment to low inflation by the monetary authorities, one might suggest only wider **and** low ranges as inflation targets.

This leads us to our fifth point: under which conditions should the target be modified or in other words, when should deviations from the target be permitted? Mahadeva and Sterne (2002:644, n. 33) stress that, overall, escape clauses should be circumstance specific and established *ex-ante*, making clear that the economic authorities are strictly following the rules. New Zealand incorporated formal escape clauses, permitting misses of the target range when there are significant supply shocks, as in terms of trade, changes in indirect taxes, etc. Note that escape clauses are allowed only as a reaction to supply shocks, since, according to mainstream, these shocks can be completely exogenous, while demand shocks can be at least partially determined and (almost) completely offset by monetary policy. Thus, allowing demand shocks also to recur to escape clauses could undermine both CBs credibility and IT regimes (Bernanke *et al.*, 1999:35; Mishkin & Schmidt-Hebbel, 2002:185; Mendonça, 2001:108-110).

Target revisions are generally comprehensive and made *ex-post*, but they can also be made *ex-ante*, e.g., when the policy makers know in advance that a shock will make them miss the target range by a great amount. Brazil is an example of a country which uses these revisions, called adjusted targets. The difference between these adjusted targets and the escape clauses are that the later are set by CBs in advance, justifying a virtual non-fulfillment of a target, while adjusted targets are a forward-looking process, i.e., they can be used only in *ex-post* revisions of the targets, with simultaneous definition of a new target and the accompanying explanation of how this new target was set (Fraga *et al.*, 2003:38). It is essential to append that escape clauses and target revisions cannot be viewed as a solution to the inherent uncertainty concerning inflation forecasting, since the accuracy on inflation forecasting is an essential element of IT (Mendonça, 2001:86, 111). Finally, missing the target should not be seen as a signal that the entire IT strategy is being or should be abandoned. In such cases, CBs must explain the reasons of that target missing, maintaining their credibility and keeping the IT framework quite intact.

Sixth, what policies should be chosen in order to reach the target, be it a point or a range? The common policy used by CBs to affect general prices is to move up or downward short nominal interest rates to counterbalance respectively a higher and lower inflation rate than desired (Svensson, 2005:1). The policies mainly consist in a careful monitoring of inflation and in preemptive or *ex-post* “strikes” against unwanted movements in inflation rates, in order for these rates not to gather momentum (Bernanke, 1999:07; Greenspan, 2004). Notwithstanding, some remarks are needed. As Gaiotti and Secchi (2004), Kriesler and Lavoie (2004) and Bibow (2005) noted, a rise in interests

may also cause a **rise** in prices, at least in the short run. Bibow (2005:16), for instance, shows that in the case of Euroland a rise in interest rates may cause an economic and productivity slump that pushes inflation **up**. Moreover, this rise in interest rates may also have other adverse consequences, namely, on fiscal expenditures, for this rise augments squandering with debt service and that, together with stagnation and a rise in unemployment, probably will raise total government spending, prodding not favorable expectations for a downward inflation. Besides, the rise in fiscal spending can bring about expectations of higher taxes and/or cuts in subsidies, also leading to a fiscal supply shock and, thus, to a shock, mild or strong, on prices.

Gaiotti and Secchi (2004:7-11) demonstrates that rises in interest rates can engender higher costs on working capital and inventories, and not only “benign” (in the sense of “in the right direction”, i.e., downward) consequences over demand.¹⁴ That implies at least a longer persistence of inflation, after correcting policies are put into use, resulting in a worsening of the commonly simple considered short run trade-off among output and inflation, calling for more gradual policies to stabilize inflationary shocks. Another unwelcome effects are over mark-ups, which can go up to offset declining sales; and over productive capacity, moving supply curves to the **left**, since costs go **up** in the **short run**, reducing investments, with obvious repercussions also over capacity in the **long run**.¹⁵

3. The Logic behind the Adoption and some Details of the Institutionality of the IT Regime in Brazil

In the first semester of 1999, the Central Bank of Brazil (CBB) was searching for a new nominal anchor to stabilize expectations, after an abrupt change in the monetary policy regime and in the exchange rate of the real against the dollar, in the very beginning of 1999; that is to say, the nominal anchor was not anymore an over-appreciated and quite stable domestic currency (Bogdanski *et al.*, 1999:9,18; Central Bank of Brazil, 2000:89).¹⁶ These are the reasons for the referred search for a new nominal anchor to stabilize expectations in the Brazilian economy and for the option for IT,

¹⁴ Thus, rising interests seem to “imply an overall adverse effect on prices... which would have partly counterbalanced the disinflationary effect operating through the demand side. While hardly enough to change the overall effect of monetary policy on prices over the medium run, this impact may not be without relevance.”(Gaiotti & Secchi, 2004:25). This kind of ideas is not new and was already advanced in 1844 by a leading scholar of the banking school. See also Kriesler and Lavoie (2004:7).

¹⁵ Finally, Kriesler and Lavoie (2004) reject the assumption of the possible efficacy of monetary policy in the short run, but not in the long run (i.e., of a vertical long run Phillips curve).

¹⁶ The average exchange rate moved from R\$ 1.21/US\$ 1 in the first days of 1999, to R\$ 1.96/US\$ 1 on Feb. 1st 1999, to R\$ 2.16/US\$ 1 on March 3rd 1999, than coming down to R\$ 1.72/US\$ 1 on March 31st 1999, some days after the new Board of Directors of CBB took office. That is to say, the American dollar raise 78.5% in the peak of its appreciation against the real, on March 3rd 1999, then came back to an appreciation of 42.1% at the end of March, starting then to fluctuate around R\$ 1.65 or R\$ 1.75 per US\$ 1 during the rest of the first semester of 1999 (an appreciation from 36.4% to 44.6% of the American currency in the rest of that period).

which would turn the very inflation target into the new nominal anchor. Moreover, there was a spread of IT throughout the world and a spur of this new arrangement by the IMF (Bogdanski *et al.*, 1999:7-8, Central Bank of Brazil, 2000).

