8 Credit, Interest, and Jurisdictional Uncertainty: Conjectures on the Case of Brazil

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

8.1 Introduction

Real interest rates have been extraordinarily high since the *Real* Plan stabilized inflation in 1994. Until 1999, one might argue, the macroeconomic policy 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. The adoption of a floating exchange rate at the beginning of 1999 marked the start of a new phase. The public sector accounts showed a primary surplus on a systematic and sustained basis, and the real exchange rate depreciated to the point where the country started to produce record high trade balance surpluses, and significantly reduced the current account deficit. Real interest rates have been, on average, lower than before, although they are still exceptionally high when compared with those of other emerging market countries. However, why is it that the interest rate remains so high?

The explanations offered for this phenomenon can be labeled as "bad equilibrium," "insufficient fiscal adjustment," and "sequence of negative shocks" hypotheses. Section 8.2 briefly reviews these hypotheses. Whatever their relative merits in explaining why interest rates have been so high since the adoption of a floating exchange rate, we argue that there is something more fundamental linking the inexistence of local long-term domestic credit to the persistence of high short-term interest rates.

Section 8.3 introduces the concept of "jurisdictional uncertainty" and argues that it is the reason for the nonexistence of a long-term domestic credit market. The concept of jurisdictional uncertainty is distinguished from related risk concepts in section 8.4. The negative consequences of jurisdictional uncertainty for private savings and

investment are spelled out in section 8.5. Section 8.6 argues that the adverse consequences of jurisdictional uncertainty have been misinterpreted as market failures that require state intervention. These interventions have varied over time but can be gathered into four categories: restrictions *to* currency convertibility, artificial term lengthening of public debt, compulsory saving funds, and forced savings through inflation-with the latter now replaced by "incomeless" taxes. Section 8.7 reviews each of these interventions and argues that they aggravate the effects of jurisdictional uncertainty. A very simple two--equation reduced-form open economy macro model is presented in section 8.8 *to* show the impact of each intervention 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 doses the chapter in section 8.9.

8.2 Current Interpretations of High Interest Rates

Three general lines of argument can be identified in the debate about the reason why real interest rates are so high in Brazil.

The first is that monetary policy after inflation stabilization has been too conservative. In the period of pegged and overvalued exchange rates (1994-1998), high interest rates were required *to* compensate for the risk of devaluation. After the adoption of a floating exchange rate (1999-to date), monetary policy was caught in a "bad equilibrium," The argument is that very high real interest rates raise the risk on public debt. It should thus be possible *to* obtain the same rate of inflation, everything else remaining constant, with a lower real interest rate and a lower risk on public debt. This is what we call the "good equilibrium."

The double equilibrium hypothesis then presupposes fiscal dominance in an open economy. Inflation is sensitive to the exchange rate, but the exchange rate responds to the 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: high real interest rates worsen the fiscal disequilibria, and increase the default risk and the risk premium demanded by creditors.

The double equilibrium model is internally consistent. Its empirical relevance, however, has 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 pol-

icies through time would hardly dare to make the abrupt interest rate cut required *to* reach the good equilibrium.

A second hypothesis is that the fiscal adjustment is still insufficient. Despite a large primary surplus, the burden of public debt is very high and puts pressure on the interest rate. The public sector high financing requirements compete for the scarce available savings, raising the market-clearing interest rate. Government spending crowds out private investment and prevents the economy from growing.

The third hypothesis is that there was an unusual series of adverse shocks, external and internal, in the last couple of years: the burst of the Nasdaq bubble, the rationing of domestic energy supply, September ll, the collapse of Argentina, and finally, in 2002, the fear of an electoral victory of the Workers' Party and the so-called Lula risk. In the wake of these shocks, the macroeconomic policy, although adequate, has *not* yet had sufficient time *to* produce results for economic recovery and lower the interest rates. An inflation-targeting monetary policy should attempt *to* smooth interest rate volatility in the trajectory toward long-run equilibrium. Thus, in the absence of additional adverse shocks, it should be only a question of time before the Brazilian real interest rate converges *to* the levels of other stable economies. In addition the central bank is not independent and has therefore *to* establish its reputation. Interest rates are high ex post but *not* necessarily ex ante because the public has doubts that political interference will prevent the central bank from complying with the inflation target.

These alternative interpretations are not mutually exclusive. A sustainable improvement in the fiscal regime, preferably in the form of a contraction of public expenditure, will certain1y reduce the equilibrium rate of interest. It is also dear that Brazil has *not* been able yet *to* extract the full potential of the macroeconomic policies put in place in 1999. The explanation above, however, misses an important point behind the persistent1y high interest rates in Brazil. We believe that a policy-related distortion, of a resilient nature, is impeding the convergence *to* real equilibrium interest rates compatible with those observed internationally.

Before we elaborate on this conjecture, we need to call attention *to* a relatively forgotten point in the debate on high interest rates: the absence of local long-term bond and credit markets. In the literature this fact is used to explain why, unlike in other countries, monetary policy is less effective in Brazil (smaller wealth effect), or private financing for long-term investment is so small. The connection between the lack of a

local long-term interest rate structure and the high short-term real interest rate has, however, gone unnoticed. The reason seems to be that the threads establishing such connection go beyond the usual macroeconomic channels covered in the literature.

8.3 Jurisdictional Uncertainty

We start by noting that there are some local instruments used for long term credit tied to government development banks with compulsory funding, but no market as such exists. Experience shows that it is possible to lengthen maturities through tax incentives (e.g., income tax deferment in private pension plans) or through decisions of fund managers required to hedge long-term liabilities (e.g., 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, the local long-term bond market is small and, symptomatically, restricted to Treasury bonds with a captive institutional demand, and with an inflation adjustment factor ("IGP-M") calculated by an independent, nongovernmental institution. There is, however, a large long-term credit market open to Brazilian debtors where the jurisdiction is foreign. Access to this market is restricted to the government, large companies-firms whose size justifies the cost of verification of credit quality -- and large banks. The credit risk is thus Brazilian, but these same firms that obtain long-term credit outside the country are by and large unable to obtain financing with equivalent maturity in the domestic market.

