

High Interest Rates in Brazil: Conjectures on the Jurisdictional Uncertainty

by
Persio Arida, Edmar Lisboa Bacha, and André Lara-Resende

*Núcleo de Estudos de Política Econômica, Casa das Garças (NUPE/CdG)
Rio de Janeiro, Brazil*

Summary: Jurisdictional uncertainty is introduced as an explanation for the inexistence of a local long-term domestic credit market. Policy makers have tended to perceive this inexistence as a market failure requiring State intervention. Such intervention involved restrictions to currency convertibility, artificial lengthening of public debt maturities, compulsory saving funds, and forced savings through inflation (now replaced by taxes without income). The interventions raised the country's external vulnerability and reduced its natural rate of output. Our conjecture is that this is at the root of Brazil's high interest rates.

1. Introduction¹

Real interest rates have been extraordinarily high since the *Real* plan stabilized inflation in 1994. Until 1999, one might argue that the macroeconomic policy tripod was not in order: there was no primary budget surplus, the exchange rate was pegged and overvalued, and interest rates were primarily oriented to sustain the level of international reserves. However, after the exchange rate floated in the beginning of 1999, the policy tripod was corrected. The public sector accounts showed a primary surplus on a systematic and sustained basis, and the real exchange rate depreciated to the point of the country producing record high trade balance surpluses, with a drastic correction in the current account deficit. Real interest rates have been on average lower than before, but they are still exceptionally high when compared to other emerging market countries. Why is it that the interest rate continues to be so high?

In the next section, we consider three hypotheses that have been offered to explain this phenomenon. These can be briefly labeled as the “bad equilibrium”, the

¹ Prepared for the seminar “Inflation targeting and debt: the case of Brazil”, jointly sponsored by NUPE/CdG, PUC-Rio and the World Bank. Rio de Janeiro: Casa das Garças, 12-13 December 2003.

“insufficient fiscal adjustment”, and the “sequence of negative shocks” hypotheses.

Section 3 introduces a new element in the debate, arguing that “jurisdictional uncertainty” is the reason why a long-term domestic credit market does not exist. The negative consequences of jurisdictional uncertainty for private savings and investment are spelled out in Section 4.

Section 5 argues that policy makers observe the adverse consequences of jurisdictional uncertainty but impute them to market failures that justify State intervention. We identify four types of intervention: restrictions to currency convertibility, artificial term lengthening of public debt, compulsory saving funds, and forced savings through inflation – with the latter now replaced by “taxes without income”. Sections 6 through 9 deal with each of these interventions, highlighting the distortions that they introduce in the economy.

A very simple two-equation reduced-form open economy macro model is outlined in Section 10 to illustrate the impact of each of these interventions on the short-term interest rate and on the exchange rate, under the assumption of a credible inflation targeting monetary policy. A discussion of policy implications closes the paper in Section 11.

2. Current interpretations on high interest rates

Three hypotheses have been offered in the literature to explain why real interest rates are so high in Brazil.

2.1. Bad equilibrium. The first hypothesis is that the monetary policy has been excessively and unjustifiably conservative after inflation stabilization in 1994. In the period of pegged exchange rates (1994-1998) it was subordinated to the exchange rate policy. In moments of crises with losses of international reserves, the Central Bank was forced to raise the interest rate to compensate for the increase in the perceived devaluation risk. In moments of external tranquility, it was forced to keep it still high to avoid inflationary pressures, because its own crawling peg policy aimed at a controlled depreciation of the real exchange rate and the fiscal deficit was high.

According to this hypothesis, in the period of floating exchange rates (1999-to date), monetary policy would have become imprisoned in a “bad equilibrium”. The argument is that too high real interest rates raise the perceived risk on public debt. It would thus be possible to obtain the same rate of inflation, everything else remaining constant, with a lower real interest rate and a lower perceived risk on public debt. This would be the “good equilibrium”.

This hypothesis presupposes fiscal dominance in an open economy, in which the inflation rate is sensitive to the exchange rate, which, on its turn, responds to the perceived risk on public debt. When the domestic public debt is high, the attempt to control inflation primarily through monetary policy may result in a perverse outcome: the high real interest rate worsens the fiscal disequilibria, increases the perceived default risk and the risk premium demanded by creditors. An interest rate initially excessive and unduly high may thus become indispensable, in face of the worsening fiscal situation that it provoked.

This hypothesis of a double equilibrium is a theoretical possibility. Its empirical

foundations, however, have not yet been established. Moreover, interest rate smoothing considerations may render it unattractive in practice. A Central Bank concerned with the credibility and the coherence of policies through time would not dare to jump in the dark, as required to displace the economy in the direction of an improbable “better” equilibrium.

2.2. *Insufficient fiscal adjustment.* A second hypothesis is that the macroeconomic tripod although improved is still insufficient. Despite an expressive primary surplus, the burden of public debt is very high and puts pressure on the interest rate. The public sector high financing requirements, generated mainly by its very high debt financing needs, competes for the scarce available savings, causing the interest rate that clears the goods market to be very high. Government spending crowds out private investment and prevents the economy from growing.

A heterodox reading of this argument would suggest the alternative to be a unilateral restructuring of public debt. An orthodox reading would be that the primary surplus would have to be even higher, in order to finance a larger share of debt service.

In view of the turbulence and risks involved in debt restructuring this is not a hypothesis that deserves to be considered. Given the very high tax burden already in place, it does not seem appropriate either -- with high political costs and more economic distortions -- to search for higher primary surpluses through tax and other government revenue increases. One of the critical aspects of the current situation is exactly that the attempt to control the budget deficit was conducted in a myopic manner. The objective of balancing the public sector accounts, in the short run and at all costs, did not take into account the distorting and productivity inhibiting effects provoked by the expressive increase in the tax burden and the higher “recycling” of income through the State. A reduction and rationalization of public spending would be very welcome indeed, but this is a difficult process to implement in the short-run, as demonstrated in an eloquent form by the frustrating efforts at public sector reform conducted in the last few years.

2.3. *Negative shocks sequence.* The third hypothesis is that, although the macroeconomic tripod is now correct, there was an unusual series of adverse shocks, external and internal, in the last couple of years: the blowing up of the Nasdaq bubble, the blackout and rationing of domestic energy supply, 9/11, the collapse of Argentina, and, finally, in 2002, the fear of an electoral victory of the Workers’ Party and the so-called “Lula risk”. The result of such shocks was that the economic tripod, although adequate, did not yet have the time to produce its results for economic recovery and lower interest rates.

