The Development of the Brazilian Bond Market

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Abstract

The bond market represents a large proportion of the GDP in developed countries but it seems to be underdeveloped in emerging markets. In the particular case of Brazil, it is widely known that firms do not have access to enough credit at a reasonable cost. Our goal is to provide a better understanding of the current state of the Brazilian bond market and provide suggestions to promote its development. We focus on the main types of corporate debt, especially domestic bonds, bank loans, international bonds, suppliers, and asset-backed securities. Most domestic bonds are non-convertible, subordinated, and have floating or inflation-indexed coupon rates. Except for international bonds and foreign banks, most financial liabilities are not denominated in foreign currency. Bond financing is positively related to the tangibility of assets and to firm size and negatively associated with the ROA. Firms that have bank loans tend to issue fewer domestic bonds, indicating that bank loans are used as an alternative to domestic bonds. Furthermore, international bonds are used as an alternative to asset-backed securities. In the case of exporters, they are able to finance through asset-backed securities using the export flow as collateral. There is also evidence that firms with good corporate governance practices issue more international bonds. Our survey results indicate that the greatest problem are the low liquidity of the secondary market, low market capitalization, low quality of legal recourse in the event of default and the absence of a complete benchmark yield curve. The main problems to finance in the domestic market are high interest rates, short maturities, and collateral requirements. We present a wealth of information on the Brazilian bond market, its development, characteristics, legal background, and structure and discuss many of the problems pointed out in our survey results along with recent initiatives to address them as well as our own suggestions for improvement.

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1. Introduction

Is the Brazilian bond market underdeveloped? What are the main determinants of the current situation of the bond market, and what can be done to promote its development? Although the bond market represents a large proportion of the gross domestic product (GDP) in developed countries, it seems to be underdeveloped in emerging markets. In the particular case of Brazil, it is widely known that firms do not have access to enough credit at a reasonable cost.

The discussion about the level of real interest rates and its causes is an important policy issue that is being dealt with by several Brazilian governments. High real interest rates are often listed as an impediment for greater economic growth and credit availability. We will discuss some of the causes of high real interest rates, list some of the policies that have been implemented to fight high real interest rates, and present economic initiatives that may still be lacking in order to reduce rates even further, resulting in cheaper corporate credit and in the growth in the domestic bond market. It is important to say that government credibility seems to be at the root of high interest rates. A Worker's Party (PT) administration was seen as potentially fiscally irresponsible and as a possible promoter of debt default during the 2002 election campaign. Brazilian interest rates and sovereign spreads reached record highs in 2002 but, even before the election, the situation improved after the PT's "Letter to Brazilians" that reassured that none of this would happen,. The Lula administration has so far fulfilled its commitment and Brazil is currently (May 2006) enjoying its lowest real interest rates since the inception of the Real Plan economic stabilization plan in 1994 with the US dollar trading at very low prices. Yet, more is needed to bring interest rates down even more and to acquire the investment grade status. This background discussion is important and will be dealt with in the Brazilian financial sector background in section 2 of this paper.

Depending on how one looks at it, the Brazilian corporate bond market is small compared to the average of developed countries and even to other emerging markets relative to GDP, especially in East Asia (Beck (2000)), but it is not small when compared to Brazil's total private debt. Demirgüç-Kunt and Maksimovic (2000) document that Brazilian firms face important financial constraints and grow slower than their counterparts in many countries. A recent World Bank report (2004a) documents that the outstanding stock of private bonds represents 9.6% of GDP, very low when compared to the average of developed countries (40%), and to other emerging markets such

as Chile (22.8%), Singapore (24%), South Korea (45%), and Malaysia (58%). The same happens to the international bonds issued by Brazilian firms. When measured relative to the GDP (11%), it seems to be small compared to developed countries (32% on average), and other emerging markets (19% in Singapore and 18% in Malaysia).

Nevertheless, when we measure the outstanding stock of private bonds relative to the total private debt (instead of GDP), the Brazilian bond market seems to be larger (26% of the total private debt), reaching the average of developed countries (27%) and the levels of other emerging markets (27% in Chile, 17% in Singapore, 35% in South Korea, and 36% in Malaysia), according to BIS data. This evidence implies that the Brazilian bond market tends to be small because the financial sector is small.

The same argument is valid for the use of international bonds by Brazilian firms. When measured relative to the GDP (11%), it seems to be small compared to developed countries (32% on average), and other emerging markets (19% in Singapore and 18% in Malaysia). However, the use of international bonds as a proportion of domestic debt in Brazil (30%) is higher than the average of developed countries (24%) and other emerging markets (13% in Singapore, and 11% in Malaysia).

In contrast to the results of the private bond data, the outstanding stock of public bonds in Brazil is high, reaching 50% of GDP, larger than the average of developed countries (41%), and other emerging markets (27% in Chile, 34% in Singapore, 16% in South Korea, and 36% in Malaysia). This is possibly evidence of the crowding out effect that the Brazilian federal government issuance has had over corporate issuers.

There is a vast literature on bond market development providing cross-country evidence but not much is known about the specific case of the Brazilian bond market (Glen and Pinto (1994), Singh (1994), Demirgüç-Kunt and Maksimovic (1995), Eichengreen and Luengnaruemitchai (2004), Burger and Warnock (2003), Claessens et al. (2003), among others). Our goal is to provide a better understanding of the Brazilian bond market, covering both public and private debt instruments. Although the Brazilian domestic bond market relative to GDP is still small when compared to other emerging economies, it has rapidly developed since the inception of the Real Plan in July 1994. This rapid development is related to a number of factors, such as economic stabilization, the regulatory environment governing securities markets, the demand for fixed income securities by investors and the scarcity of credit through the banking system as a source of major long-term financing. However, as stated, interest rate spreads and general credit default rates remain high, which affects

the cost of borrowing and availability of credit. Furthermore, the increasing domestic credit demand by the federal government crowds out other borrowers with a combination attractive interest rates and favorable prudential rules treatment of government debt relative to corporate debt, and the market may have little incentive to offer more credit to the private sector.

From a corporate finance policy point of view, Moreira and Puga (2001) document that the firm size is important to determine the capital structure in Brazil. While internal financing represents on average 54% of total sources, smaller firms use 63% of internal financing and larger firms 44%. They also show that smaller, less capital intensive, more profitable and higher growth firms use more internal than external financing. In contrast, external financing, both debt and equity, is more important for larger, more capital intensive, less profitable and faster growing firms.

Beck (2000) finds that short-term debt is the dominant form of debt financing, even when it originally takes the form of a bond. Although the use of long-term debt in Brazil is limited, even when compared to economies at a similar development stage, it seems that the use of debt adds value to shareholders (Pereira (2000)). This is consistent with debt mitigating conflicts of interest between controlling and other shareholders.

This paper proceeds as follows. Section 2 presents background information about the Brazilian financial system, particularly regarding its institutional evolution, interest rates, credit spreads, and banking system. Section 3 presents the market for public sector bonds. Section 4 discusses the private sector bond market, its evolution, characteristics, sample data and characteristics, market structure, applicable laws and prudential rules, and the recent evolution of bond covenants. Section 5 presents the results of empirical analysis for the determinants of the bond market development and for the investor and issuers surveys. Section 6 concludes the paper and presents our policy recommendations.

2. The Brazilian Financial Sector

2.1. Evolution of the Brazilian Financial System

This brief evolution the Brazilian financial system is based on information extracted from the books by Andrezo and Lima (2002) and Fortuna (2005). Our sources do not provide a historical assessment of the political issues involving the introduction of financial regulation in Brazil in the 20th century and this would be beyond the scope of this paper. Our sole goal is to provide a brief

historical evolution of the system. Nevertheless, in talks with prominent securities lawyers, we posed the question about who was for and who was against some new pieces of legislation, such as the new bankruptcy law passed in 2005 that was in congress since 1993. The answer we invariably obtained in our anecdotal survey was that there were no real foes of such law but that it simply was not a priority by the Executive branch to push for it, probably because fighting inflation was the real foe for such a long time. Once inflation was tamed and new views about credit risk emerged in the Central Bank, one of its recent presidents adopted a comprehensive agenda of measures to reduce credit risk, amongst them was the belief that the new bankruptcy law would reduce credit risk, and thus legislation was finally put on the slate and passed. The lawyers we talked to also doubt that this piece of legislation really reduces credit risk, but this is another issue. This anecdote illustrates the passive of role of the Brazilian congress which, many times, simply reacts to legislation pushed through the system by the Executive branch. Thus, the beliefs of the Executive branch for new legislation to improve the financial market is probably motivated by its ideological beliefs and external pressures, such as those of the International Monetary Fund or the Basle Agreements.

We believe that our brief report below shows that the evolution from a primitive bank centered and unregulated financial system before the 1950's to the current status occurred somewhat later than similar regulation has been introduced in central economies such as the US probably due to the lack of sophistication of the Brazilian agrarian and export oriented economy of the first part of the 20th century, which changed rapidly to an accelerated industrialization in the post-war period, with a greater need for safer and better corporate financing. The high inflation years in the 1980's and early 1990's, with its many economic plans and lack of respect for contracts certainly delayed the evolution of the financial market, sometimes in very damaging ways, such as the Collor government (1990) confiscation of financial assets.

Before the 1960's

Andrezo and Lima (2002) review the period prior to the 1960's. Two laws from the 1930's established that interest rates could not be greater than 12% and that no contracts could be written in no other currency than the Brazilian, preventing all forms of inflation indexing. In the 1940's a new law dealing with corporations was introduced and another law introduced what was the embryo of Brazil's Central Bank in 1945, as part of Brazil's commitments stemming from the Bretton Woods agreements. This new government department dealt with the monetary policy much like a

primitive Central Bank in a financial system where no financial institutions other than banks are relevant. Finally, in 1952, the Brazilian National Development Bank (BNDES) was created. The 1950's saw the increase of inflation rates above 20% and later above 30% per year.

The 1960's

The market for debt securities was very small. The high inflation rates, the limits on the interest rate, and the prohibition of indexation rendered debt securities very unattractive. According to Fortuna (2005, p. 15-16), until 1964 the Brazilian financial system lacked a well structured legal support. Only after the enactment of a series of laws in the 1960's and 1970's that its current form began to take shape. In 1964, a law allowing inflation indexation was introduced and the government started a government bond market with the ORTN's (Adjustable Treasury Bonds). With indexation, the National Housing Bank (BNH) was created to foster financing for the housing market through a savings and loans system.

Also in 1964, the first major legislation dealing with structuring the financial system was introduced, creating the Central Bank, defining and setting the bounds for several types of official agencies and financial institutions in the system. In 1965, a first capital markets law was enacted to set standards of conduct, to create new institutions and strengthen existing ones, and to introduce incentives for going public. This law brought innovations for stock exchanges, regulators (still the Central Bank), securities, by shaping stocks and bonds to something closer to what they are now, and defining the role of new institutions, such as investment banks. Other laws dealing with insurance companies and tax credit investment funds were also introduced. The 1960's saw the beginnings of the current Brazilian financial system.

The 1970's

The shaping of the modern Brazilian financial market proceeded with the introduction of law that created the Securities Commission (CVM) in 1976. It transferred responsibilities to oversee the stock and corporate bond markets from the Central Bank. Also in 1976, the new corporate law was introduced. Despite some recent and important changes, it still is the basis of the Brazilian corporate law, and defines many aspects of investor protection, such as disclosure, auditing, corporate governance, securities issuance etc. Several complementary laws were introduced to regulate specific

market agents, institutions, and institutional investors. For instance, specific regulation dealing with managed investment funds was passed and the market for funds blossomed (there was only a handful of funds before this). Closed and open retirement funds were created and regulated by a 1977 law. Intervention by the Central Bank in problematic financial institutions was also detailed by another piece of legislation. Leasing was properly regulated for the first time in 1974. By the end of the decade, the Brazilian financial system's current framework was laid out. Inflation, fuelled by the two oil crisis, however, was on the rise.

The 1980's

Inflation in the 1980's begin to get out of control and to spiral towards hyperinflation. Most of the government's efforts had to do with taming inflation. However, some important steps were taken to strengthen the financial system. Amongst them was the clear separation of the Central Bank from Banco do Brasil and the creation of the National Treasury Secretariat. These measures made the Central Bank actions more effective and clear and put an end to indiscipline on the part of Banco do Brasil. A first opening of the Brazilian financial market was enacted, the BNH was extinct and all housing financing initiatives were centralized at Caixa Econômica Federal (CEF). More discipline was imposed on state banks and many bank interventions occurred. Futures and options begin trading at stock exchanges in 1979 and the first derivatives exchanges were established during the 1980's together with new specific regulation. The factoring activity was also regulated. Most importantly, CETIP was created as the first centralized settling and custodial system mainly for non-governmental securities. A first law dealing with crimes against the financial system and initial regulation of foreign investors were passed in 1986. Brazil gained a new constitution in 1988. In this same year, Brazilian financial institutions were allowed to form universal banks by merging their commercial and investment banking activities with other activities, such as insurance, savings and loans etc.

From the 1990's to the present

The 1990's begin with very high inflation rates that were subdued in 1994 by the Real Plan and the introduction of a new currency. In 1990 and 1991 the commercial paper market was regulated through a series of CVM rules. The main pieces of regulation for foreign institutional investors as

well as for the issuance of depository receipts abroad were enacted in 1991 and 1992, deepening the opening of the financial market. Real estate investment funds were normalized through a 1993 law and a series of subsequent rules. This movement was accompanied by a series of rules and a 1997 law dealing with several aspects of securitization. Financial stabilization was followed by a more aggressive privatization program that was eased by means of changes in existing laws, sometimes at the expense of investor protection. The banking system was strengthened with a series of acts that improved the ability of the Central Bank to intervene in times of crises or of greater systemic risk. During this period, many banks have been liquidated by the Central Bank, or acquired or merged with healthier financial institutions as a consequence of an intervention. In 1994, Brazil adhered to the Basle Agreement, hoping to reduce the financial system's credit risk.

Many additional measures to improve the overall credit risk were enacted, with a special note to the new payments system introduced in 2002 that reduced the Central Bank's exposure to systemic risks. Bank consumers obtained better protection from a 2001 code. Investment and retirement funds gained largely revised regulations with an eye on improving prudence rules as well as, in the case of retirement funds, to improve their portability and flexibility. New types of retirement funds were introduced. The over the counter market was better organized and regulated. Some of the most important recent changes were made to the 1970's laws that created the CVM and that regulated corporations. The overseer power of the CVM was strengthened as well as new rules were introduced in the new corporate law to improve transparency and investor protection, in part influenced by the corporate frauds in the US and by emerging better corporate governance practices worldwide. In 1998 a law dealing with money laundering was introduced.

The CPMF financial transactions tax was introduced in January of 1997. The "P" in its acronym stands for "provisory". As will be discussed later, the CPMF tax is damaging in many ways for investments and for the bond market, in particular. However the government needs such tax income. It is expected to be extinct in 2007. However, the federal government's fiscal situation is reason enough to let it be. It has become an important source of tax income over the years. Furthermore, it is one type of taxation for which evasion is not possible while other types of taxation show very high evasion rates. Besides, the CPMF tax has provided information on financial transactions that are incommensurate with the level of declared income and wealth of individuals and firms, giving strong indications for tax authorities about potential tax evaders and money launderers. The CPMF tax is directly deducted by banks and financial institutions of any moneys coming into a bank, savings or investment account. In our view, the information content of the

CPMF tax makes sure that it is never abolished. Its rate (at 0.38% now) may even be reduced to close to zero but the tax authorities will never let go the information about tax evaders it gained with it.

2.2. Banking System

This section provides a discussion of the Brazilian banking system. We begin with a discussion of credit spreads and interest rates. The level of credit spreads in Brazil is among the highest in the world. We discuss possible reasons for these very high credit spreads and describe recent initiatives to reduce them. We also address interest rates by providing a discussion for the potential reasons for the high observed real interest rates in Brazil, currently slightly above 10% per year for short-term treasury securities and list potential reforms. We close this section with a brief discussion of the Brazilian banking system competition.

2.2.1. Interest Rates and Credit Spreads

In this section we discuss some of the reasons for the very high credit risk spreads as well as some of the recent initiatives to reduce it. We also discuss some of the reasons for the high level of the base real interest rate and some recent policy proposals to reduce them. At the end of this paper we will identify gaps in regulation that need to be addressed with a particular focus on the corporate bond market and tie it to the discussion in this section. We begin with a discussion on the reasons for the persistence of high interest rates in Brazil. The year of 1994 is a watershed because a new currency has been introduced in July and inflation finally subsided. Nevertheless, real interest rates, credit spreads and default rates remained high. In the Introduction we have shown recent comparative evidence of the size of the bonds outstanding relative to GDP for several countries. Furthermore, we also have shown that, when we measure the outstanding stock of private bonds relative to the total private debt (instead of GDP), the Brazilian bond market seems to be larger, reaching the levels of developed countries and other emerging markets, which implies that the Brazilian bond market tends to be small because the financial sector is small.

While the size of the credit market may be greater than the GDP in developed countries, it is often less than the GDP in developing nations. Brazil's credit market is small compared to the average of upper middle-income countries (Beck (2000)). There is plenty of evidence that Brazilian firms face important financial constraints and grow slower than their counterparts in many countries (Demirgüç-Kunt and Maksimovic (2000)). At 31.3% of GDP by the end of 2005, the Brazilian credit

market is smaller than Chile's, for example. The credit market has neither grown as a percentage of GDP nor in real terms between 1995 and 2004. In 2005, we observed a substantial increase in the credit market, from 27.5% of GDP in December of 2004, specially in the personal credit segment, as a consequence of a new law allowing direct paycheck and retirement social security check deductions of consumer credit taken by individuals.

Those forms of credit most common to smaller businesses, such as banking account overdraft, working capital (short-term) loans, and promissory note discounts show average interest rates greater than 70% per year. Those forms of credit more common to larger firms, such as export draft discounts, foreign loans taken abroad by the banks and passed on to clients, and vendor credit (a type of commercial credit confirmed by a large buyer of a company's products) reflect the interest charged on larger businesses, averaging less than 23% per year in December of 2005.

Syndicated loans as an alternative for long-term financing are uncommon. In discussions with bankers, we found out that syndicated loans may have been used in M&A's. Sometimes acquiring companies may borrow from a pool of banks even though a pool of banks does not necessarily mean a syndicated loan. There is no data on these transactions. As for traditional investment projects, loans are obtained from BNDES and other international agencies, such as the Inter-American Development Bank (IADB) or the International Finance Corporation (IFC), or international financing of equipments through Brazilian or international banks.

Despite the recent credit market growth and the consistent decline in the base interest rate promoted by the Central Bank, credit spreads remain very high. We begin with a discussion on the level of the base interest rate. Arida et al. (2005) discuss three commonly stated hypotheses for the high interest rates in Brazil before introducing their concept of jurisdictional uncertainty. The first reason is a tighter than necessary monetary policy, or the "bad equilibrium" hypothesis. They state that high real interest rates were necessary before the floating of the real but that a credibility concerned Central Bank would not dare to make an abrupt transition from pre-floatation interest rate levels to new and lower equilibrium levels. The second hypothesis is the federal government's fiscal needs and its crowding out effect over private debt, raising the level of interest rates. The third hypothesis were shocks that occurred around the time when the paper was originally written (Sep. 11th, the Brazilian energy crisis, the Lula effect etc) and the general vulnerability of the Brazilian economy to such shocks that, if temporary, should allow real interest rates to convert, in time and in the absence of new shocks, to international levels. These authors also comment that the Central

Bank is not independent and that this raises fears about its political management or abandonment of inflation targeting, fear that is supported by recent news relating to pressures exercised over the Central Bank's president over the destination of assets of a few liquidated banks.

Arida & al. (2005) argue that there is a resilient policy aspect that is probably absent from this analysis and is preventing real interest rates from converging to internationally acceptable levels. They also highlight the absence of a long-term bond and credit market in Brazil. The situation has, since then, improved but not to the point in which the problem has disappeared. They state that there is no domestic long-term credit market either in *reais* or in dollars. Long-term credit is only available when the jurisdiction is foreign. The authors also report on the judiciary's bias in favor of social justice even if they have to breach a contract with their decision. So, there could be an anti-creditor bias on the part of the Brazilian judiciary, not to be confused with an anti-business bias. Both savers and creditors would show a short-term bias due to the uncertainty induced by judicial biases and past contract breaching. As a consequence of jurisdictional uncertainty, firms tend to over invest in their own business, which is consistent with the very high ownership percentages, above 70% on average, reported by Leal and Carvalhal da Silva (2005), are constrained to the short-term debt market or have to deal with currency risk if they are able to borrow abroad.

Arida & al (2005) argue that the high real interest rate in Brazil is due to the existence of a large domestic currency short-term debt market under jurisdictional uncertainty. They also claim that Chile has no jurisdictional uncertainty and that Colombia also has a reputation for responsible financing and this would be the reason why only these countries enjoy a local currency debt market, besides Brazil, at albeit much lower interest rates. The interventionist nature of the Brazilian state increases jurisdictional uncertainty. For example, de facto currency convertibility does not exist and remittances abroad can be suspended at any time by the Central Bank and need its clearance through a bureaucratic process. Arida & al (2005) close by recommending that jurisdictional uncertainty is the result of a historical process and can only be gradually reverted through a series of carefully thought out steps that would include ending forced savings, introducing full convertibility, the substitution of "incomeless" taxes, such as the CPMF and other forms of taxation over revenues or payroll, compulsory savings, such as those that fund the BNDES, and increasing financial and economic integration with low jurisdictional uncertainty economies.

