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# CREDIT MARKETS IN BRAZIL: THE ROLE OF JUDICIAL ENFORCEMENT AND OTHER INSTITUTIONS <sup>1</sup>

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## 1 – Introduction

Sound financial markets have long been recognized as essential to foster economic development, not only for their role in mobilizing savings to finance investment and production, but also for their contribution to economic efficiency through the selection and monitoring of investment projects. As important as they are, however, financial markets have found little room to flourish in many low- and middle-income countries. Poor economic policy and market failure are usually blamed for this (e.g., Fry 1982). Macroeconomic instability increases credit risk, while low and unevenly distributed income reduces market size and increases unit costs. High risk and costs keep interest rates high, limiting the pool of viable projects and increasing default rates. By the same token, the shortage of well-trained labor and the high cost of information also reduce the ability of banks to assess borrowers' ability to pay back their loans. As a consequence, very little credit flows to the private sector.

Recent studies have suggested another explanation for the underdevelopment of financial markets in developing countries: institutional failure. The role of institutions in fostering economic development has a long tradition (e.g., North 1990 and Olson 1996), but the link through financial markets is a more recent one. It relies on the fact that secure contract rights are essential for banks and similar institutions to work as the "brain" of the economy. Shleifer and Vishny (1996) discuss how the lack of proper contract enforcement reduces debtors' willingness to pay and, as a consequence, creditors willingness to lend. La Porta *et al.* (1997) assembled a data set on the legal protection of investor's rights and on the enforcement of such rights in 49 countries. They found that legal rules differ greatly and systematically across countries. According to these authors, common law countries tend to protect investors considerably better than civil law countries (with the French civil law countries ranking last in investor protection). The same pattern is observed in the analysis of law enforcement and the quality of accounting standards. La Porta *et al.* (1998) extend this earlier work to test whether less investor protection leads to inferior opportunities for external finance and thus to smaller capital markets. Their results confirm the hypothesis that a better legal environment leads to both a higher valued and a broader capital market. French civil law tradition countries have the least developed capital markets.

Although much progress has been made in understanding the importance of institutional failure in explaining creditors' unwillingness to finance firms and individuals, the pertinent empirical literature still has an important shortcoming: it does not separate out the effects of legal protection, accounting standards and judicial enforcement. This paper tries to overcome this gap by analyzing the discrete effect of the quality of judicial enforcement on the performance of credit markets.

The importance of efficient judicial systems for the development of complex inter-temporal transactions such as those taking place in credit markets has been well emphasized in the literature (Pinheiro, 1996). Williamson (1995) in fact suggests that the quality of a judicial system may be indirectly assessed by the complexity of the economic transactions it is able to support. Clague *et al.* (1995) explore this dependency of financial markets on third party enforcement and obtain a set of cross-country regressions that suggest that countries with lower ratios of "contract-intensive" money to GDP tend to grow less. Pinheiro (1998) measures the economic costs in Brazil of the inefficiency of the judiciary in terms of output, investment and employment. This study concludes that improving judicial efficiency may have a significant impact on growth and presents anecdotal evidence of how the inefficient enforcement of loan contracts reduces the volume and increases the price of credit.

The main objective of this paper is then to empirically assess the impact of judicial enforcement on the development of credit markets. Two subsidiary objectives are (i) to describe credit markets and the legal and judicial institutions protecting creditors in Brazil and (ii) to present the institutions that substitute for good judicial enforcement of credit contracts. It has five sections, in addition to this introduction. Section 2 presents basic data on Brazilian credit markets. Section 3 looks at the legal and judicial institutions protecting creditors' rights. Section 4 examines cross-state differences in the size of credit market and assesses the importance of judicial performance as an explanation for the observed differences. Section 5 describes different ways devised to cope with institutional failure in specific

credit markets – i.e. the private and public arrangements, or forms of governance, created to overcome the problems created by judicial inefficiency. Section 6 concludes.<sup>4</sup>

## 2 -- Size and Structure of Brazilian Credit Markets

Table 2.1 presents the stock of performing loans provided by the domestic financial system broken down by type of borrower. Two observations are noteworthy. First, since the launching of the "Plano Real" credit to households (other than for house purchase) has posted very high growth rates. Second, meanwhile, the overall volume of performing credit came down as a percentage of GDP.<sup>5</sup> A motive for this fall was the decline in loans to the public sector, due to privatization. Another reason was the substitution of bank loans by other forms of credit, with a more widespread use of credit cards, securities and direct credit by retailers.

Table 2.1: Loans by the Financial System: Performing Loans as a percentage of GDP <sup>(1)</sup>

		1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
<b>Public Sector</b>	Federal Gov.	3.9	2.0	1.7	1.4	1.3	1.6	1.1	0.8	0.6	0.4
	States and Municipalities	5.7	4.4	4.3	3.1	4.3	4.1	3.6	3.9	4.7	2.2
	Total <sup>(2)</sup>	9.6	6.4	6.0	4.6	5.6	5.7	4.7	4.8	5.3	2.5
<b>Private Sector</b>	Industry	5.7	3.6	4.5	4.1	5.8	11.1	6.8	6.7	6.2	6.1
	Housing	9.3	10.4	7.9	5.4	7.8	7.4	7.9	7.2	6.2	5.8
	Rural	2.5	1.2	1.7	2	2.4	2.3	2.9	3.1	2.2	2.4
	Commerce	3.8	0.8	1.1	1.2	1.7	2.5	3.3	2.9	2.6	2.2
	Household Credit <sup>(3)</sup>	0.8	0.5	0.3	0.5	0.8	1.1	2.7	1.8	2.4	3.2
	Other Services <sup>(4)</sup>	1.9	1.2	1.6	1.4	2.5	3.7	3.6	3.0	2.6	2.5
	Total	23.9	17.7	17.2	14.6	20.9	28.2	27.2	24.6	22.3	22.4
<b>Grand Total</b>		33.5	24	23.2	19.1	26.5	33.9	32	29.4	27.6	24.9

Source: Central Bank.

Notes: (1) Does not include FGTS (Fundo de Garantia de Tempo de Servico, a compulsory savings earning TR+3% p.a. which can be withdrawn only in case of (a) being laid-off, (b) retirement, or (c) marriage) operations and pending information. All ratios calculated with the stock of loans on December 31<sup>st</sup> and GDP measured at end-of-year prices using IGP-DI centered on December 31<sup>st</sup> (IGP-DI is a general price index: consumer price index 30%, wholesale prices 60% and construction prices 10%). (2) State enterprises are included in public sector. (3) Includes all credits to individuals other than for housing. (4) Includes foundations, institutes and other institutions maintained with budgetary funds from the public sector (e.g. autarquias).

Banks, particularly private banks, concentrate their credit operations on working capital loans, export finance, credit for the acquisition of goods by firms and households, and on providing personal loans and overdraft facilities. Together, the ten most common types of short-term credit to firms amounted to 6.0 and 5.7% of GDP at the end of 1996 and 1997, respectively. These figures are equal to roughly half of the total credit to private industry, commerce and other services borrowers in each of the two years. The equivalent totals for households were 1.7 and 2.0 % of GDP, or about two-thirds of the total non-housing credit extended to households by the financial system in 1996 and 1997, respectively. In sum, most of the credit extended by retail banks, particularly private ones, is short term.

The banking sector shows a relatively high concentration and a high participation of public institutions, created to appropriate part of the floating income and enable credit activities that would not flourish naturally in a highly inflationary environment. State banks answer for about 60% of all deposits and assets and account for virtually all long-term credit, including almost all credit for business investment and housing. They are responsible for almost all lending to the public sector. Their loans to the private sector have traditionally concentrated on the industrial, housing and rural sectors, being largely dominant in the two last segments. In 1997 public banks answered for 52.1% of all performing loans, private national banks for 36.2% and foreign banks for the other 11.7%.

<sup>4</sup> A more detailed description of Brazilian credit markets (section 2) and of the rules protecting creditor rights (section 3) is presented in Pinheiro and Cabral (1998).

<sup>5</sup> This contrasts with what happened to the overall stock of credit, which went up quite substantially, as a result of a large increase in the volume of overdue and defaulted loans, as explained ahead. This contrast was particularly intense in the case of loans to the private sector.