This argument is additionally based on the thesis that the management of an inflation targeting monetary policy should aim at smoothing interest rate volatility in its trajectory towards long run equilibrium. It happens that the real interest rate at the starting point, immediately after the adoption of a floating rate regime in January 1999, was set at a level sufficiently high to compensate for the negative effects, on inflation and the capital account, of the confidence crisis provoked by the devaluation. That is, the starting rate was still a reflex of the workings of a fixed exchange rate under a big stress. In this perspective, in the absence of additional adverse shocks, it is only a question of time for the country to start enjoying a real

interest rate equivalent to those of other stable economies.

Although we agree with this last interpretation as to the management of monetary policy since the float, we also believe that in Brazil we have a distortion, of a resilient nature, that prolongs and eventually impedes the convergence to real equilibrium interest rates compatible with those observed internationally. To this we now turn.

3. Jurisdictional uncertainty.

Jurisdictional uncertainty is introduced in three steps. First, we argue that this uncertainty explains the paradox posed by the existence of an offshore long-term market for Brazilian credit and the inexistence of such market on-shore. Second, the uncertainty is linked to an anti-saver and anti-creditor bias at all levels of government. Third, a graphical illustration is provided of the consequences of varying jurisdictional uncertainty for the term limits of the domestic credit market.

3.1. On-shore vs. offshore. For a better understanding of our conjecture, it is first necessary to call attention to a relatively ignored aspect in the debate on high interest rates, i.e., the inexistence of a local long-term credit market. There are certainly some channels for long-term credit, typically associated to government banks with compulsory funding, but a market as such does not exist. Experience shows that it is possible to lengthen maturities through tax incentives (such as income tax deferment in private pension plans) or through decisions of managers required to hedge long-term liabilities (such as the case of pension funds willing to buy long term price-indexed assets). Although there are some other specific exceptions, such as the financing of durable goods, there is no local long-term credit market.

There is however a long term market when the jurisdiction is foreign. Nowadays, access to this market is restricted to the government, big companies and big banks – firms the size of which justify the cost of verification of credit quality. The credit risk is, thus, Brazilian, but these same firms that obtain long-term credit outside the country, are unable to obtain financing with equivalent maturity in the domestic market.

The fact that there is long-term credit offshore but not on-shore is not explained by the location of the creditors' decision-making center, since there are resident creditors with decision centers offshore, and non-resident creditors with decision centers in the country. That is, the same creditors act on both markets, but they are only willing to lend long-term offshore.

The inexistence of a local long-term credit market is also not explained by the currency of denomination of contracts. Despite the legal restrictions for the local issuance of dollar-indexed private debt, not even Brazil's Treasury is able to finance itself locally with long-term dollar-linked bonds. There is long-term credit only if the jurisdiction is foreign. It is the jurisdiction -- the uncertainty or risk associated to Brazilian jurisdiction -- that is at the root of the inexistence of a long-term domestic credit market.

There is no long-term credit market on-shore, either in *Reais* or foreign currency. Offshore, there is long-term credit for Brazilian risk only if the currency of

denomination is foreign. The inexistence of long-term offshore credit denominated in *Reais* is also a consequence of jurisdictional uncertainty. The reason is that the execution of such contracts would necessarily make reference to Brazil's jurisdiction, as the issuer of the reference currency. What one observes offshore is the existence of synthetic assets denominated in *Reais*, but settled in dollars. These mirror domestic credit instruments, exclusively of a short-term nature, that exist in Brazil. The contracts that underlie such synthetic assets make it explicit that the risks of execution and settlement are exactly equivalent to those of the assets in *Reais* to which they are referred. They are, thus, vehicles that make the international transfer of currency unnecessary, but they are merely mirror images of Brazilian credit contracts. Although signed offshore, they are subject to the uncertainties of Brazilian jurisdiction.

Available credit is, thus, restricted to the short-term in Brazil or the long-term in dollars offshore, because only the later escapes the risk of Brazilian jurisdiction. The two-part table below helps to illustrate the situation:

	Short-term		Long-term	
	Brazil	Offshore	Brazil	Offshore
<i>Reais</i>	yes	yes	no	no
Dollars	yes*	yes	no*	yes

*restrictions apply to private debtors

The left-hand side of the table refers to financial contracts for the short-term; the right-hand side, to long-term contracts. The lines describe the currency denomination of the contracts (in *Reais* or in dollars); the columns describe the jurisdiction (Brazil or offshore). As the left-hand part of the table indicates, short-term contracts are available in both denominations and locations (except for the fact that there are legal restrictions to domestic dollar denominated contracts). Long-term contracts are shown in the right-hand part of the table. There are contracts only offshore and denominated in foreign currencies. The jurisdiction uncertainty impedes contracts in *Reais* offshore, as well domestic contracts denominated either in *Reais* or foreign currency.

Jurisdiction uncertainty gives substance to the so-called "original sin" of international finance, identified by Hausmann and Eichengreen (1999), that is, the incapacity of issuance of long-term external debt denominated in the national currency. Olivier Jeanne (2003) argues that the "original sin" is the result of lack of credibility of domestic monetary policy in a context of fixed exchange rates. We consider this interpretation to unduly restrict the problem to risks posed by the volatility of foreign exchange and interest rates. If this were the only problem, there

should exist a local dollar-indexed long-term market for financial contracts. It is true that there are legal restrictions to local long-term contracts in foreign currency, but not even Brazil's Treasury, which is not subject to such restrictions, manages to finance itself with dollar-indexed long-term bonds in the local market.

Jurisdictional uncertainty is associated to lack of confidence in the monetary standard, but it does not restrict itself to a mere suspicion on the capacity of maintaining the purchasing power of the currency in the long run. Even in the absence of inflationary corrosion or losses caused by exchange rate devaluation, risks remain of capital losses associated to acts of the Prince or judicial interpretations unfavorable to the saver.

Jurisdictional uncertainty is not to be confused with frontier or transfer risk. The market knows how to price in frontier risk, as demonstrated by the difference of spreads between CDs issued by Brazilian banks offshore with and without the "dollar constraint" clause. Frontier risk by itself would thus not inhibit the existence of a long-term domestic credit market.

Jurisdictional uncertainty is also not to be confused with credit risk. This, as the frontier risk, can also be priced, as demonstrated by the existence of long-term foreign credit both for the Brazilian Treasury and big firms or financial institutions. The spread paid by Brazil's Treasury over US Treasury paper of similar duration, which has conventionally been denominated "country risk", is the market estimate of the country's credit risk.