Gonçalves & al. (2005) test jurisdictional uncertainty on a panel of 50 countries and find no support for the theory. They find, however, support for traditional factors, such as inflation and

total debt to GDP ratios. These authors discuss the limitations of their work, amongst them, are their inability to measure the artificial lengthening of public debt maturities, compulsory savings funds, and distorting taxation, besides the anti-creditor bias. Because they are considering a panel of 50 countries and not the case of Brazil alone, we believe that their evidence is not conclusive to discard the jurisdictional uncertainty hypotheses.

Garcia (2004) discusses the economic growth vulnerability to the country's international liquidity crisis. During a crisis, liquidity is reduced and a recession sets in. Increasing government expending or the money supply would not revert the recession and would lead to greater exchange rate depreciation and inflation. Garcia (2004) claims that the impact of the exchange rate over inflation is greater than previously thought in Brazil. He states that "the extreme vulnerability to external financial shocks is the Achilles' heel of the Brazilian economy". Depreciation of the domestic currency improves the economy's international liquidity through better trade balances but, on the other hand, inflation rises with the currency depreciation. With inflation targeting, interest rates need to be raised. The key, according to Garcia, is the reduction of the large term premium of Brazilian interest rates. He believes that the credibility of the Central Bank's inflation targeting is very important and that providing it with independence is instrumental to reduce real interest rates. The greater the Central Bank's credibility the less it will have to raise interest rates and the less painful the contractionary monetary policy. Besides, he recommends reducing Brazil's external vulnerability, through increasing the economy's exportability, without any import substitution and its well-know damaging effects. Coming from a different direction, Garcia (2004) recommends integration with international financial and commercial markets, with more exports and imports. Finally, he also recommends more fiscal responsibility to achieve public debt sustainability.

Brazil presents a low level of financial intermediation. Compulsory savings, such as those that feed the BNDES, agriculture lending, and the housing financing schemes lead to a very low impact of the interest rates over the economy causing the demand for loans to present a very low elasticity. Some economists believe that the exchange rate has a much greater impact over inflation than interest rates and that reducing interest rates under a credible Central Bank would be feasible and would not reduce the demand for government securities. Many do not think that the jurisdictional uncertainty hypothesis explains the level of the base real rate but that it is important to explain the credit spread. Improving the fiscal situation seems to be an almost unanimous recommendation and that, provided lesser federal government's financing needs, the crowding out effect would naturally

be reduced and credit spreads would decrease substantially. Goldfajn (2002) believes, under many different scenarios, that the Brazilian public debt is sustainable and that the total debt to GDP ratio will be reduced in the coming years.

In the meanwhile, high private credit risks and a strong credit demand by the government give banks very little incentive to offer more credit to the private sector. In December 2005 the average corporate credit spread was 14%, down from 45% in December 1997. A study by Costa and Nakane in Central Bank (2004, p. 28) develops a model to identify the components of the credit spread and show for data from 77 banks in December of 2003 that the largest components are the bank overhead costs (26%), taxes (20%), default spreads (20%), and compulsory deposits (5%). The residual corresponds to 28% of the average spread which they attribute to the bank's profit margin. Loans for both individuals and firms were considered. Costa and Nakane comment that default spreads are very high and reflect the high legal costs of debt recovery and the overall inefficiency of the judiciary. Beck (2000) reports that Brazilian overhead costs in 1997 were almost double the Latin American average and triple the upper middle-income country average. Initiatives that lower the risk of default and reduce the administrative costs to execute bad loans could be very effective to decrease credit spreads in Brazil.

We turn our attention to some micro issues that may explain the magnitude of credit spreads, some of which could be classified under the jurisdictional uncertainty category. An important difficulty to have access to bank credit is the "informality" of many Brazilian businesses. Firms may have a large portion of their operations in the informal sector of the economy to avoid taxation. The credit analysis process becomes more difficult and expensive with a very high degree of uncertainty resulting in large credit spreads. The heavy tax burden on firms is an enormous incentive to adopt legal structures that keep disclosure to a minimum. A very large portion of the Brazilian economy remains at the margin of the credit market because their operations are not properly documented from a creditor's point of view.

As a matter of fact, a large number of initiatives have been enacted or proposed in the last few years. One of them was the reduction of reserve requirements with the Central Bank (for cash deposits from 75% to 53%). Regarding better credit information, the Central Bank now publishes detailed information on interest rate and fees charged by each institution and for each type of credit line on the internet.

The Central Bank has also developed a project called Credit Risk Center that gathers information about all credits above US$ 5,000. The data is subject to privacy constraints and are used only by the Central Bank and financial institutions. However, the intention is to promote the project in order to obtain debtors authorization for public consultation of the database in hope to reduce credit costs as more information about borrowers is made available.

The Brazilian law gives bad debtors consumer and privacy rights that prevents their past bad credit information to be shared amongst financial institutions. The Central Bank is proposing new legislation to facilitate proper positive credit information sharing. The Central Bank also plans to include more information of a positive nature to turn the Center into a true credit record database. The Central Bank has also introduced regulation allowing the portability of credit records amongst financial institutions.

There are other interesting measures enacted or to pursue. Some tax reduction has been enacted and other tax cuts are being proposed. Another measure was the establishment of regulation capable of stimulating the trading of credit securities. The securitization of regular bank loans through bank credit bills was a very important measure. These securities replace loan agreements and may be executed under the Commercial Law, which does not require proof of existence of the debt (Beck (2000)), and not under the Civil Code Law. The recognition suit to assert the existence of the debt may take a couple of years. This considerably speeds collection of non-performing loans guarantees. The Central Bank is considering additional regulation on bank credit bills to stimulate their secondary market. It also passed regulation focusing on the use of credit derivatives as instruments for credit risk reduction and transfer.

Legal reforms such as the separation of principal and interest are important too. Compound interest as well as real interest rates above 12% per year may be challenged in court, depending on the judge, because of a constitutional provision banning real interest rates above 12%. While the issue is not solved, the debtor pays neither the interest nor the principal. Separation would allow the principal to be paid more expeditiously. There is legislation in congress about the practice of compound interest and the Central Bank has made efforts to clarify the issue. There have been successful lawsuits questioning the use of compound interest. The extension of *alienação fiduciária* (liens) to housing and securities was also introduced by new legislation.

The use of liens on housing was expanded. The separation of principal has to be made when interest payments are challenged in court. If the principal is not paid, the property has to be evicted.

If the occupant challenges the eviction in court, they will have to pay a penalty of 1% of the value of the property while appealing. This will expedite eviction, put more value on the collateral, and provide no incentive for appeals. Safety in the system was also enhanced with the separation of the developer's assets and of the property being built. If the developer goes bankrupt, properties under construction do not enter the bankruptcy proceedings and are transferred to the buyers.

The instruments to facilitate securitization are also present in the new regulation. Banks or other financial institutions that have a portfolio of mortgages may issue real estate credit bills or loans for the acquisition of properties put on lien. Because these securities are backed by property on lien, they are considered safer than mortgage-backed securities. They may be issued for a maximum of 36 months. Inflation indexation of real estate loans was allowed on a monthly basis to facilitate securitization.

Despite these important innovations on behalf of securitization and more expeditious execution of non-performing loans, there are still important impediments, such as the CPMF tax charges (0.38%) for each financial transaction. When securities such as these asset-backed securities are used, the CPMF tax is charged when the borrower pays and at every transfer until it reaches the investor. The tax is also charged when the investor buys these securities for the first time and at every secondary market trade. Another major impediment is the current level of interest rates. Short-term government securities pay 15% per year at the moment. Loans would have to pay more than this as they are riskier and have a much longer term. For the time being, this does not seem to be viable. Thus, the funding for real estate will come mostly from mandatory funds constituted from taxes and remunerated at very low interest rates.

In terms of the Executive branch of the government, a reduction of IOF (Financial Operations Tax) for personal loans from 6% to 1.5% was already established and other reductions are being studied together with the Ministry of the Economy.

An important boost to personal credit was the law allowing direct paycheck and social security check deductions of consumer credit taken by individuals. The tremendous growth of credit to individuals in the last two years reflects this new legislation.

This agenda of micro reforms is important to help reduce the overhead and default components of the credit spread and, with a general reduction of credit risk, of the profit margin

within the spread. This part of the credit spread leads us to a brief discussion of bank competition in Brazil.

2.2.2. Brazilian Bank Competition

The Brazilian banking system was reorganized in 1988 with the adoption of universal banking. Many new financial institutions were established under this new legal status. Before 1988 the system separated commercial from investment banking, among other activities. However, institutions conglomerated under the same banking group.

The 1988 universal banking legislation allowed the merger of financial institutions belonging to the same group while easing the process for smaller financial intermediaries to become banks. In 1964 there were 336 banks. By 1974 there were only 109. However, with the universal bank law and the incentives to become a bank to profit from high inflation rates, the number of banks grew again to 124 by the end of 1988 and to 246 by the end of 1994, when the *Plano Real* was introduced and inflation was controlled (see Fajardo and Fonseca (2004)). The total number of banking institutions declined from 246 in 1994 to 165 in 2002. Since then, this number has stabilized. There were 159 banks in August 2005. However, there have been some very high profile bank acquisitions, such as the recent purchase of Bank Boston's Brazilian operations by Itaú Bank, the second largest private bank in Brazil. A new consolidation trend has been in march with a number of foreign institutions that entered Brazil in the 1990's being acquired by big local players. On the other hand, the introduction of new forms of consumer credit with direct payroll and social security check deductions brought about new smaller players to the credit market with the subsequent reaction of the large banks. It is quite possible that this concentration leads to less competition and slows down the reduction in credit spreads. One needs to see if the recent growth in the credit market size and the prominence of new players will be short lived or is a new healthy trend in the credit market.

High inflation was a great incentive to go into the banking business. While cash deposits were mostly in non-interest bearing accounts, money could be invested in inflation-indexed loans to the federal government, with large gains to banks. Providing general credit to individuals and firms was secondary. This changed in 1994. Many of the banks that were created to profit from inflation soon were facing difficulties. Brazilian banks still earn much of their profits from holding directly or indirectly a large portion of Brazilian treasury securities that pay a very high interest rates. Arida & al. (2005) document that 90% of Brazilian Treasury securities are directly or indirectly in the hands of commercial banks. Of this amount, about half is in mutual funds managed by these banks, one third

are in the bank's own free treasury operations, and the remainder are held compulsorily. The recent consolidation trend and the attractiveness of interest rates paid by the government may induce the reader to think that banks exert pressure over the government, rendering lowering the base rate difficult. However, several former Central Bankers have repeatedly stated in the press and in informal conversations that this is not the case and that future interest rate declines, if they are not abrupt, will not have an impact on the demand for treasury paper.

The number of banks started to decline and concentration increased. Central Bank statistics show that in 1995 the 20 largest banks had 72% of bank assets. By 2003 this number climbed to 81%. Asset concentration went from 49% to 54% for the 5 largest banks. These numbers are better than the average concentration for the three largest banks in middle-income countries which was around 70% according to Beck et al. (1999). Statistics for the average five largest banks share of bank assets in the 1995-99 period reported by Demirgüç-Kunt et al. (2003) shows that Chile (71%) and Mexico (79%) have similar concentration levels to Brazil's. This concentration level is also not higher than those in many developed countries, such as Australia, the UK or Canada. The weighted average reported by those authors for their sample of 72 countries is 57%.

According to Belaisch (2003), Brazilian banks do not entirely operate in the traditional sense of savings and credit institutions and use high-yield treasury securities to make very good profits. Belaisch (2003) states that Brazilian banks behave oligopolistically but believes that recent measures to facilitate credit may render the system more competitive, as we have reported above. Fajardo and Fonseca (2004) verify that the interest cost of personal credit is positively associated with the increase in the availability of credit, suggesting that banks may indeed behave oligopolistically.

While the anecdotal evidence reported here does not deny this oligopolistic behavior, it also shows that there is room for future interest rate cuts while the Central Bank seeks to keep its credibility within its role of conceded but not legal independence. While some of the evidence we reviewed indicates that credit spreads could benefit from greater competition, it is hard to ascertain that credit spreads will not decline even further once the real interest base rate achieves internationally compatible levels. The Brazilian bank industry concentration level is not unusual or even amongst the highest in the region and countries that face greater bank concentration enjoy lower real interest rates. When authors reviewed elsewhere in this paper discuss the cause for the high interest rate levels, bank asset concentration is not included amongst the main explanatory variables. In our discussions with market participants, they do not include bank concentration as a

cause for the high level of interest rates as well. While the jury is still out, we side with the authors reviewed and market participants informally surveyed in listing other factors as the key villains contributing to Brazil's high interest rates.

It is important to ask if the current competitive structure of Brazilian banks affects the services provided to the bond market, such as underwriting etc. We addressed this question in three ways. First we resorted to informal talks with bond market agents to assess if they feel that greater bank competition is a factor in terms of providing better and lower cost underwriting and other services. The impression we obtained from these talks, once again, is that bank competition is not an issue. We heard that services provided by banks are at the level of good international standards and many active banks in the bond market are themselves foreign, bringing from their home countries state of the art underwriting practices. A second way to look at this is to verify if underwriter size or reputation is associated to the ex-ante uncertainty or ex-post volatility of initial public offerings of stock, as there is no such study for bonds in Brazil. Once again, Leal (2004) finds no correlation between these variables for Brazilian IPOs. Finally, we examined the 20 lead underwriters of all 181 corporate bonds registered by the end of October of 2005 at the SND, corresponding to more than 90% of all corporate bonds outstanding. The lead underwriters associated to the Itaú, Unibanco and Bradesco retail commercial banks have brought 99 of the 181 outstanding bonds to the market. Other lead underwriters worth noting are Pactual (15 issues), an independent Brazilian investment bank recently acquired by the Swiss bank UBS, and Votorantim (9 issues), the financial arm of a large industrial Brazilian group. The first non domestic underwriter is Santander with 8 issues. Large domestic underwriters dominate the market. Average bond underwriting fees, according to Zervos (2004) are at 2.25%, between those of Mexico and Chile.

Thus, we close by saying that we found no clear evidence, anecdotal or otherwise, indicating the Brazilian bank competition is considered a major factor to explain the current level of the base real interest rate or that greater competition could substantially improve bond underwriting services. However, there is evidence presented by Fajardo and Fonseca (2004) that the credit spread could be reduced given greater bank competition and that 3 of the 20 underwriters of bonds outstanding in 2005 brought about 50% of the issues to the market, all of them associated to large bank conglomerates. It is our opinion that this issue should be reconsidered once real interest rates reach internationally accepted levels. It is quite possible, as it was the case when inflation was very high, that these aspects are minor in the face of the current level of real interest rates but once they

decline and the smoke clears, other issues, maybe considered minor today, find a more visible place in the slate of market issues to be dealt with.

We now proceed to describe the public debt market in Brazil.

3. The Market for Public Sector Bonds

3.1. Evolution of the Public Sector Bond Market

Andima (1997) asserts that the Brazilian government bond market was incipient until the mid 1960's. The laws limiting interest rates to 12% per year precluded any type of indexation, including to foreign currency, rendered government securities, or any type of debt security, unattractive. With the new laws in the 1960's, the 12% cap was dropped and inflation indexation was allowed. The government soon started issuing ORTN's (Inflation Indexed Treasury Bonds) in 1964 and a secondary market developed by the end of the decade. In 1970, shorter-term pure-discount treasury bills were issued for the first time, the LTN. This gave the necessary impulse for the open (repo) market to blossom and it was soon regulated in 1976. In 1972 weekly LTN auctions were introduced allowing for market pricing of these securities. In 1979 the Central Bank initiates the SELIC settling and custody system and soon all treasury securities transactions were paperless. Several incentives for financial institutions to hold treasury securities were passed.

In the early 1980's, the higher inflation rates led the government to drastic measures. Amongst them was the pre-fixation of interest rates and inflation adjustment. Because inflation was not contained, investors took losses with treasury bills and inflation adjusted treasury bonds with capped yields and, naturally, the demand for debt securities in general declined as bank CD's and non-governmental debt securities yields were also capped. There was a major market contraction during this time. Soon the government abandoned these practices, changed the formula for inflation indexation and allowed securities to offer positive real interest gains once more. The market was soon active and by 1985 inflation indexed bonds corresponded to more than 95% of outstanding treasury securities.

Inflation rates were climbing in the mid 1980's. In 1986 the first major anti-inflation shock plan was introduced. It eliminated inflation indexation. Investors that held inflation indexed bonds took serious losses as their values were frozen and no adjustment of the principal was allowed anymore with the extinction of the inflation indexed treasury bonds (ORTN). In 1986, the National Treasury Secretariat was created to be the unified government's cashier and became the manager of

all government debt. Also in 1986, the Central Bank was allowed to issue its own securities for monetary policy purposes only. Treasury securities were to be used only for government financing from now on. However, the 1986 anti-inflation plan failed and the new Central Bank bill yields (LBC – Letras do Banco Central) begin to be used for indexation while the bonds that replaced the former inflation indexed treasury bonds, initially with no indexation, were once again inflation indexed. Because the Central Bank bills were used only for monetary policy purposes, in 1987 the government introduced what is now the working horse of Brazil's federal debt, the LFT (Letra Financeira do Tesouro). The LFT's interest payment is computed on the maturity day by the accumulation of the daily SELIC interest rate over the life of the security. The SELIC rate is the average secondary market yield for treasury securities transactions on a given day at the Central Bank's SELIC system. Thus, the LFT interest payment is known only at maturity. Technically, it is a security that trades at no meaningful discount because the interest it will pay will correspond to the actual yield on treasury securities during the life of the bill.

More anti-inflation plans came and went with no success. New types of government securities were introduced for specific ends. Dollar indexed government notes returned to the picture, mostly to provide hedging to foreign traders. The successive failures of anti-inflation plans led to the successive extinction and then re-birth of several re-incarnations of inflation indexed bonds, with different names, but essentially the same. Nevertheless, in 1989, the short-term LFT's represented almost all of the government's securitized debt. The government tried new longer-term securities, dollar indexed, with no success. In 1990, Brazil went into hyperinflation and then came the disastrous Collor Plan with its asset freeze-outs. Needless to say, investors once again took major losses in government paper with capped yields. The new plan failed, once more, and its successor plan prevented the participation of individuals and non-financial institutions in the repo market and extinguished some of the inflation indexed treasury bonds created only to create the NTN family (National Treasury Notes). The national treasury notes are not a single security type. There are many kinds of treasury notes. Today, the four most liquid are the NTN-B and NTN-C, indexed to different inflation indexes, the NTN-D, dollar indexed, and the NTN-F, a fixed coupon note.

Thus, by the early 1990's, all the main treasury debt instruments currently available had been created: the LTN (treasury bills) from 1970, the LFT from 1987 (treasury bills with interest computed at maturity), and the treasury notes (NTN) family from 1991. These instruments have been used more or less intensely depending on the period's economic situation and needs. Presently,

the LFT's are by far the most widely used instruments, followed by LTN's, and two kinds of inflation indexed NTN's.

Notes indexed to the U.S. dollar exist but have not been issued since 2003. The Central Bank, in compliance to the Fiscal Responsibility Law, has ceased to issue debt as of May, 2002. All open market operations are now conducted using Treasury instruments, although there is still an outstanding stock of dollar-indexed NBCE notes issued by the Central Bank before 2002.

Recently, the government exempted foreign investors from income taxation when they hold government bonds. The measure has not been extended to corporate bonds or any other type of private sector debt. Obviously, the government is looking only after its own interest when it exempts foreigners from withholding income tax on its own securities. This measure is particularly directed to US investors because Brazil has no tax treaty with the US and tax withheld in Brazil could not be easily used as credit in their US tax filings. With the withholding exemption, the potential double taxation problem is solved. In exchange, the government hopes to improve the public debt profile with investors that accept longer-term and fixed rate securities more easily. Right after the introduction of such regulation in February 2006, the investment inflow levels for government securities doubled relative to February of the prior year (see Andima, 2006, p. 4).

Market participants are naturally going to put pressure on the government to extend this measure to private sector securities. Obviously, by not withholding taxes on this income, the government is reducing its tax revenues and it probably wanted to pay this cost for its own behalf, in terms of improving its debt's profile. Nevertheless, the pressure will likely be put on the government from institutions that represent the market.

This recent measure comes at a time when foreign investor participation in the market has been increasing. Obviously, it is too early to say if this is a lasting type of investment or if it will fly away at the first sign of trouble. Previous experience shows that Brazil has not enjoyed long term investment in domestic securities by foreign investors in the past. It is also true that some things have changed and that the country exhibits one of the lowest sovereign risk spreads it ever had at this time, with no visible threats for investors from government intervention and contract breaching. Given the very attractive current yields on government paper, the improvement in sovereign risk, investors are certainly improving their portfolio's return-risk trade-off with their investments in Brazil. If they are solely opportunistic or lasting, it remains to be seem, but the outlook is good and the tax exemption has been a friendly sign by the government.

3.2. Main Characteristics of the Public Sector Bond Market

Nowadays, the Brazilian federal public debt market is one of the most liquid and sophisticated among emerging markets, offering a wide range of debt instruments (fixed-rate, floating-rate and inflation-indexed bonds). The LTN and LFT fixed and floating-rate bills are the most liquid securities, but all Treasury instruments can be used as collateral in repo transactions with the Central Bank and in the secondary market. In Brazil, fixed-income instruments are issued with standard maturity dates (e.g., the first day of each quarter in the case of LTNs), rather than fixed maturities. Moreover, the day count of bonds denominated in Brazilian real differs from those in U.S. dollars.