A reason for the low values of bank credit in Brazil is the very high real interest rate faced by firms and households, a result of banks' high borrowing rates and spreads. The high passive rate is mainly a consequence of the over-reliance on tight monetary policy, which has substituted for a more effective fiscal policy since 1994. In 1994-97, the real interest rate on federal government securities averaged 21.5% p.a., a rate similar to the one paid by banks on their certificates of deposit. On top of these high borrowing rates, banks charge large spreads. A first cause for these high spreads is the taxes levied on loans (e.g., IOF and CPMF). A second is the high compulsory deposits that apply to current account and time deposit balances. A third is banks' low productivity, particularly in credit-granting activities. Although this is a generalized problem, its importance is accentuated by the high proportion of activities carried out by public banks, which are much more inefficient than their private counterparts (Mckinsey, 1998).

Firms pay lower interest rates than households. Still, annual interest rates on working capital loans averaged 74% in 1995-97, against a mean annual inflation of 12%. Typical loans to households (other than for house purchase) are consumption and personal credit and overdraft accounts. Annual interest rates for these loans averaged 124.7%, 144.2% and 198.0% in 1995-97, respectively. Real interest rates for loans indexed to the exchange rate are much lower than those for loans in reais, with the difference being accounted for by the cost of hedging against a devaluation of the real. In 1995-97, the two most popular types of loans indexed to the dollar (ACC and Resolution 63 operations) had average annual interest rates of 20.3% and 31.8%, respectively, already including the exchange rate devaluation.<sup>6</sup>

Interest rates are much lower in the cases of development bank credits and of loans for house purchase. Development banks finance a large share of non-housing investment charging rates that vary from TJLP<sup>7</sup> to TJLP plus 6% p.a. In 1995-97, the TJLP averaged 16.4% p.a. In the mortgage sector, there are two systems. The first, *Sistema Financeiro da Habitação* (SFH – Housing Financial System), is strictly regulated by the government, which sets caps on the value of houses eligible for finance and on the value of the loans. In the other system, *Carteira Hipotecária* (Mortgage Portfolio), banks are free to set loan conditions. Almost all financing for these loans comes from the popular savings accounts, which pay a governmentally-fixed interest of TR<sup>8</sup> plus 6% p.a. and carry a government guarantee. In the SFH system borrowers pay a fixed rate of TR plus 12% p.a. -- in 1995-97, this amounted to 32.5% p.a. Interest rates in the *Carteira Hipotecária* system range in the interval of TR plus 14% to 16% p.a.

Another reason for the high interest rates in Brazil is the relatively high default rate, which creditors factor in when fixing their spreads: the ratios of overdue and default loans to performing loans averaged 3.3% and 29.2%, respectively, in 1988-97.<sup>9</sup> Public banks show a higher default rate, followed by national private and foreign banks, in this order. The private sector, however, is the one largely responsible for such high averages. In fact, while recently the stock of non-performing loans (overdue plus defaulted) to the public sector has declined, that of loans to the private sector has expanded substantially. What is perhaps most noteworthy is that the stock of non-performing debts reached at the end of 1997 about the same value of the stock of performing loans. This is largely explained by the high interest rates and penalties levied on non-performing loans. A survey by ANEFAC showed that

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<sup>6</sup> ACC interest rates are lower than Resolution 63's due to their lower credit risk. While debtors in Resolution 63 operations are national firms or banks, in ACC loans the debtor is the importer buying the goods exported. Also, the ACC loan is secured by the goods exported, which when the loan is granted have already left the country. Therefore, in an ACC loan the creditor does not incur Brazil's country risk, either from a macroeconomic or from a judicial point of view. If he has to apply to the judiciary to recover the loan, he will do so in the importer's country.

<sup>7</sup> Long Term Interest Rate.

<sup>8</sup> Reference Rate.

<sup>9</sup> The Central Bank considers a debt overdue if it has been due for over 60 days. Loans are considered defaulted if overdue for more than 180 days when guarantees are considered insufficient, or for more than 360 days when guarantees are considered sufficient. The reported values include interest and penalties, calculated on an accrual basis.

banks charge monthly penalties that vary from 9.8% to 16.0% (i.e., annual fees of 206.4% to 493.6%) on the outstanding debt of overdue personal credits and overdraft accounts that exceed the allowed credit limit. In Table 2.2 an attempt is made at netting out these two components from the stock of non-performing loans. At the end of 1997, the original stock of loans overdue and defaulted answered for just 8 percent of the total stock of non-performing loans. The default rate, measured as the ratio of overdue plus defaulted loans to the total stock of extended loans, both net of income to appropriate,<sup>10</sup> equaled 7.2 percent.

Table 2.2: Total Loans of the Financial System According to Payment Status (million R\$) <sup>(1)</sup>

		1995	1996	1997
(a)	<b>Performing loans</b>	209309	245846	255137
(b)	<b>Overdue loans</b>	7529	5351	5430
(c)	<b>Defaulted loans</b>	64814	107815	247634
(d)	<b>Overdue plus defaulted loans</b>	72343	113166	253064
(e)=(a)+(d)	<b>Total</b>	<b>281652</b>	<b>359012</b>	<b>508201</b>
(f)	<b>Income to appropriate</b>	43766	95607	233137
(g)=(e)-(f)	<b>Total net of income to appropriate</b>	237886	263405	275064
(h)= (d)-(f)	<b>Overdue and defaulted loans net of income to appropriate</b>	28577	17559	19927
(i) = (h)/(g)	<b>Default rate</b>	<b>12.01%</b>	<b>6.67%</b>	<b>7.24%</b>

Source: Central Bank.

Note: (1) These figures include FGTS and for this reason differ somewhat from those reported in Tables 2.1, 2.9 and 2.10.

### 3 – Recovering a loan: Which are a creditor’s alternatives?

When a debtor defaults, collection usually starts by the branch that extended the loan. If collection is not successful at this stage, the contract is sent to the credit recovery department of the bank, at which point extra-judicial collection formally starts. Non-performing debtors face heavy penalties, which, combined with the high rates of interest, cause the debt to “mushroom” (as described above). As a consequence, debt negotiations usually take place with large discounts. It is not uncommon for banks to close deals accepting repayment of a mere 40% of the outstanding debt (which may still surpass the loan’s original value).

If extra-judicial collection fails, creditors may choose to take the case to court. The legal action least used, due to its duration, is the *ordinary action*. It starts with a *cognizance action*, in which the plaintiff tries to establish that a debt of a given value exists and is due. The defendant has 15 days to respond and if he does not the debt will be considered executable, meaning that it is liquid, certain and due.<sup>11</sup> However, if the judge is not convinced of the existence or value of the debt, or that it has matured, a judicial process is started. Then, only after a favorable court may the creditor proceed to the *execution action*. In this action, the defendant is asked to, within 24 hours, pay the debt or name assets to be held as a guarantee of payment (*penhora* of the assets). If the debtor does neither, a court officer lists the assets for the *penhora*. The *execution action* is suspended until such assets are found either by the court officer or by the creditor. Only after the *penhora* is completed can the case then be judged. Therefore, although from a legal point of view there is not much difference between a secured and an unsecured loan (in both cases the creditor must go through the motions described here), the existence of a real guarantee insures that there will be assets for the *penhora*.

<sup>10</sup> By income to appropriate we mean the interest and penalties that should have accrued to the creditor on the overdue or defaulted loan. That is, the difference between the nominal value of the debt and the principal originally lent.

<sup>11</sup> A debt is liquid when there is no doubt about the amount that has to be paid by the debtor. It is certain if it has been structured according to the law (e.g., a credit contract has to be witnessed by two people other than the creditor and the debtor, who also have to sign the contract).

If the debtor wants to defend himself, he will do so through another judicial action called an *embargo to the execution action*. Typical embargoes argue that interest rates are too high,<sup>12</sup> or that an asset may not be used in the *penhora* because it is essential for the firm to operate and eventually pay back the debt. Job loss is another argument to which many judges are sensitive. The *embargo* may also contest the use of compound interest (*anatocismo*), which is seen by many judges as illegal. There are also cases in which the debtor argues that the person who signed the contract was not authorized to do so. If after the *penhora* the debtor has still not paid nor has managed to get his *embargo* accepted by the judge, then the assets are publicly auctioned (or transferred to the creditor, if there are no interested buyers).

