

THE CORPORATE BOND MARKET AND ALTERNATIVE DEBT SOURCES IN BRAZIL: A COMPARATIVE ANALYSIS (2004-2014)

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ABSTRACT: This study investigates the relation between the corporate bond market and the main debt financing alternatives available to firms in Brazil from 2004 to 2014. In this period, three main sources of debt financing were available: loans from commercial banks, loans from the National Development Bank, and the issuance of international bonds. We analyze the characteristics of each alternative, as well as their advantages and disadvantages in relation to corporate bond issuance, considering three main aspects: i) total cost, which includes the interest rate, taxes and fixed costs; ii) maturity; and iii) contracting speed. The results corroborate the initial hypothesis that, although the alternative debt sources competed with corporate bonds, there was also a complementary relation among them.

KEYWORDS: Debentures. Corporate bonds. Financing. Debt.

JEL CODES: G10.

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MERCADO DE DEBÊNTURES E FONTES ALTERNATIVAS DE FINANCIAMENTO NO BRASIL: UMA ANÁLISE COMPARATIVA (2004-2014)

RESUMO: Este artigo tem como objetivo investigar a relação entre o mercado de debêntures e as principais alternativas de financiamento via dívida disponíveis para as empresas no Brasil de 2004 a 2014. Nesse período, três principais fontes alternativas de dívida estavam disponíveis: empréstimos de bancos comerciais, empréstimos do BNDES e emissão de títulos no mercado internacional. Analisamos as características de cada uma dessas alternativas, bem como suas vantagens e desvantagens em relação a uma emissão de debêntures, considerando três aspectos principais: i) custo total, que inclui taxa de juros, impostos e custos fixos; ii) prazo; e iii) velocidade de contratação. Os resultados corroboram a hipótese inicial de que, embora as fontes de dívida alternativas concorressem com as debêntures, também havia uma relação de complementaridade entre elas.

PALAVRAS-CHAVE: Debêntures. Títulos corporativos. Financiamento. Dívida.

CLASSIFICAÇÃO JEL: G10.

INTRODUCTION

Corporate bonds, also known as debentures, are private debt securities that constitute an important source of long-term financing. A well-developed private debt securities market is very important to provide cheaper and longer-term financing to firms, enabling them to engage in investment projects. It is a form of debt alternative to bank loans. Nevertheless, in most developing countries, this market does not function well or even does not exist.

According to Herring and Chatusripitak (2000), in its absence firms are dependent on bank loans, which would have potentially higher costs and be mostly short-term. The cost of debt would be higher since the absence of a bond market means no competition to limit the ability of banks to extract rent from firms, whereas the preference of banks for short-term credit can be explained by the same institutional inefficiencies that impede the development of the securities market, such as uncertain rules for enforcing contracts, weak disclosure laws, and inadequate auditing and accounting procedures.

Such financing characteristics, in turn, affect firms' investment decisions. The possibility of rent extraction by banks can discourage the implementation of some otherwise lucrative projects, whereas dependence on short-term bank debt limits firms' investment decisions to short horizons to the detriment of long-term investments such as in infrastructure, public utilities, housing, and capital-intensive industries.

Furthermore, the absence of a private debt securities market also affects the economy's vulnerability to crises. Shorter debt maturities tend to make firms' leverage structure riskier. The banking market will be larger than in the presence of a bond market, and banks are highly leveraged institutions. Finally, if firms try to compensate for the absence of a domestic bond market by issuing bonds in the international market, there can be excessive exposure to currency (exchange rate) risk.

When both are present, the relation between the debt securities market and the bank loan market is complex and can be competitive or complementary. There is a competitive relation between the two markets when a well-developed debt securities market inhibits the ability of banks to extract income from their customers, reducing the cost of firms' financing. On the other hand, there is a complementary relation between the two markets since the high fixed costs of the former make it inaccessible to small firms and inadequate to finance small amounts.

In Brazil, the issuance of debt securities has historically been rarely used, but the volume of issuances showed substantial growth from 2004 to 2014. Thus, this study investigates the relation between the corporate bond market and the main debt financing alternatives available to firms in Brazil from 2004 to 2014. Our hypothesis is that although

the alternative sources competed with corporate bonds, there was also a complementary relation among them.

The period chosen for the analysis is because 2004 marked the beginning of a period of strong market growth and 2014 was the last year in which the market operated under relatively normal conditions before serious political and economic crises affected the country.

In this time interval, three main sources of debt financing were available to firms: contracting loans from commercial banks, contracting loans from the National Development Bank (BNDES), and the issuance of international bonds (Carvalho, 2017). We analyze the characteristics of each alternative, as well as their advantages and disadvantages in relation to corporate bond issuance, considering three main aspects: i) total cost, which includes the interest rate, taxes and fixed costs; ii) maturity; and iii) contracting speed.

The methodology applied for this comparison is empirical and institutional. We apply descriptive analysis of data from the Brazilian Financial and Capital Markets Association (Anbima, 2016), the Central Bank of Brazil (BCB, 2016), and the BNDES (2016), and use information obtained from interviews conducted with the main agents that operate in this market. A total of 19 interviews were carried out with representatives of Anbima, issuing companies, commercial banks, and the BNDES during 2016 and 2017.

This article is divided into three sections in addition to its introduction and conclusion. Section 1 presents a theoretical discussion of firms' financing choices. Then, section 2 provides an analysis of the Brazilian corporate bond market from 2004 to 2014. Next, section 3 discusses the alternative debt financing sources then available to firms and how they compared with corporate bond issuance.

1. FIRMS' FINANCING CHOICE

Corporate bonds are debt securities sold by firms to investors, in which the standard model involves paying interest at designated intervals and repaying the principal amount of the security on the maturity date. Hence, they constitute a form of raising funds by a debt that competes with other financing possibilities.