The existence of a long-term credit offshore but not on-shore is not explained by the location of the creditors' decision-making center. There are resident creditors with decision centers offshore and nonresident creditors with decision centers in the country. The same creditors act on both markets, but they are only willing to lend long-term off-shore. 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 finances itself locally with long-term dollar-linked bonds. There is no long-term çredit market on-shore, not in *reais* nor in foreign currency.

Regardless of the residence of the creditor or of the currency of denomination of the contract, long-term credit is only available if the jurisdiction is foreign. It is the jurisdiction--the uncertainties associ-

ated to the settlement of contracts in the Brazilian jurisdiction-that is at the root of the inexistence of a large long-term domestic credit market.

The absence of long-term offshore credit denominated in *reais* should also be noticed. The execution of offshore contracts in *reais* would in the event of litigation necessarily refer to the Brazilian jurisdiction, because Brazil is the issuer of the reference currency. Although signed offshore, credit contracts are thus subject to the uncertainties of the Brazilian jurisdiction. The credit contracts in *reais* that exist offshore are synthetic assets denominated in *reais* but settled in dollars. They 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 mirror images of Brazilian credit contracts, and really just vehicles launched by financial institutions that make a profit by bearing the responsibility of complying with the legal requirements for converting dollars into *reais.* Such contracts would disappear if the *real* were fully convertible.

Credit is thus restricted to the short term in Brazil or the long term in dollars offshore, since only the later escapes the risk of the Brazilian jurisdiction. Table 8.1 illustrates the situation. The left-hand side of the table refers to short-term financial contracts and 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). Short-term contracts are available in both denominations and locations while long-term contracts are available only in dollar terms and under offshore jurisdiction.

Table 8.1 shows that long-term credit exists only when the jurisdiction is not Brazilian. The critical divide is the jurisdiction, not the denomination currency. There are legal restrictions on the private

Table 8.1
Credit contracts in Brazil

	Short term		Long term	
	Brazil	Offshore	Brazil	Offshore
Reais	Yes	Yes	No	No
Dollars	Yes [a]	Yes	No [a]	Yes

a Restrictions apply to private debtors.

issuance of domestic debt with dollar indexation clauses but these restrictions do not apply to the Treasury. There are short-term contracts denominated in *reais* in both jurisdictions but not long-term contracts. Because the legal foundation of the domestic currency is of necessity Brazilian, offshore contracts in *reais* are "contaminated" by the Brazilian jurisdiction. Short-term external finance in *reais* mirrors short-term internal finance. Long-term credit is therefore only available offshore and denominated in foreign currencies, which is the only way to avoid the reference to events defined in the Brazilian jurisdiction.

The refusal to extend long-term credit in the domestic jurisdiction signals the presence of an important uncertainty factor. This affects, to use Keynes's (1963) terminology, "the stability and safety of the money contract" by which savings are made available to the government and other debtors. It is an uncertainty of a diffuse character that 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 the 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 an entity that generates jobs and wealth or appeals to the bank to cope with adverse life conditions. This bias may be observed more or less everywhere, but it is particularly acute in Brazil, probably because of the deep social differences and the high levels of income concentration in the country. Cultural and historical factors could also have facilitated the dissemination of this anti-creditor bias.

The depth of this bias in Brazil may be inferred from the answers to a recent elite opinion survey conducted by two Brazilian political scientists (Lamounier and Souza 2002), and summarized in table 8.2. Confronted with the dilemma between the enforcement of contracts and the practice of social justice, only 48 percent of the 500-plus respondents considered that contracts have always to prevail over social considerations. Surprisingly enough, only 7 percent of the members of the judiciary said that they were prepared to judge contracts independently of social considerations, and a full 61 percent answered that the achievement of social justice justifies decisions in breach of contracts.

Tabela 8.2

Contract enforcement according to the Brazilian elite

	Executive	Legislative	Judiciary	Total[a]
Contracts must be enforced independently of their social effects	77	44	7	48
Judge has to perform a social function, and the quest for social justice justifies decisions in breach of contracts	15	39	61	36
Other answers	08	17	32	16
Total	100	100	100	100

Source: Lamounier and De Souza (2002).
[a] Includes businesspeople, union members, journalists, members of religious orders, NGO-members, and intellectuals

The concept of jurisdictional uncertainty conforms to the growing consensus among economists and political scientists that the social, economic, legal, and political organizations of a society, meaning its institutions, are a primary determinant of its economic performance (North 1981). In the Brazilian case, 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 an unfavorable interpretation of the contract in case of a court ruling. Overcoming jurisdictional uncertainty involves recasting both what Acemoglu and Johnson (2003) call "private rights institutions," which protect citizens against expropriation by the Prince, and "contractual institutions," which enable private contracts among citizens.

A long-term domestic market does not exist because there are no long-term financial savings available under Brazilian jurisdiction. The "preferred habitat" (Modigliani and Sutch 1982) of savers is the very short term. It is a distortion resulting not from an inter-temporal consumption allocation decision but rather from the reluctance of individuals and firms to make their savings available for the long term under domestic jurisdiction. Banks and financial intermediaries share the same reluctance and only hold medium-term securities under the particular circumstances that we discuss below.

This reluctance has roots in our recent history, punctuated by the loss of value of long-term financial contracts, as a result of the mani-pulation of indexation, changes of monetary standard, freezing of

financial assets, judicial annulment of clauses of readjustment in foreign currency, normative acts of the Brazilian internal revenue service affecting the taxation of ongoing contracts, and so on. The long tradition of delays in the payment of credits against the government, as exemplified by the difficulty of cashing in on indemnity or judicial orders of payment, reinforced the reluctance to invest in long-term debt instruments. Jurisdictional uncertainty worsened after the 1988 Constitution introduced the possibility of changes in the interpretative emphasis between conflicting constitutional principles, particularly the subordination of private property to its social function.