Some credit securities are ruled by specific legislation that guarantees that they automatically satisfy the liquidity and certainty requirements. If a loan based on such securities is not paid when due, the first step consists of notifying the public registry (*Cartório de Ofício de Registro e Protesto de Títulos*). This step is known as the protest of the security, or *protesto*. The creditor can then proceed directly to an *execution action*. For this reason, these securities are called self-executable. Banks usually structure loans using these securities, since they allow a much faster judicial collection in case of default. Banks only initiate a *cognizance action* if, due to an error or to legal impediments, the loan contract is not an extra-judicial title.

Under certain conditions, the creditor may try to collect a debt by requesting that the debtor is declared bankrupt. Banks rarely follow this route. Bankruptcy legislation gives seniority to debts with workers and tax authorities. In practice, however, neither group tends to start a bankruptcy action, since workers want to protect their jobs, and tax authorities are overwhelmed by inertia and by a large number of tax evasion cases. It is usually only after the firm stops paying suppliers and banks (usually the last to suffer default) that it risks a bankruptcy request. However, the incentives for bankruptcy action are not strong since, in the end, the little that is left over after paying for lawyers and for court fees is barely enough to pay workers and the government, let alone pay other debts.

If a debtor finds himself to be financially insolvent, he may ask a judge to let him go into *concordata* (reorganization). A *concordata* does not affect the debts the firm has with its employees, the tax authorities, credits secured by real guarantees, and privileged credits (e.g., those that use *cédulas de crédito*). It basically only suspends payments to unsecured creditors (usually, those that provide the firm's working capital, such as banks and suppliers). Although the law technically allows creditors to participate in the firm's reorganization process, it is almost impossible for them to interfere without the owner's consent. But, because the *concordata* dries up all sources of credit, firms that crucially depend on supplier's credit (such as retailers) tend to consent and creditors often manage the whole reorganization process.

Overall, the legal procedures ruling judicial execution are perceived to be excessively cumbersome and to allow a great number of ways to postpone a decision. This creates a strong incentive for debtors to default. A *cognizance action* lasts, on average, five years. Once a decision is reached and the execution action begins, the debtor has five days after the *penhora* to present an *embargo*. In general, a judge takes about six months to rule about the merit of an *embargo*, but this decision may take much longer if the judge requests an expert opinion. Once a decision is reached, the debtor may then initiate another *embargo* action and this may go on successively. The debtor may also request a negotiation at any time during the process, and the creditor is then asked to participate in good faith. Once all embargoes are judged and a decision is reached, the debtor may still appeal to a higher court. In São Paulo, Brazil's financial center, the *Tribunal de Justiça* (Appeal Court) may take two years just to assign the case to a judge. An additional two years may pass until a decision is reached, and the debtor is again allowed to present embargoes. Generally, the entire process may take somewhere between 1 and 10 years, depending on the creditor's case and on how skillful the debtor's lawyers are.

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<sup>12</sup> Most contracts do not specify a fixed interest rate, but rather a reference rate and a spread. In some credit operations it is not uncommon to end up with monthly real rates above 10 percent.

The cost of an action is yet another problem. Lawyers charge between 10 and 20 percent of the value in debt. In Rio de Janeiro, judicial costs include a fixed fee of R\$ 42.83 (*custas judiciais*) plus a judicial tax of 2% of the value of the debt, with a floor of R\$ 23.29 and a cap of R\$ 10,000.00. Creditors also have to pay to register documents, for the court officer to notify the debtor and/or list assets for *penhora*, etc. Usually, only when creditors have their own in-house lawyers and the loan exceeds a certain level is it worth resorting to the courts. For a small loan, it usually does not pay to apply to the judiciary to recover it.

#### **4 – Impact of Judicial Performance on Credit Markets: A cross-state analysis**

In the previous section we argued that creditors perceive courts as providing weak protection against opportunistic behavior by borrowers. Even when the law clearly guarantees creditors' rights, the judiciary often inadequately enforces them. In this section, the link between the quality of judicial enforcement and the credit market is explored for the Brazilian case. We attempt to answer the question of whether the size of the credit market depends on the quality of the judiciary. In order to do so, we take advantage of Brazil's federal political system, where laws protecting creditors apply nationwide, but are enforced by state courts, to separate the discrete impact of judicial inefficiency on credit markets. With that end, we look at cross-state differences in the size of credit markets and test whether judicial performance explains these differences.

Data for 1988-97 shows that there are substantial differences among Brazilian regions and states in the volume of rural and non-rural credits. The Southeast concentrates most credit activity, accounting for about a fourth of overall rural credit and two thirds of the much larger total of other credits. In this region, São Paulo is by far the state with the largest credit volume. The North is the region with less credit activity, with 2.4% of rural credit and 1.5% of other credits. The other regions answer for roughly similar shares of other credits; concerning rural credits, the South gets a third of the overall total, the Center West about a fourth and the Northeast 13%. An obvious reason for the different shares of the states in total credit is the size of their economies. In fact, loan concentration in the different regions is largely explained by their size (as measured by state GDP). There are still, however, significant differences in the ratio of credit to GDP among regions and states, which remained more or less stable during 1990-96. This suggests that the size of the economy is not the single (linear) explanation for the uneven distribution of credit among the states.

Judicial performance is a likely complementary explanation. According to Aith (1998), judicial inefficiency is a "limiting factor to the expansion of the [credit] sector's activities and, more importantly, considerably increases banks' spreads -- by up to 30%, depending on the situation." And the quality of judicial enforcement is not uniform across Brazil's 27 states. There are different reasons for this. First, in some states courts are less independent from the government and/or politically influential groups than in others. Second, some state courts (especially lower level ones) are quite "politicized" i.e. the interpretation of the law may change to accommodate judges' political views. Examples are the different rulings on the privatization process and on the legality of charging compound interest, and the importance given to the article of the Constitution that states that property has a "social role" to play (but does not define which). Some judges interpret this article as awarding them the right to over-rule contract clauses if they see them as opposing "social justice", since they feel it is their duty to redistribute income (or property) in a "fair" way. Third, the problem of corruption is more present in some states than in others. Fourth, both court and lawyer fees in credit recovery cases vary from one state to the other. Last, the training of judges is not uniform across the country. Judges in the more developed regions are perceived as better prepared.<sup>13</sup>

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<sup>13</sup> Several lawyers raised this point in our interviews. Some judges are reported not to understand how leasing, factoring and other less traditional credit operations work. One lawyer mentioned that a judge he was arguing before still used the old and revoked Civil Code.



To gauge judicial performance we use data from two surveys conducted by IDESP in which businessmen in different states were asked to rate the judiciary with respect to slowness, fairness and costs (Pinheiro, 1998). The first survey, with 602 responses, was carried out in the first semester of 1996; the second, answered by 279 businessmen, took place a year later. The two surveys included state enterprises, private national firms and foreign companies of medium to large size. In both, the question concerning the respondent's view on the quality of judicial enforcement was exactly the same, and was placed in the beginning of the questionnaires (although the remainder of the questionnaire differed). Slowness comes up in the surveys as the worst of the three problems, followed by high costs and unfairness, in this order. Based on these results we built an index of judicial inefficiency, by taking a simple average the performance of the judiciary in each state on the three characteristics and for both years. Overall, the results suggest that courts in the South and in the Southeast are ranked the best, those in the Center-West third and in the North and Northeast fourth and last, respectively. There is, however, a wide variation among states within a same region and for different characteristics of the judiciary (cost, speed and fairness) within a same state.

Table 4.1 presents a set of regressions for the ratio of total, rural and non-rural credit to GDP against per capita income and judicial inefficiency. The regressions for total and rural credit also include the share of agricultural activities in GDP. The regressions were estimated using a panel with the 22 states covered by the IDESP surveys, with annual data in 1990-96 for the ratio of credit to GDP, per capita GDP and the proportion of agricultural activities in state GDP.<sup>14</sup> The measure of judicial inefficiency was fixed for all years. Time effects were captured using year dummy variables. For each type of credit, we ran 6 regressions for each specification of the dependent variable, all with per capita GDP as an explanatory variable. The first regression includes all observations (including the 5 states absent from IDESP's surveys) and excludes the judiciary-inefficiency variable. The second repeats the same functional specification but only considers the states for which we have complete information. The third regression introduces the judicial inefficiency index as an explanatory variable. The other three equations use the same model substituting the index of judicial inefficiency for the shares for "bad" and "vary bad" answers regarding cost, slowness and unfairness.