Firms can finance their projects and activities with internal resources (equivalent to reinvestment of profits) or with external resources by the issuance of equity and debt. Regarding equity, debt raises long-term funds without changing the shareholding control of the firm. The choice of how a firm finances itself is called the capital structure decision, and several studies have sought to explain this decision.

The article by Modigliani and Miller (1958) is considered a theoretical reference on the subject. By using a partial equilibrium analysis, they demonstrated that under very simplified conditions such as perfect competition in the capital market and ease of access of firms to these markets, the decision on the capital structure of firms does not affect their market value: “The market value of any firm is independent of its capital structure” (Modigliani; Miller, 1958, p. 268). Therefore, financial matters would not interfere with firms’ investment decisions.

As Stiglitz (1988) ironically pointed out, this article, by supposedly establishing the irrelevance of the financial structure, led economists to pay attention to this matter. Many skeptics regarding the irrelevance of financial choice produced interesting responses to Modigliani and Miller’s work by identifying hypotheses assumed by these authors that needed to be modified or rejected.

Some of these responses gave rise to relevant theoretical frameworks on the subject, such as the article by Kraus and Litzenberger (1973). They stated that Modigliani and Miller’s results apply to perfect capital markets. Nevertheless, the existence of taxes on profits and penalties in case of bankruptcy are market imperfections that affect firms’ capital structure. On the one hand, debt financing has a tax advantage since interest payments are tax deductible. On the other hand, if a firm’s indebtedness becomes excessive and the company is unable to honor its debt obligations, it is forced into bankruptcy and is subject to the associated penalties. Thus, there would be an optimal capital structure for firms, that is, an optimal level of leverage represented by the ratio between debt and equity which would maximize firms’ market value. Consequently, this study gave rise to the tradeoff theory, which predicts that the choice of the firm’s optimal leverage level reflects the tradeoff between the tax benefits of debt and the bankruptcy costs caused by excessive debt.

Another theoretical landmark was the article by Myers (1984), in which he developed the pecking order theory. This theory opposes the tradeoff theory by refuting the idea that firms pursue a target for the debt-equity ratio that maximizes their market value. According to the pecking order theory, firms resort first to internal resources, and when they need external resources, they prefer to issue debt rather than equity. This order would be justified by the asymmetry of information between managers and investors since by using external sources to finance promising investment projects the firm runs the risk of receiving less than its financial securities are worth given that investors have no access to managers’ privileged information. In the case of equity issuance, the difference in value could be even greater since the prices of equity securities (shares) are more volatile than that of debt securities (bonds). Hence, there would be a cost in resorting to external financing, which would be even greater in the case of equity issuance.

Outside the mainstream framework, Minsky's (1986, 2008 [1975]) investment theory further developed Keynes's (1936) theory by detailing the matter of corporate financing. His view underscored the importance of financial factors in the investment process. For Minsky, the way the investment is financed makes all the difference and there is a direct relation between a firm's financing choice and the macroeconomic environment and expectations in which it is inserted.

From the moment the firm ceases to finance itself solely by internal resources and starts to use third-party resources, Minsky emphasizes the existence of risks for both borrowers and lenders. These risks are safety margins perceived by the agents involved in financing relationships. The borrowers' risk is perceived by the firm's managers and is related to its viability given the increasing use of third-party resources since the greater the proportion of third-party resources, the less viable the firm becomes. The lender's risk, in turn, is perceived by financing providers, such as commercial banks or other financial institutions, and is related to the firm's default risk.

Thus, the ratio between internal and external financing changes according to the safety margins required by borrowers and lenders. In periods of growth, when expectations regarding the future are positive, there is an increase in confidence and a consequent decrease in the perception of risk on the part of agents, favoring external financing: [...] "the acceptable and the desired liability structures of business firms (corporations) and the organizations acting as middlemen in finance change in response to the success of the economy" (Minsky, 1986, p. 193).

Another factor that affects the proportion of firms' internal and external financing is the prevailing financing conditions, particularly the level of the short- and long-term interest rates. An increase in both interest rates leads to a reduction in investment and therefore in the amount of external financing firms use. Likewise, a regime of low interest rates increases investments and profits and also firms' willingness to finance themselves via debt.¹

Consequently, according to Minsky, the predisposition of firms to use external financing depends on the expectations of agents and the behavior of the economy (as these factors change the safety margins required by borrowers and lenders) and on the prevailing financing conditions, in particular the level of short- and long-term interest rates.

¹ The level of short- and long-term interest rates influences the gap between the demand and supply prices for capital goods. An increase in the short-term interest rate causes an increase in the supply price of capital goods since bank financing is an input in the production of these goods. An increase in the long-term interest rate reduces the demand price for capital assets. Thus, this upward movement in short- and long-term interest rates leads to a reduction in the price differential that induces the demand for investment, which reduces investment and consequently the amount of external financing used by firms. For a more detailed explanation of Minsky's investment theory, see Carvalho (2017).

Now that the theoretical aspects of firms' financing choice have been presented, the following subsection deals with a more specific issue associated with this theme, namely the relation between two markets that serve as sources of debt financing for firms: the debt securities market and the bank loan market.

1.1. THE DEBT SECURITIES MARKET VERSUS THE BANK LOAN MARKET

According to Carvalho *et al.* (2007), in the bank loan market, financial relations are mediated by commercial banks, which, on the one hand, capture demand deposits, and on the other, transfer part of these resources in the form of loans. In this way, banks assume the credit risk, that is, the risk of default by borrowers. Thus, even in the event of default, banks must honor the funds they receive from depositors. Banks' earnings for mediating the transaction consist of the difference between the interest rate on funding and the interest rate charged on loans.

In the debt securities market, which is part of the capital market, borrowers and lenders have a direct relationship in a disintermediated process. In this market, the role of financial institutions is to promote the placement of resource demanders' securities in the market. Credit risk is taken by lenders, called investors in this case, and the earnings of the financial institutions are a kind of brokerage commission.