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. In Brazil this maturity was seldom over one year, and in times of stress the duration of savings instruments contracted to levels dose to one day by massive concentration on overnight banking deposits. It is on1y through artifices, such as the indexing of public debt to the daily overnight interest rate and the regulation of captive markets (pension funds' compulsory investments and banks' 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 maturity of 12 years, and Brazil 40 is a liquid bond.

Let T be the maximum term for which there exists a domestic debt market as determined by the jurisdictional uncertainty. For terms above T, this uncertainty makes the domestic market disappear, although there is still an interest rate term structure for external debt. This means that, for maturities longer than T, the jurisdictional uncertainty cannot be evaluated quantitatively; that is, it cannot be expressed as an add-on to the interest rate prevailing in the long-term external markets, and the domestic market ceases to exist. But up to T there is a near perfect arbitrage between dollar-denominated interest rates in the domestic and international markets. Thus, for short-term debt maturities, the jurisdictional uncertainty is embedded in the spread over the riskless US Treasury rate that has to be paid to investors to hold short-term Brazilian government debt on-shore.

8.4 Jurisdictional Uncertainty and Other Risk Concepts

To clarify our concept of jurisdictional uncertainty, it is useful to spell out its characteristics to distinguish these from related concepts in the literature. Although associated with lack of confidence in the monetary standard, jurisdictional uncertainty is not restricted to mere apprehension about the purchasing power of the currency being maintained in the long run If it were so, there would be many long-term credit instruments, both domestic and offshore, indexed to the domestic price level. Even in the absence of possible inflationary and devaluation losses, few investors are willing to buy long-term financial instruments in the domestic jurisdiction. Jurisdictional uncertainty cannot thus be solely connected to the risk factors involved in price level and exchange rate volatility.

Jurisdictional uncertainty is also not to be confused with frontier or transfer risk. The market knows how to price frontier risks for different maturities, as demonstrated by the spread differences between CDs issued by Brazilian banks offshore with and without the "dollar constraint" clause. Frontier risk alone cannot inhibit the development of a long-term domestic credit market.

Jurisdictional uncertainty is also not be confused with credit risk. Like the frontier risk, credit risk can be priced for different maturities, as demonstrated by the existence of long-term offshore credit for the Brazilian Treasury as well as for large firms and financial institutions. The spread paid by Brazil's Treasury long bonds over US Treasury paper of similar duration, which has conventionally been denominated country risk, is the market estimate of the country's long-term credit risk offshore.

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, where the difficulties faced by firms include logistic problems of transport and ports, complex legal and labor legislation, and high crime rate. Jurisdictional uncertainty results from an anti-creditor bias, and not an anti-business bias. This is evident in the willingness of foreign firms 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 shown by the fact that business firms are often benefited as debtors by the materialization of the jurisdictional uncertainty in its anti-creditor bias.

Jurisdictional uncertainty is, in our view, what gives substance to the so-called original sin of international finance, as identified by Eichen-green and Hausmann (1999), namely the incapacity of issuance of long-term external debt denominated in the national currency. Jeanne (2002) 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, a local dollar-indexed long-term market for financial contracts would exist. It is true that there are legal restrictions to local long-term contracts in foreign currency, but even Brazil's Treasury, which is not subject to such restrictions, finds it difficult to finance itself with dollar-indexed long-term bonds in the local market.

Eichengreen, Hausmann, and Paniza (2003) mention countries such as Chile, Israel, and India that are able to issue long-term debt denominated in national currency on-shore but not offshore. For us, this impediment is not an ingrained, original sin. Rather, it is a problem of small size (as international financial markets need bulky issues to give them liquidity), or else the consequence of these countries having inconvertible currencies. Local pension funds and other long-term institutional investors with long-term obligations in local currency are not affected by such inconvertibility but foreign investors are. Thus what the three-country experience seems to indicate is that there are three requirements for a country to be able to issue long-term debt offshore in domestic currency: a good local jurisdiction, large debt size, and currency convertibility.

8.5 Impact on Private Savings and Investment

Jurisdictional uncertainty is therefore the reason behind the inexistence of long-term credit and long-term financial instruments. The, diffuse and non-quantifiable way by which it affects the real value of long dated financial contracts precludes the development of a large long-term financial market. Savers cannot be expected to be receptive to holding long-term financial contracts if it is impossible to price in the uncertainty affecting their purchasing value.

Jurisdictional uncertainty reduces the overall availability of credit. Secured debt contracts are not sufficient to stimulate credit supply because the judicial system renders the right of creditors to repossess the collateral difficult to exercise. The quality of enforcement of guarantees is poor because both the law and the jurisprudence are biased toward the debtor. Even if the creditor has sufficient knowledge of the debtor and feels comfortable to lend to him for a long period, jurisdictional uncertainty will make his credit illiquid. If the original creditor needs

the resources and has to sell its credit instrument, no one will be willing to buy it at a fair price. The credit cannot be fairly priced by someone who does not share the same knowledge of the debtor as the original creditor. Long-term credit instruments are therefore illiquid. Bilateral relationships might work, but jurisdictional uncertainty precludes the possibility of multilateral impersonal transactions that involve credit over long time periods. The consequence is the almost complete collapse of a long-term financial market. In the nomenclature of Kiyotaki and Moore (2001), jurisdiction uncertainty negatively affects both the borrowing constraint and the resalability constraint. Viewed from another angle, the term structure of local interest rates is truncated. Among other consequences this precludes markets from revealing long-term inflationary expectations.

Jurisdictional uncertainty not only precludes the existence of a long-term financial market but distorts savers' behavior in at least five ways:

. In the absence of currency convertibility, it increases the short-term interest rate required by savers to deploy their financial wealth in the local debt market.

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

Consequently jurisdictional uncertainty distorts capital formation in three different ways:

. Small and medium size firms, for which the cost of credit verification is high, do not have access to long-term finance. Consequently their investments are restricted by their profits.
. Large firms, with access to the external credit market, have to deal with the risky consequences of currency mismatch.
. Cash-rich firms, small or large, tend to overinvest in their own businesses.