Overall, the regressions showed a reasonable fit, statistically significant independent variables and coefficients that are robust to model specification. They show that there is persuasive empirical evidence that judicial inefficiency has a distinctive negative impact on the volume of credit extended by financial institutions. There are several other noteworthy results.<sup>15</sup>

First, per capita GDP has a positive, statistically significant impact on the ratio of total and non-rural credits to GDP -- for rural credit, though, per capita GDP is not statistically significant.<sup>16</sup> These

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<sup>14</sup> The data used in the regressions is presented in Pinheiro and Cabral (1998). Notice that due to lack of information on judicial inefficiency five states were left out of most of the regressions. These states are Acre, Rondônia, Amapá, Roraiama and Tocantins. The five are in the North region and are among the smallest states in Brazil, in demographic and economic terms.

<sup>15</sup> We estimated both linear and log-linear specifications for each dependent variable, and although only the latter is reported in Table 4.1 the conclusions are essentially the same in both cases. The log-linear was the preferred specification because in most cases in the linear form the Jarque-Bera test rejects the null hypothesis that the cedastic term is normally distributed. For some regressions we rejected the hypothesis of homoscedasticity, and in those cases t-statistics were derived using White's asymptotic covariance matrix. The regression residuals also displayed time-series autocorrelation, but re-estimation with a Prais-Winsten correction revealed little change in coefficient estimates and their statistical significance. Comparison of equations (1) to (2) shows that results are not sensitive to the exclusion of the five states for which we do not have information on the quality of judicial enforcement. The coefficient of per capita GDP remains virtually unchanged, while that of the share of agricultural activities in GDP is only slightly reduced.

<sup>16</sup> We did not deal with the possibility of per capita GDP being endogenous. The major reason for that was lack of adequate instrumental variables to test this hypothesis. However, we believe that per capita income at state level is not much influenced by the volume of credit activity in the same or near periods. One, because many other

coefficients remained essentially unchanged when we estimated regression (1) in each block with fixed and random effects, rather than using our judicial inefficiency index. The significance of this coefficient is highly dependent, however, on the inclusion of D.F. in our panel of states. When the regressions are estimated without D.F., the coefficient of per capita GDP is no longer statistically significant. Note, though, that the coefficient of judicial inefficiency and its statistical significance are not sensitive to the exclusion of D.F. from the panel.

Second, in the case of rural credit, the single most significant variable is the share of agricultural activities in GDP. This variable is also statistically significant in the regressions for total credit. This positive coefficient requires some elaboration, since initially we expected states with a larger proportion of agricultural activities to present proportionately less total credit activity, as opposed to the positive effect on credit to rural activities. Our explanation for the positive coefficient is state intervention; that is, states with strong agricultural sectors are able to secure a disproportionate amount of rural credit (which is provided mainly by public banks). This is consistent with anecdotal evidence that shows that congressmen linked to agricultural interests are usually very successful at extracting government favors in the form of a large credit supply.

Third, all measures of the quality of judicial enforcement, except for slowness, show a statistically significant impact on the ratio of total, rural and other credits to GDP, with relatively large t-statistics. Only for rural credit did one indicator of judicial inefficiency -- slowness -- showed a sign opposite to what was expected, but without statistical significance. The problem with this variable is that the judiciary is perceived to be very slow in all states, so that there is not enough variance to allow for a good estimation. Fourth, our index of judicial inefficiency results in general in a better fit than the other individual measures of judicial performance, as indicated by the higher adjusted R squares.

To assess the economic impact of the different variables on credit activity we looked at the change in the dependent variables that would result from an increase of one standard deviation in each explanatory variable (Table 4.2). Results for the linear equations indicate the increase in percentage points; the log regressions show the percentage increase in these ratios. As shown, the ratio of total credit to GDP would go up by 11.9 percentage points or 25.8% as a result of an one standard deviation increase in per capita GDP. That is, raising per capita income from R\$ 3.2 thousand (1996 prices) to R\$ 4.9 thousand increases the volume of credit by 12 percent of GDP. The corresponding results for non-rural and rural credits are 10.5 and 0.4 percentage points, respectively. For non-rural credit that means a 24.1% increase in the volume of credit, while for rural credit the increase is roughly equal to a tenth of the simple average of the ratio of rural credit to GDP across the 27 states.

The high sensitivity of the ratio rural credit/GDP to the share of agricultural activities in GDP is confirmed in Table 4.2. A one standard deviation increase in this variable causes this ratio to expand by almost 3 percentage points, which is an increase of roughly 92%. For total credits the corresponding figures are of 5.4 percentage points and 17.2%, respectively. This is less significant than it may seem to be. It means that it would be necessary for the share of agriculture in GDP to go up by 10.6 percentage points (that is, a 77% increase on average) for the volume of total credit to go up 15% (an elasticity of roughly 0.19).

The result that we repute as the most important is the high sensitivity of the ratios of total, rural and non-rural credit to GDP to the quality of judicial enforcement. This result is robust to the measure of judicial performance that we use. A one-standard-deviation increase in the index of judicial inefficiency (a deterioration in the quality of judicial enforcement) reduces the ratio of rural credit to GDP by 1.0 percentage point. In the cases of non-rural and total credits, the reduction is of 7.6 and 8.5 percentage points, respectively. In the three cases credit contraction is in the range of 21% to 25%. The impact of the judicial inefficiency index is thus of the same order of magnitude of that of per capita GDP, suggesting that differences in the quality of judicial enforcement are as important as per capita income differentials in explaining cross-state differences in the ratio of credit to GDP. Results

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variables are more important to determine per capita income (e.g., education). Two, because economic agents in one state may easily access credit from banks in other states with only minor additional costs.

indicate that it would be possible to increase the volume of credit by 8.5 percent of GDP by improving the average grade of judicial enforcement by 17.8% (that is equivalent to lowering the proportion of "bad" and "very bad" assessments from 54.8% to 45.1%).



Table 4.1: Results of Cross-State Regressions

	Log(Total Credit/GDP)						log(Rural Credit/GDP)						log(Non- Rural Credit/GDP)						
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	
Constant	-2.9669 (-16.47)	-2.5901 (-14.05)	-0.7486 (-1.87)	-1.7267 (-6.62)	-2.5521 (-4.56)	-1.7589 (-7.42)	-4.8803 (-22.05)	-4.7861 (-19.68)	-3.0246 (-4.84)	-3.7766 (-10.81)	-5.4787 (-5.95)	-3.9768 (-11.56)	-2.8228 (-20.34)	-2.6092 (-20.24)	-0.7193 (-1.87)	-1.7785 (-8.38)	-2.5333 (-4.58)	-1.9670 (-10.60)	
Per Capita GDP	0.2235 (6.11)	0.2046 (5.87)	0.1350 (3.85)	0.1656 (4.87)	0.2038 (5.33)	0.1542 (4.56)	0.0058 (0.158)	0.0254 (0.72)	-0.0407 (-1.00)	-0.0198 (-0.57)	0.0411 (0.96)	-0.0231 (-0.66)	0.1959 (5.28)	0.1937 (5.91)	0.1269 (3.85)	0.1638 (5.23)	0.1914 (5.22)	0.1619 (5.12)	
Share of Agr. Activ. in GDP	2.9262 (4.97)	1.4299 (2.19)	1.5078 (1.90)	0.9335 (1.50)	1.4462 (2.26)	0.7379 (1.19)	7.0117 (7.74)	6.4621 (5.22)	6.2025 (5.14)	5.8901 (5.05)	6.1647 (4.88)	5.7984 (4.66)							
Index of Judic. Inefficiency			-2.8667 (-5.08)						-2.7382 (-3.34)						-3.0390 (-5.17)				
Cost				-1.4306 (-4.44)						-1.6690 (-3.88)						-1.5664 (-4.75)			
Slowness					-0.0415 (-0.07)						0.7558 (0.80)						-0.0758 (-0.14)		
Unfairness						-2.0401 (-5.06)						-1.9802 (-3.96)						-1.9117 (-4.57)	
Dummy 1992							0.3346 (1.75)												
Dummy 1995	0.3041 (1.92)	0.3433 (2.17)	0.3574 (2.44)	0.3571 (2.40)	0.3432 (1.96)	0.3620 (2.47)							0.4843 (2.66)	0.4284 (2.60)	0.4373 (2.87)	0.4324 (2.80)	0.4287 (2.59)	0.4327 (2.79)	
Dummy 1996	0.3793 (2.40)	0.3425 (2.17)	0.3661 (2.50)	0.3565 (2.40)	0.3428 (2.33)	0.3608 (2.47)							0.6144 (3.37)	0.4885 (2.95)	0.5105 (3.34)	0.4983 (3.22)	0.4893 (2.95)	0.4990 (3.21)	
Adj R <sup>2</sup>	0.231	0.236	0.3492	0.3256	0.2357	0.3483	0.3272	0.2389	0.2783	0.2863	0.238	0.2793	0.1895	0.2390	0.3503	0.3347	0.2340	0.3280	