As Goodhart (1989) pointed out, the occurrence of transactions intermediated by banks is justified by the asymmetry of information between borrowers and lenders since the former have privileged information about their current financial situation and prospects which the latter do not observe publicly. Among the existing ways to reduce this asymmetry and increase public information about the real situation of firms are methods of signaling and disclosing information through, for example, audits and rating agencies. However, these methods incur costs, which make it unfeasible for small firms to access the bond market. In this scenario, the participation of banks as institutions specializing in risk assessment and loan monitoring is essential for providing financing to these firms. Hence, there is a complementary relation between the bank loan and the debt securities markets.

On the other side, Herring and Chatusripitak (2000) and Levine (2004) highlighted the competing role of the debt market vis-à-vis the bank loan market. The absence of a well-developed private debt securities market and the consequent dependence on bank loans can increase the cost of resources for firms, since there is no competition from the bond market to limit banks' ability to extract rent from them.

Therefore, on the one hand, there is a complementary relation between the debt securities market and the bank loan market since the high fixed costs of the former

make it inaccessible to small firms and inadequate to finance small volumes. On the other hand, there is a competitive relation between the two markets, given that a developed debt securities market inhibits banks' ability to extract income from their customers, reducing the cost of firms' financing.

2. THE CORPORATE BOND MARKET IN BRAZIL IN 2004-2014

Up to the mid-1990s, Brazilian capital market development was limited by the high domestic inflation rates. The uncertainty generated by inflation shortened contract terms and increased the risk premiums embedded in interest rates. With the end of high inflation in 1994, uncertainty regarding the evolution of relative prices gave way to uncertainty regarding the future trajectory of interest rates. At that time, given the fragile situation of the balance of payments at the beginning of the stabilization plan (Real Plan), which was based on a pegged exchange rate, drastic increases in the short-term interest rate were implemented to stop capital flight (Carvalho, 2010, p. 55).

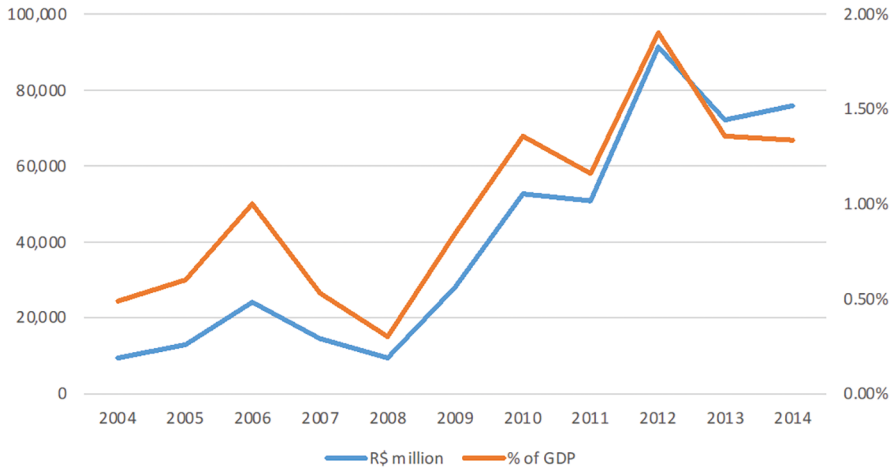
In 1999, the change in macroeconomic policy — with the adoption of the floating exchange rate policy, primary surplus targeting and inflation targeting — made the macroeconomic environment more predictable, which, in principle, would reduce financial risks. Nonetheless, the mediocre results in inflation and fiscal indicators obtained in subsequent years kept the interest rate risk high. Only after 2004, with the improvement of the external scenario and the recovery of the balance of payments accounts, did the financial risks of a macroeconomic nature decline (Hermann, 2010, p. 277).

From the perspective of the institutional environment, the implementation of reforms from 1994 to 2002 aimed at reducing the weaknesses of the financial system, such as banking and public debt market reforms, made it more robust (Torres; Macahyba; Zeidan, 2014). As a result of this improvement in the macroeconomic and institutional environments, the volume of corporate bond issues showed strong growth from 2004 onward.

When looking at the evolution of the total volume of corporate bond issues in 2004-2014, excluding leasing firms' issues,² the growth trajectory for the period is evident, as shown in Graph 1 below.

² Bond issues carried out by leasing firms are not considered in this analysis since they are basically a mere regulatory arbitrage strategy by banks. In effect, banks used the issuance of corporate bonds by leasing firms controlled by them to raise funds, avoiding the taxes and the reserve required on the issuance of bank securities. For more details, see Torres and Macahyba (2012) and Carvalho (2017).

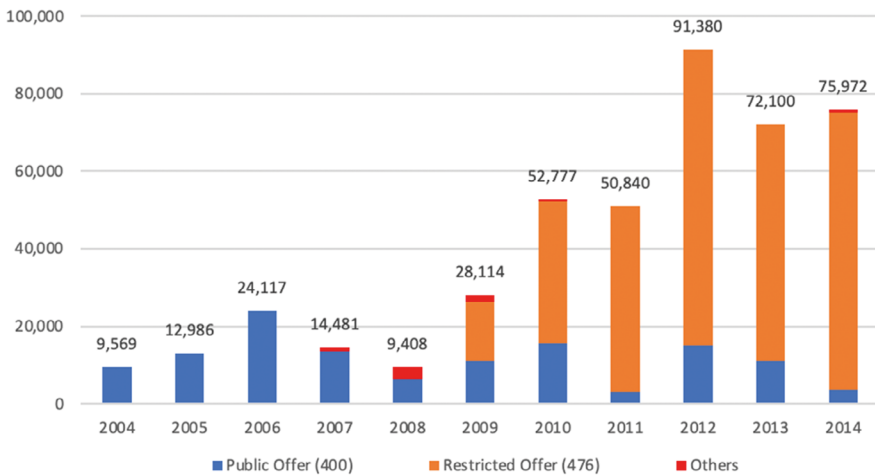
Graph 1 – Total volume of corporate bond issues, in R\$ million and in % of GDP (current value), 2004-2014



Source: Author's elaboration based on Anbima (2016).