3.2. *Anti-creditor bias*. The inexistence of a local long-term credit market signals the presence of an important uncertainty factor. This uncertainty, not quantifiable, and thus not possible to be expressed in terms of a risk premium, is what we denominate jurisdictional uncertainty. It affects, to use Keynes's (1963) words, the stability and safety of the money contract by which the "investor class" makes savings available to the government and the "active business class". It is an uncertainty of a diffuse character, which permeates the decisions of the Executive, Legislative, and Judiciary, and manifests itself predominantly as an anti-saver and anti-creditor bias. The bias is not against the act of saving, but against the financial deployment of savings, the attempt to an inter-temporal transfer of resources through financial instruments that are, in last analysis, credit instruments.

The bias is transparent in the negative social connotation of figures associated to the moneylender – "financial capital" by opposition to "productive capital", "banker" as opposed to "entrepreneur". The debtor is viewed on a socially positive form, as that who generates jobs and wealth, or that who appeals to the bank to cope with adverse life conditions. This bias may be observed more or less everywhere, but it is perhaps particularly acute in Brazil, probably because of the deep social differences and the high income concentration in the country. Cultural and historical factors may also have facilitated the ideological dissemination in Brazil of this anti-creditor bias. For our purposes, however, it is only important to identify it, not to discuss its causes. In fact, what distinguishes the Brazilian case may not be the depth of this anti-creditor bias, which underlies the jurisdictional uncertainty. As we will argue in section 5 below, peculiarly Brazilian has been the nature of the policy makers' response to the negative saving and investment consequences of such uncertainty.

The concept of jurisdictional uncertainty that we entertain conforms to the growing consensus among economists and political scientists that the social, economic, legal and political organizations of a society, i.e., its “institutions”, are a primary determinant of its economic performance (North, 1981). Overcoming jurisdictional uncertainty involves recasting institutions supporting private contracts – that Acemoglu and Johnson (2003) call “contractual institutions” – and those that impede the expropriation by the government or the elites – “political institutions” or “property right institutions”, in the terminology of those authors.

Jurisdictional uncertainty may thus be decomposed, in its anti-creditor bias, as the risk of acts of the Prince changing the value of contracts before or at the moment of their execution, and as the risk of a unfavorable interpretation of the contract in case of a court rulings. For our purposes, jurisdiction matters as the power of the State consequent upon its sovereignty to issue laws and administer Justice, and is not restricted to the territorial dimension of the contract.

Jurisdictional uncertainty affects all types of long-term mercantile activities in the country. But it should not be confused with the risk of doing business in Brazil, which involves difficulties to constitute firms, logistic problems of transport and ports, complexity of the legal and labor legislation, high criminality, etc. In our conceptualization, more focused on the question of capital formation, jurisdictional uncertainty is consequent upon an anti-creditor bias, not an anti-business bias *tout court*. This is confirmed by the fact that foreigners are willing to make long-term private direct investment in the country, but not to extend local long-term credit even to associated firms. It is also confirmed by the fact that often business firms are benefited as debtors by the materialization of the jurisdictional uncertainty in its anti-creditor bias.

3.3. *Graphical illustration.* The longest maturity for which there is a financial domestic market varies with circumstances and the perception, more or less acute, of the jurisdictional uncertainty. Rare were the moments in which this term was over one year. It is only through artifices, such as the indexing of public debt to the daily overnight interest rate and the pockets of compulsory carrying-over (the constitution of captive markets both in pension funds through regulation and in banks through deposit reserve requirements) that the average tenor of domestic public debt is today around two and half years. In contrast, under foreign jurisdiction, the external public debt has an average tenor of 12 years and Brazil 40 is a highly liquid bond.

Figure 1 illustrates in a schematic form how this dichotomy between the domestic and external markets for Brazil’s debt is reflected in their respective interest rate term structures.