Therefore, on June 21st 1999, Brazil adopted IT as her monetary policy framework, which would rule since the very beginning of the second semester of 1999, on July 1st. The main points of that framework are (Bogdanski *et al.*, 1999:11-13): a) the chosen index would be one of headline instead of core inflation, which would exempt inflation rates from several shocks, e.g., in the exchange rate, energy prices, food prices, etc., as showed in section 2. Besides, the Brazilian economy experienced several price index manipulations at least in the three preceding decades, what conducted monetary authorities to opt for a full index, to gain credibility. This would be once more needed, even though the Brazilian economy was entering its sixth year of the Real Plan, of low inflation rates. In addition, Brazilian economic authorities chose a consumer inflation index, because it would be well understood by the public (Central Bank of Brazil, 2000:93; Minella *et al.*, 2003b:127-130); b) the inflation targets would be established on the basis of a widely known price index, the Broad Consumer Price Index (IPCA);¹⁷ c) there was no escape clauses at least for possible supply shocks, principally when we consider that Brazil chose a headline inflation rate.¹⁸ Nevertheless, the CBB could adjust the target,¹⁹ taking into account some supply shocks as, for instance, the impact of administered prices and/or of inertia on market prices.²⁰ Notwithstanding, the

¹⁷ This index is calculated monthly since 1980 – by the Brazilian Institute of Geography and Statistics (IBGE), a federal institution – by means of prices which affect families earning from 1 to 40 minimum wages (from US\$ 129 to US\$ 5,161, considering the exchange rate of Sept. 6th 2005). The data are collected in the nine biggest metropolitan areas of the country and in two other big capitals: Brasília (the federal capital) and Goiânia (Mendonça, 2001:102-103; IBGE, 2005).

¹⁸ Minella *et al.* (2003b:130). Bogdanski (*et al.*, 1999:13) add: “The combination of the use of headline inflation and the absence of escape clauses justifies the adoption of the relatively wide 2-percentage point tolerance interval around the central target, and certainly makes the announced targets much tighter than they may initially appear.” These remarks are astonishing since this “wide” 2% tolerance interval is designed for a DEVC, with, as we explained, its great possible supply shocks, because of bottlenecks, foreign exchange shortage, development requirements, etc. See also Central Bank of Brazil (2000:92).

¹⁹ We must recall that the main difference between adjusted targets and escape clauses is that those clauses are set by CBs **in advance**, *ex-ante*, justifying a eventual target non-fulfillment, while adjusted targets occur only *ex-post* the occurrence of a supply shock, being accompanied by a simultaneous definition of the new target and by the explanation of how this new target would be reached (Fraga *et al.*, 2003:38).

²⁰ Fraga *et al.* (2003:33); Minella *et al.* (2003b:127). Another institutional issue in the IT framework in Brazil is the so-called administered (administered by contract and/or monitored) prices, which increased above the other (market) prices (see Graphs 1 and 2). The administered prices are regulated and monitored by the federal government and/or public agencies, and include oil by-products, fixed telephone, residential electricity and public transportation. Its weight in the IPCA was 30.8% in June 2002. As a consequence of a flaw in the privatization process in Brazil, the inflation rate indexes which adjust administered prices are the IGP-M (General Market Price Index, composed by the Wholesale Prices Index – IPA, with a weight of 60%, an index in which exchange rate variations and the international prices of many tradables, imported or exported by Brazil, has strong repercussions; by the Consumer Prices Index – IPC, with a weight of 30%; and by the National Construction Price Index – INCC, with a weight of 10%; all prices collected from the first to the last day of each month) and the IGP-DI (General Price Index–Internal Availability, composed by the same sub-indexes of IGP-M, but with prices collected from 21st to 20th of each month), both calculated by the Getulio Vargas Foundation (FGV), a very traditional independent private foundation (Minella *et al.*, 2003b:107-108,119). We must emphasize that this indexes choice by the federal government occurred as a means to attract foreign capital and guarantee

CBB only recurs to adjusting its targets when they clearly appear as unattainable, given current inflation rates. This behavior is in line with general prescriptions of IT theory, which dictates a trade-off among flexibility and credibility – although both can move in the same directions, as we saw in section 2. However, the CBB certainly has always acted (adjusted targets) only to try to maintain its credibility, albeit purporting to show that it performs its functions flexibly;²¹ d) the National Monetary Council (CMN), based on a proposal by the Finance Minister, set the inflation target as well as the tolerance intervals; e) the CBB chose a point target inside a range, constituted from a band, some percentage points above and below that point target;²² f) the targets – the point and the range – would be set considering the accumulated inflation during the period January-December of each year. i.e., the CBB will follow a calendar year; g) the initial targets for 1999, 2000 and 2001 would be set no later than June 30th 1999, i.e., the IT regime already began with the targets for these three years; and for 2002 and subsequent years, inflation targets would be set no later than June 30th for two years ahead;²³ h) the CBB would be given responsibilities and means to implement the policies to achieve the targets; i) as in many other countries, in case the targets are breached, the CBB Governor would issue an open letter to the Finance Minister explaining the causes of the breach, and the measures adopted and time span required to ensure that current inflation returns to the established range; and j) the Monetary Policy Committee (Copom) would meet at regular monthly intervals, deciding the interest rates by a majority vote of its nine members and issuing minutes explaining its decisions.

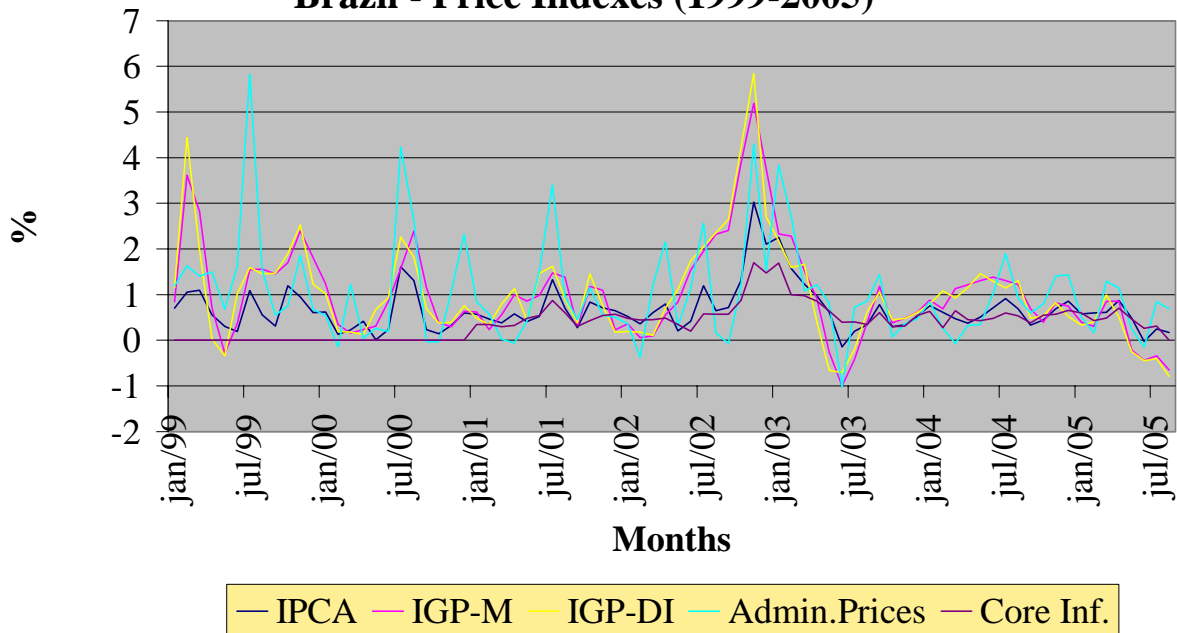
a more stable rentability even for domestic capital, making important fluctuations in the exchange rate have significant consequences over the administered prices, although, paradoxically, in many cases they do not have a significant participation in the costs of these firms. Therefore, exchange rate fluctuations gather an unjustified momentum over the official index for the Brazilian IT regime, the IPCA, even though it is common that the costs of the firms responsible for these administered goods and services are mainly in *reais*. That is to say, this institutional building often causes a unjustified mismatch between costs in *reais* and prices indexed to dollars, with important effects over inflation and inflation targets. Thus, here we perceive the influence of economic interests over an institutional building with many flaws, by no means properly regulated, **and with repercussions over inflation and growth of an entire country.**