The National Treasury carries out auctions of LTN, LFT and NTN-F every week, usually on Tuesdays, and of inflation-indexed bonds once a month. The Treasury also holds repurchase auctions in order to provide liquidity and price references to the market, as well as to smooth the debt maturity profile.

Every month, the Treasury releases a calendar informing the auction dates of each type of instrument, together with a ceiling for the overall volume of debt to be issued in the corresponding period. Auctions are typically American style (Multiple Price), although Dutch bid-pricing (uniform price) may also be used. Primary offerings are cleared and settled through the Special System for Settlement and Custody – SELIC, which is managed by the Central Bank of Brazil.

Secondary market transactions are cleared and settled through SELIC on a delivery-versus-payment basis (DVP) against same-day bank reserves. Both types of settlement are electronic. Currently, there are 12 primary dealers and 10 secondary (specialist) dealers. Both foreign and domestic banks can be dealers and the list is updated every six months considering the performance of individual institutions, including the ability to provide liquidity in the secondary market.

Brazilian federal bonds can be negotiated in the secondary market in two forms: over-the-counter and through the screen. Screen transactions are done through the Brazilian Mercantile and Futures Exchange - BM&F and CETIP systems. These transactions, as well as those over-the-counter, are registered with SELIC. BM&F's electronic system, SISBEX, allows transactions of public bonds among banks and is complemented by the CETIP system, which provides pension and mutual funds with an electronic trading platform.

Table 1 reports the level and composition of central government bonds (as a percentage of GDP) from 1985 to 2005. We can see that the level of central government bonds increased

significantly during this period. It represented only 6.47% of the GDP in 1990, and reached 54.96% of the GDP in 2005. It is important to note that most bonds are issued domestically (47.33% of the GDP in 2005), although the amount of foreign bonds is increasing when compared to the levels in the early 90´s.

In the domestic market, most bonds are linked to the overnight SELIC interest rate (25.70% of the GDP in 2005), but the central government started to increase the issues of fixed interest rate bonds (14.09% of the GDP in 2005), although most of them have short maturities. Domestic bonds in foreign currency are decreasing in importance (0.27% of the GDP in 2005), while inflation adjusted notes are gaining space (7.27% of the GDP in 2005), specially because they offer long-term protection against inflation.

In the international market, most central government bonds are issued in foreign currency (7.44% of the GDP in 2005) and have longer terms when compared to domestic bonds. However, in September 2005, Brazil followed the example of Uruguay and Colombia by issuing external debt denominated in the local currency. Brazil issued R$ 3.4 billion (US$ 1.5 billion) worth of global bonds with a maturity of over 10 years and a 12.5% coupon. The global issue was a successful placement as it was oversubscribed several times and the distribution was truly international, being purchased mainly by investors from Europe and the United States. The issue also extended the maturity of the yield curve for real-denominated fixed rate government debt to over 10 years. In the domestic market, it only goes up to 7 years. Tovar (2005) points out that the Brazilian issue is of particular interest for several reasons. First, it was not the result of a debt restructuring process. Second, the securities have relatively long maturities. Third, the bonds are not indexed to inflation, but denominated in the local currency at a fixed interest rate, transferring both inflation and exchange rate risk from the government to investors. Evoking Arida & al (2005), the real indexed bonds issued abroad reminds us of their jurisdictional uncertainty hypothesis. These securities have a longer maturity than their domestic counterparts.

Table 2 reports the level and composition of local government bonds (as a percentage of GDP) from 1985 to 2005. Contrary to the central government bonds, the level and composition of local government bonds decreased significantly (from 6.10% of the GDP in 1990 to 0.11% of the GDP in 2005). One reason could be that some local government bonds defaulted in the past and investors are not willing to hold these bonds anymore. Most local government bonds are issued in

the domestic market. Some large states and municipalities also issue bonds abroad in foreign currency (0.05% of the GDP in 2005).

Table 3 reports the level and composition of Central Bank bonds (as a percentage of GDP) from 1985 to 2005. In compliance to the Fiscal Responsibility Law, which prohibited the Central Bank to issue debt, the level and composition of Central Bank bonds has decreased significantly recently (from 10.18% of the GDP in 2001 to 0.35% of the GDP in 2005). All Central Bank bonds were issued in the domestic market, and most of them had nominal or overnight interest rates. After 1998, most Central Bank bonds were issued using U.S. dollar adjusted interest rates.

Table 4 reports the amount outstanding of federal debt from 1995 to 2005. Panel A shows the internal debt. The amount outstanding of floating-rate bills is R$ 497.91 billion, which represents 50.80% of the internal debt, followed by fixed-rate bills (27.86%), inflation adjusted notes (14.37%), and U.S. dollar notes (0.53%).

We can observe that floating-rate bills have been the main debt instrument since 1997 and represented on average more than 50% of the internal debt (ranging from 40.09% in 1999 to 63.90% in 2002). The proportion of fixed-rate bills decreased from 1995 (36.41%) to 2002 (2.44%). However, the National Treasury initiated a process of gradual replacement of floating-rate for fixed-rate securities, and their volume has risen significantly since 2003 (27.86% at the end of 2005). The issue of inflation adjusted notes increased from 1995 (0.62%) to 2005 (14.37%). In contrast, the National Treasury decided to decrease the issue of U.S. dollar indexed notes (from 7.28% in 1995 to 0.53% in 2005) in order to reduce the internal debt denominated in foreign currency.

Panel B of Table 4 shows the external federal debt profile, which is mostly represented by bonds and notes (81.23%), followed by loans from multilateral organizations (12.44%), private banks and government agencies (4.05%), and Paris Club debts (2.28%). In 1995, after 15 years out of the market, the Brazilian government issued sovereign bonds with great success. Since then, the main measures underlying the Brazilian government strategies regarding the international capital markets have been the consolidation of Brazilian yield curves in strategic markets (U.S. dollar, euro, yen) with liquid benchmarks, paving the way for other borrowers to access long-term financing, and broadening the investor base in Brazilian public debt. The Brazilian government has also pursued a strategy of buying back restructured debt (the Brady bonds) and replacing them with new bonds (global bonds and eurobonds).

The volume of trade of government securities in the secondary market is very high. The total volume traded in 2005 exceeded R$ 79.51 trillion and the turnover ratio reached 81.12. Overall trade on floating-rate securities has remained higher than on fixed-rate securities, reflecting the much higher amount outstanding of LFTs.

The average internal debt term is 2.29 years and has been decreasing since 2001 (3.32 years). As expected, fixed-rate bills have the lowest term (0.79 years), followed by U.S. dollar notes (1.00 years), floating-rate bills (1.59 years), and inflation adjusted notes (5.68 years). The average term of fixed-rate bills increased from 2000 (0.43 years) to 2005 (0.79 years), while the average term of floating-rate bills decreased (2.31 years in 2000 and 1.59 years in 2005). In contrast, the average term of inflation adjusted notes almost doubled (3.15 years in 2000 and 5.68 years in 2005).

Despite a slight decrease since 2000, the average term of external debt is substantially higher than that of internal debt (7.19 years in 2000 and 6.32 years in 2005). In 2005, the highest average term was for global bonds (7.00 years), followed by Brady bonds (6.16 years), and eurobonds (3.68 years).

In closing, we can say the things have been improving. Longer maturity, greater demand, lower sovereign risk, friendlier policies to foreign investors, successful new issues, and securities that are less taxing on the treasury are increasing their participation in the Brazilian public debt profile. The recent trend of the characteristics of the debt is favorable although nominal debt levels are increasing. We now turn our attention to the private sector debt.

4. The Market for Private Sector Bonds

4.1. Evolution of the Private Sector Bond Market

Andima (1998) summarizes the evolution of the Brazilian corporate bond market. The first phase was from 1882 to 1965. In 1882 there was a first law about commercial firm securities which were better regulated one year later by a 1893 law. Other laws in 1938 and 1940 regulated bondholder rights and bond issuance. In 1945 a bankruptcy law was introduced. However, Brazilian inflation rates rose in the 1950's putting an end to the incipient bond market. Inflation indexing shorter term securities took over and longer term securities fell out of favor. In any case, the bond market was quite small with no secondary bond market to speak of.

The second development phase of the corporate bond market was set by Andima (1998) between 1965 and 1976. This is a time when major new regulations that shaped the Brazilian financial market were introduced. A 1965 law introduced several modern corporate bond characteristics, specially the ability to index to inflation, that made the issuance of bonds feasible once more in a high inflation environment. This law and subsequent regulation also introduced provisions that rendered bonds more easily sellable, introduced convertible bonds, regulated bond public issuance, and allowed bond issuance volumes as a proportion of shareholder's equity and not of paid-in capital, as before.

The third phase was between 1976 and 1993. In 1976 new important laws were introduced, creating the Securities Commission and regulating capital markets and public corporations in general. Several types of bonds were allowed, with or without collateral, subordinated, warrants, denominated in foreign currency etc. The issuance procedure and the filings with the Securities Commission were detailed as well as the role of investment bankers and other financial intermediaries. The market took a modern face. However, during the period, the market experimented ups and downs mostly due to several types of existing subsidized financing as well as taxation issues. By the end of the period, many of these deterrents had been removed and the bond market was thriving as well as it could in a very high inflation economy. In 1988, Andima introduced the National Bond System, allowing for proper custodial and settlement procedures for bonds as well as adding more transparency to the market. Anderson (1999) provides more detail about Brazilian corporate bonds during this period and will be reviewed later.

Finally, after the Real stabilization plan in 1994, the Brazilian corporate bond market entered its current phase. A new 2003 CVM rule brought forward many innovations, such as shelter registrations and green shoe options while making many former requirements more flexible. A simplified standard bond indenture and tax law changes to improve liquidity in the secondary market are being discussed. The main current characteristics and practices of Brazilian corporate bonds will be described in the following sections.

4.2. Aggregate Data

Table 5 reports the level and composition of bonds (as percentage of GDP) issued by the private sector from 1985 to 2005. We can see that the level of private sector bonds increased significantly during this period. Domestic bonds represented only 2.58% of the GDP in 1992, while it reached 14.90% of the GDP in 2005. Most domestic bonds are linked to the overnight interest rate (12.57% of the GDP in 2005), followed by inflation adjusted interest rates (1.85% of the GDP in 2005), and U.S. dollar adjusted rates (0.47% of the GDP in 2005).

In the international market, the level of private sector bonds also increased significantly from 0.14% of the GDP in 1987 to 6.67% of the GDP in 2005. Most private sector bonds are issued in foreign currency (6.62% of the GDP in 2005). However, at the end of 2004, Brazilian private financial institutions issued external debt denominated in the local currency. Banco Votorantim was the first, issuing US$ 75 million worth of eurobonds with a maturity of 18 months and a 18.5% fixed coupon rate. Unibanco followed, issuing US$ 75 million worth of eurobonds with a maturity of 18 months and a 17.9% coupon, and Banco do Brasil issued R$ 200 million worth of global medium term notes with a maturity of 3 years and 17.25% coupon.

In 2005, more financial institutions, such as Banco Bradesco and Banco Santander Banespa, issued foreign bonds in the local currency. Furthermore, Unibanco was the first Brazilian financial institution to issue US$ 100 million worth of Brazilian real eurobonds with a coupon linked to inflation index IGP-M. Prior to Unibanco, only the IADB, which enjoys a triple-A rating, had issued eurobonds in Brazilian reais with a coupon linked to the IGPM inflation index in 2004. Besides private financial institutions, some corporations, such as the electricity company Eletropaulo and telecommunications company Telemar, also issued foreign bond in local currency in 2005.

Most domestic debt is issued by the government (Federal, State and Municipal). The proportion of government debt increased from 64.88% in 1995 to 79.10% in 2005. This increase is

reflected in the decrease of the debt issued by financial institutions, which dropped from 35.12% in 1995 to 19.99% in 2005. Despite a slight increase since 1995, corporate issuers are relatively small when compared to the government and financial institutions, representing around 1% of total domestic debt.

In order to look more carefully into the domestic debt issued by Brazilian firms, we classify corporate debt into four types: debentures, commercial papers ("notas promissórias"), mortgage-backed securities ("certificado de recebíveis imobiliários"), and receivables investment funds ("fundos de investimentos em direitos creditórios"). Debentures and commercial papers are traditional bond instruments in developed and developing countries. The last two instruments are the main vehicles for Brazilian domestic securitizations.

4.2.1. Debentures and Commercial Papers (CP)

Private debt securities in Brazil are predominantly of a short-term nature (Beck (2000)). Companies may go public by issuing either debentures or commercial papers. Companies do not need to issue stock to go public and many never do. They will need to register the issue with the CVM if they sell it to the public. The main reason to issue securities is to obtain financing at a lower cost than bank credit or for a term that banks are reluctant to offer.

Although CP's have been legally introduced in 1964, their issuance boomed after a 1994 change in the Brazilian regulation that significantly reduced their legal issuance costs (Borges and Lopes (2001)). Commercial papers may be issued by private and public corporations, their minimum maturity is 30 days and the maximum maturity is 360 days for a public corporation. CP's have no collateral but there may be personal guarantees by owners or corporate officers.

Many CP's include a swap agreement from a fixed to a floating rate yield. Borges and Lopes (2001) believe that the main reasons that prevent greater development of this form of debt in Brazil are the natural reluctance of Brazilian investors to hold private securities, due to the attractive yields in government papers, the lack of knowledge about CP's, and legal problems. A law suit on past due CP's could take at least two years and priority is always given to labor, fiscal and collateralized obligations. No priority is given to short-term debt over long-term debt in the Brazilian bankruptcy laws.

There was a substantial increase in the amount outstanding (from R$ 13.80 billion in 1995 to R$ 84.99 billion in 2005). Most debentures (80.04%) have floating interest rates, in general a spread

over the CDI (Interbank Certificate of Deposit). The percentage of debentures with floating interest rates has significantly increased since 1998 (42.12%). Inflation-adjusted debentures are also commonly used in Brazil (12.45%). Some debentures (2.26%), generally subscribed by the Brazilian Development Bank (BNDES, "Banco Nacional de Desenvolvimento Econômico e Social"), use the long-term interest rate (TJLP, "taxa de juros de longo prazo"[1]). Debentures with fixed interest rates and U.S. dollar-adjusted rates are rare in Brazil and represented only 0.04% and 3.18% of the total amount outstanding in 2005, respectively.

Debentures priority order over the company's assets is: (1) fixed collateral debentures; (2) floating collateral debentures; (3) unsecured debentures (called "quirografárias"); and (4) subordinated debentures. Floating collateral debentures give bondholders a general privilege over the company's free assets, i.e. that are not a collateral to any other debt, while fixed collateral bonds have a claim over specific assets. Of the total of bonds outstanding was about R$ 85 billion in December of 2005, 66.2% were subordinated debentures, 26.7% were unsecured debentures, 1.9% were floating collateral debentures, and 5.2% are fixed collateral debentures. Most debentures outstanding (94.4%) are not convertible (straight bonds).

In U.S. dollars, the volume of bonds issued increased from US$ 7.5 billion in 1995 to US$ 17.1 billion in 2005. Stock issuance went from US$ 2.1 billion in 1995 to US$ 1.9 billion in 2005. US$ 1.1 billion were issued in commercial papers in 2005. Debentures and CP's issuance volumes have often been greater than stock issuance volumes in recent years.

Debentures are traded on the National Debentures System (SND, "Sistema Nacional de Debêntures") and on Bovespa Fix. The National Debenture System is an electronic secondary market for debentures in Brazil created in 1988 and maintained by the National Association of Financial Institutions (ANDIMA). Bovespa Fix is an integrated framework for the trading, settlement and safekeeping of corporate bonds created in 2001 by the São Paulo Stock Exchange (Bovespa).

[1] The long-term interest rate (TJLP), created in 1994, is defined as the basic cost of financing granted by the BNDES. The long term interest rate lasts for a calendar-trimester period and is calculated according to the following parameters: I - the inflation mark calculated pro rata for the twelve months following the first month of validity of the rate, based in the annual fixed marks established by the "Conselho Monetário Nacional" (National Monetary Council); II - risk premium. The TJLP is set by the "Conselho Monetário Nacional" and published until the last working day of the trimester immediately previous to its starting validity.

Debenture trading volume and turnover in 2005 was R$ 16.28 billion and 0.19 (relative to the amount outstanding of R$ 84.99 billion), respectively. Debenture trading volume and turnover are very low when compared to those of federal debt securities (R$ 79.51 trillion and 81.12, respectively). Most of the volume (98%) is still concentrated on the National Debenture System but the volume traded on the Bovespa Fix is increasing (from 0.24% in 2001 to 1.99% in 2005).

Most companies issue debentures to increase the working capital (41.02%), to investment in operations (35.88%), or to increase debt maturity (20.55%). Other minor purposes (2.55%) are changing the debt profile, purchasing fixed assets, paying previous debt, and purchasing a stake in other companies.

Mortgage-backed securities and receivables investment fund quotas are traded on CETIP ("Central de Custódia e de Liquidação Financeira de Títulos") and Bovespa Fix. Similar to the National Debenture System, CETIP is an electronic secondary market for fixed income securities created in 1986 and maintained by ANDIMA. Most fixed income securities are registered with CETIP because it provides a safer trading environment and guarantees the existence of the security. Prior to 1986, false securities were a serious problem. Trading can be done over the phone or through computerized systems. CP´s volume and turnover in 2005 was R$ 1.60 billion and 0.82 (relative to the amount outstanding of R$ 1.94 billion), respectively. Although the volume is lower than that of debentures, the turnover ratio is higher.

4.2.2. Asset-Backed Securities

The first regulation dealing with securitization dates back to the 1970s and addressed solely leasing transactions. It was only in the 1990s that a few issues of securitized receivables by special purpose entities (SPE) came to the market, of which the 1992 offer by Mesbla (now an out of business retailer) is the best known case. Beginning in 1997, several issues backed by export receivables were made by offshore SPEs. Also in 1997, Law 9514 established the legal framework for the Brazilian equivalent of mortgage-backed securities, called CRI ("certificado de recebíveis imobiliários"), that can be issued only by institutions which have this special purpose. From 2000, the Central Bank and the CVM introduced new regulation with mechanisms that made asset-backed securitization from industry, agriculture, and real estate credits possible through receivables investment funds, the FIDC ("fundos de investimentos em direitos creditórios"). The FIDC is simply a managed fund and not an SPE, thus it is less costly to charter and operate.

Although there are other securitization instruments in Brazil, CRIs and FIDCs are the dominant vehicles in Table 6. The volume of CRIs and FIDCs has increased significantly from 1999 (0.02% and 0.00% of the GDP, respectively) to 2005 (0.16% and 0.43% of the GDP, respectively). Export notes are issued by an exporter and provide a credit right over a future export with a maximum maturity of up to one year. They represented less than 0.01% of the GDP in 2005 (down from 0.07% of the GDP in 1996).

Brazilian financial markets have grown more sophisticated in recent years. Growth spearheaded the development of the real estate instruments in the capital market. The consolidation of the regulatory environment provided a legal framework for the creation of a secondary market for mortgage-backed securities and the development of new specialized tools, such as the CRIs. They have evolved to facilitate real estate financing by simplifying the securitization process of real estate loans.

Real estate-backed securities have been benefited from the introduction of its own securitization vehicle, the real estate credit securitization companies ("Companhias Securitizadoras de Crédito Imobiliário"), in 1999 which, in turn, issue CRIs. Some real estate-backed issuance may also be done through FIDCs and SPEs. Similar to mortgage-backed securities in other countries, CRIs are crucial in promoting securitization by simplifying and standardizing an otherwise complex real estate transfer process. They provide investors with a legally valid mechanism to take a security interest in what previously was an illiquid mortgage collateral.

Until recently, except for real-estate-backed securities, the growth of other asset-backed securities in Brazil was limited by the high cost of existing SPEs. The introduction of FIDCs is largely responsible for opening a viable alternative to traditional bank credit to a large number of small, medium, and large-sized Brazilian companies through the securitization of their receivables for the first time. An increasing number of banks, consumer financing companies, and corporations have turned to FIDCs as a cost-efficient vehicle to raise capital and improve balance sheets.

FIDCs are securitization funds created by Resolution Number 2907 of Central Bank of Brazil dated November 29, 2001. The rules of operation are supervised by the CVM. These funds constitute a mechanism for the securitization of credits and risk segregation that is comparatively superior to other securitization methods available in Brazil today. They allow beneficial treatment under the Brazilian tax code and are bankruptcy-remote entities.

Receivables investment funds comprised of receivables and other credit rights are instruments for securitization that can be very attractive for both private investors and companies holding credits against third parties who need to raise funds. Their portfolios may be comprised of credit rights originating from a wide variety of sources, including finance, commerce, industry, real estate, real estate mortgages, leasing and service providers.

Transfers of receivables in Brazil may be questioned only in a few circumstances expressly provided in the law, as in the case in which the debtor transfers assets during the course of a legal proceeding, causing the debtor to become insolvent, thereby hindering creditors from obtaining reimbursement. In such a case, the court may set the transfer aside. At least 50% of the assets purchased by a FIDC must represent credit rights and the fund must have a sponsor who is civilly and criminally accountable. Furthermore, the fund must be rated by an independent rating agency in order to issue shares to investors. Rating must be updated quarterly and, in the event of any change, must be published as relevant information. Fund shares may be distributed or negotiated in exchanges or over-the-counter. However, only "qualified investors" (such as financial institutions, pension funds, and insurance companies) may invest in FIDCs.