Total ex-leasing issues consist of public offerings, restricted public offerings, and a small residual of offerings that fall into other categories, as shown in Graph 2.

Graph 2 – Total volume of corporate bond issues, in R\$ million, 2004-2014



Source: Author's elaboration based on Anbima (2016).

Public offerings require issuing institutions to prepare detailed prospectuses containing information about the issue, their activities and financial situation, and registration with the Brazilian Securities Commission (*Comissão de Valores Mobiliários – CVM*).³ Both the disclosure of information and registration with the CVM serve to protect investors, ensuring that they can properly assess the risks involved in offerings.

Restricted public offerings have a much simpler issuance process but can only be offered to a restricted group of investors. They follow CVM Instruction 476 of 2009, which was inspired by Rule 144A of the U.S. Securities and Exchange Commission (SEC).⁴ It is intended to simplify the life of the issuer, speeding up the issuance so as not to miss windows of opportunity in the market, and to reduce the costs of the process. This type of issuance does not require several bureaucratic steps, such as prior registration with the CVM and the preparation of the prospectus with information about the offering, which reduces the time and costs. On the other hand, bonds can only be offered to and acquired by a restricted number of qualified investors.

The logic behind this simplification is that qualified investors have privileged conditions to assess the risk of the offering, therefore, the volume of information disclosed can be reduced and prior analysis of the offering by the CVM can be waived. On the other side, by restricting transactions to qualified investors, this instruction reduces the number of buyers, resulting in less competition for the bond, and consequently, higher interest rates.

Thus, in relation to public offerings of corporate bonds, restricted offerings have lower fixed costs, but their interest rates tend to be higher. The choice of the offering type depends on the volume to be raised. In cases of large amounts, public offerings are more advantageous since fixed costs are diluted in relation to the volume, and in general interest rates are lower. Furthermore, often a very large volume cannot be fully absorbed by the limited number of buyers of the restricted offering. For small volumes, however, interest rate gains do not offset the high fixed costs of public offerings, favoring restricted offerings.

The main side effect of Instruction 476 is that it ended up allowing the corporate bond market to adapt to the strong presence of bank credit. Indeed, a reasonable part of the restricted offering is in fact credit transactions acquired by the financial institution coordinating the offering itself rather than offered to the market. In these cases, banks

³ Public offerings follow CVM Instruction 400 of 2003. It allows some transactions to be exempt from registration with the Commission, but these cases are very rare.

⁴ According to Brealey, Myers, and Allen (2011, p. 382): “In 1990 the SEC adopted Rule 144A, which relaxed its restrictions on who can buy and trade unregistered securities. The rule allows large financial institutions (known as qualified institutional buyers) to trade unregistered securities among themselves. Rule 144A was intended to increase liquidity and reduce interest rates and issue costs for private placements. It was aimed largely at foreign corporations deterred by registration requirements in the United States.”

buy securities issued by a certain corporation as a way of granting credit without having to carry the risk of this transaction on their balance sheets. Hence, it is a much less bureaucratic and more comprehensive way of securitizing loans given that this strategy allows for the securitization of unsecured debts.

From the estimates presented by Carvalho (2017), it can be inferred that between 60% and 65% of the total volume of corporate bond issues from 2010 to 2014 corresponded to credit transactions. This scenario strongly favored banks, which started to carry less risk on their balance sheets and increased their earnings with the structuring of transactions.

For firms, the predominance of this type of issue prevents the diversification of their investors and disfavors one of the main functions of the corporate bond market, which is to limit the ability of banks to extract income from corporations and consequently reduce the cost of debt. However, these transactions generally have a longer maturity than traditional bank loans.

Therefore, before Instruction 476, the Brazilian corporate bond market consisted of few and concentrated capital market transactions. After it came into force, the volume of issuances expanded, which increased firms' access to medium- and long-term private resources and boosted the market. However, the market began to include both capital and credit market transactions, with the latter representing the majority.

In addition to Instruction 476, another important regulatory change in the corporate bond market took place in 2011 with the approval of Law 12,431/11, which aimed to expand the base of investors operating both in the primary offering and in the secondary market. To this end, it granted tax incentives to resident and non-resident investors who acquired corporate bonds destined for investment projects. Because of these incentives, the securities issued under this law are called 'incentivized debentures' and they must as a counterpart present specific characteristics such as a minimum term of four years and remuneration at a fixed interest rate. Regarding the distribution regime, no requirements apply, and they may be issued via public or restricted offerings. The first issuance under this law occurred in 2012 and its impact was small in the period assessed here.

The market overview during the period 2004-2014 presented in Carvalho (2017) indicated that the average issuance maturity was 5.5 years, 83% of issuances were post-fixed following variations in the short-term policy interest rate (Selic rate), the funds raised were used to refinance liabilities, the main issuers were infrastructure firms, demand was concentrated in banks and their investment funds with low participation of pension funds and individuals, the secondary market showed low liquidity, and interest rates were high for the issuer since the bonds had to yield more than the short-term interest rate, which remained at high levels.

These conditions are not favorable for firms, especially for long-term financing. Ideally, maturities should be longer to smooth amortization, bond yields should be at a fixed rate

to give debt predictability, demand should be spread to increase competition in the interest rate bidding, the secondary market should be liquid to reduce the liquidity premium charged on bonds, and above all, the interest rates should be much lower to diminish the cost of debt.