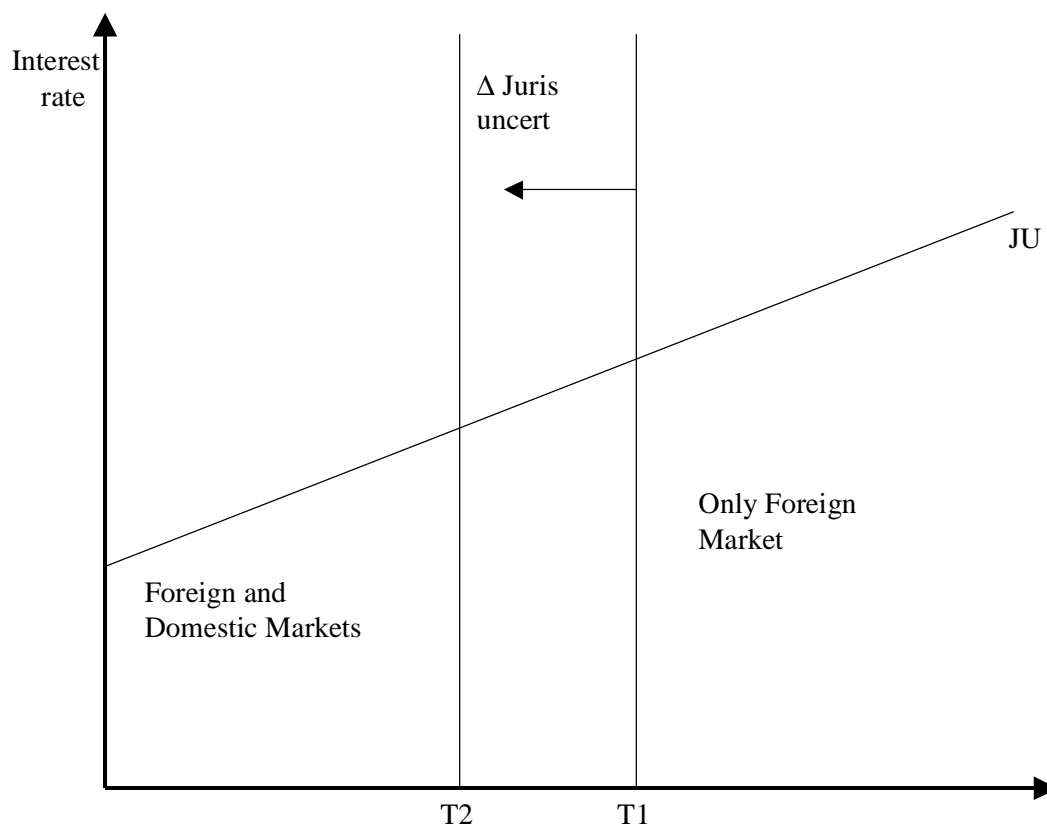


Figure 1

The dollar interest rate is in the vertical axis, and the bond maturity in the horizontal axis. The line JU reflects the interest rate term structure of Brazil's external debt. The vertical line T1 marks the maximum term for which there exists a domestic debt market, as determined by the jurisdictional uncertainty. Up to the short-term limit T1, there is a domestic market and, by arbitrage, dollar interest rates are similar both domestically and abroad, along the line JU. For terms above T1, the jurisdictional risk makes the domestic market disappear, even though there is still an interest rate term structure for external debt. When the perception of the jurisdictional uncertainty intensifies, the short-term limit, for which there is a domestic market, contracts, as illustrated by the displacement to T2 in the figure. Although the intensity of the jurisdictional uncertainty may be estimated by longer or shorter superior term limits for which a domestic market exists, it cannot be priced in, that is, it cannot be expressed as an add-on to the interest rate in the external market.

4. Impact on private savings and investment

The inexistence of a local long-term market results not from lack of financial investment opportunities but from the reluctance of creditors and savers as a whole to lengthen the horizon of their placements. Evidence of this is that there are Brazilian and foreign creditors willing to buy long-term Brazilian bonds abroad, but not inside the country. Even banks that manage to issue long-term paper under external jurisdiction very often try to reduce the term of placements when passing on the loans domestically.

A long-term domestic market does not exist because there are no long-term financial savings available under Brazilian jurisdiction. It is a distortion, which results not from an inter-temporal consumption allocation decision, but from the resistance of individuals and firms to make their savings available for the long-term under domestic jurisdiction. It is a resistance that has roots in our recent history, punctuated by the loss of value of long-term financial contracts, as a result of the manipulation of indexation, changes of monetary standard, freezing of financial assets, judicial annulment of clauses of readjustment in foreign currency, normative acts of the Internal Revenue Service affecting the taxation of on-going contracts, etc. Jurisdictional uncertainty worsened after the 1988 Constitution, with the possibility of changes in the interpretative emphasis between conflicting constitutional principles, particularly the subordination of private property to its social function. It is an experience reinforced by the long tradition of judicial and administrative delays in the payment of credits against the government, as exemplified by the difficulty of cashing in on indemnity or judicial orders of payment.

The presence of the jurisdictional uncertainty distorts savers' behavior in at least four aspects:

- (i) it reduces overall savings because it is a risk pertaining to the postponement of consumption;
- (ii) it makes savers willing to attach a high value to the reprogramming of their financial wealth, thus keeping it short-term and in the most liquid form possible;
- (iii) it induces savers to transfer their long-term financial wealth offshore; and
- (iv) it increases the preference for forms of saving allocation that do not depend on financial intermediation, searching for direct forms of real investment.

Consequently, jurisdictional uncertainty affects the nature and quality of fixed investment. Its effects can be classified into three groups:

- (i) Prevalence of self-investment, or fixed investment that dispenses with financial intermediation, with the inevitable loss of information about opportunities and, hence, lower returns;
- (ii) Small and medium size companies, for which the cost of credit verification is high, do not have access to foreign credit. Consequently, the fixed investment of a large number of firms is strictly limited to the self-generation of cash; and
- (iii) Large firms, with access to the external credit market, have to bank the

risk and the consequences of currency mismatch.

5. Policy-makers' responses

Policy-makers are directly associated to the responsibility for the jurisdictional risk, as testified along the last decades by their many decisions clearly detrimental to savers, as for example the pre-fixing of monetary correction (government debt inflation-adjustment factor) at artificially low levels in the beginning of the 1980s or the financial asset freeze of the Collor plan in the beginning of the 1990s. Independently of the innumerable measures directly hurting the savers, most economic policy decisions that raised the jurisdictional uncertainty were probably a consequence of a mistaken attempt to correct its effects.

Policy-makers perceived the limits to GDP growth imposed by the inexistence of long-term domestic savings. They, however, did not interpret this inexistence as a result of jurisdictional uncertainty, but as a market failure that would render policies attempting to remedy the distortions optimal from a social welfare viewpoint. The purpose of these policies was to create mechanisms of capital formation under the command of the government, on both the mobilization of long-term domestic savings and the financing of fixed investment. They have been traditionally organized along five dimensions:

- (i) Limited currency convertibility. Capital controls, administered in a discretionary form, imposed restrictions on foreign investment of residents. The purpose was to create "captive" savings that could thus be directed by the government to finance investment.
- (ii) Artificial lengthening of the maturity of financial investments, both for public debt and private sector credits. This term lengthening has traditionally been made through:
 - a. tax measures that strongly penalize financial investments of very short maturities (IOFs);
 - b. norms that make compulsory for certain classes of agents (pension funds, insurance companies) the acquisition of long term government bonds; and
 - c. induction to the retention of long-term government debt by financial intermediaries, even in the absence of resources of final investors for such maturities;
- (iii) Mechanisms of compulsory savings (FGTS, PIS/PASEP) administered by government banks (CEF and BNDES).
- (iv) Seignorage as a mechanism to generate and channel forced savings to the public sector, a mechanism explored even further by the creation of public sector commercial banks; and
- (v) Practices at the level of public enterprises to increase savings and investment, such as:
 - a. Payment of benefits to employees through transfers to pension funds instead of direct salary increases;

- b. Use of monopoly power over tariffs and public sector prices with the objective of extracting society's resources for the financing of public investment; such resources as a rule were not transferred to the Treasury as dividends, but rather reinvested in the expansion of the public enterprises themselves; and
- c. Use of public enterprises as vehicles for the absorption of foreign savings through external debt.

The importance of interventions through public enterprises has diminished lately, due to privatization, creation of independent regulatory agencies, establishment of limits for sponsoring firms' transfers to their employees' pension funds, and the progressive subcontracting of the management of such funds. Our attention will thus concentrate on the first four topics, with the following important caveat. The fourth block of interventions has also had its form of expression substantially altered since the stabilization of inflation with the *Real* plan. Forced savings through inflation were replaced in what concerns the public finances in good measure by very distorting taxes – that we will denominate “taxes without income” in Section 9 below.