²¹ The CBB has a general rule with respect to supply shocks: to accommodate the first round effects of (important) supply and cost-push shocks, allowing relative price movements to affect inflation, but trying to neutralize the second round effects of these shocks, i.e., acting to avoid the *ex-post* inertial effects of these shocks and only allowing “the primary effects of the change in relative prices and of past inertia... [to] be accommodated. Part of inertia is accommodated because the Central Bank also takes output volatility into account in its decisions.”(Minella *et al.*, 2003a:15). With these adjusted targets there would be some credibility loss, however counterbalanced by a gain in transparency and communication, and **lesser** than in the case of a complete failure to achieve the former, non adjusted target (Minella *et al.*, 2003a:15).

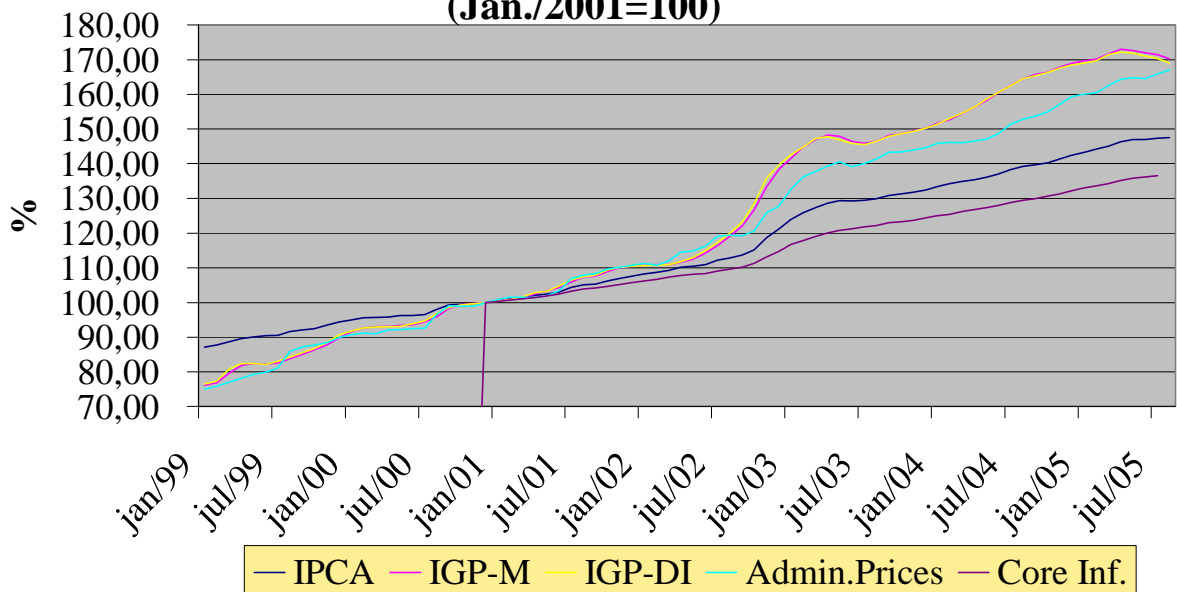
²² This band should not be too wide, in order not to be too lenient with inflation. But, as a result of the greater volatility of the exchange rate, interest rates, and risk premium in Brazil, the CBB broadened the tolerance interval from $\pm 2\%$ to $\pm 2.5\%$, for 2003 and 2004 (Minella *et al.*, 2003b:130-131).

²³ As a matter of fact, the targets have been always set by the end of June for two years ahead, as formally determined in the beginning of IT in Brazil (<http://www.bcb.gov.br/?INFLATIONNORMS>; Minella *et al.*, 2003b:107).

Graph 1
Brazil - Price Indexes (1999-2005)



Graph 2
Brazil - Accumulated Price Indexes (1999-2005)
(Jan./2001=100)



4. The Consequences of the Specific Characteristics of the Brazilian IT Regime

As a preliminary remark, Bogdanski *et al.* (1999:12) and the Central Bank of Brazil (2000:92) explained that the rationale behind the adoption of decreasing targets for the first three years of the new regime, 1999-2001, but also for the next two years, 2002-2003 (see Table 1), is that

there would be, in general, two causes for inflation: a) an inflationary and, thus, protracted process; and b) a temporary inflation rise due to a shock, with a once and for all impact over prices. The rising inflation rates in the beginning of 1999 would be of the second kind, an outcome of a supply shock (exchange rate appreciation), with no further upward pressure. Nevertheless, they do not make clear why the shocks coming from the depreciation of the real would be once-and-for-all and not require a quite extended span for realignment of prices: “The combination of very high domestic interest rates, fiscal tightening, and the floating of the currency may lead to negative output growth in 1999. Conditions are now very favorable for bringing down interest rates while at the same time achieving lower inflation and higher output growth.”(Central Bank of Brazil, 2000:92).²⁴

TABLE 1
EFFECTIVE INFLATION RATES, TARGETS AND RANGES, IN PERCENTAGE POINTS (1999-2007)

YEAR	INFLATION TARGETS (CMN)	CHANGE IN INFLATION TARGETS (CMN)	ADJUSTED TARGETS (CMN)	RANGE (CMN)	EFFECTIVE INFLATION RATES (IPCA – IBGE)	TARGETS FULFILLMENT
1999	8.00			±2.00	8.94	Fulfilled – upper limit
2000	6.00			±2.00	5.97	Fulfilled –central target
2001	4.00			±2.00	7.67	Non-fulfilled
2002	3.50			±2.00	12.53	Non-fulfilled
2003	3.25	4.00	8.50	±2.50	9.30	Fulfilled – upper limit
2004	3.75		5.50	±2.50	7.60	Fulfilled – upper limit
2005	4.50		5.10	±2.50		
2006	4.50			±2.00		
2007	4.50			±2.00		

Sources: Conjuntura Econômica, june 2005; Banco Central do Brasil (<http://www.bcb.gov.br/?METASNORMA>); Agostini & Ohno, 2005; Fraga *et al.* (2003).