Although FIDCs and CRIs are relatively new instruments in Brazil, their issue volumes, amount outstanding, volume traded and turnover have been increasing significantly over the past few years. In 2005, the total CRI volume issued was US$ 0.9 billion and the total trading volume was also US$ 0.9 billion while the total volume issued in FIDC shares was US$ 3.5 billion and the total trading volume was US$ 1 billion. FIDC's success has to do with the ability of non-public companies to finance based on the credit risk quality of its clients, often better than their own. Investors seem to be attracted by the FIDCs higher yields due to their lower quality risk when compared to bond and bank CD yields. This is a new and exciting market that may still experience significant growth.

4.2.3. International Bonds

Brazilian firms may issue international bonds in foreign jurisdictions. As expected, most international debt securities are issued by the government (US$ 62.90 billion), followed by financial institutions (US$ 34.40 billion) and corporate issuers (US$ 9.80 billion), according to BIS data. The proportion of government international debt securities decreased from 75.12% in 1995 to 58.73% in 2005. In contrast, foreign debt issued by financial institutions has substantially increased (from 17.25% to 32.12%) and corporate issues had a modest increase (from 7.63% to 9.15%).

The percentage of international debt securities with remaining maturity of up to 1 year is low. In general, foreign debt is long term. If we analyze all Brazilian issuers, only 7.38% of international debt has maturity of up to 1 year, ranging from 5.25% (government) to 11.05% (financial institutions). Most international debt securities are bonds and notes (US$ 106.00 billion or 98.97% of the total in 2005). This proportion has been increasing since 1995 (US$ 56.60 billion or 93.86% of the total).

4.3. Firm and Bond-Level Data

We collect and analyze firm and bond-level data in order to better understand the Brazilian bond market. Our sample is includes all public Brazilian firms listed at Bovespa. The sample has both financial and non-financial institutions and does not contain companies with incomplete or unavailable information. Our 2004 sample contained 357 companies. The market and accounting data comes from the Economatica database that contains financial statements and time series data of companies. The information on domestic and international bonds comes from the CVM, SND, and Bovespa Fix.

Table 7 reports the main characteristics of our sample. Thirty-six percent of firms have foreign shareholders with a mean stake of 18.60%. Foreign shareholders with more than 50% of the voting capital control 18.67% of firms. Most foreign shareholders come from the United States (21.90%), Spain (10.95%), the Netherlands (7.30%), Italy (7.30%), and Japan (6.57%).

Our sample includes large firms when measured by the number of employees (mean of 7,218), total revenues (R$ 2.71 billion, of which 12.16% are exports), and total assets (R$ 5.43 billion). In general, we are analyzing firms established a long time ago (mean of 46.67 years since incorporation). Almost 20% of the firms issue American Depositary Receipts (ADRs) and 45.33% use derivatives to hedge or change the debt profile, as an indication of their financial sophistication.

Table 8 presents the capital structure of listed Brazilian firms. The mean (median) shareholder's equity is 46.11% (31.62%) of total assets. On average, financial liabilities represent 57.29% of assets (median of 30.63%), of which 23.55% are denominated in foreign currency. On average, most debt is represented by domestic bonds (18.04% of total assets), followed by national banks (15.44%), suppliers (8.23%), international banks (5.15%), BNDES (4.77%), international bonds (1.45%), and asset-backed securities (1.13%). Except for international bonds and foreign banks loans, which are 99.9% denominated in foreign currency, while only 0.48% of domestic

bonds, 6.34% of national bank loans, 2.27% of suppliers credit, 2.83% of BNDES loans, and 3.73% of asset-backed securities are foreign currency indexed.

It is important to note that, when we analyze the medians, all the percentages of total assets are zero, except for suppliers (5.63%) and national banks (0.94%). This indicates that more than 50% of firms do not finance their operations through domestic bonds, international banks, BNDES, international bonds, and asset-backed securities. Only 30% of Brazilian listed firms issue domestic bonds, 15.20% issue international bonds, and only 6.67% finance through asset-backed securities. This shows that issuance is concentrated in a few larger and more financially sophisticated listed firms. A comparison of firm characteristics in Tables 7 and 9 suggests that this is indeed the case.

Table 9 reports the capital structure of listed Brazilian firms that issue domestic bonds (Panel A), international bonds (Panel B), and asset-backed securities (Panel C). Financial liabilities of firms that issue domestic bonds average 98.51% of assets, most of which are represented by domestic bonds (60.94%), followed by BNDES (8.88%), suppliers (7.93%), international banks (6.88%), and national banks (6.58%). This gargantuan average is distorted by a few firms with negative shareholder's equity. The median for financial liabilities is 44.59%. Domestic bond issuers are less financially sophisticated than international bond and asset-backed securities issuers because only about half of them use derivatives (54.95%) while most other issuers use them. Domestic bond issuers are smaller (total revenues, assets, and number of employees) than international bonds and asset-backed securities issuers. Domestic bond issuers seem to be less leveraged than other issuers. Domestic bond issuers, by their turn, are larger, more financially sophisticated, and more leveraged than non-issuers.

Brazilian firms that have access to the international bond market are generally larger, more financially sophisticated, and less leveraged than firms issuing local bonds. Financial liabilities represent on average 36.60% of assets, most of which are international bonds (9.53%), followed by suppliers (6.90%), and international banks (5.60%). These firms present the largest use of derivatives (92.98% of the firms) and the highest stake of foreign shareholders (22.41% of capital).

Data on the main characteristics of international bonds is available upon request. The volume issued is higher than domestic bonds (US$ 199.44 million). Curiously, and in contrast with the jurisdictional uncertainty hypothesis discussed earlier, maturity is slightly shorter (average original and remaining terms of 7.00 and 3.69 years, respectively). Most international bonds use fixed interest rates (80.33%) and the mean interest rate coupon is 8.14% per year (ranging from 2.92% to 13.50%).

Regarding the currency, the U.S. dollar is dominant (88.96%), followed by the Brazilian real (8.20%), the yen (1.93%), and the euro (0.91%). Banco Votorantim, Unibanco, Banco do Brasil are among the main international bond issuers denominated in reais (see section 4.2).

Asset-backed securities are generally issued by large Brazilian firms (total revenues, assets and number of employees are generally higher than those of other companies), which present the highest proportion of exports in total revenues (14.51%). This is not surprising since most of these asset-backed securities are related to export receivables. Asset-backed securities represent 16.89% of total assets, followed by international banks (6.00%), and domestic bonds (5.15%). Derivatives are used by 80% of the firms, and foreign shareholders have on average a lower stake (12.26%) when compared to the other two groups of companies.

Financial intermediaries have issued R$ 125.90 billion or 70.17% of the total volume of public bond offers between 1995 and 2005, followed by electricity, gas and water supply (12.90%), and manufacturing firms (7.26%). In general, financial firms are leasing companies. Banks cannot issue bonds but they are allowed to buy bonds from associated leasing companies. Although the amount issued is highest for financial firms, the number of issues is relatively low (36) when compared to electricity, gas and water supply (152), and manufacturing (83), which means that the average amount issued by financial firms is high.

Our results seem to suggest some sort of graduation to international and asset-backed securities markets. We have found no rigorous Brazilian studies trying to show that this is indeed the case. When Brazilian real interest rates decline to internationally compatible levels and greater development of the bond market occurs, will this apparent trend stop? First one could challenge by saying that this apparent graduation is only an opportunistic behavior of the larger Brazilian issuers due to the strong real in recent years. One could also say that this is influence by the good performance of Brazilian exporters in light of favorable commodity prices in recent years as well. On the other hand, there is indication that international issuers, including some multilateral organizations, may issue in Brazilian reais. Thus, it is difficult to say if this apparent graduation is more than the opportunistic behavior or larger and export oriented Brazilian issuers. This could well come to a halt if the real depreciates, if commodity prices decline, or if the domestic real interest rate comes down. We do not feel comfortable suggesting that we have identified a trend only by looking at cross-section 2004 data for Brazilian issuers.

Table 10 shows the main characteristics of domestic bonds issued by the listed firms in our sample. Most domestic bond offers are public (72.93%), and the average issued volume is R$ 227.19 million (ranging from R$ 2 million to R$ 1,500.00 million). The turnover in the secondary market is low (mean of 0.23) and domestic bonds present medium to long maturities. The average original term is 8.37 years (ranging from 2.00 to 31.34 years). The average remaining maturity from 2004 is 4.65 years.

Most publicly placed bonds are not convertible (85.59%) and have no collateral (37.55% of unsecured bonds and 29.26% of subordinated bonds). Most bonds use floating coupon rates (45.85%), or inflation-adjusted coupon rates (34.50%), or use the TJLP long-term interest rate (13.10%). Bonds denominated in U.S. dollars or paying a percentage of the firm's earnings or revenues are less common in Brazil, representing only 3.06% of the amount outstanding in our sample.

Table 11 shows the main characteristics of privately placed bonds. Note that the results are somewhat different from those in Table 10. The average volume issued is lower (R$ 146.05 million), but the maximum volume issued is higher for privately placed (R$ 2,693.08 million) than for publicly placed bonds (R$ 1,500.00 million). The turnover is low (mean of 0.00 and maximum of 0.10). However, the average original maturity is 8.83 years (ranging from 3.00 to 25.00 years) and the average remaining term from 2004 is 4.17 years, similar to publicly issued bonds.

In contrast with publicly placed bonds, most privately placed bonds are convertible (71.76%) and secured (34.12% of floating collateral bonds and 25.88% of fixed collateral bonds). Furthermore, most privately placed bonds use the long-term interest rate (55.29%), followed by floating rates (15.29%), and inflation adjusted rates (12.94%). These differences among publicly and privately placed domestic bonds are not surprising. Most privately placed bonds are generally subscribed by BNDES, which uses the long-term interest rate (TJLP) as the basic cost of credit, requires fixed or floating collateral in order to finance companies in Brazil, and designs convertible bonds in order to enjoy the upside in case of success of the financed project.

The BNDES is the main instrument of the federal government for long-term financing, with an emphasis on providing incentives for national private enterprise. The BNDES structure is designed to stimulate national development and job creation. In addition to operating as a development bank, it also operates through its wholly owned subsidiaries BNDES Participações S.A. (BNDESPAR), which invests in domestic companies through subscription of shares and convertible

bonds, and the Special Agency for Industrial Financing (FINAME), which supports the expansion and modernization of Brazilian industry by financing the acquisition of machinery and equipment.

BNDES has disbursed R$ 40 billion in 2004, the greatest volume of resources ever released in the 52 years of the Bank's history. Of the total released by the Bank, R$ 39.8 billion were directed to the financing of medium and long-term investments and exports. BNDES held a corporate bond portfolio of approximately R$ 9.3 billion, which represented 21% of the total bond outstanding of R$ 44.5 billion at the end of 2004.

Most issuers in the BNDES´s bond portfolio are from the private sector (91%), while 9% are government-owned companies. Generally, the issuers are from the industrial (74%) and service (26%) sectors. Most of its bond portfolio (93%) matured in more than 1 year, while 66% matured in more than 5 years. More than 51% of the bond portfolio had ratings equal to B or better and about 10% of the portfolio value was in credit default provisions.

Lustosa and Leal (2004) have estimated that non-public debt corresponds to 10% of the aggregate mutual fund industry portfolio (but most of it may be bank CD's) and 3% of closed pension fund portfolios. However, because corporate bonds may correspond only to a relatively small fraction of these holdings, BNDES may be by far the single largest institutional bondholder in Brazil. Albeit among BNDES' stated goals is the development of Brazil's capital market, it is possible that it crowds out issuers from the market into its own portfolios. One of the recent initiatives under consideration by market participants is the creation of a liquidity fund for bonds led by BNDES.

4.4. Bond Market Structure

All public security issues must be brought to the market by a financial institution. Brazil adopts the universal banking concept. Thus, corporate bond underwriters may be an investment bank associated or not to large retail commercial banks or a department of a large universal, or multiple bank, as they are called in Brazil. As reported in section 2.2.2, we examined the 20 lead underwriters of all 181 corporate bonds registered by the end of October of 2005 at the SND, corresponding to more than 90% of all corporate bonds outstanding. Itaú, Unibanco, and Bradesco, large domestic underwriters, dominate the market. The evidence in Leal (2004) is the same for stock IPOs.

Lustosa and Leal (2004) provide information about the relative importance of the main types of institutional investors in Brazil. Mutual funds are by far the largest type of institutional investor in terms of their asset holdings with US$ 180 billion in assets or approximately 30% of GDP. They are followed by closed (company sponsored) pension funds with about US$ 73 billion in assets of 14.5% of GDP by mid 2004. Assets of other types of institutional investors, such as open pension funds (no company sponsoring) and insurance companies, correspond to less than 5% of GDP. Aggarwal et al (2005) compare the size of mutual funds in Brazil to those in other emerging countries, including Argentina, Chile, Mexico, India, and Thailand. Brazil has, by far, the largest mutual fund industry among these markets. Pension funds, given their long-term goals, have been active buyers of corporate bonds. The assets of all of these institutional investors have been growing and are expected to continue to grow in the future. In particular, the open pension fund industry and the insurance industry have experienced high growth rates and may become important players in the bond market soon.

Bond rating is not mandatory. However, the number of bonds rated is growing particularly due to requirements in prudential regulations for closed pension funds to be discussed later. The rating agencies operating in Brazil are Standard & Poor's, Fitch, Moody's, SR Rating, and Austin Rating, the last two are Brazilian agencies. Most issues are rated by Standard & Poor's (37.74% of the SND and 44.86% of the Bovespa Fix) and Fitch (38.74% of the SND and 28.50% of the Bovespa Fix).

Bond custodial and settlement services are performed either through the SND or the Bovespa Fix systems. SND is the older and by far the largest of the two, holding more than 90% of all bonds outstanding at any given time. It was created in 1988 by ANDIMA and is operated by CETIP (the largest financial custodial and settlement firm in Brazil), which is associated to ANDIMA. Bovespa Fix was created in 2001 and is a segment for custody and trading of corporate debt securities at Bovespa. Bovespa Fix's custodial and settlement services are provided by CBLC (Brazilian Company of Settlement and Custody), associated to Bovespa.

Corporate bond issuing costs include registration fees (CVM and others), publication costs, rating, and fees for other services, such as legal etc, besides underwriting fees. For issues by special purpose entities, there are other costs related to due diligence and financial feasibility studies. Costs of keeping a company public include publication costs, registration fees (CVM), auditing, investor relations etc.

Zervos (2004) provides detailed information about primary market transaction costs for Brazil, Chile, and Mexico. Average total issue costs in Brazil (2.25%) fall between those of Mexico (1.18%) and Chile (2.74%). Corporate bond underwriting fees have been decreasing in Brazil. They have hovered between 3% and 6% in the past but now stay between 1% and 2.5% for recent issues. The average underwriting fee was 2.25% and the median is 2.04% in the 1995-2005 period.

Zervos (2004) notes that publication fees are quite high in Brazil. In fact, Carvalho (2000) has also noted that publication fees averaged US$ 143,000 in 1998 and corresponded to about 30% of the cost of keeping a company public in Brazil. He credited this to the mandatory publication of financial statements in the State or Municipal Registries for companies incorporated in some states or municipalities, a monopoly that may be seen as an additional tax levied on public companies.

Presently, there are no specific actions on the part of the government to develop the primary and secondary bond markets. Some recent laws, such as the new bankruptcy law, have indirectly eased things somewhat for collateralized bonds. The revision and modernization of issuance procedures through the introduction of CVM Instructions 400 of 2003 and 404 of 2004 helped formalize book building, shelf registration, green shoe options, and standardized bond indentures (still not used to this date).

Self regulatory bodies, such as ANDIMA, have been active in creating new procedures and codes of conduct, such as trading manuals, standard pricing procedures, standard bond contracts etc that facilitate bond trading. The National Association of Investment Banks (ANBID) has introduced a certification for investment professionals. A group of market institutions associations has produced a plan to develop the capital market that includes some general actions that benefit bond and stockholders.

One suggestion advanced by ANDIMA has been the change in taxation of bond interest. Currently tax is entirely withheld by the holder of the bond. If the bond has been recently bought, then the buyer pays all the tax accrued for the next coupon, and the seller none. As more individuals, who are subject to withholding, trade in the market, a change in the taxation procedure is necessary to remove this impediment for the secondary bond market development. Other proposals in the plan include creating a liquidity fund through the BNDES, more incentive for analysts to follow bonds, and a revision of call and renegotiation provisions.

4.5. Brief Description of Applicable Laws and Prudential Rules

In this part we summarize some of the key issues pertaining to the Brazilian laws and regulations applying to bonds. We include comments on the main bond characteristics, taxation, issuance requirements, and prudential rules applicable to institutional investors. We also discuss the impact of the recently passed bankruptcy law on bonds. ANDIMA (2005) provides a full compilation of all applicable regulation. An earlier assessment of the Brazilian credit market and its judicial system was done by Pinheiro and Cabral (2001). A more recent assessment was produced by the World Bank (2004b). The main legal documents that regulate the Brazilian corporate securities market are Laws 6,385 of 1976 and 6,404 of 1976, modified by Laws 9,457 of 1997 and 10,303 of 2001. We presented some characteristics of bonds and commercial papers in section 4.2.1. We proceed to briefly discuss taxation, issuance requirements, prudential rules, and the potential impact of the recent bankruptcy law on corporate bonds.

4.5.1. Taxation

Taxes levied on bonds include income tax and two types of financial transactions taxes (IOF and CPMF). The IOF tax is levied on transactions of a holding period of 30 days or less at decreasing rates as the number of holding days increase. The CPMF tax is a flat rate of 0.38% for every cash flow out of an investment or bank account but not for cash flows within an investment account. All taxes are withheld at the source by financial intermediaries. There is no withholding for institutional investors.

Beginning in January of 2005, income tax rates on fixed income transactions are 22.5% for a holding period of up to 180 days; 20% for holding periods of 181 to 360 days; 17.5% for holding periods of 361 to 720 days; and 15% for longer holding periods. Foreign investors are taxed at a flat 15% rate. Prior to 2005, there was a single flat income tax rate of 20%. The objective of the government with this change was to favor longer term government bonds.

Bond interest payments are taxed by withholding the tax at the source as well. This has been a problem for the secondary bond market. Because the holder of the bond pays the full tax for the whole holding period, when the bond is traded, the buyer pays the tax relative to the interest accrued in the period prior to its sale. This was not a problem when the market was virtually exclusive to institutional investors because they do not withhold income tax. However, as more individuals and corporations trade directly in the market, this is an impediment for market growth.

4.5.2. Issue Requirements and Prudential Rules

An issuer must first register as a public company at the CVM to issue bonds publicly. The issue itself must also be registered at the CVM. Only registered bonds can be sold in the primary and in the organized secondary markets. The bond indenture and the transcripts of the board meeting or general shareholder meeting that decided upon the issuance must also be filed at the Commercial Registrar and any fixed collateral must be previously constituted. Corporate bonds are not required to be rated but some institutional investors face limitations of their holdings of non-rated bonds.

Law 6,404 of 1976 limits the issue value to the company's book equity for non-collateralized bonds. Fixed collateral bond issues may amount up to 80% of the value of the collateralized assets and floating collateral bonds may amount up to 70% of company's assets minus the book value of the fixed collateral debts. In many cases, companies must file a financial feasibility study, particularly when they have been in operation for less than 2 years, book equity is negative, the company is under bankruptcy proceedings, or if the issue amount is greater than book equity.

CVM's Instruction 400 of 2003 is the key regulation detailing all requirements to issue bonds and other securities. This instruction formalized the book building procedure by allowing consultations with up to 20 investors. Records of these consultations must be kept. Consultations are kept confidential and private. In order to do this, companies must file a preliminary prospectus with the CVM. Any publicity materials must be previously approved by the CVM and the company must publish an announcement of public securities distribution. The issuer and its underwriter are responsible for the accuracy and truthfulness of all information provided to the CVM.

Bondholders must be represented by the fiduciary agent, which is usually an independent financial institution that specializes in this kind of service. CVM Instruction 28 of 1983 defines the role of the fiduciary agent as to protect the interest of bondholders; to inform bondholders of relevant facts and provide an annual report; and to notify bondholders when the issuer does not fulfill its duties.

Financial institutions, investment funds, pension funds, and insurance companies can acquire only public issued corporate bonds that are under CETIP or CBLC´s custody. Financial institutions cannot purchase corporate bonds of related companies except for leasing companies. Closed pension funds cannot hold more than 80% of their portfolios in low credit risk corporate securities. A low credit risk corporate bond must have been registered at the CVM and classified as such by one of the credit rating agencies operating in Brazil. Closed pension funds cannot hold more than

20% of is assets in average or high credit risk corporate bonds, classified as such by one of the credit rating agencies operating in Brazil, or in non-rated corporate bonds. Finally, these funds cannot hold more than 10% of their assets in corporate bonds issued by the sponsoring companies. Pension funds constituted by the federal, state, or local governments cannot hold more than 20% of its holdings in corporate bonds of a single issuer. However, pension funds can hold up to 100% of its assets in treasury securities. This regulatory privilege of treasuries is one of the instruments to crowd out corporate debt. In closing, it is worth noting that Central Bank regulation allows commercial bank treasurers are free to hold Brazilian treasuries without penalty in their capital adequacy calculation but that the same is not true for corporate debt. This another incentive for institutional investors to prefer treasuries over corporate debt.