Note: For Total Credit, normality is rejected in regression (1); in (5), t-statistics were calculated using White's consistent covariance estimates. For Rural Credit, White's consistent covariance estimates were used in all regressions; normality was rejected in all regressions but (4). For Non-Rural credit, no heterocedasticity problems were encountered, but normality was rejected in regressions (1), (2) and (5).

Table 4.2: Sensitivity of the Ratio of Credit to GDP to a One-Standard Deviation Increase in Independent Variables

Variable	Standard Deviation	Linear Equations			Log Equations		
		Total Credit	Rural Credit	Other Credits	Total Credit	Rural Credit	Other Credits
Per Capita GDP	1.6999	0.1187	0.0044	0.1045	25.80%		24.08%
Share of Agricultural Activities in GDP	0.1055	0.0537	0.0296		17.24%	92.39%	
Index of Judicial Inefficiency	0.0975	-0.0846	-0.0103	-0.0762	-24.38%	-23.43%	-25.64%
Cost	0.1654	-0.0739	-0.0096	-0.0669	-21.07%	-24.12%	-22.82%
Unfairness	0.1315	-0.0703	-0.0129	-0.0602	-23.53%	-22.93%	-22.23%

## 5 - Alternative Private and Public Arrangements to Ensure Willingness to Pay

In section 3 we argued that the Brazilian legal and judicial systems grant creditors a relatively weak protection, when compared to the best international standards described in La Porta et al (1997). In section 4 we showed that inefficient judicial enforcement is a significant obstacle to the expansion of credit activities in Brazil. In this section, we claim that it is conceivable that the volume of lending in Brazil would be even lower, were it not for private contracting arrangements and institutions that attempt to circumvent the ineffectiveness of courts. In what follows, we complement the preceding analysis using a methodological approach in which these arrangements and institutions play a more prominent role.

Up to this section, the discussion has followed essentially along the lines of “classical contract law”, treating the identity of the parties to a transaction as irrelevant and giving precedence to formal over informal features of the contract (as discussed by Williamson (1985, p. 69)). However, the emphasis given by banks to the negotiation of defaulted loans, so as to preserve their relationship with their clients, suggests that this approach is not entirely consistent with the way credit markets operate. It indicates that the identity of the parties involved in a credit transaction is often relevant and that the parties value the continuation of their financial relationship. Banks treat default in different ways depending on whether the borrower is an anonymous consumer that takes a small occasional loan or a firm that recurrently borrows from it.

In this section we show that in Brazil there are forms of contractual relationships, different from those implicit in classical contract law, that enable certain types of credit transactions that would otherwise be unfeasible in an environment of weak creditor protection as the one previously described. These forms of governance rely mainly on the private ordering of contracts, as opposed to judicial enforcement. We argue that in Brazil there are three main institutions that allow these forms of governance to flourish. The first is the existence of a well-developed informational infrastructure (credit history records, etc.), the second is the presence of public banks, and the third relates to mechanisms that rely on peer pressure to insure repayment. These institutions are discussed seriatim in the context of specific credit activities.

### 5.1 Credit Bureaus and Post-Dated Checks

Problems of asymmetric information in credit markets have long been emphasized in the literature. Institutions that augment the amount of information available to creditors reduce the risk of default

due to debtor inability to repay and have a positive impact on the volume of credit. But such institutions are also important because they increase debtors' willingness to repay through mechanisms such as reputation. Jappelli and Pagano (1998) built an international data set on credit data banks and found information effects on default rates and lending activities that are consistent with this hypothesis. They argue that this may explain why central banks forcibly create public credit registries, particularly where creditor protection is poor and where there is a lack of alternative private information sharing arrangements.

Reliable and readily available information on borrowers is an important feature of the Brazilian credit market. Our interviews showed that creditors perceive ex-ante screening mechanisms as their best protection against bad debtors. A simple theoretical model helps demonstrating the importance of informational factors in determining the cost and availability of credit (Pineiro, 1996). Assume that there are two types of borrowers. Type 1 borrowers are perfectly willing to pay back their loans, including the interest  $r$  charged by the bank. Type 2 clients always default on their debts. Assume that, in this case, the bank renegotiates the loans and is able to get the principal back and to salvage a return of  $r(1-\alpha)$  on the loan, net of negotiation costs,<sup>17</sup> where  $\alpha$  measures the success of ill-intentioned borrowers in expropriating the bank. The bank cannot observe the borrower's type but learns from experience that a proportion  $\pi$  of its customers is of type 2<sup>18</sup>. Assume that the interest rate  $r$  charged on loans is determined so as to obtain an expected rate of return given by

$$E(\text{return}) = i + a \sigma_{\text{return}}, \quad (1)$$

where  $i$  is the interest rate the bank would be willing to charge if  $\pi = 0$ . In this case,

$$E(\text{return}) = (1-\pi) r + \pi (1-\alpha) r = r (1-\alpha\pi), \quad (2)$$

$$\sigma_{\text{return}}^2 = r^2 \alpha^2 \pi (1-\pi), \quad (3)$$

From which follows that the bank will charge an interest rate equal to

$$r = i / [1-\alpha\pi(1+a\sqrt{(1-\pi)/\pi})] \quad (4)$$

It is clear from the above expression that  $r/i$  will be higher the larger the values of  $\alpha$ ,  $\pi$  and  $a$ . While  $a$  reflects risk aversion,  $\alpha$  and  $\pi$  directly depend on the protection the law and the courts award to creditors against type 2 borrowers. Instead of renegotiating the loan, the bank may opt for trying to have it enforced in court. If the law gives appropriate protection to creditors, and if the courts enforce it adequately, type 2 borrowers would settle for a low  $\alpha$ . The value of  $\alpha$  and the possibility of being penalized by the courts then determine the value of  $\pi$ .

This simple model may well account for the way in which creditors in Brazil have reacted to the unexpected rise in default rates that followed the explosion in consumer credit after price stabilization. Because households did not have access to credit during the high inflation period, they did not have a credit history. They were also not aware of the consequences of default. While creditors had little information (and practice) to discriminate borrowers, these were probably overestimating the benefits of default. As predicted by the model, creditors reacted by charging very high interest rates in order for expected returns to remain positive despite the high values of  $\pi$  and  $\alpha$ . The problem, however, is that if  $\pi$  and  $\alpha$  are too large,  $r \gg i$  and even type 1 borrowers become a bad credit risk. If interest rates increase too much, banks will probably not be willing to lend any more money. This generates a low-level equilibrium with low credit volumes, high default rates and very high interest rates.

A simple extension of this model helps to clarify the role of information sharing in protecting lenders and increasing borrowers' willingness to pay. Suppose now that an institution collects and sells information about people's creditworthiness, and that for a fee  $f$  the bank can buy this type of

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<sup>17</sup> The model may be easily extended to the case in which the bank also loses part of its principal.