8.6 Distorting Policy Reactions in Brazil

In a comparison with emerging market economies, the strong impact of jurisdictional uncertainty on short-term interest rates stands out in the Brazilian case. The reason seems to be that among emerging market economies with weak jurisdiction, Brazil appears to be unique in its developing a large *"de-dollarized"* captive short-term domestic market for its public debt. Other Latin America countries have a dollarized market for local short-term financial assets. Besides Brazil, the only two Latin countries without financial dollarization are Chile and Colombia. Chile, as is indicated by its investment-grade credit rating, does not suffer from jurisdictional uncertainly. Colombia only recently lost its investment-grade status because of high drug-related risks, but it has traditionally followed very responsible financial policies. What makes Brazil special is its large public debt market in domestic currency under substantial jurisdictional uncertainty. This explains both the lack of a long-term credit market and an unusually high short-term interest rate. Table 8.3 summarizes our point of view. Short-term interest rates and local long-term credit markets depend on the quality of the jurisdiction and the degree of currency convertibility. (A third determinant, the long-term stability of the local monetary standard is ignored for simplicity, as this is frequently subsumed under a good jurisdiction.) If the jurisdiction is strong and the currency convertible, short-term interest rates are low and there exists a long-term credit market in domestic currency, certainly domestically, and also abroad

Table 8.3
Jurisdiction and currency convertibility

Currency convertibility	Jurisdiction	
	Strong	Weak
Yes	Low short-term interest rates Long-Term credit in domestic currency locally and abroad (if the country has scale)	Dollarization with moderate short-term interest rates No long-term domestic credit
No	Low short-term interest rates Long-term credit locally but not abroad in domestic currency	High short-term interest rates No long-term domestic credit market

if the country's securities market is big. Mexico after NAFTA would illustrate this situation. If the jurisdiction is strong but the currency is not convertible, short-term interest rates are low and the domestic currency long-term credit market flourishes locally but not abroad. India falls into this category. If jurisdiction is weak but currency is convertible, the local short-term financial market is dollarized with moderate interest rates. This is the case of Peru. Finally, if the jurisdiction is weak and the currency is not convertible, domestic short-term interest rates are high and no long-term domestic credit market can exist. This, in our view, is the case of Brazil.

The persistence of very high short-term interest rates has caused agents other than the Brazilian Treasury to resort to bank credit only occasionally to avoid bankruptcy. Alternatively, they might exercise their lobbying power to transfer to the Treasury the responsibility for paying their debts. In the 1990s this is precisely what happened. Local states and municipalities transferred their public liabilities to the Union under favorable conditions. Rural debtors and banks were bailed out by the Union through programs such as Proes and Proer. The Brazilian Treasury is the only agent that ends up systematically paying high interest rates over time.

Policy decisions that disregard holders of financial instruments are directly responsible for Brazil's jurisdictional uncertainty. These decisions were particularly detrimental in the early 1980s, leading to triple -digit inflation. This began with monetary correction (government debt inflation-adjustment factor) being pre-fixed at artificially low levels in late 1979. A purge of monetary correction indexes took place at the beginning of all inflation stabilization attempts in the 1980s, and a financial assets freeze occurred in the Collor Plan of 1990. Simonsen (1995) documents these interventions in his analysis of the rise and fall of inflation indexation in Brazil.

Independently of the various measures directly hurting the holders of financial instruments, most economic policy decisions that aggravated jurisdictional uncertainty were probably a consequence of mistaken attempts to correct its effects. Policy makers noted the limits to economic growth imposed by the unavailability of long-term domestic savings. They, however, did not interpret this unavailability to be due to jurisdictional uncertainty but to a market failure that required policy intervention. The general purpose of the policies was therefore 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 were organized along five dimensions:

. Limited currency convertibility. Capital controls, administered in a discretionary *form,* imposed severe restrictions on foreign investment of residents. The purpose was to create "captive" savings that could thus be directed by the government to finance domestic real investment.

. Mechanisms of compulsory long-term savings (FGTS, PIS/PASEP) administered by government agencies and banks (CEF and BNDES).

. Artificial lengthening of the maturity of financial investments, both for public debt and private sector credits. This term lengthening has traditionally been made through (1) tax measures that strongly penalize financial investments of very short maturities (IOFs), (2) regulations that make compulsory for certain classes of agents (pension funds, insurance companies) the acquisition of long-term government bonds, and (3) incentives for the retention of long-term government debt by financial intermediaries, even in the absence of resources of final investors *for* such maturities.

. Practices at the level of public enterprises to increase savings and investment. Examples are (1) payment of benefits to employees through transfers to pension funds instead of direct salary increases, (2) 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 (3) use of public enterprises as vehicles for the absorption of long-term foreign savings through external debt.

. Seignorage as a mechanism to generate and channel forced savings to the public sector, a mechanism further explored by the creation of public sector commercial banks.

The importance of interventions through public enterprises has lately diminished, 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. The use of inflation to promote forced savings has also had its *form* of expression substantially altered since the stabilization of inflation with the *Real* Plano Forced savings through inflation were replaced by distorting taxation, which we will denominate "incomeless" taxes in section 8.7 below.

There are two common threads to this collection of economic policy responses. The first is the subordination of microeconomic efficiency to macroeconomic considerations. The welfare cost of the constraints imposed on the freedom to allocate wealth and savings was deemed smaller than the aggregate welfare gains to be obtained from the availability of long-term domestic credit. Overcoming what government perceived as a serious market failure was considered to be welfare improving despite the obvious misallocation of resources. The second thread is the *form* of the policy response. In all cases the decision power of the bureaucracy was increased. *Three* examples are of interest. First, the convertibility restriction empowered the bureaucracy to decide who, and under what conditions, is authorized to transfer wealth abroad. Second, the artificial lengthening of public debt maturity increased the dependence of financial intermediaries to the lender of last resort. Third, the power to decide the deployment of compulsorily-held savings has always been maintained in the hands of the bureaucracy. Wealth holders were never allowed to choose the manager of their savings. "Portability" of long-term compulsory savings never came into existence.