4.5.3. Bonds and Bankruptcy

Law 11,101 of 2005 replaced the old bankruptcy law of 1945. However, it kept many of its principles, such as giving priority to employees, to creditors with fixed collateral, and to the tax authorities. After those are paid, then other creditors may receive if there any remaining assets. Fixed collateral bondholders are now paid before the tax authorities and after employee liabilities. Employee liabilities are now limited to 150 minimum wages per employee (about US$ 19,000) to curtail the practice of millionaire labor suits by the owner's own family members and associates, which depleted the assets available to pay creditors.

Law 11,101 introduced a reorganization procedure in which the company continues to operate if it proves to be viable to a judge. There was no need for such proof before. The reorganization procedure includes all creditors, even those with fixed or floating collateral, while only non-collateralized creditors were affected before. The new law also allows for the immediate sale of assets while all pending legal issues needed to be solved before, and that could take many years. When the assets were free to be sold, they could be no more than scrap. Buyers of the bankrupt company's assets are not considered their legal successor anymore and, thus, not liable in the bankruptcy proceedings. During reorganization, company control is shared by a court appointed manager and the judge.

The law does not distinguish between bondholders and other creditors. The distinguishing factor among creditors is the collateral. Even bondholders with floating collateral may not receive as they are only placed ahead of other non collateralized bondholders but after all labor, fixed collateral creditors, and tax debts.

Given these characteristics, the new bankruptcy law will probably have very little impact on the credit recovery ability of bondholders. Most bonds issued in Brazil offer no collaterals. Thus, the situation of 90% of the bonds outstanding or more remained the same. It is quite obvious that the issuers of non-collateralized bonds are probably the largest and best firms in the country and the probability that they go into bankruptcy proceedings in the near future is quite low. In contrast, many potential issuers that are not in the market today could benefit from a more privileged treatment under the bankruptcy law.

We discussed this potential impact with prominent securities lawyers. They believe that the key risk factor on credit risk is law enforcement in general and that this particular bankruptcy law will not have an effect on the general levels of interest rates. Even if they are correct, there could be a marginal gain to bond holders if issues such as debt maturity is differentiated under the law. The new law does not distinguish short and long term debt, only collateralized and non collateralized debt. Thus, subordinated and unsecured bondholders are paid together with other non collateralized creditors. Greater protection under bankruptcy for longer term creditors, be they bondholders or bank creditors, could be helpful to develop the long term credit market in Brazil. We side with the lawyers, however, because we believe this is marginal relative to the major macro bond market deterrents, such as the judiciary and central government financing problems.

4.6. Evolution of Bond Covenants

In this section we review three articles that have analyzed corporate bond covenants in Brazil. Each article covers a period in which the economic situation of the country was different. Anderson (1999) covered the 1989-1993 period, when inflation was very high and Brazil might have experienced hyper inflation for a short period. Naturally, bond indentures at the time were mostly concerned about the dangerous effects of high inflation. He analyzed 50 bond indentures.

Filgueira and Leal (2000) document the changes in Brazilian bond indentures after the Real Plan. They study bond 96 indentures in the 1994-1997 period. Saito et al. (2005) continue the work of the previous authors and analyze 119 indentures in the 1998-2001 period, which saw the floating of the Brazilian currency. We complete the analysis looking at 67 bond indentures from 2002 to 2004. Our tabulations are not included in the paper but are available upon request.

As one would expect, inflation and foreign currency indexation decreased dramatically from the first period to the last. Two-thirds of the bonds in the most recent period are not indexed to

inflation or to a foreign currency, certainly the dollar in most or all cases. No coupon bonds were common in the high inflation years when inflation indexation coupled with bond premia, to account for any distortions in inflation indexation, was a common compensation scheme. After the high inflation period, the number of no interest bond was negligible or null. On the other hand, the number of floating rate bonds increased substantially. It is worth noting the frequency of fixed rate bonds decreased in recent periods possibly because of higher interest rates around the period when the currency has been floated (January of 1999). Floating rate bonds usually employ one of the widely publicized average market rates: the CDI, one-day inter-bank loans, or the SELIC, secondary market transactions on federal government treasury bills.

Early maturity through bond indenture renegotiation was common in Brazil. Bond issuers may propose major changes in the bond's indenture in scheduled renegotiation periods. If a bondholder does not agree with the proposed changes she can put the bond to issuers. Thus, programmed renegotiations may result in the early retirement of the bond. The number of bonds with a programmed renegotiation has declined as uncertainty has decreased from the first to the last period. On the other hand, the use of call provisions increased in the second and third periods, and has decreased since 2002. The call provision is a mild version of the renegotiation provision because it only allows for the retirement of the bond and not for changes in its indenture provisions.

Early maturity covenants may convey the false impression that corporate bonds were actually short-term securities in Brazil. Our anecdotal evidence reveals that bond issuers did not resort to them often and that this covenant worked as an additional guarantee for bondholders only during the very high inflation period. As we have stated, usage of this covenant is in decline and we know of no major recent early maturity events in the market in the last 10 years. However, during the high inflation years in the late 80's and early 90's it is possible that the inclusion of early maturity covenants has allowed the bond market to stay afloat, providing an additional and desired flexibility in a time of very high uncertainty. As the economy stabilized, the presence of this covenant could have been regarded as potentially abusive and its usage declined.

We examined the evolution of three types of bond covenants: those that impose limitations on dividends, on investments, and on financing. One interesting finding is that the use of covenants that restrict corporate managers' actions, to mitigate conflicts of interest, is on the rise. Once inflation has come down, bond indentures took a greater emphasis on other issues, such as conflicts of interest. Curiously, dividend covenants did not show a clear progress in the period, except for

cash flow constraints to related parties. However, there was an increase in the use of covenants dealing with ownership and control changes, insurance of fixed assets, operations within stated corporate goals, capital asset sale prohibition, and the use of assets as collateral, possibly to limit related party transactions. Furthermore, there was a substantial increase of financing covenants, such as restrictions on additional debt, third party debt guarantees, and the issuance of senior debt.

The evidence presented suggests that bond covenants and indentures adapt to current market conditions. It is very difficult to ascertain if bond covenants changes lead or lag market development. We actually believe this is an endogenous process. Greater market volumes caused by major economic changes exogenous to the market provide better incentives and greater need of bond financing, leading the improved covenants that better meet the needs of creditors and borrowers in the new market phase. Bond market issuance volumes have floated tremendously in dollar terms since 1989. Average annual bond issuance in the Anderson (1999) study 1989-1993 period was US$ 1.9 billion. The average annual bond issuance in the 1994-97 period, studied by Filgueira and Leal (2000), was US$ 7.0 billion, while Saito & al (2005) and ourselves report average annual issuance volumes for the 1998-01 and 2002-04 periods, respectively, of US$ 5.8 billion and US$ 3.3 billion. In 2005, issuance was a record US$ 17.1 billion. There is no clear relationship between bond issuance and the evolution of covenants in our opinion. However, the volume is certainly larger in the post-inflationary period. We believe that the evolution of bond indentures is endogenous.

5. Determinants of Bond Financing

The final part of this study provides evidence about the determinants of the bond financing on a firm-level basis. We produce an analysis of firm leverage and analyze, in particular, the usage of bonds relative to other types of debt. We analyze the determinants of leverage in general, bank loans, domestic bonds (debentures and commercial papers), international bonds, and asset-backed securities. We use an econometric and a qualitative method. The panel regression model is employed to determine what drives a Brazilian firm to use debt, in particular bonds. The survey is designed and conducted among selected market participants, representing issuers and investors, in order to identify the main motivations and potential obstacles to bond investing and financing.

5.1. Panel Regressions

We briefly review the literature on the determinants of capital structure. In Brazil, Leal and Saito (2003) review the Brazilian empirical evidence. Harris and Raviv (1991) provide evidence that leverage increases with fixed assets, non-debt tax shields, investment opportunities, and firm size and decreases with volatility, the probability of bankruptcy, profitability, and the uniqueness of the product. Our empirical analysis includes five of these variables: tangibility of assets, firm size, investment opportunities, profitability, and volatility.

Titman and Wessels (1988) and Rajan and Zingales (1995) argue that the tangibility of assets is an important factor for leverage because it represents the firm's collateral value. Our measure for tangibility of assets is the ratio of fixed to total assets. Warner (1977) and Ang & alli (1982) document that smaller firms tend to have relatively higher bankruptcy costs while Titman and Wessels (1988) argue that larger firms tend to be less risky because they can diversify. We use the natural logarithm of total assets as a proxy for firm size. We expect that larger firms are able to use more debt, particularly bonds.

Galai and Masulis (1976), Jensen and Meckling (1976), and Myers (1977) argue that when a firm issues debt, managers have an incentive to transfer wealth from bondholders to shareholders, and these agency costs are higher for firms with substantial growth opportunities. Thus, firms with more investment opportunities are expected to be less leveraged. The market-to-book ratio is our proxy for investment opportunities. Alternatively, we will also use the Tobin's Q, constructed as the market value of assets (total assets minus book equity plus the market value of equity) divided by the book value of assets. Forms of computing Q are described in DaDalt et al. (2003), but they find that simpler computations of Q should be preferred over more complex estimators, particularly when data availability is a concern, which is our case.

According to the trade-off theory, more profitable firms should have higher leverage as bankruptcy costs are lower when profitability is higher, and interest tax shields induce them to finance with debt. Jensen and Meckling (1976), Easterbrook (1984), and Jensen (1986) suggest a positive relationship between leverage and profitability. In contrast, the pecking order theory suggests that more profitable firms should be less leveraged because they should prefer raising capital from retained earnings first, before turning to debt, and lastly to new equity. The empirical evidence on this hypothesis is ambiguous. Our measure of profitability is the return on assets (ROA), measured as the operating income over total assets.

Bolton and Freixas (2000) propose a model of financial markets and corporate finance where equity, bank debt, and bond financing coexist in equilibrium. They suggest that riskier firms prefer bank loans, safer firms issue bonds, and the ones in the middle prefer to issue both equity and bonds. More volatile firms are generally associated with a higher probability of default, implying a negative relationship between leverage and volatility. Due to the lack of suitable time-series data for the volatility of cash flows or earnings, we measure volatility as the standard deviation of the daily returns in the year of analysis.

Since the early contributions of Jensen and Meckling (1976) and Morck, Shleifer, and Vishny (1988), the literature has documented that there are both costs and benefits associated with the concentration of ownership (cash flow rights) and control (voting rights). Shleifer and Vishny (1997), La Porta et al. (1998, 2000, 2002), and Claessens et al. (2002) suggest that greater cash flow rights are associated with greater firm valuation. In contrast, concentration of control rights and the separation of voting from cash flow rights have a negative effect on firm value, because it may result in the expropriation of outside stakeholders.

In Brazil, there is a huge separation of voting and cash flow rights (Leal and Carvalhal-da-Silva (2005)), mainly through the deviations from the one-share-one-vote rule. Since it may affect firm valuation and consequently its cost of capital, we will include three variables to attempt to capture the effect of ownership and control on leverage: the controlling shareholder's stake of voting shares (control), of total shares (ownership), and the ratio of these two variables (separation of ownership from control).

Leal and Carvalhal-da-Silva (2005) construct a firm-level corporate governance practices index (CGI) from a set of 24 questions in order to measure the overall quality of corporate governance practices of Brazilian firms. They find that the CGI maintains a positive, significant, and robust relationship with corporate value. Our panel model spans a longer time series than that analyzed by Leal and Carvalhal-da-Silva (2005). We construct a reduced version of their CGI with 15 questions, including those that are more discriminating among firms (see Carvalhal-da-Silva and Leal (2005)). We believe that better governed firms provide better protection to outside financiers, be they shareholders or bondholders. The greater the CGI score the greater the firm's leverage.

The macroeconomic environment obviously may be an important influence on bond market development (Eichengreen and Luengnaruemitchai (2004), Burger and Warnock (2003), and Claessens et al. (2003)). We include year dummies in order to control for differences in

macroeconomic variables (such as GDP growth, interest rates, volatility of interest rates, and inflation) during our time period. There is evidence that macroeconomic factors may be important to determine the size and currency denomination of the domestic bond market while it does not seem to have a significant effect on the currency composition of the international bonds (Eichengreen et al. (2005)).

The basic panel regression model will be estimated for a sample of firms listed at Bovespa with available information from 1998 to 2004, according to the following equation:

$$Lev = \beta_0 + \beta_1 Tang + \beta_2 Size + \beta_3 Price/Book + \beta_4 Tobin's Q + \beta_5 ROA + \beta_6 Vol + \beta_7 Control + \beta_8 Own + \beta_9 Control/Own + \beta_{10} CGI + \beta_{11} Industry + \beta_{12} Year + \varepsilon$$

where *Lev* denotes the ratio of total (non equity) liabilities to total assets, *Tang* is the tangibility of assets (the ratio of fixed to total assets), *Size* is the natural logarithm of total assets, *Price/Book* is the market-to-book ratio, *Tobin's Q* is the market value of assets divided by the book value of assets, *ROA* is the return on assets (profitability), *Vol* is the standard deviation of the daily returns of stock prices in a calendar year, *Control* is the controlling shareholder's stake of voting shares, *Own* is the controlling shareholder's stake of total (voting and non-voting) shares, *Control/Own* is the ratio of voting shares to total shares owned by controlling shareholder, *CGI* is the reduced version of the corporate governance index, *Industry* are industry dummy variables in order to control for the firm's industrial classification, *Year* are year dummy variables in order to control for differences in macroeconomic variables during the time period.

In order to analyze the different types of debt issued by Brazilian firms, we also estimate the same regression using four alternative dependent variables: *Bank* (ratio of bank loans to total assets), *Bond* (ratio of domestic bonds to total assets), *IntBond* (ratio of international bonds to total assets), *AssetBacked* (ratio of asset-backed securities to total assets). Our four additional regressions are similar to the one above.

The initial sample includes all 357 public Brazilian firms listed at the São Paulo Stock Exchange in 2004. The market and accounting information comes from the Economatica database. The data on the characteristics of the bonds on a firm level basis and the information on ownership and control structure as well as the company charters necessary for the construction for the corporate governance index come from the Brazilian Securities and Exchange Commission.

We considered the fixed effects and random effects approach to perform our panel regression model. We ran the Hausman test in order to check which is the more efficient model between fixed and random effects. The Hausman test statistic presents significant p-values and indicates the fixed effects model is more efficient and should be used in order to make sure that the results are consistent.

5.1.1. Initial OLS Results

Table 12 presents our analysis for the relationship between overall leverage and its determinants. As expected by the theory, the tangibility of assets is positively related to leverage, indicating that firms with more fixed assets may use them as collateral in order to increase leverage. Size and ROA are negatively related to leverage at the 1% level, suggesting that larger and more profitable firms tend to use more equity. This could be the case if size and profitability are correlated, or if larger companies have better access to the equity market and can fund their operations through the issue of new stocks, or if profitable firms can re-invest their profits and use them to finance their capital needs. Brazilian firms use retained earning more than firms in many other countries. This finding is consistent with prior Brazilian evidence presented by Leal and Saito (2003).

The other independent variables present mixed or week coefficients. There is a negative relation between volatility and leverage, suggesting the riskier firms use less debt, but it is statistically significant only in one model. In three specifications, Tobin´s Q and price-to-book ratios are positively and negatively associated with leverage, respectively. The result for the price-to-book ratio is in line with the evidence that firms with more growth opportunities are expected to have less leverage (Galai and Masulis (1976), Jensen and Meckling (1976), and Myers (1977)) but the results for Tobin's Q contradict this evidence. Tobin's Q coefficients suggest that more valuable firms present greater leverage. No corporate governance variable (control, ownership, separation of ownership and control, and the CGI) present significant coefficients.

Table 13 reports the panel models for bank loans. Similarly to the leverage analysis, bank loans are positively related to the tangibility of assets, and negatively associated with size, ROA, and volatility. Tobin´s Q, price-to-book, and the corporate governance variables are by and large not statistically significant. Specification 5 includes *Bond*, *IntBond*, and *AssetBacked* as potential determinants of the firm choice for bank loans. The idea is to analyze if these types of debt are substitutes. Firms that issue domestic bonds tend to have fewer bank loans and firms issuing

international bonds tend to have more bank loans, suggesting that domestic bonds may substitute for bank loans while international bonds and bank loans are used simultaneously.

Table 14 show the panel models for domestic bonds. As in the case of bank loans, bond financing is positively related to the tangibility of assets and Tobin's Q and negatively associated with size and the ROA. The volatility, price-to-book, and the corporate governance variables do not present statistical significance in most models. Firms that have bank loans tend to issue fewer domestic bonds, indicating that bank loans are used as an alternative to domestic bonds. We find no support for the Bolton and Freixas (2000) hypothesis that riskier firms prefer bank loans and safer firms issue bonds. Actually, if volatility is a suitable proxy for risk, we found just the opposite.

Table 15 reports the panel models for international bonds. In contrast to the analysis for overall leverage, bank loans and domestic bonds, international bond usage is negatively related to the tangibility of assets and positively associated with firm size. This is somewhat surprising because most international bonds are unsecured, as well as most domestic bonds, so having no need for collateral should also affect the domestic bond coefficient. It could be that this coefficient is driven by the peculiar characteristics of international bond issuers, which are different from those of domestic bond issuers. As we have discussed elsewhere in this paper, international bond issuers are larger and more financially sophisticated than domestic bond issuers.

There is a negative relation between international bond use and the ROA and a positive relation with volatility. In some specifications, Tobin´s Q and price-to-book are statistically significant, but the sign of the coefficients are mixed and inconsistent with the domestic bond issuers signs. Although the ownership and control variables are not statistically significant, the CGI presents a positive and statistically significant relation with international bond use. It seems that firms with better corporate governance practices issue more international bonds. Firms that use more bank loans and domestic bonds tend to issue more international bonds as well. International bonds may be used together with bank loans and domestic bonds and not as an alternative.

We also included some additional variables that may be useful in explaining the choice for the international bond market: *Export* (a dummy variable indicating if the firm exports goods or services), *ADR* (a dummy variable indicating if the firm list its shares in the U.S. through American Depositary Receipts), *Foreign Controlling Shareholder* (a dummy variable indicating if the firm has a foreign shareholder with more than 50% of the voting capital), and *Foreign Shareholder* (a dummy variable indicating if the firm has a foreign shareholder). The results suggest that firms that export

tend to issue fewer international bonds. One possible explanation is that exporters have generally other financing choices such as special bank credit lines and securitization instruments. These debt instruments have attractive interest rates because the export flow is used as collateral. There is no significant relation with ADR listing. However, firms with foreign shareholders tend to issue more international bonds, suggesting that the presence of foreign shareholders facilitates access to the international bond market.

We also analyze asset-backed securities. Results are available upon request. Coefficients are statistically weaker than in the previous cases. In a few specifications, the issuance of asset-backed securities is positively related to the tangibility of assets, firm size, and price-to-book. The corporate governance variables are generally not statistically significant. Firms that issue international bonds tend to have fewer asset-backed securities, indicating that international bonds are used as an alternative to asset-backed securities. As expected, exporters tend to issue more asset-backed securities using their export revenues as collateral. There is no significant relation with ADR listing and with the presence of foreign shareholders.

Our OLS results indicate that having more collateral is associated with greater usage of domestic debt, both through bank loans and bond issues, but not to international bond use. Asset backed securities are used more often by exporting firms. Accounting return is negatively related to leverage in all forms. More profitable firms use less debt. Size is also negatively related to debt usage with the exception of international debt. Corporate governance variables had an influence only on international debt issuance. Better governed firms issue more abroad. The results for the other variables present mixed coefficients. However, OLS results are not reliable. There may be reverse causality, for exemple, among the variables used, and some of the variables, such as size, are known to be related to other variables in the system, such as the CGI, Tobin's Q, and profitability. We perform an endogeneity check to confirm these preliminary results.

5.1.2. Endogeneity Checks

The OLS equations estimated in section 5.1 do not deal with the potential endogeneity of the variables in the system of equations, which may cause bias in the OLS estimation. One way to address this problem is to use an instrumental variables estimator such as two-stage least squares (2SLS) or three-stage least squares (3SLS). Both models attempt to account for the endogeneity that

exists in the simultaneous equation model. While 2SLS estimates the model parameters of each equation at a time, full-system estimators, like 3SLS, estimate all parameters simultaneously.

2SLS is a method of using instrumental variables to replace the endogeneous variables where they appear as explanatory variables in the simultaneous equation model. It is important to note that the 2SLS estimates will still be biased, but they will be consistent. Zellner and Theil (1962) show that 3SLS produces consistent and more efficient estimates than those produced by the 2SLS procedure.

In this paper, 3SLS is adopted, since it is likely to have an efficiency advantage over single equation methods, such as 2SLS. The endogenous variables in the system are *Lev*, *Bank*, *Bond*, *IntBond*, and *AssetBacked*. Thus, these variables are expected to be endogenous within our simultaneous equations framework.

In order to address the issue of endogeneity or reverse causality[2] among the variables in the single regressions of section 5.1, a system of simultaneous equations was estimated via 3SLS. The endogenous model can be represented using the following simultaneous equation notation:

$$d_j = \alpha + \sum_{i \neq j} \phi_i d_i + \sum_{i=1}^{N} \varphi_i X_i + \varepsilon$$

where *d* is as a vector of debt measures, such as *Lev*, *Bank*, *Bond*, *IntBond*, and *AssetBacked*, and X is a vector of control variables that are associated with debt measures as well. These equations, one for each debt measure, are included in a simultaneous equation system. If the coefficients of *d*, simultaneously determined, are still significant, this will be an indication that the net effect of alternate debt measures is significant. In order to allow for non-linear relationships, we also include quadratic versions of some control variables. Except for size, we find no significant relationship with the square of the other control variables.