<sup>18</sup> It is assumed that the number of clients of each bank is very small if compared to the number of borrowers, so that the past history of borrowers at the bank does not change  $\pi$ .

information. With it, the probability of lending to a type 2 borrower falls from  $\pi$  to  $\rho$  ( $\rho < \pi$ ). In this case, both the expected value and the variance of the bank's return on the loan change to

$$E(\text{return})|_{w/\text{info}} = r(1-\alpha\rho) - f, \quad (5)$$

$$\sigma_r^2|_{w/\text{info}} = r^2\alpha^2\rho(1-\rho) \quad (6)$$

From which follows that the interest rate will be determined by

$$r = (i+f) / [1-\alpha\rho(1+\alpha\sqrt{(1-\rho)/\rho})] \quad (7)$$

The model clearly demonstrates that two key features in determining the cost of credit are: (i) the cost of obtaining information on borrowers and (ii) how effective creditors are in using such information (i.e., how successful they are in reducing the probability of lending to a type 2 borrower). Notice also that information sharing and good legal/judicial systems reduce interest rates through different channels. The first operates by reducing the proportion of bad debtors that manage to get credit. The second by directly lowering the actual proportion of bad debtors and the loss they impose on banks.<sup>19</sup>

Several information sharing institutions are available in Brazil. Upon request, they run a credit check on an individual or a company, its owners and top management. In general, the inclusion of an individual's or firm's name in any of the negative lists is sufficient to exclude him/her from the credit market. Knowing this, creditors play the threat of inclusion in one of these lists when negotiating with debtors.

The main public data bank used by creditors is the Returned Check Register, which lists all people who have issued checks with insufficient funds. This register is particularly useful for credit analysis due to the widespread use of checks in Brazil, a practice inherited from the high inflation period (during which the use of cash and credit cards was heavily penalized). The register is organized at the national level and is managed by the Central Bank. Banks compulsorily supply information on returned checks. Once an individual's name is included in this register it remains there for five years, a period during which that person is not allowed to have a bank account. Another, less important public data bank is the Register of Defaulters (*Cadin - Cadastro de Inadimplentes*). Although originally intended only for public financial institutions, currently all public institutions may enter information about firms and individuals in this register, whether or not related to credit activities. It is not, however, accessible to private creditors.

The SPC – Credit Protection Service – is another major source of information used by creditors in Brazil. The SPCs are non-profit institutions established at the municipal level and organized by the local Associations of Retailers (Clube de Diretores Lojistas – CDL). The SPCs are relatively old institutions; the one operating in Rio de Janeiro, for instance, was established in 1955. Currently, there are about 1.200 of them operating in all of Brazil. Information coverage is in general municipal (i.e. at the city level), but SPCs from different cities exchange information forming a national network, in effect. SPCs' databank contains information collected from retailers, banks, credit card administrators, financial firms, etc. Only registries of debts which have originated in a commercial or trading relationship may be included (not debts to schools, landlords, etc). While SPC includes information on individuals only, the CDL manages another data bank, known as SIAC, with similar information about firms. SIAC data banks also provide information on *protestos* and on debtors against whom judicial actions have been initiated. Another product provided by the CDL is the *videocheque*, through which members may find out whether there are restrictions on customers' checks.

The two main private credit bureaus in Brazil -- i.e., institutions that collect and sell information on borrowers -- are, in this order, SERASA and SCI. Both operate nationwide, while other similar but

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<sup>19</sup> Note, though, that information-sharing mechanisms will also help to reduce the actual probability of default  $\pi$ , since type 2 borrowers know that the probability of they borrowing again if they default on a loan will be much lower.



smaller firms, such as Seta and Asteca, service only the main markets, especially São Paulo, where the largest banks are located. SERASA was created in 1968 by three of Brazil's main banks. Currently all medium and large Brazilian banks are shareholders of SERASA. It has a staff of 1400 employees and offices in all state capitals and all main cities in Brazil. SERASA is specialized in building up databases on firms and on individuals (identification, address, personal and professional information, financial commitments, negative records and financial and economic analysis). It relies essentially on two sources of information: (i) information collected at other data banks, such as the Central Bank, SPC and public registers; and (ii) information supplied directly by the banks. Serasa offers creditors a menu of products, which go from simple checks on the presence or not of a potential client on any negative list to more sophisticated information on credit limits and risk of default.

SCI offers products similar to Serasa's, but, differently from it, is not based on reciprocity: a client may obtain information without the obligation to provide any. However, SCI tries to make clients provide some information back, and has an incentive system that gives a reduction in prices for clients that share their information about potential borrowers. In recent years, demand for SCI services has expanded substantially, but SCI remains much less important than SERASA, functioning as a subsidiary source of information for creditors.

Information sharing institutions have been essential to allow the recent expansion of financing of non-durable goods, which is largely unaccounted for in Central Bank statistics. Since 1994 retailers have begun to finance the sale of clothes, footwear, toys, foodstuffs and other similar goods. Even services are often paid in a few installments, rather than in full when provided. The instrument that made this form of financing possible is the post-dated check. As shown in Table 5.1, in São Paulo about 36 percent of all sales are paid for using post-dated checks, against 37 percent using cash and 21 percent paying with credit cards. A survey by Banco Fenícia and FIPE (Fundação Instituto de Pesquisa Econômicas) in São Paulo during six weeks in June/ July 1997 showed that 49.5% of the people interviewed were using postdated checks, the most important source of consumer financing. The second most used source was retailer credit (*crediários*), used by 40.8% of the respondents, while 24.5% were using some sort of credit card financing and 11.9% were using store credit cards (private label). The importance of this instrument may also be assessed from the estimate that in May 1998, 60 percent of all checks issued in Brazil were post-dated.

Table 5.1: Forms of payment in São Paulo

	November 1996	April 1997	August 1997	November 1997
Cash	33.0	33.2	38.7	44.4
Credit card	25.0	20.6	18.4	18.3
Postdated check	36.0	41.9	35.1	32.2
Bank loan	3.0	1.1	4.1	4.8
Other	2.0	3.2	2.1	0.4

Source: FCESP.

It is virtually impossible to measure the volume of credit extended through postdated checks. A crude lower-bound estimate may be derived, however, from the activity of factoring companies, which recycle these funds, reducing the working capital needs of retailers.<sup>20</sup> In 1997, factoring activity involved 726 firms and operations amounting to R\$ 14.75 billion, 29.38% more than the R\$ 11.4 billion registered in 1996. These figures are comparable to the stock of household credit at the end of 1996 and 1997, which totaled R\$ 19.6 and R\$ 28.9 billion, respectively.

What makes credit through postdated checks interesting to our analysis is that it operates largely outside the formal framework described in section 3. It is not supported by collateral or personal guarantees. Its low unitary value precludes recourse to the judiciary in case of default.<sup>21</sup> Moreover,

<sup>20</sup> Factoring is an activity that consists in the purchase of firm's credit resulting from merchant sales. The factoring company assumes the credit risk.

<sup>21</sup> In the Banco Fenícia/FIPE survey, more than half of the loans were of values under R\$ 500.

differently from other Latin American countries, in Brazil there are no major legal sanctions to issuers of checks without funds: they do not go to prison nor have to pay any pecuniary penalty. Issuers may also suspend payment of the check before it is presented without suffering any legal sanction. In fact, post-dated checks are not even legally recognized, since creditors may cash them at any time.

In this way, this entire market segment is basically supported by information sharing institutions (and by peer pressure on the part of other retailers, in waiting to cash the checks when agreed). It is the easy and low-cost access to information on the person writing the check and the high cost to the consumer of entering a “black list” if writing a check that has no funds that have made post-dated checks a widely used form of financing consumption. The efficacy of such “informal” sanctions may be assessed by the interest charged by factoring firms: 4.9% (monthly rate in April 1998),<sup>22</sup> which is low compared to interest rates charged, for instance, by credit card companies. Default rates are also relatively lower than for financial institutions' credit portfolio (e.g., 2.9% in São Paulo). This also compares favorably with the proportion of *crediários* that have late payments: 10% (Banco Fenícia/FIPE survey).