We will not be describing the history of each intervention type or its current operation mechanisms in any detail. Our interest is to briefly capture their current effects. There is, however, a common thread to this ensemble of economic policy responses. In face of what seemed to the government as a serious market failure – the insufficiency of long-term private savings – the response has always involved an increase in the decision power of the bureaucracy. Thus, the convertibility restriction gave it the power to decide whom and under which conditions is authorized to transfer wealth abroad. The artificial lengthening of public debt maturity increased the dependence of financial intermediaries and magnified the bureaucracy's role as lender of last resort. The bureaucracy always retained the power to decide in which fixed investment compulsory savings could be deployed. There has never been a private or a competitive administration of the savings compulsorily retained, although in principle we could have had a system in which the savings' proprietor had the power to choose the administrator of his resources. “Portability” of compulsory savings has never come into existence.

The increase in the bureaucracy's power seems to have resulted from the confluence of three vectors: passions, interests, and tradition. Passions involve an ideological perception of economic policy as an instrument of optimum control over private agents, myopic in relation to their own long run interests, and passive in their reaction to the interventions of an omniscient government. Interests are expressed through the political articulation of private groups, supporting the power of the bureaucracy over fixed investment, in view of their privileged access to the State and their capacity to mold its investment policies for private profit. Tradition derives from the historical cultural experience of State control over mercantile activities, which, in Brazil, was strong until very recently.

It is not our purpose to analyze the relative strength of each of these vectors, but only to call attention to the fact that they are at the root of the interventionist bias which, in the attempt to resolve the problems caused by the jurisdiction uncertainty, end up by magnifying its negative effects.

We now consider the current effects of each of the previously identified four intervention mechanisms.

6. Convertibility restrictions

In the fixed exchange rate system prevailing from WW-II to the beginning of 1999, restrictions to convertibility had the purpose of giving the government the monopoly of ordering the priorities for the use of scarce international reserves. This monopoly was used to allocate reserves primarily to import capital goods and essential raw materials. The last of the priorities of the policy maker – given his perception that it is necessary to confine domestic savings – was to permit that the owner of financial resources might acquire foreign exchange to transfer it abroad.

Until the 1990s, the restrictions to convertibility, for all practical effects, were absolute, with exceptions admitted only in specific cases administered in a discretionary form. The result was the emergence of an enormous parallel exchange rate market, without legal support but in practice tolerated, through which necessarily passed the settlement of a good share of foreign exchange operations. A gradual loosening of the restrictions to convertibility only occurred after the *Real* plan, with the consequent reduction of the parallel exchange rate market's quantitative expression.

This loosening occurred through the authorization, in the beginning of the 1990s, of on-shore deposit accounts for non-residents, the so-called CC-5. Notwithstanding, it preserved intact the structure of restrictions to currency convertibility. First, not all agents can transfer resources abroad. Big institutional savers (pension funds and the technical reserves of the insurance companies) do not have permission to invest abroad. Second, the transaction costs are high: the bureaucratic cost of compliance is its main ingredient (waiting periods, necessity to provide information to the Central Bank and the Internal Revenue Service, etc.). Third, there are limits for the remittances. Values that are considered voluminous need previous authorization from the Central Bank.

It is crystal clear for any financial wealth owner that a mere administrative decision can revert this situation of relative liberalization. The creation of the mechanism of the CC-5 did not dismantle any of the controls on convertibility and did not involve any reduction of the normative power of the bureaucracy. It maintained the legal and administrative mechanisms of convertibility control, being just a normative expedient to create a fissure making international currency transfers possible, without altering the foreign exchange laws. It just an artificial and shaky by-pass designed to evade the legal prohibition of convertibility. Examples: (i) two exchange rate systems still cohabit, the “commercial” and the “floating”, which can be split at any time by an economic policy decision; (ii) the Central Bank has the normative power to impede, at any moment, the remittances of foreign exchange abroad; (iii) the CC-5 itself, as well as the mechanism that it created to by-pass the barrier of legal restrictions to convertibility, were stigmatized with an aura of anti-patriotism and even of criminality.

With the adoption of the float in 1999, the pursuance of active monetary policy

(in the sense of the ability to drive local interest rates away from the external rate) became compatible with free capital mobility. The very concept of a quantitative scarcity of foreign exchange ceases to apply. Notwithstanding, there has been no substantive progress in relation to the mechanisms of convertibility, nor were the Central Bank powers reduced. It continues to retain the power to suspend convertibility by administrative procedures.

The rationale for controls changed with floating exchange rates. The reason now is the fear that, if full convertibility were adopted, the capital flight for a jurisdiction with a better quality could be of such a magnitude that there would not be any stable equilibrium in the foreign exchange market. Capital flight would depreciate the exchange rate and erode the fiscal base. Such an attitude may be viewed as another example of the fear to float. More fundamentally, however, by keeping capital controls intact, the monetary authorities tend to confirm the conjecture that it is not possible to establish a market price for jurisdictional uncertainty. The underlying assumption is that not even an overly depreciated exchange rate would impede the flight to quality undertaken by residents. The maintenance of a regime of restricted convertibility subject to discretionary reversal in a context of floating exchange rates signals to private agents that the policy maker shares their perceptions about the uncertainty of the jurisdiction.

7. Artificial debt term lengthening

Jurisdictional uncertainty impedes the deployment of long-term financial resources within the country. There is a demand only for short-term debt, even if issued by the government. There is not a voluntary supply of long-term credits for the Treasury. The government, however, needs to give the appearance of being capable to issue long-term debt. Long debt is perceived as positive, because it makes monetary policy more effective and reduces the rollover risk, and thus, the credit risk of public debt. In view of the inexistence of voluntary long-term funds, the lengthening of debt terms is dependent on the willingness of financial intermediaries to make the necessary term transformation, carrying long-term bonds with funding of a very short-term nature. This results in very high interest rate mismatching risks, which required for a long time high premiums on the debt and also some form of implicit insurance by the Central Bank.

Until the creation of the LFT (floating rate bonds based on the daily Central Bank reference rate) in 1986, this debt intermediation process with maturity mismatch increased significantly the cost of the public debt. After the introduction of the LFT, with the consequent elimination of the interest rate risk differential, the addition of a direct cost to public debt became limited to the debt share that the government attempts to finance with instruments other than the LFT. This is not the place for a specific discussion of public debt management, with its diverse instruments – indexation to the dollar or to several different domestic price indexes. But it should be pointed out that the LFT is the only instrument allowing a reduction in the premium paid on long debt, because only it allows the elimination of the mismatch risk between the inter-bank financing rate and the interest rate received by the financial

intermediary when carrying government bonds.