The increase in the bureaucracy's power resulted from the confluence of passions, interests, and tradition. Passions as private agents were perceived to be myopic to their own long-run interests and passive in their reactions to the interventions of an omniscient government able to implement optimum control of economic activity. Interests are expressed through the political articulation of private groups supporting the control of the bureaucracy over the deployment of compulsory
savings into alternative investments, in view of their privileged access to the state and their capacity to mold its policies *for* private profit. Tradition derives from the historical cultural experience of state control over mercantile activities, and state control was particular1y strong in Brazil until very recently. These forces seem to be at the root of the interventionist bias that worsened the impact of jurisdictional uncertainty on the short-term interest rate, as we show in the following section.

8.7 Effects of Policy Interventions

This section considers successively the allocation and growth distorting consequences of convertibility restrictions, artificial lengthening of public debt maturities, compulsory saving funds, and "incomeless" taxes.

8.7.1 Convertibility Restrictions

In the pegged exchange rate system that prevailed in Brazil from the period of World War II to the beginning of 1999, restrictions to convertibility gave the government the power of ordering priorities on the use of scarce international reserves. This monopoly power was used to allocate reserves primarily to the importing of capital goods and essential raw materials. Until the 1990s the restrictions on convertibility, for all practical purposes, were strict; some exceptions were admitted but only in special cases and administered in discretionary form. The result was the emergence of an enormous parallel exchange rate market, without legality but tolerated, through which there passed 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 in the parallel exchange rate market.

The loosening of restrictions that occurred with the so-called CC-5 mechanism was nonetheless partial. In the first place, not all agents can transfer resources abroad.. Big institutional savers (pension funds and the technical reserves of insurance companies) do not have permission to invest abroad. Second, the transaction costs are high because of complex compliance requirements. Third, there are limits on the remittances. Large values need previous authorization from the central bank. Moreover a mere administrative decision can reverse this situation of relative liberalization. The CC-5 mechanism maintained intact the legal and administrative instruments of convertibility control, since it was just a normative expedient to create a fissure for international currency transfers without altering the restrictive foreign exchange laws. The power of the bureaucracy was not reduced. Examples are (1) the double exchange rate system that is still in place, the "commercial" and the "floating," and arbitrage between the two markets can be suspended at any time by central bank decision, (2) the normative power of the central bank to impede, at any moment, the remittances of foreign exchange abroad, and (3) the stigmatization of the CC-5 by allegations of anti-patriotism and even criminality.

With the floating of the exchange rate 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 idea of a quantitative scarcity of foreign exchange ceased to apply. Nonetheless, there has been no substantive progress in the mechanisms of convertibility. The central bank continues to retain the power to suspend convertibility by administrative fiat.

The rationale for controls changed with floating exchange rates. The fear nowadays of adopting full convertibility is that the capital migration toward a better jurisdiction might be of such magnitude that no stable equilibrium will exist in the foreign exchange market; severe depreciation and an erosion of the tax base will necessarily follow from the liberalization of the capital account. This attitude may be viewed as another example of the fear to float. More fundamentally, however, capital controls signal to private agents how monetary authorities view the exchange rate system. In a context of fixed exchange rates, the maintenance of capital controls signals that the monetary authorities perceive the pegged rate as being overvalued. In a context of floating exchange rates, the maintenance of capital controls signals that the monetary authorities do not believe that there is an acceptable market premium to compensate for jurisdictional uncertainty. The underlying assumption is that capital flight will occur regardless of how depreciated the exchange rate is.

8.7.2 Artificial Debt Term Lengthening

Because of jurisdictional uncertainty, there is no long-term domestic financial market. The government, however, wishes to increase the maturity of public debt to make monetary policy more effective and reduce the roll-over risk, and thus the credit risk of public debt. Policy actions have been pursued on two different fronts. Policy makers have tried to force investors to extend the maturity of their portfolios through administrative and fiscal measures that penalize short-term financial investments. The results obtained were very limited. As a consequence attention was drawn to financial intermediaries. The lengthening of debt terms turned out to depend on the willingness of financial intermediaries to make the necessary term transformation, carrying long-term bonds with funding of a very short-term nature. Thus, as of January 2004, a full46 percent of the domestic federal debt was held by local commercial banks-33 percent voluntarily and 13 percent compulsorily. Out of this total, 56 percent is estimated to have been held by government-owned banks and 44 percent by private banks. The domestic financing counterparts to these assets are mostly CDs with daily liquidity (after an initial 30-day holding period) and automatic drawing rights. An additional 44 percent of the domestic debt was in banks' clients' funds (FIFs), enjoying daily liquidity, if not automatic drawing rights, regardless of the maturity of the underlying debt instrument. Thus 90 percent of the federal domestic debt can be

said to have its maturity artificially lengthened through the intervention of the commercial bank system.

The result of this intermediation under fixed rate debt instruments is a high interest rate mismatching risk, which for many years called for high premiums on the carrying of debt and also some implicit form of 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 public debt cost. The introduction of the LFT eliminated the mismatch risk between the interbank financing rate and the interest rate received by the financial intermediary when carrying government bonds. The LFT, however, has duration of one day and, as we have seen, virtually no final buyer outside the banking sector or the funds they manage.

Although since the creation of the LFT a substantial proportion of the public debt has had daily financial indexation, the central bank continues to try to lengthen maturities with fixed rate instruments. As of January 2004, 51.1 percent of the domestic federal debt was in LFTs, and 12.6 percent in fixed rate bills (as for the rest, 21.0 percent was dollar indexed, and 15.3 percent held in inflation protected instruments). Such lengthening increases the effectiveness of monetary policy but has high fiscal costs, because the government only manages to place fixed rate instruments when financial intermediaries expect falling rates, and thus high carryover profits. Experience shows that whenever the expectations become frustrated, the central bank is forced to buy back the fixed-rate debt at subsidized rates to avoid insurmountable losses and the risk of a systemic crisis. As there is no long-term funding -- especially not at fixed rates -- on the part of the nonbank public, the debt, as we have seen, is almost entirely carried by financial intermediaries. As these are, as a collective, maturity mis-matched, the central bank has to offer an implicit bailout insurance that ends up forcing it to exchange the debt, at unfavorable prices, in critical moments Jurisdiction uncertainty requires thus an implicit bilateral agreement between financial intermediaries and the central bank to create the impression of long-term duration for the public debt. 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 finance the public debt.