## 5.2 Public Banks

In developing countries, state intervention is policy makers' usual response to either market or institutional failure in financial markets. This is the case in Brazil, where public banks dominate a large part of the credit market (see section 2). One reason for that is their privileged access to funds with comparatively low cost and long maturity terms. But also important is the fact that, by being state-owned and virtual monopolists in their market segments, they are able to structure their credit operations in ways that mitigate the negative effects of weak creditor protection. In some cases, these provide for governance structures that also grant debtors protection from government expropriation. This creates a mutual hostage situation that allows for economic activities that would not otherwise flourish in private hands. In this section we analyze one such case: the financing of private investment in infrastructure (another example in which the use of collateral and the potential recourse to the judiciary are not sufficient to make credit operations feasible).

While some of these infrastructure projects may be financed through traditional corporate finance instruments, others may not. This is the case of projects in industries such as oil drilling or electricity generation, where the volume of lending involved is so large that its inclusion in the investor's balance sheet would quickly exhaust its investment capacity and compromise its credit rating. The solution traditionally encountered to overcome this problem has been the use of project finance. Overall, it is estimated that about half of the loans to infrastructure projects in recent years have been channeled through project finance operations. Most of these operations have a similar structure: about 30 percent of the project is financed through equity, and about 70 percent is financed by loans, almost exclusively extended by BNDES and IADB or IFC. Foreign banks participate through the IADB and the IFC. Capital markets and domestic financial institutions have had a minor role in those operations. Creditors proportionately share the same guarantees, with no seniority for any of them. The project itself is the main guarantee for all loans – both the project's revenues and assets, including all the project company's available assets (shares, mortgage of the fixed assets, etc).

The two instruments most often used by lenders in Brazil to encourage debt repayment – collateral and credit rating – work inefficiently in the case of project finance. In infrastructure the ‘project company’ is a poor collateral if the project is not a success since its assets are highly specific and have low resale value (especially before the project is complete). Mortgaging fixed assets prevents the investor from using them to request other loans; that is, the project becomes entirely committed to the lenders. It is, however, unlikely that the bank will foreclose on the mortgage, as its market value is too low. As stated by a bank officer: “what will the bank do with a loss making power plant?” In

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<sup>22</sup> Corresponding to a discount of 4.7% per month on the face value of the check.

addition, the 'project company' does not have a credit history. Sponsors' credit history provides only imperfect guidance, since there is no recourse to the sponsors' assets.

How do lenders view the protection awarded by the law and the judiciary in project finance operations? These loans are based on carefully written contracts, which strictly abide to the law (Brazilian or New York, depending on the contract) and foresee recourse to the judiciary if necessary. Nonetheless, lenders argue that in case of default in this kind of project, the solution must go through finding a new group of investors to manage the project or, if that does not solve the problem, renegotiating the loan. As stated by a bank officer: "resorting to the judiciary is the worst of all options." For this reason, these credit contracts have clauses giving lenders the right to step in if necessary. The riskier the project, the stricter are the covenants allowing creditors to step in.

Therefore, the most important role for the laws and the judiciary in the financing of infrastructure is to protect investors (and creditors, indirectly) against the political risk of administrative expropriation. So far, with the privatization process still underway and with the same administration in control, there has been no need for judicial action. But one may foresee that an independent and strong judiciary is crucial in making creditors feel secure that, even in the long run, regulatory agencies will respect the concession contract, that the government will not change the laws and that these will be properly enforced.

Meanwhile, financing by public and multinational banks provides for governance structures that simultaneously restrain government's and borrowers' opportunism. On the one hand, sponsors' willingness to pay is encouraged by the fact that they tend to have the prospect of a large number of other credit operations with lenders. The monopolistic position of public banks in long-term credit markets is then essential to reduce the benefits of opportunistic default. On the other hand, government opportunism is discouraged by the fact that (i) through public banks it will share the losses imposed on the project, and (ii) it would likely compromise the country's ability to obtain financing from multilateral institutions.

### **5.3 Peer pressure**

Peer-pressure based mechanisms combine the advantages of both formal and informal lending programs. Lenders know the borrowers well and have access to a better monitoring and enforcement technology than in other formal lending schemes, a characteristic that is the well-known advantage of informal lending. However, it avoids the negative aspects of informal lending, such as increased market segmentation, lack of sufficient risk diversification and small operation scale. Peer pressure schemes include credit cooperatives and group lending. The latter provides particularly strong incentives, in the sense that in group lending all are liable for repayment and will be sanctioned if any one individual defaults. As a consequence, individuals in the group provide information and help enforcing contracts.

Examples of group lending can be found in Brazil, but mainly in the field of micro-credit. *BNDES Solidarity* is an initiative involving small, and often informal, businesses. These businesses have high failure rates, with a high proportion of them closing down less than a year after being established. Because of this and also because they often have difficulties in providing good collateral, small businesses have traditionally suffered from a severe credit shortage. This initiative is directed at remedying this situation. Its objective is to extend very small loans -- from 150 to a few thousand reais -- to businesses that often operate informally and that in general have no bank account. Also active in micro-credit, but in this case mostly to individuals, are Credit Cooperatives. In neither case is there the intention to subsidize borrowers. Interest rates charged are similar to those found in the market place and these programs are expected to be self-sustainable. What is peculiar about these initiatives is that they rely on a complex governance structure -- based on peer pressure, information sharing and public credit -- which are very different from that assumed in classical contracting law. Loans are too small to be formally registered, let alone to enforce them in the costly Brazilian judicial system.

The high cost of and the difficulty in obtaining bank credit in Brazil have driven individuals into forming credit cooperatives, which provide general-purpose micro-credits.<sup>23</sup> “Low” interest rates (2 to 5 % per month) and the certainty of obtaining a loan when needed have fueled the growth of this type of institution. In 1989, there were about 300 such organizations in Brazil; today, they are 1,100, with about 1 million associates and a R\$1.4 billion in resources (Brazil Cooperatives’ Organization ,OCB). Cooperative equity comes from members’ paychecks every month. In some cases, a percentage is used (about 1%), while in other cases a fixed fee is charged (for example, one cooperative charges R\$12 from members with ‘low’ salaries and R\$17 for those with ‘high’ salaries). To facilitate cooperatives’ credit operations, the Central Bank authorized in 1997 the creation of two private banks: Bancoob and Banficed. Together, these banks have a net worth of over R\$700 million. Bancoob alone is among the 20 largest private banks in Brazil.

BNDES Solidarity is a program created to provide funds to non-government organizations (NGOs) engaged in micro lending. To be eligible, the NGO must show at least six months of successful experience in micro-credit. In addition, a public or multilateral institution, or another reputed NGO must have financed at least a quarter of the loans it previously extended. Additionally, if the NGO was created by a municipality, this municipality must have at least 250 thousand inhabitants. BNDES provides funds equal to 100 percent of the total value of the NGO’s stable resources, up to a maximum of R\$ 3.0 million per contract. There is no interference, however, with the way the NGO operates.

Table 5.2 presents basic statistics as well as a description of required guarantees and procedures adopted in case of default for five institutions engaged in micro lending. It is clear that these NGOs charge high interest rates and apply stiff penalties in case of default. As high as interest rates might seem, however, they are still well below the rates charged in the alternative forms of credit which are available to these borrowers.<sup>24</sup> Penalties are also much lower than those charged by banks on similar operations. Although default rates vary considerably, they are not high by market standards. Peer pressure, foreclosure on real and personal guarantees and the inclusion of the debtor’s and the *avalista*’s names in black lists such as the SPC are the instruments used to ensure willingness to pay. Judicial enforcement is not perceived as an alternative in most cases, because it is too costly. In fact, for most loans, the cost of taking judicial action is higher than the value of the loan. For a similar reason, these loans are often not taken to the relevant public register. Only for the larger loans are these procedures justifiable.

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<sup>23</sup> Credit cooperatives are financial institutions that raise deposits to lend to their members. See Huppi and Feder (1990), Guinnane (1992) and Banarjee, Besley and Guinnane (1994) for a discussion on the merits and problems with credit cooperatives.

<sup>24</sup> In August 1988, moneylenders (*agiotas*) were charging a monthly interest rate of 20.53% (or 940.03% p.a.), on average. In some cases, borrowers were paying interest rates as high as 33.64% per month (O Globo, August 23, 1998, p. 37).