Although most public debt since the creation of the LFT has daily financial indexation, the Central Bank continues to try to lengthen maturities with fixed rate instruments. Such lengthening increases the potency of monetary policy, but it has high fiscal costs, because the government only manages to place fixed rate instruments when market participants expect falling rates and, thus, high carryover profits for the financial intermediaries. Notwithstanding, if expectations are frustrated, the Central Bank is forced to buyback the fixed-rate debt at pre-crisis rates to avoid insurmountable losses and the risk of a systemic crisis. As there is no long-term funding – certainly not at fixed rates – on the part of the non-financial public, the debt is almost entirely carried by the financial intermediaries. As these are, as a collective, maturity mismatched, the Central Bank offers an implicit insurance that ends up by forcing it to buyback the debt, at unfavorable prices, in critical moments.

The policy makers also try to force the public not to stay parked in the very short run through administrative and fiscal measures that increase the cost of investing resources in the very short term. Such measures imply, however, an additional debt cost. The arbitrage possibilities for the owner of resources, both in external financial markets and in the domestic market for durable goods, result in that, given the net of tax required rate, the gross of tax short term interest rate has to be higher in the proportion of the financial cost of the administrative and tax measures.

The ensemble of measures of induced term lengthening and restrictions to very short-term placements, create, furthermore, a negative signaling effect that makes the saver more unwilling to financing the debt, even at short terms.

8. Compulsory savings

The use of inflation as a mechanism of extracting forced savings for the government gave signs of exhaustion in the beginning of the 1960s. The structural reforms of the second half of that decade aimed at replacing part of the forced savings generated by inflation by institutional mechanisms of compulsory saving, notably the FGTS, the PIS-PASEP, and the unification of the social security funds.

The reforms that the military regime introduced in this period also included the “monetary correction”, an attempt at neutralizing the perverse effects of inflation on savings through indexation. The indexation of assets was designed to preserve the real value of the recently created instruments of compulsory savings, and to serve as a stimulus to long-term voluntary savings. The Savings Account with indexation to the inflation rate plus 6% of yearly interest was the first attempt to create a retail instrument for long-term voluntary savings. The resources of the savings accounts would be primarily directed for the financing of investment in housing.

The surcharges on the wage bill for social security, the FGTS, and the PIS-PASEP ideally should be perceived as savings, that is, a mere inter-temporal income transfer, without impact on the permanent income of wage-earners. In practice, however, the monetary correction was systematically underestimated; at times it was pre-fixed at rates lower than expected inflation; and, moreover, innumerable barriers for the access of wage earners to the resources of their compulsory savings were

erected. Besides, the investment in projects without profitability, as well as the misuse of resources for the financing of current government spending, led to successive increases in the tax rate of the instruments of compulsory savings.

The bad management of the resources and the departures from the original objectives of the instruments of compulsory savings made wage earners perceive that the surcharges did not effectively represent deferred income, but merely taxes without counterpart of future individual income. This perception transformed the compulsory surcharges on the wage bill into a tax wedge between the income paid by the employer and the income received by the employee.

The difference between the cost of labor for the firm and the net income received by the wage earner induced a displacement of employment from the formal to the informal sector of the economy, where the tax wedge did not apply. Since labor productivity is much lower in the informal sector, there is a reduction in the average productivity of the economy. This means the introduction of a real distortion that reduces natural output below potential output, with adverse implications for the natural rate of interest, as discussed in Section 10.

9. Taxes without income

The mechanisms of financial indexation introduced in the mid-1960s were later extended and generalized for commercial and labor contracts. This worsened the inflationary process in the following decades, and made the use of forced savings to transfer income to the public sector even more difficult than before.

The price stabilization achieved by the *Real* plan made explicit the magnitude of the public sector deficit, which was previously masked by the gains with the forced transfer of savings through inflation. It was no longer possible to postpone the adjustment of the public sector accounts, because long-run external credit was been affected by the default risk and the local long-term domestic credit market was very small indeed.

The most efficient adjustment would have been through spending reductions. This option, however, was made more difficult by the amplification of tax earmarking in the 1988 Constitution, and by the end of the flexibility, propitiated by inflation, to reduce real current spending through delays in the release of resources.

The second best alternative would have been to raise the less distorting taxes, such as the income tax, or to institute a national value added tax. Fiscal federalism, however, heightened by the 1988 Constitution, forced the federal government to transfer more than 50% of the revenues of the income tax and the federal value added tax (IPI) to the states and municipalities. The deadlock in the discussion about the redistribution of a new national value added tax on consumption, to replace the existing state-level valued added taxes on production, made any attempt at a rational reform of the tax system unviable.

In face of the constitutional inflexibility of spending, the restriction on external financing, and the political difficulties of rationalizing the tax system, the only remaining alternative was to increase the so-called “social contributions”, i.e., the cumulative taxes that are levied on sale proceeds and financial transactions.

The tax burden reached very high levels even by standards of industrial economies: 37% of GDP in 2002. This increase in the tax burden permitted the generation of high primary surpluses (4.3% of GDP in 2003) and a relative stabilization of the debt-to-GDP ratio. The form of implementation of the increase in the tax burden enormously aggravated its distorting burden: through taxes on sale proceeds and financial transactions.

Such taxes are characterized by their incidence independently of the generation of income. Used in a vast scale, they tend to create a dichotomy in the industrial structure (Bodin, 2003). On one side, there are small businesses that only tax evasion makes them viable. On the other side, there are big firms, with oligopolistic power or trademark based product differentiation, that enjoy sufficiently high profit margins over sales to comply with taxation. Average sized firms, however, which are unable to operate evading taxes given their visibility, are hard put to pay taxes on turnover.

The result is that demand increases propitiated by interest rate reductions tend to have a response more in the plane of prices than of quantities. The informal sector cannot respond to the demand increase in the short-run, at the risk of becoming unviable for having to start paying taxes without income. As firm size increases, the risks of informality also increase and, from a certain size upward, the firm is forced to become formal. The passage to the formal sector, however, makes the firm unviable and it either is acquired by a big group or goes bankrupt. The formal sector, because it is almost exclusively composed of large cartels, capable of attending the complex demands of fiscal compliance, responds to the increase in demand raising margins and prices.