Table 16 shows the results of our simultaneous equations analysis. In order to facilitate the comparability with the results of section 5.1 (single equations), our simultaneous equations contain only the variables used in the full specification of each single equation analysis. We do not report the results for the quadratic variables (except for size), since none is significant.

In general, results obtained with the simultaneous equations are consistent with the previous ones presented in the single equation analysis with an important difference. In the *Lev*, *Bond*, and *AssetBacked* specifications, the sign of the size coefficient changes from negative to positive, and the

[2] One important source of endogeneity is the reverse causality among the variables.

sign of squared size is negative, suggesting that large firms tend to use more debt, bonds and asset-backed securities but, as they become larger, they tend debt usage increases at a slower rate. One possible explanation is that large companies have access to the capital market and can fund their operations through the issue of new stocks. Because size is certainly correlated to other independent variables used in the OLS analysis, our 3SLS results are more reliable.

Table 16 confirms that domestic bonds are used with international bonds and asset-backed securities and are substitutes for bank loans. Previous results for exporting firms were confirmed as well. Firms that have ADR programs tend to issue fewer international bonds and asset-backed securities. The second result is an evidence that firms with ADRs can issue new stocks abroad instead of international bonds and asset-backed securities.

5.1.3. Discussion about Potential Biases

The number of public corporations in Brazil has decreased in the last 10 years. There were 844 public corporations in January of 1995 and in December of 2004 there were 652. The maximum number in the period was 1,046 in January of 1998. Carvalho (2000) shows that many of the corporations created in this period were state owned corporations and syndicates related to the privatization program, corporations that became public to issue ADRs, securitization and leasing companies, and corporations that issued less than US$ 1 million. He deletes these companies and shows that the number of public corporations in Brazil declines even more. We do not believe that the dynamics of the number of public companies in Brazil introduces any additional biases in our results because in most cases these companies were not listed or did not have any market liquidity that allowed for the computation of some of the variables we need in our research.

The number of Bovespa listed firms has been decreasing in Brazil. It starts at 545 companies and was at 357 in 2004. Carvalho (2000) reports that the costs of keeping the company listed and public are cited by 88% of the respondents he surveyed as the main causes that prevent companies from becoming or staying public. Among these costs, the largest burden are publication costs, mandated overheads, external auditors, and the shareholder services department. The law makes public corporations publish their financial statements in major newspapers as well as in the official registrar's of the state or county they have been incorporated. Many of these official publications charge exorbitant prices, becoming a de facto tax on public companies levied by states and counties.

Another reason for de-listing is the acquisition by foreigners. Siffert Filho (1998) shows an increase in ownership by foreigners in Brazil. Many companies that de-listed have been acquired by

foreign investors that saw no advantage in incurring the costs of keeping the subsidiary public in Brazil. Combining the evidence that many companies find the costs of staying public too high, with foreign owners that do not see any advantage for their companies to remain listed, with the very small number of companies that became public and listed in the period, we believe that our sampled companies are survivors. Besides, our analysis was based on those companies that were listed in 2004, increasing our survivorship bias. Therefore, our coefficients are representative of currently listed companies in Brazil but are most likely overstated.

5.2. Survey

In order to better understand the obstacles to the development of the corporate bond market, we conduct a survey among selected market participants, which are representative of firms (financial and non-financial) and investors (mutual funds, insurance companies, pension funds etc). The purpose of this survey is to identify the main determinants and potential obstacles of bond financing choice for a typical Brazilian firm (supply side) and the main reasons that drive investors to buy corporate bonds (demand side).

We conduct the survey on a statistically valid sample, covering different firms' characteristics: industry, firm, size, access to the international market (ADR, eurobonds etc), users and non-users of commercial papers and bonds. This allows us to have a broad coverage of Brazilian firms, and to draw valid conclusions about the sample and possible extensions to the rest of public companies in Brazil.

A brief survey, that takes no more than 15 minutes to answer, was proposed in hope that we get the highest response rate. Questionnaires were made available on Internet and are available upon request. Some questions could be objectively answered from publicly available data but others are subjective and depend on the respondents views.

Appendix 1 conveys results for the subjective questions of the investors' survey for a sample of 28 institutional investors, including mutual funds, pension funds, independent asset managers, and banks. The main problems of the local bond market are: low liquidity of the secondary market (100% of the respondents), low market capitalization (79%), low quality of legal recourse in the event of default (64%), and absence of a complete benchmark yield curve (64%).

Half of the investors surveyed are subject to constraints in their portfolio asset allocation. In case constraints are relaxed, they would increase the weight of asset-backed securities (58%), foreign assets (57%), and domestic bonds issued by private-owned companies (45%).

If their portfolios increased in value by 50%, their asset allocation would mostly remain unchanged. Nevertheless, some investors would increase the weight of domestic government bonds (53%), asset-backed securities (50%), and certificates of deposit (39%). Most investors (more than 70%) would be interested in holding real denominated bonds or inflation indexed bonds issued by AAA institutions (World Bank, IADB etc).

Overall, investors agree that the yield curve provided by public bonds is crucial for pricing corporate bonds. Furthermore, if the yield on government bonds was to increase significantly and that of private bonds remained constant, they would sell private bonds and buy government bonds. In general, they feel that a large stock of public sector bonds is not necessarily important for the development of the corporate bond market, and government and corporate bonds are not substitutes in their portfolios.

Appendix 2 shows results for the subjective questions of the firms´ survey, covering a sample of 24 firms. Most firms (83%) have outstanding bonds and have issued bonds over the last three years, so answers may be biased in favor of bond financing. However, respondents are not sure about issuing bonds in the next two years. The main reason (30%) to change the funding strategy from bonds to other types of financing instruments is associated with high issuance costs. Another reason pointed out by most firms (60%) is that cash flow from operations is high enough so that they do not need other types of financing.

Bank loans have the following problems: high interest rates, collateral requirements, and a slow process of loan approval and disbursement. Note that the high interest rate is a major problem specially associated with banks located in Brazil. Collateral requirements and the slow process are problematic for both domestic and foreign bank borrowings.

The different types of fees (for underwriters, credit rating agencies, lawyers, and registration) represent obstacles to issuing domestic and international bonds. Domestic bond issues also have the following problems: small market (46%) and low liquidity in the secondary market (38%). Regulatory requirements represent a problem for both domestic (29%) and international (33%) bonds.

The main problems to finance in the domestic market are the interest rates (79% for bank loans and 46% for domestic bonds), maturity (71% for bank loans and 29% for domestic bonds), and collateral requirements (46% for bank loans and 50% for domestic bonds). The speed for

access to required financing, and the information requirement are more problematic for bond issues (71% and 25%, respectively) than for bank loans (33% and 4%, respectively).

The six forms of financing (domestic banks, domestic bonds, international banks, international bonds, asset-backed securities, and suppliers' credit) were ranked according to their relative advantages in different attributes. Asset-backed securities and international bonds have the lowest interest rates while domestic banks charge the highest. Local currency lending is more easily available in domestic banks and bonds and obviously more difficult in international banks. Financing instruments with different indexation alternatives are more common in domestic banks and bonds and less common in suppliers´credit.

As expected, long-term lending is only available in the international bond market. Suppliers´ credit is generally a short-term financing choice. There is no substantial difference in the non-interest rate costs among the six financing instruments. Domestic bonds have the most favorable tax treatment, while international bank loans present the worse tax treatment.

The great advantage of the suppliers´ credit when compared to bank or bond financing is the possibility of renegotiation in the case of economic difficulties. This is not surprising since suppliers depend directly on the firm's success and have more incentives to renegotiate. In contrast, asset-backed securities have the lowest possibility of renegotiation in case of economic difficulties, since the securitization of credits and risk segregation is comparatively superior to the other types of financing alternatives.

The costs related to disclosure requirements are lower for domestic bank borrowings and higher for international bond issues. The size of the potential market relative to the firm's financing needs is higher in the international bond market and lower for suppliers´ credit.

We use the survey results above together with many indications, facts and recommendations that emerged elsewhere in the paper to draw our conclusions and recommendations in the final section of this paper.

6. Conclusion and Recommendations

Many respectable analysts believe that the Brazilian domestic government debt market hurts more than helps the corporate debt market because it crowds out corporate debt. However, the size of the public debt market is not necessarily indicative of crowding out. Evidence by from a panel of 41 countries by Eichengreen and Leungnaruemitchai (2004) shows no significant impact of the size of the government bond market and suggests that the positive effects of the liquidity and market

infrastructure benefits offset crowding out. Of course, evidence from a cross-section of countries does not rule out crowding out in one country in the sample. If this is the case, what are the reasons for the crowding out of private debt by public debt in Brazil? Of course, higher interest rates must be used to entice institutional investors, in particular, to hold more government debt than they would otherwise like. Our survey results suggest that this is indeed the case. About half of the investors surveyed managed constrained portfolios. We are sure that many in the other half also abide to capital adequacy or prudential rules that are biased towards government debt and penalizes corporate debt. When asked what they would do if their portfolio was not constrained, they said they would buy more corporate debt. However, if interest rates on government debt are disproportionably raised relative to corporate debt, they would buy more government debt.

Government debt crowding out is often listed as one of the reasons for the high real interest rates in Brazil. The federal government's gargantuan financing needs induces it to pass regulation favoring its own debt in detriment of the development of the corporate financing market. The recent foreign investor exemption of income tax withholding on government debt investments only, while corporate debt is still taxable, is a clear example of the government's "self dealing". Capital adequacy rules, pension fund prudential rules, mutual fund prudential rules etc all favor treasury debt. While this is not surprising per se, it is hard to say if a local AAA corporate bond issued by a Brazilian firm is really less risky than the federal government's debt and ceilings for corporate securities are arbitrary anyway and could have been set with an anti-creditor or "self-dealing" mind by regulators.

We open with a recommendation for a revision of capital adequacy and prudential rules to reduce their bias towards government debt. While we do not claim that portfolios should be unconstrained, maybe the ceiling for holdings in managed funds or weights used in capital adequacy calculations are biased towards treasury paper. Of course, this will take some pressure on regulators from market organizations. Because these regulations are in different branches of the government, the Central Bank (commercial banks), CVM (mutual funds), the Ministry of Social Security (closed pension funds), and the Ministry of Finance (open pension funds and insurance companies), this is no easy task.

We know that the CVM is actually planning to go in the opposite direction. They are holding public discussions of a potential new norm that will limit holdings of private debt in mutual funds marketed for retail investors to 30% of the portfolio, with several "sub-limits", such as no more than

20% in stocks or corporate bonds. This ruling does not apply to stock funds, but to non-stock funds, that is, multi-market or fixed-income funds. We believe that this is a step in the wrong direction. The new regulation is motivated by a few recent financial institution debacles that hurt retail investors. They define mutual funds directed to retail investors as those with a minimum initial investment of R$ 300,000 or less, for the time being. Their intent is to protect retail investors because they do not have the ability to evaluate credit risk. The CVM also argues that the vast majority of funds hold much less than 30% in private debt and that the measure will not change current practices. We believe that this will put a limit where no limit exists and may signal to individual investors that private securities in general are very risky and are a bad thing. This is the kind of anti-credit bias that Arida & alli (2005) refer to, a bias that exists in Brazilian regulation in general, favoring government securities as if they were risk-free.

The reasons for the high level of interest rates in Brazil are discussed by many. This paper is about the bond market but we cannot afford not to summarize our discussion of this matter and to list some key recommendations advanced in the recent literature to reduce interest rates in Brazil. Nevertheless, we will place these economic policy recommendations in tune with their potential unfolding into the bond market.

We spent some time discussing Arida & alli's (2005) jurisdictional uncertainty hypothesis, which is the result of a historical process and can only be gradually reverted through a series of carefully thought out steps that would include ending forced savings, introducing full convertibility, the substitution of "incomeless" taxes, such as the CPMF and other forms of taxation over revenues or payroll, compulsory savings, such as those that fund the BNDES, and increasing financial and economic integration with low jurisdictional uncertainty economies.

Specifically, in the case of the bond market in Brazil, ending the biased tax treatment in favor of government debt, such as extending the tax exemption of foreigners to corporate debt and lifting the incidence of the financial transactions tax (CPMF) on securitization structures could be very helpful. The question about accrued taxes on coupon payments is unsolved. In order for the secondary market to be more friendly to individuals, there should be a mechanism to compensate bond buyers from the tax they paid on interest accrued on behalf of the seller. This issue seems simple and would provide the right signal to the market.

Reducing compulsory savings, that finance the BNDES, for example, and earmarked moneys for housing and agriculture loans, would allow greater transparency and competition in the market.

This seems to be one of the most difficult tasks ahead. With diminishing earmarked funds, the BNDES and other institutions would have to seek financing in the domestic and international markets on a competitive basis, helping develop and deepen the market. This change can only be gradually introduced given the current level of interest rates and the scarcity of financing for the sectors that traditionally benefit from these kinds of subsidized credits. Even the Central Bank seems to believe that freeing banks from setting aside moneys for housing and agriculture financing could ease the pressure on the credit spread. However, the issue of financing housing and agriculture is complex and politically sensitive and should be a hard one to address at first.

Brazil has given important steps towards greater integration to global financial and product markets, but this trend has recently slowed down. External shocks are an important source of macroeconomic uncertainty for Brazil and the economy's frailty to those shocks could be one of the reasons for high interest rates. Greater integration with global markets could ease the pains caused by unfavorable shocks. Steps towards reducing restrictions for institutional investors to hold foreign assets is another step that can only be taken gradually. Raising the ceiling for foreigner issued asset holdings, particularly for non compulsory savings funds, such as mutual funds and open pension funds, could allow the introduction of globally, albeit imperfectly, diversified portfolios in the domestic market, helping to reduce jurisdictional uncertainty.

Going along those lines, the CVM opened for public discussion a new ruling that will allow some types of mutual funds, loosely called hedge funds or, in a literal translation, multi-market funds, to have up to 10% of their holdings in foreign issued securities. This is an important first step that should be extended in the future to all types of institutional investors.

Full currency convertibility is yet another measure that is probably long due. Convertibility has to do with the bureaucratic costs of international flows. Nowadays, the complications to send or receive money from abroad, even if only small amounts, increase overhead costs for such transactions. Banks charge steep fees on foreign transfers of money. Proper documentation must be shown, contracts must be translated etc. It is simply impossible to walk into any branch of a bank and wire money abroad or receive money from abroad. There are centralized offices, requirements etc. As part of the international financial integration of Brazil, these difficulties should be removed and international transfers, even of small amounts, should be facilitated. Ironically, these difficulties are one more penalty on the poor. Many Brazilians live abroad in wealthy countries, many times

illegally. Their remittances to their families feed a large network of money dealers instead of going through the proper and more convenient routes of commercial banks.

The very high uncertainties in the Brazilian economy in the last 20 years has certainly led a substantial amount of funds into foreign countries. It is quite possible that a significant part of these funds was gained lawfully but, since their irregular remittance abroad, sometime in the past, has become undeclared and untaxed wealth. The creation of funds for the repatriation of these moneys, that could invest in corporate as well as in government debt markets, with a hold on withdrawals for some time and taxation as the money comes into to fund on the principal, as compensation for unpaid past due taxes, could help ease any potential tax losses of allowing foreign securities to be part of existing institutional investor's portfolios. One possibility is that these funds are managed by financial institutions operating in Brazil but are located in foreign jurisdictions. The funds could hold Brazilian debt securities indexed to reais. The money would not have to be repatriated. If the main motivation for the money to be abroad was jurisdictional uncertainty, then it would still be in under foreign jurisdiction. Naturally, some procedure to ascertain that the money into these funds does not originate from unlawful activities will be necessary.

Many authors believe that the credibility of the Central Bank's inflation targeting is very important and that providing it with independence is instrumental to reduce real interest rates. The greater the Central Bank's credibility the less it will have to raise interest rates in times of crises, and the less painful the contractionary monetary policy. Improving the fiscal situation seems to be an almost unanimous recommendation and that, provided lesser federal government's financing needs, the crowding out effect would naturally be reduced and credit spreads would decrease substantially. These macro initiatives are important in potentially reducing the level of interest rates and that alone would be instrumental to help develop the Brazilian bond markets even further.

Our survey pointed out to some of the main problems of the local bond market: low liquidity of the secondary market (100% of the respondents), low market capitalization (79%), low quality of legal recourse in the event of default (64%), and absence of a complete benchmark yield curve (64%). All measures suggested above could contribute the improve the current situation.

Initiatives that lower the risk of default and reduce the administrative costs to execute bad loans could be very effective to decrease credit spreads in Brazil. A very large portion of the Brazilian economy remains at the margin of the credit market because their operations are not properly documented from a creditor's point of view. Complex and high taxation, bureaucratic

difficulties to operate a business legally, and even the corruption of all sorts government officers and inspectors push small business into illegality. Many believe that a simplified tax code will be nearly impossible due to conflicting political interest between the states and the central government. The reduction of the costs to execute bad loans though, consists of many initiatives, that are quite possible to implement.

The Central Bank proposal to reduce the anti-creditor bias of lower court judges is very important. Market representatives as well as government regulators should promote seminars with judges to clarify why their pro-debtor rulings, particularly when contract terms are ignored, is very important to reduce the costs with unnecessary appeals and injunctions and shorten the legal process. Solving the uncertainties over the 12% real interest rate constitutional provision as well as the issue of the doubts some judges have about the use of compound interest is also very important and will reduce the judicial uncertainty in the system.

The Central Bank is proposing new legislation to facilitate proper positive credit information sharing. The Central Bank also plans to include more information of a positive nature to turn its Credit Center into a true credit record database. The Central Bank has also introduced regulation allowing the portability of credit records amongst financial institutions. Portability can only be attained with the customer's permission to have his information shared. The intention is to promote the advantages of the Credit Center in order to obtain debtors authorization for public consultation of the database in hope to reduce credit costs as more information about borrowers is made available.

Market organizations such as ANDIMA and ANBID are pushing for a simplified standard bond indenture. The simplified bond would hopefully reduce issuance costs, increase market volume and maybe reduce underwriting fees, that are relatively high in Brazil when compared to Mexico's and those in developed countries. Simplified bonds would be approved on some sort of a fast track by the CVM, reducing legal processing costs as well. So far, no bond with this new feature has been offered yet. It has been suggested that the BNDES champions simplified bonds in the market. The BNDES has also been called to help induce liquidity into the secondary bond market because its portfolio is so large, albeit comprised largely of privately issued bonds. So far, nothing concrete has been enacted.

Another important initiative has been the consolidation of Brazilian yield curves in strategic markets (U.S. dollar, euro, and yen) with liquid benchmarks, paving the way for other borrowers to

access long-term financing, and broadening the investor base in Brazilian public debt. The Brazilian government has also pursued a strategy of buying back restructured debt (the Brady bonds) and replacing them with new bonds (global bonds and eurobonds). The same is intended in the domestic markets. In our survey we identified that market participants believe that the absence of a full yield curve hurts the market for bonds.

No priority is given to short-term debt over long-term debt in the Brazilian bankruptcy laws. This did not help the Brazilian commercial paper market. Many potential issuers that are not in the market today could benefit from a more privileged treatment under the bankruptcy law. Our results show that issuance is concentrated in a few larger and more financially sophisticated listed firms. Commercial papers could be an easier entry mode into the market. Even non public firms are allowed to issue them.

In closing, we review our main econometric findings on the determinants of bond usage. Having more collateral is associated with greater usage of domestic debt, both through bank loans and bond issues, but not with international bond use. Asset backed securities are used more often by exporting firms. Accounting return is negatively related to leverage in all forms. More profitable firms use less debt. Size is positively related to debt usage. Larger firms tend to borrow more but at a decreasing rate as they get larger. Corporate governance variables had an influence only on international debt issuance. Better governed and foreign owned firms issue more abroad. The domestic bond market and the bank loan market seem to be substitutes. However, firms the issue abroad also tend to use more bank loans and bonds, suggesting that more sophisticated and larger firms use all kinds of debt at their disposal. Firms that use bank loans are smaller and less financially sophisticated than those that issue domestic bonds which, in their turn, are smaller and less sophisticated than those that issue bonds internationally. Finally, our results suggest that smaller and less financially sophisticated firms resort to bank loans, in contrast to larger and more financially sophisticated firms.

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Appendix 1 – Results for the Subjective Questions of the Investors Survey

4. Do you think that the following characteristics of the local corporate bond market limit your demand for this kind of asset?

	YES	NO
1. Low Returns	33%	67%
2. High insolvency risk	31%	69%
3. Low liquidity/functioning of the secondary market	95%	5%
4. Unfavorable tax treatment	15%	85%
5. Lack of timely information about issuer	23%	77%
6. Low quality of legal recourse in the event of default	62%	38%
7. Excessive regulatory/legal constraints	23%	77%
8. Low market capitalization (stock of outstanding bonds)	72%	28%
9. Absence of a complete benchmark yield curve	67%	33%
10. Absence of a benchmark market index to track	31%	69%
11. Low quality (or absence) of the clearing and settlement system	5%	95%
12. Low quality (or high cost) of the credit rating system	28%	72%
13. Other (please specify)	-	-

5. Does the current regulatory framework (laws governing your sector, state regulator for your sector…) impose any restriction on the allocation of your assets?