Table 5.2: Basic Practices and Results of NGOs Engaged in Micro-Lending

	Monthly Interest Rate (in percent)	Guarantees	Default Rate (%) <sup>(2)</sup>		Procedures in Case of Default
			June 98	July 98	
Portosol	3.5	Individual <i>aval</i> , mutual <i>aval</i> or real guarantees <sup>(1)</sup>	5.00	4.45	One day after the loan is due a credit officer will visit the client and try to arrange for an immediate new date for payment the client visits. At the same time, the financial sector will mail a collection letter to the debtor and the <i>avalista</i> . If no payment is made on the new date, a new visit is made to the client and the <i>avalista</i> is also visited to try to negotiate a final payment date. The debtor will be required to give, personally or in writing, the reasons for the delay. If he or she does not do that, the loan will be considered defaulted and an additional 1% of monthly interest rate and a 2% penalty for loans due for over 30 days will be charged. After that period the loan is considered due in its full amount. In this case collection is passed to a lawyer and the name of the debtors and the <i>avalista</i> are included in the SPC. The lawyer will try to manage a friendly collection and, if not successful, will start a judicial collection process.
Blusol	4.8	Individual <i>aval</i> , mutual <i>aval</i> or real guarantees <sup>(1)</sup>	0.0	0.2	The credit officer will visit the debtor to learn the reasons for the delay and notify the client that his or her payment is overdue and that a penalty and additional interest rate ( <i>juros de mora</i> ) will be charged. In case of group lending all borrowers are informed of the penalties. If no payment is done after 15 days of the original payment date, the loan guarantor is notified. After 25 days of the payment date, a final warning will be given to the debtor and the guarantor, informing that in 5 days a judicial collection process will be started and collection fees will be added to the debt due. The name of the debtor is also included in the SPC.
FAEP <sup>(3)</sup>	3.9	Individual <i>aval</i> , mutual <i>aval</i> or real guarantees <sup>(1)</sup>	0.76	0.32	If any part of the debt is not paid on time, the debtor must give personally or in writing the reasons for the delay. If this is not done up to 24 hours before the debt is due, the loan is considered non-performing and the debtor has to pay an additional 2% of interest rate and a 1% penalty for delays over 30 days. After that period the loan is considered due in its full amount.
CEAPE – PE <sup>(4)</sup>	5.3	Individual <i>aval</i> and real guarantees	3.2	3.1	A penalty and an additional interest rate are charged on overdue loans. Since October 1996 CEAPE-PE has required that borrowers open a savings account associated to the loan where deposits are made each time a credit is provided. This savings account provides a partial guarantee in case of default.
Viva Cred	3.9	Individual <i>aval</i> and promissory note issued by the borrower	2.0	2.6	In case of delay, a credit officer visits the client. If there is a justification for the delay, the credit officer works out a solution to be taken to the credit committee, which will take a decision on the matter.

Source: BNDES.

(1) Which guarantees are demanded depends on the purpose and type of the loan.

(2) Proportion of loans overdue for 30 days or more.

(3) Fundo de Apoio ao Empreendimento Popular.

(4) Centro de Apoio aos Pequenos Empreendimentos – Pernambuco

## 6 – Final Remarks

Our analysis of the Brazilian credit market revealed a set of stylized facts and led to the derivation of two important results, the usefulness of which, we believe, extends beyond the analysis of this country's particular experience. They concern (i) the link between judicial inefficiency and credit market size and (ii) private arrangements that substitute for a better performing judiciary. In what follows, we review the stylized facts, present our results and comment on their policy implications.

Macroeconomic instability has long curtailed the development of credit markets in Brazil. Only after the Real Plan (1994), has the sharp reduction in inflation allowed for the volume of credit to households to increase substantially. Nevertheless, domestic credit remained mostly concentrated on short-term operations. Public banks are the providers of most longer term loans. A striking fact is that the ratio of performing loans to GDP has decreased since 1994.

Interest rates in Brazil are amongst the highest in the world. They result from both a tight monetary policy (that keeps banks' borrowing rates high) and large loan spreads (a result of low productivity, high taxes and high default rates, among other factors). We found that the existence of good collateral (e.g., in mortgage loans or fiduciary alienation) and of "protection" to creditors from judicial slowness (e.g., in advance to foreign exchange contracts, ACC) contribute to reduce interest rates charged by banks.

Creditors' rights are only weakly protected by the legal and judicial systems in Brazil. Slowness is a major problem (since the law allows debtors several ways in which to postpone a court decision). Cost is also an issue, particularly for low-value credits. The preference given by bankruptcy law to liabilities with workers and tax authorities in practice eliminates the protection it is supposed to provide creditors with. A set of legal institutions tries to substitute for a better performance of the judiciary (as often also found in other French civil law countries). Examples are the use of self-executable securities and the creation of special forms of collateral, such as fiduciary alienation.

A prime objective of the paper was to assess the impact of poor judicial enforcement on the development of the Brazilian credit market. In order to do so, we tested whether differences in judicial performance explained cross-state differences in credit market size. Although the legislation protecting creditor rights is the same throughout the country, there is a lack of uniformity in the quality of judicial enforcement across the states. To measure judicial performance, we created an index of judicial inefficiency that builds on a survey conducted by IDESP with businessmen in different states regarding slowness, fairness and costs of the judiciary.

Our first main result is to show that the lack of proper judicial enforcement significantly reduces the ratio of credit to GDP, even after controlling for the level of per capita income. Regression results show that judicial inefficiency has a distinctive negative impact on the volume of both rural and non-rural credits. They also show that the ratio of credit to GDP increases with per capita income, which may at least partly explain why the size of credit markets in Latin American countries is smaller than in industrialized economies. A one-standard-deviation increase in per capita income is shown to raise the ratio of credit to GDP by 11.9 percentage points, or about 25.8%. Similarly, raising the index of judicial inefficiency by one-standard-deviation (a deterioration in the quality of judicial enforcement) causes the ratio of credit to GDP to fall by 8.5 percentage points. This is equivalent to a contraction of 24.3% in the volume of credit, keeping per capita GDP and population constant. These regression results suggest that differences in the quality of judicial enforcement are as important as per capita income differentials in explaining cross-state differences in the ratio of credit to GDP.

The second main result of the paper is the identification of governance structures in the financial market that support important credit activities in the absence of strong legal and judicial credit rights' protection. We argue that three main institutions allow these forms of governance to flourish: the existence of a well-developed informational infrastructure, the presence of public banks, and the use

of mechanisms that rely on peer pressure to insure repayment.

A good informational infrastructure allows for the wide use of post-dated checks, for example. The easy and low-cost access to reliable information on a person writing a check together with the high cost to a consumer of entering a “black list” have made post-dated checks a widely used low-cost credit instrument in financing the purchase of non-durable consumer goods and basic services.

Public banks not only have access to funding with comparatively lower cost and longer maturity terms but are also virtual monopolists in their market segments. This has permitted them to structure their credit operations in ways that mitigate the negative effects of weak creditor protection. In some cases they provide for governance structures that also protect debtors from government expropriation, creating a mutual hostage situation that allows for economic activities that would not otherwise flourish in private hands. Such is the case of the financing of private investment in infrastructure, which we analyzed in detail.

Peer pressure schemes constitute the third institution. They include credit cooperatives and group lending. What is peculiar about these initiatives is that they rely on a complex governance structure – based on peer pressure, information sharing and public credit – which is very different from that assumed in classical contracting law.

Some policy implications may be drawn from our results. A first (and obvious) implication is that improving the quality of judicial enforcement is important to allow for the development of credit markets. This would in turn, as discussed in the introduction, indirectly contribute to foster economic development and growth. A second implication is that, because judicial reform is a slow process, government should support institutions that substitute for good judicial enforcement in encouraging debtors to repay – facilitating and supporting information sharing and group lending, for example. Finally, we believe that a more detailed assessment of the comparative advantages and disadvantages of the governance structures here discussed *vis a vis* judicial enforcement should be carried out. For instance, the low productivity and high default rates of public retail banks suggest that, although they may be effective in allowing certain credit activities to take place, they may not be the most efficient solution, were creditors’ rights properly enforced. On the other hand, even if rights were efficiently enforced, information sharing would still be warranted due to its low cost and strong disciplinary effects.

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