This has two associated effects: (i) the non-inflationary interest rate is higher than it should be; and (ii) the productivity of the economy is lower than it would be without a large informal sector that reduces natural output.

Another aspect of the process of equilibrating public sector finance was the replacement of traditional populism by what we may call “fiscal populism”. Traditional populism is here defined as the attempt to influence voters by resorting to easy money and/or increasing expenditures not backed by taxes; the stop and go process thus generated was aptly called the electoral business cycle. In contrast, under “fiscal populism” there is no tolerance for deviations of inflation relative to target or for fiscal deficits. The political objective proper is achieved by increasing spending. The result is fiscal equilibrium associated with large government recycling of national income (i.e., expenditure and taxes are high proportions of income), the negative consequences of which are illustrated in the following.

10. The model

It is now time to return to our discussion on the reasons for extraordinarily high interest rates in Brazil. Jurisdictional uncertainty as well as the distortions created by policy makers was already in full force when the inflation targeting regime was introduced. It would thus be misleading to interpret the workings of the distortions under inflation targeting as defects or inadequacies of the inflation targeting regime in itself. Our task is to insert the distortions into the inflation targeting framework to

examine how a sustained and encompassing program aiming directly to remedy the jurisdictional uncertainty may alter the equilibrium interest rates. Our approach will be illustrative and shamelessly deprived of analytical rigor.

We assume a strict inflation-targeting framework. The interest rate i_t is set independently of other policy objectives such as minimizing output fluctuations or achieving interest smoothing. This is not realistic. Since the adoption of the inflation-targeting regime, interest rate smoothing was prevalent with the exception of discontinuities provoked by major shifts in expected inflation. We also have the evidence that in some circumstances the Central Bank prefers to miss the target to prevent a too severe contraction in output (such as the accommodative stance adopted after the 2001 shocks). The rationale for assuming strict inflation targeting is just simplicity.

We will also disregard Central Bank credibility issues. Under full credibility and no disturbances, actual and expected inflation coincide with the announced time invariant inflation π^* . The assumption works as a rough approximation to reality. In spite of not having institutional independence from outside pressures, the Central Bank has enjoyed in practice substantial control over monetary policy instruments. Markets recognize well the accountability and transparency of the Central Bank since the adoption of inflation targeting. Not having formal independence or fixed mandates for board members, however, is extremely costly in some circumstances, as exemplified by the surge in inflation expectations after the election of Lula in the last quarter of 2002.

Equations (1) and (2) summarize the model:

$$(1) \quad \pi^* = F[x_t, E_t x_{t+1}, e_t / e_{t-1}, (i_t - \pi^* - r_t)]$$

$$(2) \quad G [(1-p).(1+i_t).(e_t/E_t e_{t+1}) - (1+r^*)] = N(e_t).$$

Equation (1) is a reduced-form domestic goods market equilibrium condition under a fully credible inflation-targeting policy. We take x_t as the current output gap, $E_t x_{t+1}$ as the expected output gap, e_t / e_{t-1} as the ratio between the current nominal exchange rate and last period's exchange rate, and r_t as the natural interest rate. To hit a given inflation target π^* , the Central Bank needs to set the spread between the real interest rate to the natural rate higher, the bigger are the actual and expected output gaps and the exchange rate depreciation.

In (1), we define the natural rate of interest, r_t , as the real rate of interest required to keep aggregate demand equal to the natural rate of output; any factor changing the natural rate of output impacts the natural rate of interest as well. In particular, a positive productivity shock reduces the natural rate while an increase in government spending raises the natural rate of interest. The definition of the natural rate implies that the variables of $F(\cdot)$ are mutually constrained: if both current and expected output gaps are zero and the real exchange rate is constant ($e_t / e_{t-1} = (1 + \pi^*)$), then the rate of interest ($i_t - \pi^*$) is equal to the natural rate, r_t .

Equation (2) is the balance of payments equilibrium under the simplifying assumption that the level of reserves is constant. The left-hand side captures capital flows as a function of the interest rate spread. The variable $(1+i_t).(e_t/E_t e_{t+1})$ is the

rate of return in dollars of an investment in reais; r^* is the external, risk-free interest rate in dollars; p stands for both credit risk (or the risk of default on the domestic debt) and frontier risk (or the risk of default on external debt, caused by capital controls or sovereign restructuring). The two risks are simplified here as all-or-nothing events. The right hand side gives net exports as a function of the current exchange rate.

The capital flows described in (2) differ from the formulation given by Blanchard (2003) in three aspects. First, we assume that the Central Bank short-term domestic interest rate i_t may pose credit risk. Second, we take p as exogenously given and not as a function of the interest rate itself. Third, we leave risk aversion considerations in the background. Sudden stops will be captured in the analysis by shifts in the $G(\cdot)$ function.

The model determines simultaneously the domestic interest rate and the exchange rate as a function of the natural interest rate, the external risk free interest rate, the default probability, the current output gap, and expectations on the future output gap and the exchange rate.

We now turn to expectations. It may be argued that, under full Central Bank credibility, there is a strong case to be made for a rational expectations approach in which the one-period ahead expected values of the output gap and exchange rate coincide with the true conditional expectations. To simplify matters, however, we will keep short from modeling the learning dynamics by which expectations evolve over time and assume that expectations are exogenously given.

Figure 2 illustrates the model, with the domestic interest rate in the vertical axis and the exchange rate in the horizontal axis. The domestic equilibrium (1) is upward sloped. An increase in the real exchange rate requires a higher interest rate for inflation to remain constant at π^* . The external balance equation given by (2) is downward sloped. An increase in the real exchange rate increases both net exports and capital inflows; external balance requires then a lower interest rate to reduce capital inflows. Note that if p is sensitive to the interest rate, as in Blanchard (2003), the external balance curve could be upward sloped.