8.7.3 Compulsory Savings

The use of inflation by the government as a mechanism to extract forced savings gave signs of exhaustion at the beginning of the 1960s. The structural reforms of the second half of that decade aimed at replacing part of the forced savings due to inflation by institutional mechanisms of compulsory savings, notably FGTS, PIS-P ASEP, and the unification of the social security funds.

The reforms that the military regime introduced in this period also included "monetary correction," an attempt at neutralizing the perverse effects of inflation on savings through price indexation. The indexation of financial assets was designed to preserve the real value of the recently created instruments of compulsory savings and to stimulate long-term voluntary savings. The fixed 6 percent interest rate inflation-adjusted passbook savings account was the first attempt to create a government guaranteed, indexed retail savings instrument. The resources of the savings accounts would be primarily directed for the financing of investment in housing.

The surcharges for social security, FGTS, and PIS-P ASEP were initially designed as savings, that is, as a compulsory intertemporal income transfer, without impact on the permanent income of wage earners. Over the years, however, the monetary correction lagged behind inflation and at times was set at rates lower than expected inflation. Apart from the losses in purchasing power to wage earners, many barriers of access to their compulsory savings funds were erected. Besides, investment in projects without profitability, as well as the misuse of funds to finance current government spending, required successive increases in the tax rate of compulsory savings to keep the overall system able to finance new investment projects.

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

The quantitative importance of such compulsory saving mechanisms can be visualized in Brazil's 2002 consolidated national accounts (IBGE 2004). Gross national savings this year were R$249 billion. Social

security contributions added up to R$181 billion, whereas family contributions to pension funds, FGTS, and PIS/PASEP were R$22 billion.

The difference between the cost of labor for the firm and the net income received by the wage earner shifted employment from the formal to the informal sector of the economy where the tax wedge did not apply. If computed only as wage-related payments not directly received by the workers (e.g., social security, compulsory accident insurance, contribution to education, and contributions to the so-called S's training schemes), this wedge represents 49.7 percent of the monthly formal sector wage, according to Amadeo and Camargo (1996). If one includes the extra yearly 13th salary plus paid vacations and holidays, and other benefits such as family allowances, maternity leaves, and food and transport vouchers (neither of which is available in the informal sector), the difference adds up to 86.9 percent of the basic monthly formal sector wage. Since labor productivity is lower in the informal sector, there is a reduction in the average productivity of the economy as a result. Therefore the tax-induced labor displacement process diminished natural output, with adverse implications for the equilibrium rate of interest, as discussed in section 8.8.

8.7.4 "Incomeless" Taxes

The price stabilization achieved by the 1994 *Real* Plan revealed the magnitude of the public sector deficit,. which had previously been masked by the inflation-related forced transfer of savings to the government. The adjustment of the public sector accounts became imperative. But the reduction of expenditures was harder to implement due to the increase of tax earmarking under the 1988 Constitution. The reduction of real spending through administrative delays in the release of nominal payments, an otherwise effective mechanism of budget control under high inflation, became much less effective after price stabilization. The second-best alternative was to raise the income tax or to institute a national value added tax. Fiscal federalism, however, supported by the 1988 Constitution, forced the federal government to transfer nearly 50 percent of income tax and federal value-added tax (IPI) revenues to the states and municipalities. The deadlock in the discussion over 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 rational reform of the tax system unviable.

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

The tax burden reached very high levels even by standards of advanced economies: 35.9 percent of GDP in 2003, up from 25.8 percent in 1993 (BNDES 2001; Afonso and Araújo 2004). This increase in the tax burden permitted the generation of high primary surpluses (4.3 percent of GDP in 2003) and a relative stabilization of the debt-to-GDP ratio. The distorting burden caused by the increase in the tax burden, however, was enormously aggravated because it was heavily dependent on turnover taxes-on sale proceeds or financial transactions (COFINS, PIS/PASEP, CPMF, IOF, and ISS). A full 47 percent of the increased tax burden between 1993 and 2002 was in the form of such taxes, which came to represent 25 percent of the total tax burden in the latter year (income taxes stood for 20 percent, value-added taxes [IPI and ICMS] for 25 percent, wage bill taxes for 23 percent, and sundry taxes for the remaining 7 percent).

Such turnover taxes are levied regardless of the generation of income. The adverse effect on output is evident. Used on a vast scale, they tend to create a dichotomy in the industrial structure (Bodin 2003). On one side, there are small businesses that are only made viable through tax evasion. On the other side, there are large firms, with oligopolistic power of trademark-based product differentiation, enjoying sufficiently high profit margins over sales to be able to comply with taxation requirements. Average sized firms, however, which are unable to operate evading taxes in view of their visibility, are hard put to pay taxes on turnover.

Industrial dichotomy makes the domestic goods supply curve steeper. Informal sector firms cannot increase output in face of growing demand because of compliance risks. The reason is that with a larger output the risks of remaining informal increases, and the firm has to pay turnover taxes. Profitability disappears with the passage to the formal sector unless the firm has above average management. The formal sector, in turn, responds to the increase in demand by raising margins and prices because it is almost exclusively composed of large firms with oligopolistic pricing power, capable of attending the complex demands of fiscal compliance.

Apart from the industrial dichotomy, the widespread use of turnover taxation was bolstered by its political attractiveness. Voters can hardly figure out the share of income absorbed by taxes levied on sale proceeds and financial transactions. In the process of equilibrating public sector finances, the traditional populism was replaced in Brazil by what might be called fiscal populism. Traditional populism is here defined as the attempt to influence voters by resorting to easy money or higher spending 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. Voters are to be seduced by higher expenditures, and little concern is given to whether taxation is detrimental to growth or extremely distorting in its allocation effects. The consequence of fiscal populism is an increase in overall taxation and government spending as a proportion of GDP. The macro picture given by the fiscal deficit and monetary policy seems sound, but natural output is reduced.