Notwithstanding, this is only a preliminary critic to the IT implementation, in Brazil. In addition to the option for accentuated decreasing targets, we should first oppose the inflexibility of all the main points of the framework, in Brazil. For, as we will show, the IT regime has been adopted in Brazil **as a rule, not as a framework**, in stark opposition to some of the principal proponents of that regime (Bernanke *et al.*, 1999:21-22, 24-25). That is to say, the BCB has not considered sufficiently the consequences of its choice of interest rates (Wray, 1998) over employment and economic growth in the short **and** the long runs. In other words, the BCB knows the consequences of its monetary policies, but has been giving too little weight to this implications,²⁵ clearly preferring to attain some minor gains – of one annual percent or even less – in inflation rate to try more stable

²⁴ The actual GDP growth, we now know, was only 0.79% in 1999.

²⁵ As stressed by Minella *et al.* (2003b:119), following a model of the Brazilian economy, “a 1 percentage point increase in the unemployment rate decreases the inflation rate by 1.2 percentage points when measured in annual terms.”

policies in the long run, with more investment, growth, employment, higher aggregate supply and productivity, fewer supply bottlenecks, etc., with all the consequences of these achievements over long run rates of growth and inflation. Moreover, it has not been considering the fiscal consequences of raises in interest rates, since: a) the weight of financial expenditures augments; b) the burden of the debt also rises, together with a relative fall in overall tax revenues (taxes over commerce, production, services, employment, yield, etc. – Galvão, 2005); c) disbursements because of unemployment increase; d) average GDP growth decreases, making larger the debt/GDP relation and the risks of fiscal dominance, unless counterbalanced by strong measures to augment fiscal revenues (raises in tax burdens) and/or to diminish fiscal expenses (with steep and almost overall reductions of government disbursements – Safatle and Romero, 2005a; 2005b), since the government knows that beyond a threshold (that is lower for DEVCs, when compared to DCs and their international currencies) an “increase in the real interest rate also increases the probability of default on the debt... [making] domestic debt less attractive”(Blanchard, 2004:3).

We should also not forget the consequences of exchange rate fluctuations over inflation. Minella *et al.* (2003a:24-25; 2003b:106), for instance, stress exchange rate volatility as one of the three most important challenges for monetary policy in DEVCs which adopt IT, together with construction of credibility and some control over changes in relative prices. As we saw in section 2, a national currency depreciation may have an important impact over prices, as an outcome of the pass-through from higher import prices of intermediary and final products as well as from higher demand and prices for **exports**. Another major effect of sudden depreciations of the national currency is over the balance sheets of domestic firms, because of the mismatch between revenues in domestic currency and debts in foreign currencies.²⁶ On the other hand, an appreciation of the currency, in spite of short term advantageous consequences over inflation rates – because of symmetric downward impacts on import and export prices – can make the domestic economy less competitive (Mishkin & Schmidt-Hebbel, 2002:192), what might cause unfavorable expectations over CBs reserves on the medium or long runs if this appreciation is not sustainable (Minella *et al.*, 2003a:24-25; 2003b:122-125). Once more, the central concern here is that DEVCs do not issue reserve

²⁶ Minella *et al.* (2003a:24-25; 2003b:122); Strachman & Vasconcelos (2001). For similar effects on Asian DEVCs, see Chang (1998; 2000). As Mishkin and Schmidt-Hebbel (2002:192,196) explains: “Depreciations in emerging market countries are particularly dangerous because they can trigger a financial crisis... These countries have much of their debt denominated in foreign currency; when the currency depreciates, the debt burden of domestic firms increases. Since assets are typically denominated in domestic currency and so do not increase in value, net worth declines. This deterioration in balance sheets then increases adverse selection and moral hazard problems, which leads to financial instability and a sharp decline in investment and economic activity. This mechanism explains why the currency crises in Mexico in 1994-95 and East Asia in 1997 pushed these countries into full-fledged financial crises, with devastating effects on their economies.(...) Central banks in these countries may thus have to smooth excessive exchange rate fluctuations... mitigating potentially destabilizing effects of abrupt and sustained changes in that price.”

currencies, therefore, they cannot recur to seigniorage, making obligatory big and **stable** reserves of foreign currencies on the long run, in order not to experience sudden and disrupting speculative movements against their currencies, and the accompanying volatility in the exchange rate and the other deleterious effects just described.²⁷ The level of reserves functions as an insurance against major capital flows to/from a country in a financially integrated world, strongly reducing exchange rate volatility (Froyen, 1996; Minella *et al.*, 2003a:24-25, 28-29; Fraga *et al.*, 2003:26-27).

The lack of observation of these points might explain why the IT regime in Brazil did not achieve its targets in 2000 and 2001, and only attained it, in 2003 and 2004, after significant upward revisions, through the so-called adjusted targets, and even then the targets were achieved only in the upper limit. We should also stress that only in 2000 IT hit the central target, while in 1999 also only the upper limit of the target was accomplished. Therefore, despite the novelty of the regime in 1999, its capacity to achieve its objectives, at least in these six first years of this experiment in economic policy, can be seriously challenged, even taking into account that IT will certainly hit the target in 2005.²⁸ However, Minella *et al.* (2003a:28-29; 2003b:116-123) can affirm that IT in Brazil has been successful in anchoring expectations, reducing inflation persistence and, thus, controlling inflation rates with an accentuated upward bias. Therefore, IT and orthodox policies have achieved a decrease in inflation rates expectations after an enormous supply shock as the national currency depreciation against the US dollar, in the end of 2002/beginning of 2003, as an outcome of the uncertainties surrounding the presidential election, in that period.²⁹

The expectations from the market of rises in interest rates and of a dampening in output growth for any higher growth³⁰ introduce a very strong antigrowth bias, more puzzling when we

²⁷ However, stable reserves on the long run mean reserves not liable to sudden outflows, what may demand measures to dampen capital flows (Braga, 2005a; Lamucci, 2005; Safatle, 2005a), stabilize the exchange rate **and** rise current account surpluses and/or foreign direct investment, but not reserves made up from short term debt or hot money (Braga, 2005b).