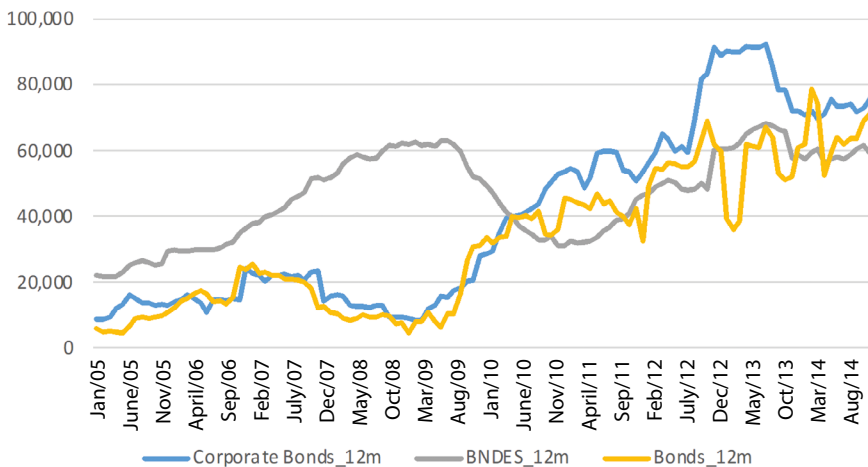
Nevertheless, although its functioning is peculiar and different from what one would expect from the capital market, the Brazilian corporate bond market still works as a source of funding for firms. For this reason, it is important to analyze its position in relation to available debt financing alternatives, which will be discussed in the following section.

3. THE ALTERNATIVE DEBT FINANCING SOURCES

In total, three main alternative sources of debt financing were available for firms during 2004-2014: contracting loans from commercial banks, contracting loans from the National Development Bank (BNDES), and issuing international bonds (Carvalho, 2017).

Graph 3 shows the evolution of three of these funding sources.⁵ Interestingly, the volumes of BNDES loans and international bond issuances had the same order of magnitude as the volume of corporate bond issues. Nevertheless, the volume of credit to corporations presented much larger magnitudes.

Graph 3 – Volume accumulated in 12 months, in R\$ million, 2005-2014



Source: Author's elaboration based on Anbima (2016) and BNDES (2016).

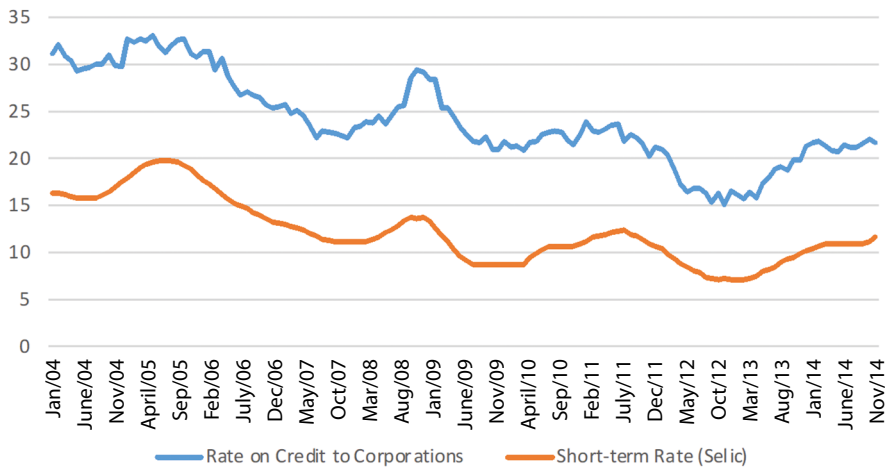
⁵ The monthly volume of international bond issues was converted into Reais by multiplying the monthly amount in US\$ by the average exchange rate for the month.

The characteristics of each alternative financing source, as well as their advantages and disadvantages in relation to corporate bond issuance, are presented below considering three main aspects: i) total cost, which includes the interest rate, taxes and fixed costs; ii) maturity; and iii) contracting speed.

3.1. BANK LOANS

In the analyzed period, loans from commercial banks to corporations basically involved two modalities: traditional bank loans and loans funded in foreign currency.^{6,7} Since there are no data disaggregated by modality, Graphs 4 and 5 below exhibit the evolution of the average interest rates and the aggregate volume of credit transactions to corporations in 2004-2014. Graph 4 indicates that the interest rate on credit transactions showed a downward trend in the period, following the short-term interest rate (Selic).

Graph 4 – Average interest rate on credit transactions with corporations and short-term interest rate, in % yoy, 2004-2014



Note: yoy – year over year

Source: Author's elaboration based on BCB (2016).

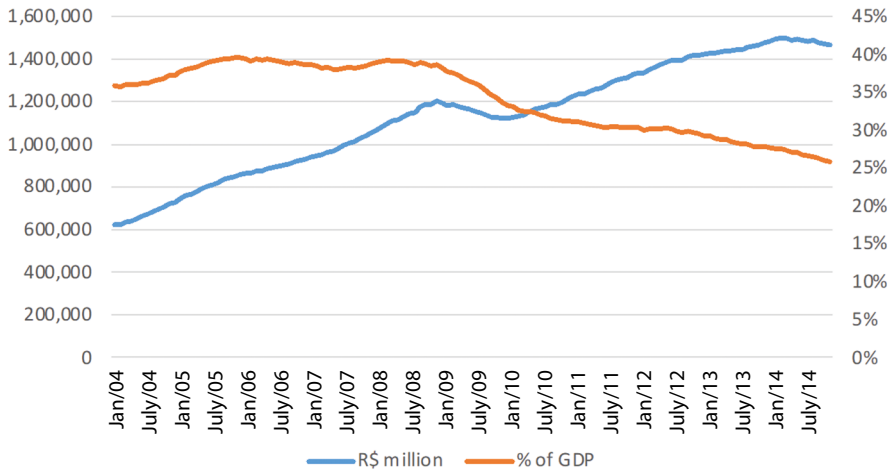
Graph 5 reveals that although in current value, the volume of concessions accumulated in 12 months showed practically linear growth in the period, this trend does not occur

⁶ These loans are known in the market as '4131 loans' in reference to Law 4131/1962, which governs the investment of foreign capital and foreign remittances.