8.8 Jurisdictional Uncertainty and the Interest Rate

We are now at the point of our discussion where we can link jurisdictional uncertainty to the reasons for extraordinarily high interest rates in Brazil. Jurisdictional uncertainty as well as the distortions created by policy makers were already in place when the inflation-targeting regime was introduced in 1999. It would thus be misleading to interpret the workings of the distortions under inflation targeting as defects or inadequacies of the inflation-targeting regime alone or of its underlying macro model. Our task is to insert the distortions provoked by jurisdictional uncertainty and government interventions into the inflation-targeting framework. We can then examine how a sustained and encompassing program aimed directly at remedying the jurisdictional uncertainty might lower the interest rate. The model here is a simple version of the usual forward-looking short-term open macro model. Its purpose is to illustrate how the distortions associated with jurisdictional uncertainty affect the central bank rate of interest.

We assume a strict inflation-targeting framework. The short-term nominal interest rate it is set by central bank 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 central bank prefers to miss the target than facing a too severe contraction in output (e.g., 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 target and time-invariant inflation rate π^*. The assumption works as a rough approximation to reality. Despite not having formal independence, the central bank has enjoyed in practice substantial control over monetary policy instruments. Markets acknowledge 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:

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

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

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 equilibrium interest rate. Given the inflation target π^* and the equilibrium rate r_t, the central bank sets the nominal interest rate as a function of the actual and expected output gaps and the exchange rate depreciation.

In equation (1) we define the equilibrium 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 affects the equilibrium rate of interest as well. In particular, both a positive productivity shock and a cut in government spending reduce the equilibrium rate. The variables of $F(.)$ are mutually constrained: if both current and expected output gaps are zero and the real exchange rate is

constant *(e_t/e_{t-l} = 1 + π*),* then the real rate of interest $i_t - π*$ is equal to the equilibrium rate, r_t.

Equation (2) is the balance of payments equilibrium under the simplifying assumption that the level of international reserves is constant. The left-hand side captures capital flows as a function of the interest rate spread. The variable $(1 + i_t)(e_t/E_t e_{t+l})$ is the rate of return in dollars of an investment in *reais*, and *r** is the external risk-free interest rate in dollars. Variable p captures all of the risks involved in short-term arbitrage. There are credit risks (domestic debt repudiation), contractual risks (court rulings or acts of the Prince interfering with the compliance of contractual obligations), and frontier risks (capital controls blocking remittances). The risks are simplified here as all-or-nothing events. The right-hand side gives net exports as a function of the current real exchange rate.

The capital flows described in equation (2) differ from the formulation given by Blanchard (chapter 2 in this volume) in three ways. First, we do not differentiate between Treasury and central bank liabilities. Second, we take as exogenously given. In Blanchard's formulation *p* is a function of the interest rate because a higher interest rate increases the default risk. (It may also be argued that *p* is a function of the exchange rate as well, in the sense that the more devalued the currency is, the bigger is the risk of the introduction of capital controls.) Third, we leave risk aversion considerations in the background. Sudden Stops are captured in the analysis by shifts in the *G(.)* function.

The model determines simultaneously the domestic interest rate set by the central bank and the exchange rate as a function of the equilibrium 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.

It would seem sensible to adopt, under full central bank credibility, a rational expectations approach in which the one-period-ahead expected values of the output gap and the exchange rate coincide with the true conditional expectations. However, local financial markets are truncated at the long end, making the deployment of the full apparatus of conditional expectations artificial. Thus, to simplify matters, we have chosen to skirt the modeling of learning dynamics by which expectations evolve over time and assume that expectations are exogenously given.

Figure 8.1 illustrates the model, with the domestic interest rate in the vertical axis and the exchange rate in the horizontal axis. For simplicity, we assume $π* = O$. The domestic equilibrium (1) is upward sloped.
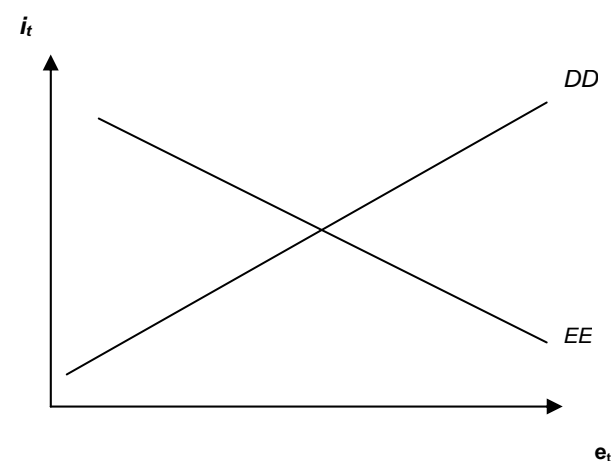

Figure 8.1
Simple model of interest and exchange rate equilibrium

An increase in the real exchange rate (a larger value of e_t) requires a higher interest rate for inflation to remain constant. The external balance equation (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 (chapter 2 in this volume), the external balance curve could be upward sloped.

The following exercises are straightforward:

. A productivity increase raises the natural rate of output, reduces the equilibrium rate of interest, and shifts the domestic balance curve *DD* to the right.
. A reduction in the risk factor p shifts the external balance curve EE to the left.
. An increase in the risk-free foreign interest rate shifts EE to the right. The same holds true for any adverse shocks to capital flows.
. A reduction in the expected output gap shifts *DD* to the right.
. A more depreciated expected exchange rate shifts EE to the right.

With the help of this simple model, it is possible to discuss the effects of a comprehensive program aimed at reducing the jurisdictional uncertainty in terms of an inflation-targeting regime.

Suppose that agents perceive such a 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:

Making the currency convertible reduces p. The reason is that the risk of blockage of capital remittances would disappear. As a consequence curve EE shifts to the left. This may explain why countries with bad jurisdiction but currency convertibility (including the legalization of local bank deposits in US dollars) show lower interest rates.

Abandonment of attempts to lengthen artificially the maturity of public debt reduces the bailout-related debt costs. A smaller p value captures this effect, shifting EE to the left.