²⁸ The CBB will accomplish the target through annual nominal interest rates of more than 18% since January 2005, and of 19% or more since May (19.75% from June to September, i.e., with annual real interest rates of about 14%), with also an accompanying strong appreciation of the domestic currency. Probably that indicates the impossibility of such low targets for long periods, at least without big reserves, solutions for many bottlenecks of the economy, etc., as we indicated throughout this paper.

²⁹ Minella *et al.* (2003a:19-25,29-30); Fraga *et al.* (2003:5). These uncertainties generated a strong appreciation of the US currency against the real, from R\$ 2.30 on April 2nd 2002, to R\$ 2.85 on July 1st (an appreciation of 23.9%), to R\$ 3.54 on December 27th (an additional appreciation of 24.2% or 53.9% since April 2nd), to R\$ 3.66 on January 27th 2003 (the peak of the appreciation of the US dollar against the Brazilian currency, in a total of 59.1% since April 2nd 2002, peak which would be repeated on February 14th 2003). This depreciation of the real engendered a rise on the annual inflation rate (considering the last 12 months), from 7.5% on August 2002, to 12.5% on December 2002, to a peak of 17.2% on May 2003, then declining rapidly to 9.3% on December 2003, and to a range from 5.1% to 8.1% from January 2004 until August 2005, also as a consequence of the re-appreciation of the real – the value of the US dollar went back to R\$ 2.84 on July 1st 2003, almost the same value of exactly one year before, i.e., the dollar lost 22.4% of its peak value in only 4.5 months (since February 14th 2003).

³⁰ That is to say, IT, at least as it is currently adopted in Brazil, with very inflexible characteristics, leads to a very high antigrowth bias, and this in an economy which performed one of the fastest economic growths in the world, in the period 1930-1980, with an average annual growth of about 7%.

consider that the country is a DEVC, with more volatile macroeconomic environments, higher vulnerability to external shocks and higher volatility of a series of variables, like inflation, output, exchange and interest rates (Fraga *et al.*, 2003:4,8,31). Another reason is the asymmetric effects of supply shocks, with inflationary shocks having a greater repercussion over prices than deflationary shocks, as a consequence of the downward price rigidities. Thus, it would be wise to prescribe higher central and/or range targets, which reflect not only higher past inflation but also a greater vulnerability to shocks, external and domestic.

As expounded before, this general settlement is also a consequence of DEVC's low level of reserves and feeble fiscal positions as well as underdeveloped financial systems (Fraga *et al.*, 2003:13-14,22-25; Strachman & Vasconcelos, 2001). And it has long run implications, since this strong anti-inflation bias imply a stifling of investments and, therefore, of output and productivity growth (Bibow, 2005). Consequently, this long run anti-growth bias is self-reinforcing, for the persistence of many bottlenecks together with lower productivity and older means of production result in higher prices and stricter limits to production growth.

It is essential to return now, however, to a point only briefly mentioned in the introduction, namely, the high interest rates long before **and** after IT implementation, in an example of predominance of financial interests producing since long ago (even now, in September 2005) the highest real interest rates in the world. For instance, Agostini and Ohno (2005) highlight that, since March 1975, the nominal interest rate did not fall below 15%, but one could say that these high nominal interest rates have been always a must in Brazil, in response of high inflation rates.³¹ Notwithstanding, the nominal interest rates remained above 19% per annum during all the first part of the Real Plan (July 1994 to December 1998), with annual **real** interest rates of no less than 15% in the entire period, unless in August 1998 (12.8%).³²

Initially, the reason for these unusual interest rates was that the economy was in the aftermath of the Real Plan and of a very long period of high inflation, thus requiring high and real interests. But afterwards, a high real interest rate was considered essential to maintain a net capital inflow, in order

³¹ The annual inflation rates achieved between 23.5% and 33.6% in 1975, floating until March 1978 (36.4%), but since then moving upward almost without interruption until February 1986 (256.1%). Then it dropped steeply after the Cruzado Plan, which began on February 1986, to 77.7% (February 1987). However, it increased again to 6,821.3% in April 1990. Then, after the Collor Plan, it fell to 370% in July 1991, but once more moved upward, almost steadily, to 4,922.5% in June 1994, on the verge of the Real Plan (July 1st). Afterwards, the annual inflation rate decreased to less than 10% on December 1996, moving to 1.65% on January 1999, on the brink of the depreciation of the domestic currency, on January 11th 1999. Then, the inflation rate moved upward at the end of 2002, because of the presidential election in October, returning to rates below 10% since December 2003.

³² Nowadays, the projected basic real interest rate in Brazil is more than 14%, by far the highest in the world, almost three times Hungary, the second place, with 5.1%, then appearing Turkey, with 4.7%. The mean in 40 countries was 1.3%, or 0.7 in DCs and 2.1% in DEVCs. Until now, the lowest real interest in the Workers Party government (which began in January 2003) was 8.6% in January 2004; and the highest 17.6 in February 2003 (Guimarães, 2005).

to sustain the pegged exchange rate, transformed in nominal anchor of the Brazilian currency, until this over-appreciated anchor collapsed in January 1999. Then, subsequently, the prime Brazilian interest rate was set high to avoid an inflation/exchange rate depreciation spiral, with huge capital outflows,³³ and, more recently, since IT implementation, to keep inflation rates inside the range, if possible, as in 2005, hitting the central target in spite of the loss of some important points in economic growth and of the controversial necessity to hit that central target and not just stay inside the formerly stipulated range (Lamucci *et al.*, 2005). That is why it would be useful to consider history and former institutions – in the sense of costumes, mores, etc. – when analyzing some events and policies, mostly some as important as an IT regime set up. This would be of enormous relevance, especially when one considers that financial and banking interests have been given predominance among the Brazilian business for a long time before the long process which almost led to hyperinflation and which began, as we expounded, in the 70s (Lessa & Fiori, 1983).