⁷ There are also specific types of loans such as those aimed at the export, agricultural, and real estate sectors, which are not considered in this study since they are restricted to these sectors.

when data are calculated as a percentage of GDP. In this calculation, the volume of credit to corporations remained relatively constant up to 2009, oscillating from 35% to 40% of GDP, and declined in subsequent years, reaching 26% in December 2014.

Graph 5 – Credit concessions to corporations accumulated in 12 months, in R\$ million and % of GDP (current value), 2004-2014



Source: Author's elaboration based on BCB (2016).

Both traditional loans and loans with funding in foreign currency have a relatively short maturity period and are quickly contracted. However, these modalities present differences in their costs due to the interest rates charged, the incidence of taxes, and the need for currency hedging.

The interest rates charged in each modality are different because banks' costs of raising funds are different. Basically, the rate banks charge on loans is determined by the cost of raising funds plus a bank spread that includes the customers' credit risk. Thus, for the same customer, the main difference between the rates of the two types of loans is the bank's funding cost. In the case of traditional loans, banks raise funds in domestic currency based on the short-term interest rate. For loans with funding in foreign currency, the rate usually used is the Libor, which is the main reference rate for the international market.⁸

⁸ Domestic banks have an advantage in raising funds in domestic currency compared to foreign banks because they capture demand deposits in domestic currency. On the other hand, foreign banks have an advantage in raising funds in foreign currency because they have demand deposits in foreign currency.

Regarding taxes, loans raised in foreign currency had the tax advantage of being exempt from the tax on financial transactions (IOF), whose rate on credit transactions was 1.88% for maturities longer than 12 months. However, to prevent firms from being exposed to the risk of an exchange rate devaluation that would cause the contracted debt to explode, banks bundle this type of loan with a swap contract that changes the currency variation for the domestic short-term interest rate. Thus, loans with funding in foreign currency had the advantage of the financial tax exemption but had the additional cost of currency hedging.

Accordingly, the competitiveness of rates in transactions with foreign currency funding in relation to traditional loans is mainly influenced by the difference between the domestic short-term interest rate and the Libor. Indeed, the fact that the Libor has been subjected to successive reductions since the 2008 crisis has made these loans more competitive, favoring their expansion in relation to traditional loans.⁹

The comparison between the total costs of a corporate bond issuance and a traditional bank loan involves three factors: interest rate, tax incidence, and operational fixed costs. First, as the bank's funding cost is the same, the difference in the interest rate to be paid on the debt only occurs when the bonds are offered to the market and there is interest rate bidding among investors. In this case, the rates obtained are more favorable than in a traditional loan. Since most of the time restricted offerings do not have a rate bidding, it can be said that only public offerings have an advantage in terms of interest rates in relation to traditional loans.

Regarding taxes, corporate bond issues were exempt from the financial tax, which did not occur with traditional loans. Finally, when considering fixed costs, those of a public offering of corporate bonds were higher than those of a restricted offering which, in turn, were much higher than those of traditional loans. Thus, corporate bonds only paid off in the case of large volumes, which diluted the fixed issue costs.

In summary, in terms of costs, a public offering of corporate bonds had an advantage in interest rates and financial tax exemption when compared to traditional loans but its fixed costs were much higher. Hence, this form of financing was only worthwhile for very large volumes. When it comes to a restricted offering of corporate bonds, even though it almost always had the same interest rate as a traditional loan, there was the advantage of the financial tax exemption. However, its fixed costs were higher, although lower than those of a public offering. Therefore, to be advantageous in terms of total cost, this type of issuance also required large volumes, although smaller than those of public offerings.

⁹ For more information, see "Apesar de condição atrativa, emissões neste ano devem ser menores" (2013) and Pinheiro and Marques (2014).

When comparing an issue of corporate bonds with a loan with funding in foreign currency in terms of costs, the interest rates were different because of the different funding costs. While both were exempt from the financial tax, the fixed costs of issuing corporate bonds were higher, and loans raised in foreign currency had the cost of currency hedging. In this case, the choice depended on the relation between the interest rate and fixed costs. If the funding conditions of banks abroad were favorable in relation to the domestic market, the interest rates on loans with funding in foreign currency became more competitive. On the other hand, as in the case of traditional loans, corporate bonds had an advantage in raising large volumes.

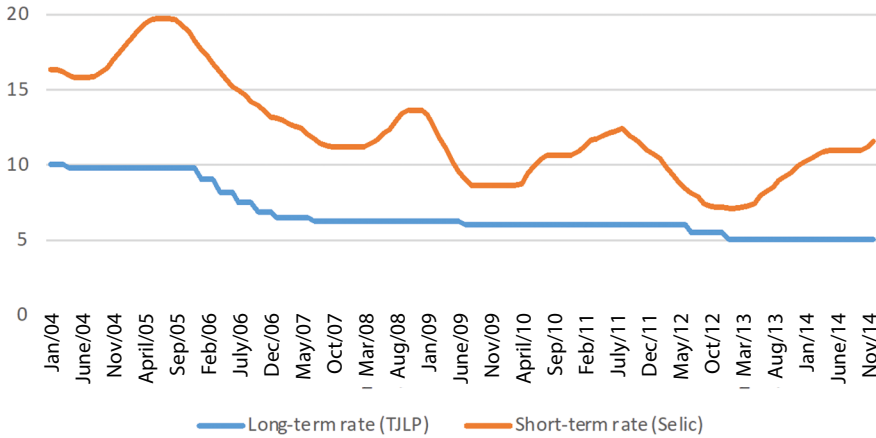
Concerning maturity, funding via corporate bonds involved a longer maturity period than that obtained in both bank lending operations. However, considering the contracting speed, the time taken to obtain a bank loan was much shorter than that taken to issue corporate bonds.