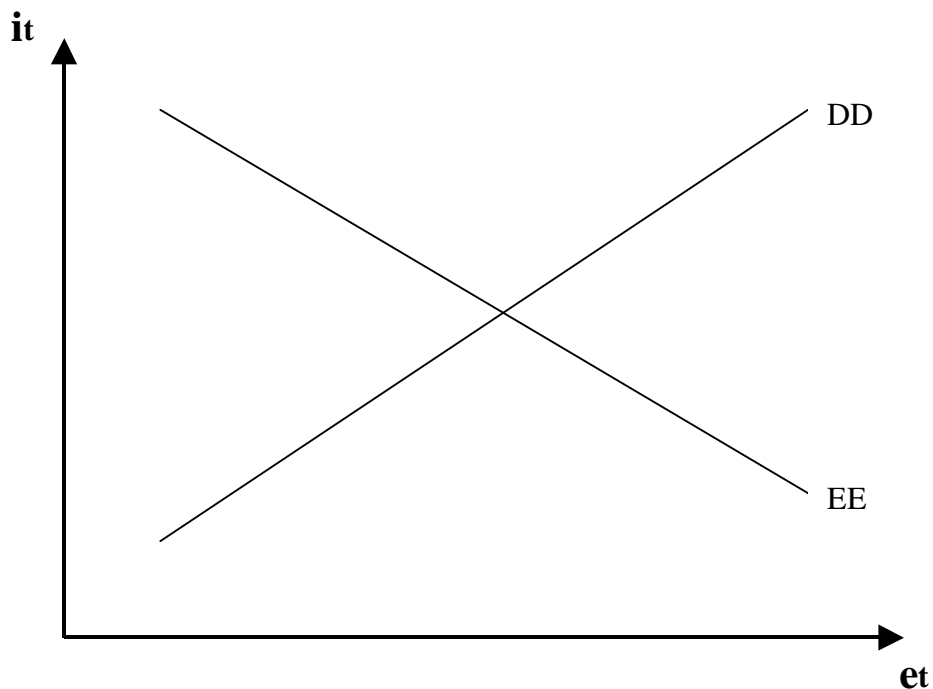


Figure 2

The following exercises are straightforward:

- A productivity increase raises the natural rate of output, reduces the natural rate of interest and shifts the domestic balance curve to the right.
- A reduction in the probability of default or in the convertibility risk shifts the external balance curve to the left.
- An increase in the risk free foreign interest rate shifts the external balance curve to the right. The same holds true for any adverse shocks to capital flows.
- A reduction in the expected output gap shifts the domestic curve to the right.
- A larger expected exchange rate shifts the external balance curve to the right.

11. Final remarks

With the help of the model, we may now discuss the effects of a comprehensive program aimed at reducing the jurisdiction uncertainty in terms of the workings of the inflation-targeting regime. Suppose agents perceive such program to be sustainable over time, with the unwinding of the distorting policy responses reinforcing their perception about the quality of the domestic monetary standard. Then:

- The removal of capital controls and the commitment to establish a fully

convertible currency would be perceived as a reduction of p , shifting the curve EE to the left.

- The abandonment of attempts to lengthen the maturity of public debt not backed by changes in the behavior of final wealth holders would reduce the fiscal cost of the debt. A smaller p value also captures this effect, shifting EE to the left.
- The replacement of distorting taxation by income taxes would make the DD curve flatter as smaller increases in interest rates would be needed to offset the expansionary effects of a depreciated exchange rate.
- A balanced reduction of expenditure and taxes (reversing the “fiscal populism”) would be equivalent to a productivity shock (larger natural output), reducing the output gap and shifting DD to the right.
- The elimination of mechanisms of forced savings increases the productivity of aggregate investment, thus increasing the natural rate of output and shifting DD to the right.

Summing up: unwinding the policy responses to the jurisdictional uncertainty reduces the short term interest rates set by Central Bank (both real and nominal) but the net effect on the exchange rate cannot be predicted on a priori grounds. The annulment of the “financial” distortions (convertibility restrictions and artificial debt term lengthening) would appreciate the real exchange rate; but the annulment of the “real” distortions (compulsory savings and taxes without income) would depreciate the exchange rate.

These results rely critically on the assumption that the issues posed by jurisdiction uncertainty are addressed directly and in a coherent and sustainable mode. For it is all too easy to think of scenarios in which the unwinding of policies may backfire. Examples:

- The removal of capital controls is perceived as an opportunity window to escape from the local jurisdiction. The perception is that convertibility will not last long. Consequently, the future expected exchange rate increases, shifting the curve EE to the right.
- The reduction of public debt maturity is perceived as making the public sector more vulnerable to portfolio shifts by private investors. Monetization of debt looks more likely. Therefore, the future expected exchange rate increases, shifting the curve EE to the right.
- The dismantling of forced savings reduces the funding available for long-term investment, as the behavior of savers remains unaltered. The expected output gap increases as the next period natural rate of output shrinks (Think of less investment in infrastructure, for instance). DD shifts to the left.
- The substitution of “easy to evade” income taxes for “easy to collect” taxes without income raises doubts about total tax collections. If agents anticipate that government spending will not budge, the expected future output gap increases, shifting DD to the left.

The question then is how to ensure that the removal of current policies is understood

as increasing confidence in domestic jurisdiction. It is probable that the removal as such will not be sufficient; if property rights are violated in the meantime, for instance, it would be very hard to convince agents that the problem of jurisdictional uncertainty is being tackled appropriately. In particular, a “big bang” approach is to be avoided. Although the guidelines of policies to deal with jurisdictional risk are outside the scope of this paper, it seems that a comprehensive and pre-announced program, with well-defined steps and criteria for moving from one phase to the next, is the way to go.

The dismantling of forced savings, for instance, can be done at the margin and over a certain number of periods. The road to convertibility may be paved by strengthening the prudential framework, limiting the scope of capital controls that may be used in the transition phase, as well as defining proper international reserve requirements (see Arida, 2003). Prudential regulations limiting the mismatch of maturities of financial intermediaries may be the best way to deal with the artificial lengthening of debt maturities. The reduction of distorting taxes may be conditioned to the adoption of strict budget-balancing rules.

With all these caveats, it is difficult to think of another manner to bring interest rates down in Brazil in a sustainable way.

References

Acemoglu, D. and S. Johnson (2003), “Unbundling institutions”, NBER WP 9934, August.

Arida, P. (2003), “Aspectos macroeconômicos da conversibilidade: o caso brasileiro”, unpublished.

Blanchard, O. (2003) “Fiscal dominance and inflation targeting: lessons from Brazil”, unpublished.

Bodin-de-Moraes, P. (2003), “Favelização da indústria: as conseqüências destruidoras da tributação ineficiente”, *O Estado de São Paulo*, May 2.

Eichengreen, B. and R. Hausmann (1999).

Jeanne, O. (2003).

Keynes, J. M. (1963), “Inflation and Deflation”, in *Essays in Persuasion* (Norton).

North, D. (1981), *Structure and Change in Economic History*. New York: WW Norton & Co.