Replacement of distorting "incomeless" taxation makes the DD curve flatter, as smaller increases in interest rates are needed to offset the expansionary effects of a depreciated exchange rate.

A balanced reduction of expenditure and taxes (reversing the "fiscal populism") works like a productivity shock (larger natural output), reducing the output gap and shifting DD to the right.

Elimination of mechanisms of forced savings increases the productivity of aggregate investment, increasing the natural rate of output and shifting DD to the right.

The signaling effect of attempts to extricate distortion from policy responses reduces the equilibrium interest rate, shifting DD to the right, since savers require lower rates to deploy their wealth in domestic debt instruments.

To sum up, unwinding the policy responses to the jurisdictional uncertainty reduces the short-term interest rate required to keep inflation on target while the net effect on the exchange rate cannot be predicted on a priori grounds. Removing "financial" distortions (convertibility restrictions and artificial debt term lengthening) appreciates the exchange rate, and removing "real" distortions (compulsory savings and "incomeless" taxes) depreciates the exchange rate.

8.9 Final Remarks

To our results above we need to add some words of caution. Critical to our results is the assumption that the issues posed by jurisdiction

uncertainty are addressed in a coherent and sustainable mode. However, it is easy to think of scenarios in which the unwinding of policies can backfire. For example, convertibility might be perceived as a brief and unique window of opportunity to elude local jurisdiction. The expected exchange rate would increase as a result, shifting the curve EE to the right. The reduction of public debt maturity might be perceived as increasing the vulnerability of the public sector to portfolio shifts by private investors. The fear of debt monetization would increase the expected exchange rate, shifting the curve EE to the right.

The dismantling of forced savings mechanisms might reduce the funding available for long-term investment if savers remain reluctant to buy long-term debt instruments. In this case the expected output gap would increase as the next period natural rate of output shrinks, and the DD curve shifts to the left.

The substitution of "easy to evade" income taxes for "easy to collect" "incomeless" might raise doubts about government revenue. If government spending is perceived as constant, the expected output gap increases, shifting DD to the left.

It is important then to ensure that the removal of distortions is perceived as an improvement of the domestic jurisdiction, but the removal alone may not be sufficient. The distortions created by the misguided policy reactions to jurisdictional uncertainty are only part of the problem. Jurisdictional uncertainty has deep institutional roots in the executive, the legislative, and the judiciary branches of the state. If property rights are violated in the process of dismantling these distortions, for instance, it will be very hard to convince agents that the problem of jurisdictional uncertainty is being tackled appropriately. In particular, a big bang approach can be dangerous. Because jurisdictional uncertainty is the result of history, restoring confidence in the jurisdiction is per force a long road. Increased tradability and economic integration with a good jurisdiction can signal an improvement of the domestic jurisdiction, as we have learned from the development of local capital markets in countries entering the European Union.

Although a discussion of policy guidelines to deal with local jurisdictional uncertainty is outside the scope of this chapter, a step-by-step announced program, with well-defined criteria for moving from one phase to the next, could well be the best way to go. The dismantling of forced savings, for instance, could be done at the margin and over a certain number of periods. The road to convertibility could be

paved by strengthening the prudential framework, limiting the scope of capital controls in the transition phase, as well as setting proper international reserve requirements (see Arida 2003). A more stringent regulatory framework could reduce the bailout costs caused by excessive exposure of financial intermediaries to maturities mismatch. The reduction of distorting taxes could be achieved by adopting strict budget-balancing rules that are perceived as legally and politically viable.

Note

References

Acemoglu, D., and S. Johnson. 2003. Unbundling institutions. NBER Working Paper 9934. August.

Afonso, J. R, and E. Araújo. 2004. Uma análise da carga tributária global estimada. Unpublished Technical Note. Available at *www.joserobertoafonso.ecn.br.*

Amadeo, E., and J. M. Camargo. 1996. Instituições e o mercado de trabalho no Brasil. In J. M. Camargo, ed., *Flexibilidade do Mercado de Trabalho no Brasil.* Rio de Janeiro: Fundação Getúlio Vargas, pp. 47-94.

Arida, P. 2003. Aspectos macroeconômicos da conversibilidade: O caso brasileiro. Available at *www.iepecdg.com.*

BNDES. 2001. Informe-SF, n. 29. Available at: *www.federativo.bndes.gov.br.*

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. Exchange rates and financial fragility. Proceedings of the Seminar on *New Challenges for Monetary Policy.* Kansas City: Federal Reserve Board of Kansas City, pp. 329-68.

Eichengreen, B., R. Hausmann, and U. Paniza. 2003. The pain of original sin. Available at: *http://emlab.berkeley.edu/users/eichengr/research/ospainaug 21-03.pdf*

IBGE. 2004. Instituto Brasileiro de Geografia e Estatística, Contas Nacionais/Contas Econômicas Integradas-2002. Available at *www.ibge.gov.br.*

Jeanne, O. 2002. Why do emerging economies borrow in foreign currency. Prepared for the Inter-American Development Bank Conference on Currency and Maturity Mismatching: Redeeming Debt from Original Sin. Washington, DC, November 21-22.

Keynes,J.M. 1963. Inflation and deflation. In *Essays in Persuasion.* NewYork: Norton.

Kiyotaki, N., and J. Moore. 2001. Evil is the root of all money. Claredon Lectures I, November 26. Discussion Paper 110. Edinburgh School of Economics.

Lamounier, B., and A. de Souza. 2002. As elites brasileiras e o desenvolvimento nacional: fatores de consenso e dissenso. São Paulo: Instituto de Estudos Econômicos, Sociais e Políticos de São Paulo. Available at: *www.augurium.com.br/termometro.php.*

Modigliani, F., and R Sutch. 1982. Debt management and the term structure of interest rates. In A. Abel, ed., *The Collected Papers of Franco Modigliani,* vol. 1. Cambridge: MIT Press.

Simonsen,M. H. 1995. 30 *Anos de Indexação.* Rio de Janeiro: Editora da Fundação Getúlio Vargas.

North, D. 1981. *Structure and Change in Economic History.* New York: Norton.