YES	54%
NO	46%

6. If the regulatory framework did not impose any restriction on the allocation of your assets, how would you change the shares of the following items in your portfolio? Please mark which assets would increase importance (weight) in your portfolio and which would decrease their importance.

	Increase	Unchanged	Decrease
A. Domestic assets	20%	73%	7%
A.1 Domestic stocks	11%	89%	0%
A.2 Domestic government bonds	17%	61%	22%
A.3 Domestic bonds by state-owned companies	26%	74%	0%
A.4 Domestic bonds by private-owned companies	33%	67%	0%
A.5 Asset-backed securities	47%	53%	0%
A.6 Domestic commercial papers	12%	88%	0%
A.7 Certificates of deposit	22%	78%	0%
B. Foreign assets (cash, bonds or equities)	52%	48%	0%

7. Suppose that your portfolio is increased by 50%. How would you allocate the new resources compared to your current portfolio allocation? Please mark which assets would increase importance (weight) in your portfolio and which would decrease their importance. (If the holding of a given assets increases by 50 percent then its weight would remain unchanged)

	Increase	Unchanged	Decrease
A. Domestic assets	44%	56%	0%
A.1 Domestic stocks	36%	62%	2%
A.2 Domestic government bonds	49%	49%	2%
A.3 Domestic bonds by state-owned companies	10%	90%	0%
A.4 Domestic bonds by private-owned companies	33%	64%	3%
A.5 Asset-backed securities	54%	46%	0%
A.6 Domestic commercial papers	10%	87%	3%
A.7 Certificates of deposit	38%	59%	3%
B. Foreign assets (cash, bonds or equities)	8%	92%	0%

8. If the following bonds became widely available, would you be interested in holding them in your portfolio?

	Yes	No
a. Bonds in local currency issued by AAA institutions (World Bank, IDB…)	79%	21%
b. CPI indexed bonds issued by AAA institutions (World Bank, IDB…)	74%	26%

9. Do you agree or disagree with the following statements (Average for each statement, scaled by 1=strongly agree… 5 = strongly disagree)

A large stock of public sector bonds is important for the development of the corporate bond market.	3.71
The yield curve provided by public bonds is crucial for pricing corporate bonds.	1.97
Government and corporate bonds are substitutes in your portfolio.	3.67
If the yield on government bonds were to increase significantly and that of private bonds remained constant I would sell private bonds and buy government bonds.	1.97

Appendix 2 – Results for the Subjective Questions of the Firm Survey

3. Bond financing

a. Does your company have any outstanding bonds?

YES	81%
NO	19%

b. Have you issued bonds in 2002, 2003 or 2004?

YES	81%
NO	19%

c. Do you plan to issue bonds during 2005 and 2006?

YES	19%
NO	19%
UNCERTAIN	62%

d. If you issued bonds in the past and no longer do it what is the main reason for this change in your funding strategy?

High issuance cost	33%
High interest rate	0%
High taxes	0%
Low demand	0%
Issuance requirements	11%
Other (please specify)	56%

4. In what way do the following factors are a problem for your ability to finance your operations by borrowing from banks? (Percentage of firms responding "1 - it is a problem")

	Banks located in Brazil	Banks located outside Brazil
Collateral requirements	41%	41%
High interest rate	89%	37%
Bank monitoring of firm's operations	15%	19%
Perception that banks are not lending much	11%	22%
Slow process of loan approval and disbursement	48%	48%
Other (please specify)	-	-

5. In what way do the following factors are a problem for your ability to finance your operations by issuing bonds? (Percentage of firms responding "1 - it is a problem")

	Domestic Bonds	Foreign Bonds
Underwriters' fees	48%	44%
Credit rating agencies' fees	44%	37%
Lawyers´fees	41%	48%
Registration fees	22%	19%
Disclosure requirements (comply with additional accounting requirements, make accounting information publicly available…)	26%	19%
Minimum issue requirements	22%	22%
Other regulatory requirements	33%	30%
Low liquidity in the secondary market	37%	19%
The market is very small	44%	7%
The is no junk bond market	30%	19%
Other (please specify)	-	-

6. In what way do the following factors are a problem for your ability to finance your operations in the domestic market? (Percentage of firms responding "1 - it is a problem")

	Domestic bank loans	Domestic bonds
Speed of access to required financing	30%	67%
Maturity of financing	74%	30%
Interest rate	81%	52%
Minimum amount required for loans or issuance	15%	33%
Guarantee requirement	44%	52%
Information requirement	4%	26%
Other (please specify)	-	-

7. What are according to you perception the relative advantages of each form of financing? (Average for each attribute and form of financing, scaled by 1=best alternative…6=worst alternative)

	Average Ranking (1 to 6)					
	Banks Located in Brazil	Domestic Bonds	Banks Outside Brazil	Bonds Issued Abroad	Asset-Backed Securities	Suppliers' Credit
Interest rate cost	4.44	3.26	3.11	2.74	2.59	3.48
Availability of local currency lending	2.41	2.52	3.63	3.37	2.53	3.70
Available indexation alternatives (CPI, other)	2.48	2.52	3.19	3.41	2.81	4.26
Availability of long term lending	3.96	2.96	2.78	1.48	2.85	5.19
Non interest rate costs (*)	2.70	3.22	3.19	3.78	3.48	2.74
Tax treatment	3.15	2.59	3.48	3.26	2.59	3.04
Possibility of renegotiation in case of economic difficulties	2.37	3.26	3.15	3.74	4.11	2.63
Costs related to disclosure requirements	2.26	3.19	3.33	4.00	3.22	2.85
Size of potential market relative to firm's financing needs	2.89	2.93	3.26	1.89	3.22	4.33

(*) In the case of banks: fees, commissions, signing costs etc. In the case of bonds: underwriters fees, credit rating fees etc…

Table 1. Level and Composition of Central Government Bonds (as a percentage of GDP)

Year	DOMESTIC BONDS (debt issued using domestic law)								FOREIGN BONDS (debt issued under foreign law)						TOTAL GOVT. BONDS
	Foreign Currency		Domestic Currency					TOTAL DOMESTIC BONDS	Foreign Currency		Domestic Currency			TOTAL FOREIGN BONDS	
			Nominal		Indexed							Indexed			
					Prices		Overnight Interest Rate				Nominal	Prices	Overnight Interest Rate		
	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term			Short Term	Long Term					
1985	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1986	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1987	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1988	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1989	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1990	NA	0,00	0,85	NA	NA	0,00	5,62	6,47	0,00	0,00	0,00	0,00	0,00	0,00	6,47
1991	NA	0,25	0,31	NA	NA	0,69	4,57	5,82	0,00	0,00	0,00	0,00	0,00	0,00	5,82
1992	NA	1,11	0,03	NA	NA	8,10	1,39	10,64	0,00	0,00	0,00	0,00	0,00	0,00	10,64
1993	NA	9,25	1,74	NA	NA	15,41	1,33	27,74	0,00	0,23	0,00	0,00	0,00	0,23	27,97
1994	NA	4,48	0,16	NA	NA	3,25	2,23	10,12	0,00	8,06	0,00	0,00	0,00	8,06	18,18
1995	NA	0,61	3,03	NA	NA	0,05	2,86	6,55	0,00	6,42	0,00	0,00	0,00	6,42	12,96
1996	NA	1,60	6,17	NA	NA	0,00	0,00	7,77	0,00	5,98	0,00	0,00	0,00	5,98	13,75
1997	NA	2,78	0,56	NA	NA	0,00	14,76	18,11	0,55	5,58	0,00	0,00	0,00	6,13	24,23
1998	NA	2,65	0,54	NA	NA	0,00	14,06	17,25	0,28	6,17	0,00	0,00	0,00	6,45	23,70
1999	1,49	1,32	4,08	0,00	0,01	0,08	15,52	22,49	0,00	9,16	0,00	0,00	0,00	9,16	31,65
2000	0,61	0,75	6,63	0,22	0,08	0,56	18,60	27,45	0,58	9,00	0,00	0,00	0,00	9,58	37,03
2001	1,51	1,77	3,94	0,13	0,38	1,86	22,96	32,54	0,37	10,01	0,00	0,00	0,00	10,38	42,92
2002	1,31	2,40	0,98	0,03	0,30	3,20	26,45	34,67	1,14	13,76	0,00	0,00	0,00	14,91	49,58
2003	0,93	1,01	5,04	0,82	0,43	3,55	27,85	39,63	0,71	10,31	0,00	0,00	0,00	11,03	50,65
2004	0,23	0,43	8,17	0,88	0,97	3,49	25,40	39,57	0,60	8,48	0,00	0,00	0,00	9,08	48,65
2005	0,12	0,15	7,74	6,35	0,83	6,44	25,70	47,33	0,39	7,05	0,19	0,00	0,00	7,63	54,96

Note: long term is more than one year and short-term is less than one year. Foreign currency bonds include domestic currency bonds indexed to the exchange rate, and domestic currency bonds include bonds payable in foreign currency but indexed to the domestic currency. Data come from the National Treasury, Central Bank of Brazil, and Bank for International Settlements (BIS).

Table 2. Level and Composition of Local Government Bonds (as a percentage of GDP)

Year	DOMESTIC BONDS (debt issued using domestic law)								FOREIGN BONDS (debt issued under foreign law)						TOTAL GOVT. BONDS
	Foreign Currency		Domestic Currency					TOTAL DOMESTIC BONDS	Foreign Currency		Domestic Currency			TOTAL FOREIGN BONDS	
			Nominal		Indexed							Indexed			
	Short Term	Long Term	Short Term	Long Term	Prices		Overnight Interest Rate		Short Term	Long Term	Nominal	Prices	Overnight Interest Rate		
					Short Term	Long Term									
1985	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1986	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1987	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1988	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1989	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1990	NA	NA	0,00	6,10	NA	NA	NA	6,10	0,00	0,00	0,00	0,00	0,00	0,00	6,10
1991	NA	NA	0,00	5,87	NA	NA	NA	5,87	0,00	0,00	0,00	0,00	0,00	0,00	5,87
1992	NA	NA	0,00	9,45	NA	NA	NA	9,45	0,00	0,00	0,00	0,00	0,00	0,00	9,45
1993	NA	NA	0,00	3,78	NA	NA	NA	3,79	0,00	0,00	0,00	0,00	0,00	0,00	3,79
1994	NA	NA	0,00	5,27	NA	NA	NA	5,27	0,00	0,00	0,00	0,00	0,00	0,00	5,27
1995	NA	NA	0,00	5,47	NA	NA	NA	5,47	0,00	0,00	0,00	0,00	0,00	0,00	5,47
1996	NA	NA	0,00	6,19	NA	NA	NA	6,19	0,00	0,02	0,00	0,00	0,00	0,02	6,21
1997	NA	NA	0,00	4,37	NA	NA	NA	4,37	0,00	0,02	0,00	0,00	0,00	0,02	4,39
1998	NA	NA	0,00	2,35	NA	NA	NA	2,35	0,00	0,03	0,00	0,00	0,00	0,03	2,37
1999	NA	NA	0,00	1,26	NA	NA	NA	1,26	0,00	0,01	0,00	0,00	0,00	0,01	1,28
2000	NA	NA	0,00	0,19	NA	NA	NA	0,19	0,00	0,01	0,00	0,00	0,00	0,01	0,20
2001	NA	NA	0,00	0,22	NA	NA	NA	0,22	0,00	0,01	0,00	0,00	0,00	0,01	0,23
2002	NA	NA	0,02	0,10	NA	NA	NA	0,12	0,00	0,00	0,00	0,00	0,00	0,00	0,12
2003	NA	NA	0,01	0,15	NA	NA	NA	0,16	0,00	0,03	0,00	0,00	0,00	0,03	0,19
2004	NA	NA	0,01	0,16	NA	NA	NA	0,17	0,00	0,04	0,00	0,00	0,00	0,04	0,21
2005	NA	NA	0,00	0,05	NA	NA	NA	0,05	0,00	0,05	0,00	0,00	0,00	0,05	0,11

Note: long term is more than one year and short-term is less than one year. Foreign currency bonds include domestic currency bonds indexed to the exchange rate, and domestic currency bonds include bonds payable in foreign currency but indexed to the domestic currency. Data come from the National Treasury, Central Bank of Brazil, and Bank for International Settlements (BIS).

Table 3. Level and Composition of Central Bank Bonds (as a percentage of GDP)

Year	DOMESTIC BONDS (debt issued using domestic law)								FOREIGN BONDS (debt issued under foreign law)						TOTAL GOVT. BONDS
	Foreign Currency		Domestic Currency					TOTAL DOMESTIC BONDS	Foreign Currency		Domestic Currency			TOTAL FOREIGN BONDS	
			Nominal		Indexed						Nominal	Indexed			
	Short Term	Long Term	Short Term	Long Term	Prices		Overnight Interest Rate		Short Term	Long Term		Prices	Overnight Interest Rate		
					Short Term	Long Term									
1985	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1986	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1987	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1988	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1989	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1990	NA	0,00	3,20	NA	0,00	0,00	0,11	3,31	0,00	0,00	0,00	0,00	0,00	0,00	3,31
1991	NA	0,00	1,20	NA	0,00	0,00	0,44	1,64	0,00	0,00	0,00	0,00	0,00	0,00	1,64
1992	NA	0,00	14,02	NA	0,00	0,00	0,93	14,94	0,00	0,00	0,00	0,00	0,00	0,00	14,94
1993	NA	0,00	7,64	NA	0,00	0,00	0,01	7,65	0,00	0,00	0,00	0,00	0,00	0,00	7,65
1994	NA	0,00	6,96	NA	0,00	0,00	0,61	7,58	0,00	0,00	0,00	0,00	0,00	0,00	7,58
1995	NA	0,00	4,14	NA	0,00	0,00	3,49	7,64	0,00	0,00	0,00	0,00	0,00	0,00	7,64
1996	NA	0,00	6,46	NA	0,00	0,00	4,21	10,67	0,00	0,00	0,00	0,00	0,00	0,00	10,67
1997	NA	1,34	3,25	NA	0,00	0,00	2,90	7,49	0,00	0,00	0,00	0,00	0,00	0,00	7,49
1998	NA	3,70	5,29	NA	0,00	0,00	2,47	11,45	0,00	0,00	0,00	0,00	0,00	0,00	11,45
1999	NA	6,36	0,00	NA	0,00	0,00	0,12	6,47	0,00	0,00	0,00	0,00	0,00	0,00	6,47
2000	NA	7,62	0,00	NA	0,00	0,00	0,00	7,62	0,00	0,00	0,00	0,00	0,00	0,00	7,62
2001	NA	10,18	0,00	NA	0,00	0,00	0,00	10,18	0,00	0,00	0,00	0,00	0,00	0,00	10,18
2002	NA	4,96	0,00	NA	0,00	0,00	0,00	4,96	0,00	0,00	0,00	0,00	0,00	0,00	4,96
2003	NA	1,97	0,00	NA	0,00	0,00	0,00	1,97	0,00	0,00	0,00	0,00	0,00	0,00	1,97
2004	NA	0,76	0,00	NA	0,00	0,00	0,00	0,76	0,00	0,00	0,00	0,00	0,00	0,00	0,76
2005	NA	0,35	0,00	NA	0,00	0,00	0,00	0,35	0,00	0,00	0,00	0,00	0,00	0,00	0,35

Note: long term is more than one year and short-term is less than one year. Foreign currency bonds include domestic currency bonds indexed to the exchange rate, and domestic currency bonds include bonds payable in foreign currency but indexed to the domestic currency. Data come from the National Treasury, Central Bank of Brazil, and Bank for International Settlements (BIS).

Table 4. Amount Outstanding of Federal Debt

Panel A: Internal Federal Debt

Year	Fixed Interest Rate Bills		Floating Interest Rate Bills		Inflation Adjusted Notes		U.S. Dollar Adjusted Notes		Other		Total Internal Debt (R$ million)
	Volume (R$ million)	% of Total	Volume (R$ million)	% of Total	Volume (R$ million)	% of Total	Volume (R$ million)	% of Total	Volume (R$ million)	% of Total	
1995	19.588,12	36,41%	18.460,28	34,31%	333,42	0,62%	3.918,60	7,28%	11.501,89	21,38%	53.802,30
1996	48.076,52	32,69%	0,00	0,00%	8,59	0,01%	12.443,26	8,46%	86.559,06	58,85%	147.087,42
1997	4.913,84	2,12%	128.553,29	55,37%	0,00	0,00%	24.187,20	10,42%	74.509,83	32,09%	232.164,16
1998	4.913,84	2,06%	128.553,29	53,81%	0,00	0,00%	24.187,20	10,12%	81.247,53	34,01%	238.901,86
1999	39.716,56	10,54%	151.128,12	40,09%	830,60	0,22%	27.346,06	7,25%	157.944,29	41,90%	376.965,62
2000	75.438,03	17,66%	204.850,22	47,96%	7.022,46	1,64%	15.000,48	3,51%	124.778,94	29,22%	427.090,12
2001	48.806,73	9,65%	275.243,08	54,40%	26.781,63	5,29%	39.204,29	7,75%	115.953,55	22,92%	505.989,27
2002	13.583,59	2,44%	356.026,00	63,90%	47.230,00	8,48%	49.893,00	8,95%	90.472,00	16,24%	557.204,59
2003	91.309,85	12,98%	433.346,53	61,61%	61.897,43	8,80%	30.110,13	4,28%	86.656,05	12,32%	703.319,99
2004	159.841,57	20,00%	448.719,57	56,15%	78.740,71	9,85%	11.772,93	1,47%	100.104,18	12,53%	799.178,96
2005	273.066,78	27,86%	497.907,65	50,80%	140.818,33	14,37%	5.206,28	0,53%	63.209,10	6,45%	980.208,14

Panel B: External Federal Debt

Year	Bonds and Notes		Multilateral Organizations		Private Banks and Government Agencies		Paris Club		Total External Debt (R$ million)
	Volume (R$ million)	% of Total	Volume (R$ million)	% of Total	Volume (R$ million)	% of Total	Volume (R$ million)	% of Total	
1995	NA	NA	NA	NA	NA	NA	NA	NA	NA
1996	NA	NA	NA	NA	NA	NA	NA	NA	NA
1997	53.347,56	73,17%	5.045,69	6,92%	2.846,21	3,90%	11.670,15	16,01%	72.909,61
1998	58.983,92	72,43%	5.985,11	7,35%	4.330,86	5,32%	12.131,16	14,90%	81.431,05
1999	89.184,62	73,05%	12.550,34	10,28%	5.361,67	4,39%	14.991,55	12,28%	122.088,19
2000	105.519,27	73,90%	16.669,46	11,67%	6.698,25	4,69%	13.907,04	9,74%	142.794,02
2001	124.482,87	73,49%	23.370,79	13,80%	7.894,91	4,66%	13.635,14	8,05%	169.383,71
2002	200.667,70	74,39%	38.952,45	14,44%	11.989,03	4,44%	18.143,37	6,73%	269.752,54
2003	171.613,97	75,92%	30.947,30	13,69%	9.298,43	4,11%	14.193,48	6,28%	226.053,18
2004	160.369,28	78,63%	25.456,11	12,48%	8.415,12	4,13%	9.702,98	4,76%	203.943,50
2005	144.155,86	81,23%	22.075,82	12,44%	7.190,38	4,05%	4.051,87	2,28%	177.473,93

Note: data come from the National Treasury and Central Bank of Brazil.

Table 5. Level and Composition of Bonds Issued by the Private Sector (as a percentage of GDP)

Year	DOMESTIC BONDS (debt issued using domestic law)				FOREIGN BONDS (debt issued under foreign law)			
	Domestic Currency			Foreign Currency	Domestic Currency			Foreign Currency
	Nominal	Indexed to Prices	Indexed to Interest Rate		Nominal	Indexed to Prices	Indexed to Interest Rate	
1985	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
1986	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
1987	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,14
1988	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,07
1989	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,02
1990	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,02
1991	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
1992	0,01	0,57	1,96	0,04	0,00	0,00	0,00	0,39
1993	0,01	1,00	3,43	0,08	0,00	0,00	0,00	2,19
1994	0,03	2,92	9,99	0,23	0,00	0,00	0,00	2,28
1995	0,02	2,55	8,73	0,20	0,00	0,00	0,00	2,13
1996	0,02	2,26	7,74	0,18	0,00	0,00	0,00	3,19
1997	0,02	2,21	7,54	0,17	0,00	0,00	0,00	3,70
1998	0,03	2,94	10,06	0,23	0,00	0,00	0,00	3,97
1999	0,33	1,89	7,89	0,20	0,00	0,00	0,00	5,52
2000	0,24	1,42	6,44	0,13	0,00	0,00	0,00	4,90
2001	0,24	2,04	7,39	0,16	0,00	0,00	0,00	6,28
2002	0,01	2,01	6,80	0,15	0,00	0,00	0,00	7,60
2003	0,02	2,58	7,71	0,20	0,00	0,00	0,00	9,41
2004	0,04	3,26	9,03	0,31	0,01	0,00	0,00	7,56
2005	0,01	1,85	12,57	0,47	0,05	0,00	0,00	6,62

Note: include short-term instruments (such as commercial papers etc), medium-term notes and long-term bonds. Data come from the Brazilian Securities Exchange Commission (CVM), National Debenture System (SND), and Bank for International Settlements (BIS).