This is a way to understand or, at least, to put in other perspective, the several institutional traps mounted in the beginning of IT and the great obstacles if not “impossibilities” to surpass them. However, we would like to emphasize the crucial importance of three additional factors: 1) the very big deficits which led to a public debt/GDP relation of 51%, in June 2005 (Safatle, 2005b), i.e., a fiscal, institutional and historical cause,³⁴ with consequences in terms of an already expounded insatiable search for increases in fiscal revenues and for cuts in public expenditures; 2) the permanent difficulties in the BP, also a perennial institutional cause (Strachman & Vasconcelos, 2001); and 3) the indexation of administered prices to the General Price Index (IGP-FGV), “almost condemning [the economy] to the perpetuation of the basic interest rate in extremely high levels.”(Agostini & Ohno, 2005:2). As the consequences of the first two causes are already clear, we now detail the third one.

In Brazil, after one year of a depreciation of the national currency, the pass-through to market prices inflation is 12%; the pass-through to administered prices is 25%; and the resulting general pass-through to the headline IPCA is about 16% (Minella *et al.*, 2003a:25). Therefore, the pass-through of administered prices, as a percentage of the observed depreciation, is two times higher than that of market prices. This is an effect, as we explained before, of the contracts settled for the privatized utilities, service firms and some regulated prices, bringing about that the prices of oil by-

³³ Once more, the CBB candidly clear the point: “During the pegged exchange rate regime, which ended in January 1999, the Selic rate [the main interest rate of CBB] needed to be at high levels in order to prevent a large outflow of reserves. In the first months following the flotation of the real, the Selic rate needed to be kept at high levels to prevent an inflation-exchange rate depreciation spiral.”(Minella *et al.*, 2003b:112, n. 7).

³⁴ These deficits were generated in a clear case of fiscal irresponsibility, in the first four years of the Real Plan and of the Cardoso government. Then, after this scenario have been set, the federal government changed its fiscal policies in order to honor its debt.

products, fixed telephone, residential electricity and public transportation are partly indexed to the US dollar, resulting in a higher degree of persistence of past inflation and in a backward-looking inflation (Fraga *et al.*, 2003:17). Besides these more persistent effects of past inflation in the administered prices, there is another important issue, given the current indexation by IGP-FGV: these prices rise persistently above market prices, contributing strongly both for higher rates of inflation and for a continuous erroneous effort to decrease the lower inflation related to market prices to counterbalance the higher rates in the administered ones (see Graphs 1 and 2).³⁵ This is another institutional component which has brought about a permanent quest for a low inflation in an environment in which a third of the prices – with this share is increasing – rise systematically above average inflation. Moreover, these prices are not subject to the main effects of the anti-inflation policies directed to the other two thirds of the prices. The only major possible impact of anti-inflation policies over administered prices occurs through the well known effects of variations of interest rates over the exchange rate.

These institutional characteristics result in a permanent bias against investments and economic growth, besides bringing about an increasing rejection to IT and the inflexibility of its implementation in the country³⁶. Furthermore, this can have clear **upward** effects over inflation in the medium and long runs through: a) the impacts of a restrained production capacity and the resulting shortage of supply of several goods and services, as currently happens in steel, paper and pulp, and some chemicals production, all with full capacity utilization, as well as is the case with a deteriorated public and private infrastructure; b) the not emerging gains of an improved productivity coming from new vintages of capital, which could also have positive impacts over the BP, through augmented exports (also because of the augmented production capacity); and c) not to mention again the influences of a curbed economy over fiscal deficits, with **fringe rises** of public expenditures in interest rates surpassing by far all the reductions in investments disbursements by the federal government (Agostini & Ohno, 2005:4-5).

³⁵ Some data can illustrate the problem: the weight of the administered prices in the official inflation rate (IPCA) grew from 17% in January 1991 to 28% in August 1999, reaching 30.8% in June 2002, and circa 1/3 in the first semester of 2005 (Minella *et al.*, 2003b; Agostini & Ohno, 2005). From June 1999 to May 2005, administered prices rose 124.3% against 54.3% of market prices, with great influences, as we saw, from the Wholesale Prices Index – IPA, with a weight of 60%, i.e., with great repercussions from exchange rate fluctuations and the prices of **tradables**, exported or imported by Brazil (Agostini & Ohno, 2005:4). In addition, the projected rise (in the end of September 2005) of administered prices for 2005 is of 7.8%, against a projected inflation rate of less than 5.1%, that is to say, below the target for 2005; and, finally, for 2006 the expected rise in those prices is 5.3%, against an inflation target of 4.5% (Izaguirre, 2005).

³⁶ Fraga *et al.* (2003:29) underscore that CBs must be flexible enough not to incur in unnecessary output costs which could bring forth the perception that IT is defective and too costly. According to Mishkin and Schmidt-Hebbel (2002:200), CBs should “not be perceived as being overly obsessed with controlling inflation at the expense of output stability. A central bank is likely to lose the support of the public if it is perceived as being inflation nutters... and putting no weight on output fluctuations in making its decisions about monetary policy.”

One additional feature is that the information and studies on which decisions about the basic interest rates are made are at least very feeble and at a maximum non-existent. Nakano (2004) shows that the CBB incredibly have few or no information about many sectors, their costs, productivity, idle capacity and the consequences of these variables over prices formation and their relevant repercussion over general inflation, and over investments in sectors with almost full capacity utilization, the output gap, etc.³⁷ The CBB works over studies made by big banks and financial institutions on prospective inflation, with data about the “real economy”. These institutions, then, constitute preferential interlocutors of the CBB, in a strange relation, for these interlocutors are favorable to high interest rates and also want to know beforehand the future interest rates. We must also highlight that there is a minor participation of agents from the productive sector – agents which establish prices – in this consulting by the CBB.

A final remark is that the CBB has lowered its level of transparency in its last months minutes, perhaps because of the difficulties to explain the incoherence of increasing interest rates even when current inflation is inside the target range **and not rising**. This is why some economists – even some who build the IT institutionality in Brazil – defend that the CBB should make public the models over which it bases its policies, mainly because since September 2004 the minutes of the Copom meetings have become increasingly obscure and in contradiction with other Copom minutes (Kutney, 2005). For instance, in a quite long series of monthly meetings, Copom has accomplished a strange unanimity, stranger when we consider that for many economists there is no clear reason to tighten the monetary policy.³⁸

5. Conclusions

Several necessary institutional transformations appear as a natural conclusion of the previous sections. First, some authors (Agostini and Ohno, 2005:6-7) and we argue that the CBB – as, for instance, the Bank of Canada – should announce only a range as its target, and not a point, for the pursuit of a point leads almost inevitably to more frequent changes in monetary policies and with a stringent bias. As a matter of fact, with or without the point inside the target range, the CBB should use all the stipulated range to accommodate supply shocks, certain demand and prices fluctuations, etc., in order to achieve rather low levels of inflation without compromising the economic growth by any margin, **if not necessary**. Nonetheless, this is not what happens in reality, since the CBB seems

³⁷ For example: “What is the output gap which generates inflationary pressures [in Brazil] if there is an open unemployment rate of more than 11%?(...) Brazil is different from developed countries, since in those economies the gap is defined by the unemployment rate, for the inflationary pressures originate in the work market.”(Nakano, 2004).