Therefore, corporate bonds had an advantage in terms of maturity and bank loans in terms of ease of contracting. As for the costs, these depended on the volume to be raised. Bank loans were more advantageous for small volumes, whereas bonds were favored for large volumes. Finally, it is important to highlight that bank credit lines were less influenced by the short-term dynamics of the economic and political environment than the issuance of debt securities. This way, bank loans could be more constantly accessed than funding from the capital market.

3.2. NATIONAL DEVELOPMENT BANK LOANS

During the period under analysis, the BNDES offered loans for investment projects with very long maturities based on the long-term interest rate (TJLP), which was set by the government independently of the short-term rate (Selic rate). Graph 6 shows that the long-term rate was always below the short-term rate and suffered successive reductions in the period 2004-2014, having gone from 10% in January 2004 to 5% in December 2014.

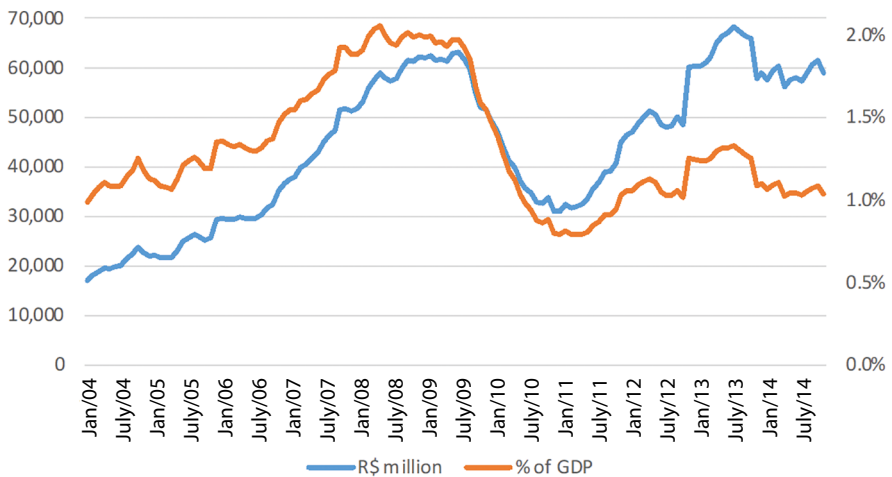
Graph 6 – Long- and short-term interest rates, in % yoy, 2004-2014



Note: yoy – year over year
 Source: Author's elaboration based on BCB (2016).

Graph 7 shows the evolution of the volume of monthly releases by BNDES. It is interesting to note that, even though the bank expanded its transactions in the credit market after the 2008 crisis — as reported by Torres and Macahyba (2015, 2012), the volume of funds lent measured as a percentage of GDP underwent a strong reduction from August 2009 onward, and by the end of 2014 had returned to its pre-crisis level.

Graph 7 – Monthly releases by BNDES accumulated in 12 months, in R\$ million and in % of GDP (current value), 2004-2014



Source: Author's elaboration based on BNDES (2016).

Regarding corporate bond issues, whether public or restricted, BNDES loans had much lower rates and longer maturities. However, BNDES resources could only be used to finance investment projects. Therefore, they competed only with bonds destined to finance investments and not with those issued for other purposes, such as refinancing liabilities and working capital, which were the majority of the period.

On the part of firms, for projects that met the requirements of the BNDES, there was a desire to maximize financing from this bank since the cost was much lower than not only corporate bonds but all options available in the market.

Regarding the contracting speed, the procedures for granting loans by the BNDES involved a risk analysis of the investment project, whose duration varied depending on the type and stage of execution. Hence, a comparison of this aspect remains undefined.

Thus, while BNDES loans undoubtedly offered a cost advantage, they were limited to funding large investment projects. In contrast, corporate bonds provided the advantage of enabling firms to raise funds for diverse purposes. It is worth noting that the BNDES actively worked to develop the corporate bond market in the period, since by sharing the financing of long-term investments in Brazil with the private market, it could concentrate on projects that generated large externalities.¹⁰

3.3. ISSUANCE OF INTERNATIONAL BONDS

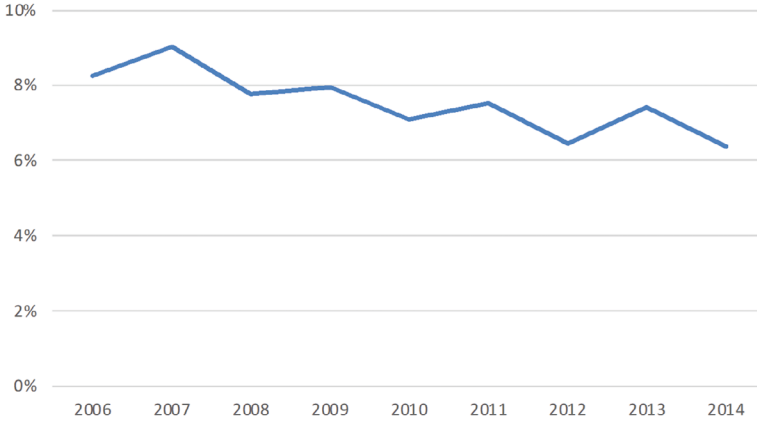
Fundraising via bond issuance in the international market tends to have lower interest rates and longer maturities than in the domestic market. Another advantage is that foreign issues almost entirely have a fixed rate, which removes the issuer's interest risk, in contrast to the large dominance of post-fixed issues in the domestic market. However, this type of issuance requires that firms have access to the international market as well as the willingness to contract debt in foreign currency.