Table 6. Asset-Backed Securities (as a percentage of GDP)

Year	Mortgage-Backed Securities				Securitization of Receivables										TOTAL ASSET-BACKED SECURITIES
	Nominal Domestic Currency	Inflation Indexed	Foreign Currency	Total	Commercial Debt		Credit Card Debt		Other Consumer Loans		Export Notes		Receivables Investment Funds ("FIDCs")		
					Short Term	Long Term	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term	
1985	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	NA	0,00	0,00	0,00	0,00
1986	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	NA	0,00	0,00	0,00	0,00
1987	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	NA	0,00	0,00	0,00	0,00
1988	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	NA	0,00	0,00	0,00	0,00
1989	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	NA	0,00	0,00	0,00	0,00
1990	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	NA	0,00	0,00	0,00	0,00
1991	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	NA	0,00	0,00	0,00	0,00
1992	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	NA	0,00	0,00	0,00	0,00
1993	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	NA	0,00	0,00	0,00	0,00
1994	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	NA	0,00	0,00	0,00	0,00
1995	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	NA	0,00	0,00	0,00	0,00
1996	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	0,07	0,00	0,00	0,00	0,07
1997	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	0,08	0,00	0,00	0,00	0,08
1998	0,00	0,00	0,00	0,00	NA	NA	NA	NA	NA	NA	0,03	0,00	0,00	0,00	0,03
1999	0,00	0,02	0,00	0,02	NA	NA	NA	NA	NA	NA	0,02	0,00	0,00	0,00	0,04
2000	0,00	0,02	0,00	0,02	NA	NA	NA	NA	NA	NA	0,02	0,00	0,00	0,00	0,04
2001	0,01	0,02	0,00	0,03	NA	NA	NA	NA	NA	NA	0,01	0,00	0,00	0,00	0,04
2002	0,02	0,01	0,00	0,03	NA	NA	NA	NA	NA	NA	0,02	0,00	0,00	0,00	0,05
2003	0,02	0,01	0,00	0,03	NA	NA	NA	NA	NA	NA	0,01	0,00	0,00	0,05	0,09
2004	0,04	0,01	0,00	0,05	NA	NA	NA	NA	NA	NA	0,01	0,00	0,00	0,23	0,29
2005	0,13	0,03	0,00	0,16	NA	NA	NA	NA	NA	NA	0,00	0,00	0,00	0,43	0,59

Note: data come from the Brazilian Securities Exchange Commission (CVM), National Debenture System (SND), Bovespa Fix, and Central Bank of Brazil.

Table 7. Main Characteristics of Brazilian Listed Firms

Descriptive Statistics	Foreigner Ownership %	Employees	Years Since Incorporation	Total Revenues		Assets (R$ million)	Use of Derivatives	ADR
				Amount (R$ million)	Exports (% Revenues)			
Mean	18,60%	7.218	46,67	2.705,34	12,16%	5.431,16	45,33%	19,89%
Median	0,00%	2.050	45,00	498,11	0,00%	704,84	0,00%	0,00%
Std Dev	32,04%	29.132	32,54	8.960,08	20,04%	21.346,26	49,85%	39,97%
Minimum	0,00%	0	1,00	0,00	0,00%	0,00	0,00%	0,00%
Maximum	100,00%	433.000	196,00	150.403,21	98,00%	239.014,14	100,00%	100,00%

Note: data for 2004. Source: Economatica database, and Brazilian Securities and Exchange Commission (CVM).

Table 8. Capital Structure of Brazilian Firms

Panel A: Amount Outstanding (% of assets)

Descriptive Statistics	Shareholder´s Equity (% Assets)	Financial Liabilities		National Banks		International Banks		Domestic Bonds		International Bonds		Asset-Backed Securities		BNDES		Suppliers		Other	
		Amount (% Assets)	% in Foreign Currency	Amount (% Assets)	% in Foreign Currency	Amount (% Assets)	% in Foreign Currency	Amount (% Assets)	% in Foreign Currency	Amount (% Assets)	% in Foreign Currency	Amount (% Assets)	% in Foreign Currency	Amount (% Assets)	% in Foreign Currency	Amount (% Assets)	% in Foreign Currency	Amount (% Assets)	% in Foreign Currency
Mean	46,11%	57,29%	23,55%	15,44%	6,34%	5,15%	99,85%	18,04%	0,48%	1,45%	99,90%	1,13%	3,73%	4,77%	2,83%	8,23%	2,27%	3,26%	5,77%
Median	31,62%	30,63%	11,88%	0,94%	0,00%	0,00%	100,00%	0,00%	0,00%	0,00%	100,00%	0,00%	0,00%	0,00%	0,00%	5,63%	0,00%	0,00%	0,00%
Std Dev	540,13%	245,85%	28,15%	141,93%	21,06%	8,64%	2,98%	196,81%	5,67%	6,75%	1,08%	10,20%	18,98%	14,79%	9,48%	9,49%	11,11%	14,33%	21,19%
Minimum	-6225,36%	0,00%	0,00%	0,00%	0,00%	0,00%	42,31%	0,00%	0,00%	0,00%	87,60%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Maximum	99,82%	3780,70%	100,00%	2695,28%	100,00%	62,11%	100,00%	3716,64%	100,00%	97,62%	100,00%	144,11%	100,00%	176,06%	81,40%	93,89%	96,10%	212,98%	100,00%

Panel B: Brazilian Firms by Type of Bonds Issued

Firms by Type of Bonds Issued	% of Firms
Firms Issuing Domestic Bonds	29,60%
Firms Issuing International Bonds	15,20%
Firms Issuing Asset-Backed Securities	6,67%

Note: data for 2004. Source: Economatica database, and Brazilian Securities and Exchange Commission (CVM).

Table 9. Capital Structure of Brazilian Firms Issuing Bonds

Panel A: Firms Issuing Domestic Bonds

Descriptive Statistics	Foreigner Stake	Years Since Incorporation	Employees	Total Revenues		Assets (R$ million)	Shareholder´s Equity (% Assets)	Use of Derivatives	Financial Liabilities (% Assets)	National Banks (% Assets)	International Banks (% Assets)	Domestic Bonds (% Assets)	International Bonds (% Assets)	Asset-Backed Securities (% Assets)	BNDES (% Assets)	Suppliers (% Assets)	Other (% Assets)
				Amount (R$ million)	Exports (% Revenues)												
Mean	18,16%	43,84	9.083	5.471,60	10,20%	10.123,00	63,24%	54,95%	98,51%	6,58%	6,88%	60,94%	2,59%	0,95%	8,88%	7,93%	4,32%
Median	0,00%	43,00	3.466	1.580,61	0,00%	2.263,05	27,17%	100,00%	44,59%	1,60%	2,51%	8,38%	0,00%	0,00%	2,78%	5,60%	0,00%

Panel B: Firms Issuing International Bonds

Descriptive Statistics	Foreigner Stake	Years Since Incorporation	Employees	Total Revenues		Assets (R$ million)	Shareholder´s Equity (% Assets)	Use of Derivatives	Financial Liabilities (% Assets)	National Banks (% Assets)	International Banks (% Assets)	Domestic Bonds (% Assets)	International Bonds (% Assets)	Asset-Backed Securities (% Assets)	BNDES (% Assets)	Suppliers (% Assets)	Other (% Assets)
				Amount (R$ million)	Exports (% Revenues)												
Mean	22,41%	45,20	13.797	10.266,01	8,46%	26.972,55	22,39%	92,98%	36,60%	4,18%	5,60%	4,58%	9,53%	0,53%	4,31%	6,90%	1,14%
Median	0,48%	38,50	4.314	4.378,10	0,00%	6.975,33	28,01%	100,00%	38,28%	1,40%	2,55%	0,34%	3,94%	0,00%	2,02%	5,60%	0,02%

Panel C: Firms Issuing Asset-Backed Securities

Descriptive Statistics	Foreigner Stake	Years Since Incorporation	Employees	Total Revenues		Assets (R$ million)	Shareholder´s Equity (% Assets)	Use of Derivatives	Financial Liabilities (% Assets)	National Banks (% Assets)	International Banks (% Assets)	Domestic Bonds (% Assets)	International Bonds (% Assets)	Asset-Backed Securities (% Assets)	BNDES (% Assets)	Suppliers (% Assets)	Other (% Assets)
				Amount (R$ million)	Exports (% Revenues)												
Mean	12,26%	49,32	21.247	9.862,26	14,51%	42.093,36	21,76%	80,00%	42,16%	2,28%	6,00%	5,15%	2,25%	16,89%	4,81%	4,23%	0,54%
Median	0,00%	38,00	9.242	5.876,52	0,00%	10.130,81	20,66%	100,00%	38,94%	0,00%	0,85%	0,00%	2,18%	3,25%	1,49%	2,84%	0,00%

Note: data for 2004. Source: Economatica database, and Brazilian Securities and Exchange Commission (CVM).

Table 10. Main Characteristics of Domestic Bonds in Our Sample of Brazilian Firms

Panel A: Domestic Bonds by Public and Private Offer

Domestic Bonds by Offer	% of Domestic Bonds
Publicly Placed Bonds	72,93%
Privately Placed Bonds	27,07%

Panel B: Descriptive Statistics of Publicly Placed Bonds

Descriptive Statistics	Issued Volume (R$ Thousands)	Turnover in the Secondary Market	Original Term (Years)	Remaining Term (Years)
Mean	227.189,26	0,23	8,37	4,65
Median	120.000,00	0,02	7,00	3,92
Std Dev	268.545,22	0,44	5,91	3,29
Minimum	2.000,00	0,00	2,00	0,09
Maximum	1.500.000,00	3,45	31,34	15,42

Panel C: Publicly Placed Bonds by Collateral, Interest Rates, and Type

Publicly Placed Bonds by Collateral	% of Publicly Placed Bonds
Fixed	20,52%
Floating	12,66%
Unsecured	37,55%
Subordinated	29,26%

Publicly Placed Bonds by Type	% of Publicly Placed Bonds
Straight	85,59%
Convertible	14,41%

Publicly Placed Bonds by Interest Rates	% of Publicly Placed Bonds
Fixed	0,44%
Floating	45,85%
Inflation Adjusted	34,50%
Long-Term ("TJLP")	13,10%
% Earnings or Revenues	3,06%
U.S. Dollar Adjusted	3,06%

Note: data for 2004. Source: Brazilian Securities and Exchange Commission (CVM), National Debenture System (SND), and Bovespa Fix.

Table 11. Main Characteristics of Privately Placed Bonds in Our Sample of Brazilian Firms

Panel A: Descriptive Statistics of Privately Placed Bonds

Descriptive Statistics	Issued Volume (R$ Thousands)	Turnover in the Secondary Market	Original Term (Years)	Remaining Term (Years)
Mean	146.047,20	0,00	8,83	4,17
Median	25.702,50	0,00	7,00	2,62
Std Dev	354.984,31	0,01	5,41	5,23
Minimum	60,00	0,00	3,00	0,08
Maximum	2.693.080,00	0,10	25,00	24,99

Panel B: Privately Placed Bonds by Collateral, Interest Rates, and Type

Privately Placed Bonds by Collateral	% of Privately Placed Bonds
Fixed	25,88%
Floating	34,12%
Unsecured	15,29%
Subordinated	24,71%

Privately Placed Bonds by Interest Rates	% of Privately Placed Bonds
Fixed	7,06%
Floating	15,29%
Inflation Adjusted	12,94%
Long-Term ("TJLP")	55,29%
% Earnings or Revenues	9,41%

Privately Placed Bonds by Type	% of Privately Placed Bonds
Straight	28,24%
Convertible	71,76%

Note: data for 2004. Source: Brazilian Securities and Exchange Commission (CVM), National Debenture System (SND), and Bovespa Fix.

Table 12. Panel Regressions for Leverage

Independent Variable	Dependent Variable = Lev			
	(1)	(2)	(3)	(4)
Tang	**0.35** (0,04)**	**0.34** (0,05)**	**0.35** (0,04)**	**0.66*** (0,00)**
Size	**-41.85*** (0,00)**	**-40.28*** (0,00)**	**-41.75*** (0,00)**	**-35.57*** (0,00)**
ROA	**-0.88*** (0,00)**	**-0.91*** (0,00)**	**-0.88*** (0,00)**	**-0.82*** (0,00)**
Vol	0,01 (0,85)	0,00 (0,94)	0,01 (0,82)	**-0.26*** (0,00)**
Tobin´s Q	**0.61*** (0,00)**		**0.60*** (0,00)**	0,20 (0,10)
Price/Book		-0,47 (0,26)	-0,43 (0,30)	**-2.54*** (0,00)**
Control				0,08 (0,76)
Own				-0,21 (0,45)
Control/Own				-4,75 (0,51)
CGI				0,07 (0,95)
F-statistic	385,19 (0,00)	1.062,10 (0,00)	350,29 (0,00)	100,23 (0,00)
Number of Observations	1.239	1.246	1.239	501
Adjusted R^2	0,74	0,89	0,74	0,74

Note: all variables are defined in the text. Industry and year dummies are omitted to conserve space. ***, **, * denote statistical significance at 1%, 5% and 10%, respectively, and p-values in parenthesis.

Table 13. Panel Regressions for Bank Loans

Independent Variable	Dependent Variable = Bank				
	(1)	(2)	(3)	(4)	(5)
Tang	**0.20*** (0,00)**	**0.20*** (0,00)**	**0.20*** (0,00)**	**0.49*** (0,00)**	**0.20*** (0,00)**
Size	**-9.51*** (0,00)**	**-9.24*** (0,00)**	**-9.50*** (0,00)**	**-22.12*** (0,00)**	**-11.02*** (0,00)**
ROA	**-0.19*** (0,00)**	**-0.19*** (0,00)**	**-0.19*** (0,00)**	**-0.68*** (0,00)**	**-0.20*** (0,00)**
Vol	**-0.06*** (0,00)**	**-0.05*** (0,00)**	**-0.06*** (0,00)**	**-0.22*** (0,00)**	**-0.06*** (0,00)**
Tobin´s Q	0,07 (0,13)		0,07 (0,14)	0,11 (0,21)	**0.10** (0,04)**
Price/Book		-0,06 (0,69)	-0,05 (0,73)	**-2.06*** (0,00)**	-0,16 (0,32)
Control				0,08 (0,66)	
Own				-0,21 (0,32)	
Control/Own				-2,66 (0,61)	
CGI				0,30 (0,70)	
Bond					**-0.09*** (0,00)**
IntBond					**0.64*** (0,00)**
AssetBacked					0,14 (0,75)
F-statistic	345,12 (0,00)	347,46 (0,00)	313,48 (0,00)	109,44 (0,00)	253,23 (0,00)
Number of Observations	1.239	1.246	1.239	501	1.232
Adjusted R^2	0,72	0,72	0,72	0,75	0,73

Note: all variables are defined in the text. Industry and year dummies are omitted to conserve space. ***, **, * denote statistical significance at 1%, 5% and 10%, respectively, and p-values in parenthesis.

Table 14. Panel Regressions for Domestic Bonds

Independent Variable	Dependent Variable = Bond				
	(1)	(2)	(3)	(4)	(5)
Tang	**0.16** **(0,04)**	**0.15** **(0,05)**	**0.16** **(0,04)**	**0.11*** **(0,00)**	**0.19**** **(0,02)**
Size	**-13.71*** **(0,00)**	**-13.14*** **(0,00)**	**-13.69*** **(0,00)**	**-6.75*** **(0,00)**	**-15.16*** **(0,00)**
ROA	**-0.10**** **(0,02)**	**-0.11*** **(0,01)**	**-0.10**** **(0,02)**	**-0.07*** **(0,08)**	**-0.13*** **(0,00)**
Vol	0,03 (0,14)	0,03 (0,17)	0,03 (0,13)	**0.02*** **(0,01)**	0,02 (0,29)
Tobin´s Q	**0.24*** **(0,00)**		**0.24*** **(0,00)**	-0,01 (0,82)	**0.25*** **(0,00)**
Price/Book		-0,11 (0,54)	-0,10 (0,60)	0,18 (0,32)	-0,13 (0,52)
Control				0,06 (0,25)	
Own				-0,05 (0,42)	
Control/Own				-0,30 (0,85)	
CGI				0,06 (0,80)	
Bank					**-0.14*** **(0,00)**
IntBond					0,14 (0,44)
AssetBacked					0,03 (0,96)
F-statistic	281,96 (0,00)	277,57 (0,00)	256,16 (0,00)	150,70 (0,00)	203,03 (0,00)
Number of Observations	1.239	1.246	1.239	501	1.232
Adjusted R^2	0,68	0,67	0,68	0,81	0,68

Note: all variables are defined in the text. Industry and year dummies are omitted to conserve space. ***, **, * denote statistical significance at 1%, 5% and 10%, respectively, and p-values in parenthesis.

Table 15. Panel Regressions for International Bonds

Independent Variable	Dependent Variable = IntBond						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Tang	0,00 (0,83)	0,01 (0,40)	0,00 (0,63)	**-0.03*** **(0,08)**	-0,01 (0,16)	**-0.03***** **(0,00)**	**-0.04***** **(0,00)**
Size	**0.57***** **(0,00)**	**0.54***** **(0,00)**	**0.60***** **(0,00)**	**0.48***** **(0,01)**	**0.59***** **(0,00)**	**0.48***** **(0,00)**	**0.48***** **(0,00)**
ROA	**-0.02*** **(0,06)**	**-0.02*** **(0,07)**	**-0.02**** **(0,04)**	-0,02 (0,61)	0,00 (0,83)	0,00 (0,91)	0,00 (0,71)
Vol	**0.01**** **(0,03)**	**0.01*** **(0,06)**	**0.01**** **(0,02)**	**0.02***** **(0,00)**	**0.01**** **(0,03)**	**0.01***** **(0,00)**	**0.01***** **(0,00)**
Tobin´s Q	-0,01 (0,14)		**-0.02***** **(0,01)**	-0,01 (0,52)	**-0.02**** **(0,02)**	**-0.02**** **(0,03)**	**-0.02**** **(0,02)**
Price/Book		0,00 (0,76)	**0.02**** **(0,05)**	0,03 (0,89)	**0.01*** **(0,07)**	0,05 (0,60)	0,07 (0,47)
Control				0,02 (0,64)			
Own				-0,01 (0,84)			
Control/Own				0,72 (0,41)			
CGI				**0.61***** **(0,00)**		**0.23***** **(0,00)**	**0.29***** **(0,00)**
Bank					**0.03***** **(0,00)**	**0.01*** **(0,06)**	0,01 (0,32)
Bond					0,01 (0,23)	**0.05***** **(0,00)**	**0.05***** **(0,00)**
AssetBacked					-0,14 (0,28)	0,03 (0,40)	
Export						**-0.39*** **(0,07)**	**-0.27*** **(0,06)**
ADR						0,24 (0,17)	0,11 (0,55)
Foreign Controlling Shareholder						**0.40***** **(0,01)**	
Foreign Shareholder							**0.32**** **(0,02)**
F-statistic	449,85 (0,00)	459,45 (0,00)	415,26 (0,00)	121,00 (0,00)	317,30 (0,00)	113,07 (0,00)	114,43 (0,00)
Number of Observations	1.239	1.246	1.239	501	1.232	460	460
Adjusted R^2	0,77	0,78	0,78	0,80	0,77	0,83	0,84

Note: all variables are defined in the text. Industry and year dummies are omitted to conserve space. ***, **, * denote statistical significance at 1%, 5% and 10%, respectively, and p-values in parenthesis.

Table 16. 3SLS Regressions

Independent Variable	Dependent Variable				
	Lev	Bank	Bond	IntBond	AssetBacked
Tang	**0.27*** (0,00)**	0,00 (0,96)	0,01 (0,79)	**-0.05* (0,07)**	**0.01** (0,04)**
Size	**7.56*** (0,00)**	3,02 (0,12)	**0.83* (0,07)**	0,23 (0,68)	**0.45*** (0,00)**
$(Size)^2$	**-0.15** (0,04)**	-0,13 (0,19)	**-0.05** (0,04)**	0,00 (0,93)	**-0.02*** (0,00)**
ROA	**-1.92*** (0,00)**	**-0.97*** (0,00)**	-0,13 (0,14)	-0,07 (0,45)	**0.07*** (0,01)**
Vol	**-0.14*** (0,00)**	**-0.09*** (0,02)**	-0,02 (0,11)	**0.03*** (0,00)**	0,00 (0,41)
Tobin´s Q	0,07 (0,53)	**0.24* (0,07)**	-0,02 (0,60)	**-0.06* (0,10)**	**0.03*** (0,00)**
Price/Book	1,18 (0,24)	**2.80** (0,03)**	**-0.77*** (0,00)**	**0.60** (0,05)**	0,09 (0,35)
Control	-0,16 (0,13)				
Own	0,08 (0,58)				
Control/Own	2,36 (0,51)				
CGI	**-1.89*** (0,01)**			0,19 (0,19)	
Bank			**-0.08* (0,10)**	**-0.16** (0,00)**	0,02 (0,15)
Bond		**-1.42** (0,04)**		**0.73*** (0,00)**	0,12 (0,17)
IntBond		**2.29*** (0,00)**	**0.62*** (0,00)**		0,07 (0,31)
AssetBacked		4,00 (0,17)	**1.17* (0,10)**		
Export				**-1.43** (0,03)**	**0.62*** (0,01)**
ADR				**-1.70* (0,08)**	**-0.25*** (0,01)**
Foreign Shareholer				**0.34* (0,06)**	0,15 (0,26)
Number of Observations	460	460	460	460	460
Adjusted R^2	0,25	0,34	0,55	0,45	0,18

Note: all variables are defined in the text. Industry and year dummies are omitted to conserve space. ***, **, * denote statistical significance at 1%, 5% and 10%, respectively, and p-values in parenthesis.