³⁸ Agostini and Ohno (2005:6). We should stress once more that this lack of transparency is in clear opposition to the general setting of IT, as we saw in Section 2 (see also Svensson, 2005:1-3). This is another example of the weird institutional flexibility with which IT is followed in Brazil.

to be quite obsessed either by the central target or by high interest rates and, in this sense, does not obey the decree that rules IT in Brazil, which mention explicitly that the inflation target is attained when it is inside the pre-determined range. Second, and as a direct outcome, the definition of the target – once more, with or without central point – should be more flexible, in order not to impair economic growth and development without necessity, also taking into account that Brazil is a developing economy.

Another suggestion is to exclude the administered prices from the inflation target, that is to say, Brazil should pursue a core inflation target, with the exclusion of these managed prices and, perhaps, of some food prices, like, for example, in the USA. A fourth suggestion is the adoption of sectoral indexes for price adjustments, as a current proposal by the Ministry of Energy (Agostini & Ohno, 2005:4-5; Schüffner, 2005). This measure could help to refrain the rises of some administered prices, bringing down inflation whether these prices continue or not to take part in the official inflation target, because of the direct impact of these prices over a wide series of costs and market prices in the economy.

Fifth, it would be important to increase the flexibility of the temporal target, changing it from a calendar year to the accumulated inflation in 12 months or, better, with 24 or 36 months to converge the actual inflation rate to the target, as in New Zealand, Chile, UK and Canada (Mishkin & Schmidt-Hebbel, 2002:186-187). This measure is important since the pursuit of the target in the calendar-year cause more rigid policies, in order to faster diminish the inflation rate (Agostini & Ohno, 2005:6).

Sixth, there should be an increase in the number of participants or a change in the composition of the Monetary Policy Committee (Copom), which decides the basic interest rate. This would lead to the inclusion of participants from industrial sectors, unions, etc., among its current nine members, widening the interests represented in the definition of monetary policies and permitting a more relevant participation by the industrial and all non financial service sectors. Some authors – even some who set up the IT institutionality in Brazil – also propose open individual votes in the Copom meetings, facilitating the identification of personal stances in terms of economic policy, what would help to increase the credibility of the CBB (Kutney, 2005). Seventh, the CBB must improve its research scope and improve urgently its own prices forecasts, in order to stop depending on those from market institutions. Eighth, the CBB and its Monetary Policy Committee (Copom) must urgently augment the level of transparency of their decisions, in order to be more in line with the prescriptions of the main proponents of IT. This would lead to an increase in credibility, also if combined with more flexibility and wisdom (Greenspan, 2004).

Ninth, and in this same direction, we support the adoption of an IT regime with only implicit inflation targets, as currently in the USA and EU (Greenspan, 2004). This would allow more flexibility, for the CB would pursue low inflation rates, **but with no obligation** to achieve any target, since the market would not know if a target exists and, if so, what would its level be. Nevertheless, we should not be too optimistic about the possibility of a virtuous institutional modification of IT regime in Brazil. This would be another unavoidable conclusion of our institutional – and thus, historical – approach. But we must certainly try.

References

- AGOSTINI, A. & OHNO, F.H. (2005) *Metas de Inflação vs. Política Monetária*. Relatório de Pesquisa. GRC Visão. Maio. Curitiba: Mimeo.
- ARESTIS, P.; CAPORALE, G.M. & CIPOLLINI, A. (2002) “Does inflation targeting affect the trade-off between output gap and inflation variability?”. *The Manchester School*, v. 70, n. 4, p. 528-545.
- _____ & SAWYER, M. (2003) “Reinventing fiscal policy”. *Journal of Post Keynesian Economics*, v. 26, n. 1, p. 3-25, fall.
- BERNANKE, B.S., LAUBACH, T., MISHKIN, F.S. & POSEN, A.S. (1999) *Inflation Targeting: Lessons from the International Experience*. Princeton: Princeton University Press.
- BIBOW, J. (2005) *Refocusing the ECB on Output Stabilization and Growth through Inflation Targeting?* Annandale-on-Hudson, N.Y.: Mimeo.
- BLANCHARD, O. (2004) *Fiscal Dominance and Inflation Targeting: Lessons from Brazil*. National Bureau of Economic Research (NBER). Working Paper Series, n. 10389, mar.
- BOGDANSKI, J.; TOMBINI, A.A. & WERLANG, S.R.C. (2000) *Implementing Inflation Targeting in Brazil*. Banco Central do Brasil. Working Paper Series, n. 1, july.
- BRAGA, P. (2005a) “Argentina freia o ingresso de capital”. *Valor Econômico*, 10 Jun. (Internet edition)
- _____ (2005a) “Argentina persegue câmbio estável e deixa inflação subir”. *Valor Econômico*, 15 Jul. (Internet edition)
- CENTRAL BANK OF BRAZIL (2000) “Issues in the adoption of an inflation targeting framework in Brazil”. In BLEJER, Mario I.; IZE, Alain; LEONE, Alfredo M. & WERLANG, Sérgio R.C. (Eds.) *Inflation Targeting in Practice: Strategic and Operational Issues and Application to Emerging Market Economies*. Washington, D.C.: IMF. p. 87-94.
- CHANG, H.J. (1998a) “Korea: the misunderstood crisis”. *World Development*, v. 26, n. 8, p. 1555-1561, aug.
- _____ (2000) “The hazard of moral hazard: untangling the Asian crisis”. *World Development*, v. 28, n. 4, p. 775-788, apr.
- _____ & GRABEL, I. (2004) *Reclaiming Development: An Alternative Economic Policy Manual*. London: Zed Books.
- CONJUNTURA ECONÔMICA (2005) june.
- FONTANA, G. & PALACIO-VERA, A. (2004) *Is Long-Run Price Stability and Short-Run Output Stabilization All that Monetary Policy Can Aim for?* The Third Australian Society of Heterodox Economists Conference. University of New South Wales.
- FRAGA, A.; GOLDFAJN, I. & MINELLA, A. (2003) *Inflation Targeting in Emerging Market Economies*. Banco Central do Brasil. Working Paper Series, n. 76, june.
- FROYEN, R.T. (1996) *Macroeconomics: Theories & Policies*. 5th ed. Upper Saddle River: Prentice Hall.
- GAJOTTI, E. & SECCHI, A. (2004) *Is There a Cost Channel of Monetary Policy Transmission? An Investigation into the Pricing Behaviour of 2,000 Firms*. Temi di discussione, Banca D'Italia, n. 525, dec.
- GALVÃO, A. (2005) “Dívida pública em títulos sente juro alto e cresce R\$ 10 bi, para R\$ 915 bi”. *Valor Econômico*, 23 Ago. (Internet edition).
- GREENSPAN, A. (2004) *Risk and Uncertainty in Monetary Policy*. Remarks at the Meetings of the American Economic Association, San Diego, Cal., Jan. 3 (<http://www.federalreserve.gov/boarddocs/speeches/2004/20040103/default.htm#f1>)
- GUIMARÃES, L.S. (2005) “Estável, Selic amplia juro real”. *Valor Econômico*, 20 Jul. (Internet edition).
- INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA (IBGE) (2005) *Índices Nacionais de Preços ao Consumidor – IPCA e INPC: Agosto 2005*. Rio de Janeiro: Mimeo. (http://www.ibge.gov.br/home/estatistica/indicadores/precos/inpc_ipca/defaultinpc.shtm)
- IZAGUIRRE, M. (2005) “Inflação abaixo do centro da meta abriu o espaço para corte da Selic”. *Valor Econômico*, 23 Set. (Internet edition).
- JOHNSON, S. (2005) “ECB keeps rates on hold”. *Financial Times*, 4 Aug. (Internet edition).
- KEYNES, J.M. (1936) *The General Theory of Employment, Interest and Money*. London: Macmillan, 1973.
- KUTNEY, P. (2005) “Werlang defende redução do juro e mudanças no sistema de metas”. *Valor Econômico*, 9 Jun. (Internet edition).
- KRIESLER, P. & LAVOIE, M. (2004) *The New View on Monetary Policy: The New Consensus and its Post-Keynesian Critique*. The Third Australian Society of Heterodox Economists Conference. University of New South Wales.
- LAMUCCI, S. (2005) “Pastore sugere taxar capital de curto prazo”. *Valor Econômico*, 22 Fev. (Internet edition).
- _____; GUIMARÃES, L.S. & RIBEIRO, A. (2005) “Inflação cai e se aproxima de meta ‘quase impossível’”. *Valor Econômico*, 21 Jul. (Internet edition).
- LESSA, C. & FIORI, J.L. (1983) *Relendo a Política Econômica: as Falácias do Nacionalismo Popular do Segundo Vargas*. Texto para Discussão, IEL/UFRJ, Rio de Janeiro, n. 30.
- MAHADEVA, L. & STERNE, G. (2002) “Inflation target as a stabilization device”. *The Manchester School*, v. 70, n. 4, p. 619-650.