Graph 8 shows the average annual rates of fixed-rate external issues carried out by Brazilian firms (only available from 2006 onward). There was a reduction in rates, which went from 8.25% in 2006 to 6.36% in 2014.¹¹

¹⁰ For more details on BNDES initiatives aimed at developing the corporate bond market, see Wajnberg (2014).

¹¹ In the international market, it is the secondary market with high liquidity that provides the reference rate for a new issue. In Brazil, this rate is estimated by banks.

Graph 8 – Average interest rate on international bonds and medium-term notes issued by Brazilian firms, in % yoy, 2006-2014

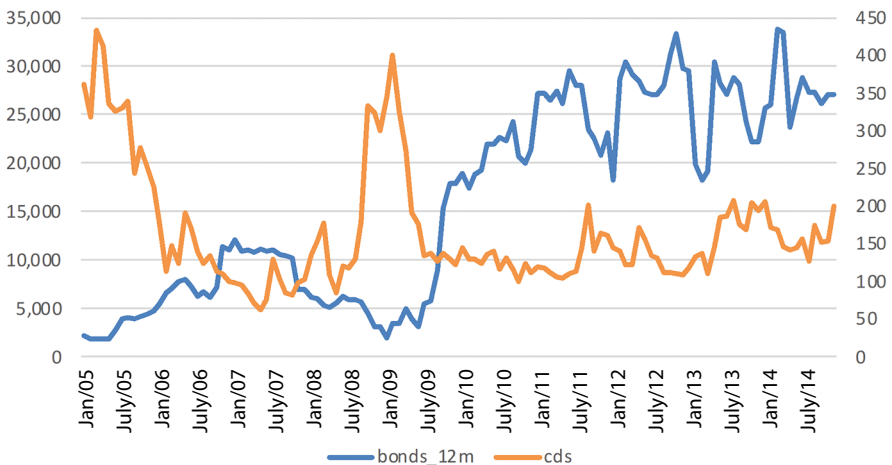


Note: yoy – year over year

Source: Author's elaboration based on ANBIMA (2016).

Regarding volume, the amount raised by Brazilian firms by the issuance of securities abroad depends on the opening of the international market to Brazil, which is closely linked to the evolution of the perceived country risk. In this sense, Graph 9 shows there was a substantial increase in the volume of bonds and medium-term notes issued by Brazilian firms abroad from 2009 onward, accompanying the decline in country risk measured by the Credit Default Swap (CDS) index.

Graph 9 – Volume of bonds and medium-term notes issued by Brazilian firms accumulated in 12 months (in US\$ millions) vs CDS (in points)



Source: Author's elaboration based on ANBIMA (2016).

Between domestic and foreign corporate bond issuance, the latter had advantages in terms of longer maturities and the speed of the issuing process. Regarding costs, however, although international rates were lower than those in the domestic market, funding abroad was not always advantageous or available to all firms.

First, to issue international bonds, a firm needs to be large and known abroad. Second, as issuing bonds represents contracting debt in foreign currency, it is more advantageous for firms that have part of their revenues in foreign currency, since this constitutes a natural hedge against the risk of exchange rate devaluation. For firms that do not have this type of income, the need to contract hedging in the form of an exchange rate swap makes the transaction very expensive, considering that the issuance maturity abroad is usually long, and the longer the maturity, the more expensive the swap. Hence, for these firms, the interest rate differential between domestic and international bonds must be large enough to offset the cost of the swap.

Therefore, although it had advantages in terms of maturity, contracting speed, and interest rates, when considering the total cost of the issuance, including the need to contract an exchange rate swap, the international bond market was not attractive for most firms that issued debt in the domestic market.

CONCLUSION

This study has shown, first, that the functioning of the corporate bond market in Brazil is peculiar and unlike what one would expect from the capital market. The corporate bond market showed strong expansion in 2004-2014, particularly after the entry into force of CVM Instruction 476 in 2009, which regulated restricted offerings. The impact of this instruction can be assessed from two different perspectives.

On the one hand, it transformed the Brazilian corporate bond market into a market that functioned partly as a capital market and partly as a credit market, with the second part being larger than the first. According to estimates, credit transactions represented between 60% and 65% of the total volume of corporate bond issues from 2010 to 2014 (Carvalho, 2017). This 'encroachment' by the bank credit market disfavored one of the main functions of the corporate bond market, which is to limit banks' ability to extract income from firms and consequently reduce the cost of debt.

On the other hand, however, this instruction allowed for a large increase in the volume of issues, and although a large part of this increase was due to the incorporation of credit transactions, it is important to note that these transactions generally have a longer maturity than traditional bank loans. Thus, under this aspect, CVM Instruction 476 facilitated firms' access to longer-term private resources.

Second, by investigating the relation between the corporate bond market and the main debt financing alternatives available to firms, we have corroborated our hypothesis that, although they were competing, there was also a complementary relation among them.

Bank loans had advantages regarding ease of contracting whereas bonds had longer maturities. As for the costs, these depended on the volume to be raised, since bank loans were more advantageous for small volumes, whereas large volumes favored bonds. BNDES loans had an undeniable cost advantage, but this was only available to finance large investment projects. In this case, corporate bonds' advantage was to allow firms to raise funds for other purposes. Finally, issuing international bonds implied indebtedness in foreign currency and, for that reason, it was attractive to a minority of large firms that had revenues in dollars. For the vast majority, currency hedging costs made issuing domestic bonds more advantageous. Therefore, in general, the issuance of debentures tended to be advantageous for raising large volumes, for purposes other than investment, and for firms that did not have revenues in dollars.

Finally, by analyzing the relation between the corporate bond market and the debt financing alternatives during 2004-2014, this study seeks to contribute to the debate on the lack of private long-term financing mechanisms in Brazil by showing how the private debt market actually worked and how it related to alternative sources.

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