- de MENDONÇA, H.F. (2001) *Independência do Banco Central, Âncoras Nominais e Coordenação de Políticas: Uma Análise de Diversos Mecanismos de Estabilização*. Ph.D. Dissertation, Instituto de Economia, Universidade Federal do Rio de Janeiro (IE-UFRJ). Rio de Janeiro: Mimeo.
- MINELLA, A.; de FREITAS, P.S.; GOLDFAJN, I. & MUINHOS, M.K. (2003a) *Inflation Targeting in Brazil: Constructing Credibility under Exchange Rate Volatility*. Banco Central do Brasil. Working Paper Series, n. 77, July.
- _____; _____; _____ & _____ (2003b) "Inflation targeting in Brazil: lessons and challenges". *BIS Papers*, n. 19, p. 106-133, oct.
- MISHKIN, F. & SCHMIDT-HEBBEL, K. (2002) "A decade of inflation targeting in the world: what do we know and what do we need to know?". In LOAYZA, N. & SOTO, R. (Eds.) *Inflation Targeting: Design, Performance, Challenges*. Santiago: Central Bank of Chile. p. 171-219. (<http://www.bcentral.cl/esp/estpub/estudios/bancacentral/v5.htm>)
- MUSCATELLI, V.A.; TIRELLI, P. & TRECROCI, C. (2002) "Does institutional change really matter? Inflation targets, central bank reform and interest rate policy in the OECD countries". *The Manchester School*, v. 70, n. 4, p. 487-527.
- NAKANO, Y. (2004) "Deve-se levantar o 'véu financeiro' e redescobrir a economia". *Valor Econômico*, 31 Ago. (Internet edition).
- SAFATLE, C. (2005a) "Delfim quer que governo adote uma nova política econômica". *Valor Econômico*, 24 Fev. (Internet edition).
- _____ (2005b) "Zerar déficit nominal exige manter, até 2015, CPMF e desvinculação". *Valor Econômico*, 23 Jun. (Internet edition).
- _____ & GALVÃO, A. (2005) "Cresce apoio no governo a superávit de 5% do PIB". *Valor Econômico*, 11 Ago. (Internet edition).
- _____ & ROMERO, C. (2005a) "Denúncia favorece ataque à política econômica". *Valor Econômico*, 22 Ago. (Internet edition).
- _____ & _____ (2005b) "Aumentam as pressões para suavizar política econômica". *Valor Econômico*, 22 Ago. (Internet edition).
- SCHÜFFNER, C. (2005) "Investidores cobram definições antes de participar do leilão". *Valor Econômico*, 17 Ago. (Internet edition).
- STRACHMAN, E. & VASCONCELOS, M.R. (2001) *An Institutional Analysis of some Monetary Issues in Developing Economies*. Paper Presented in the Conference 2001 of the European Association for Evolutionary Political Economy (EAEPE), 8-11 nov. (<http://www.econ-pol.unisi.it/eaepe2001/papers.html>).
- SVENSSON, L.O. (2005) *Further Developments of Inflation Targeting*. Prepared for "Inflation Targeting: Implementation, Communication and Effectiveness", workshop at Sveriges Riksbank, Stockholm, June 10-12.
- VALOR ECONÔMICO (2005) "Banco da Inglaterra corta juros após 2 anos". *Valor Econômico*, 5 Ago. (Internet edition).
- VEGA, M. & WINKELRIED, D. (2005) *Inflation Targeting and Inflation Behavior: A Successful Story?* Cambridge: Mimeo. Feb.
- WRAY, L.R. (1998) *Understanding Modern Money: The Key to Full Employment and Price Stability*. Cheltenham: Edward Elgar.