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O Mercado Brasileiro de Securitização Imobiliária: uma análise comparativa de *spreads*

Eduardo Fernandes Cazassa

Escola de Administração de Empresas de São Paulo (EAESP) da Fundação Getúlio Vargas, São Paulo, Brasil. eduardo.cazassa@gmail.com

RESUMO

Este trabalho busca apresentar o contexto do mercado brasileiro de Certificados de Recebíveis Imobiliários (CRIs) como instrumento de dívida, desenvolvimentos recentes e uma análise comparativa de *spreads* desses títulos.

A literatura existente relata o subdesenvolvimento do mercado brasileiro de títulos de dívida privada. Entretanto, uma análise mais profunda dos títulos de dívida estruturada pode relacionar os motivos para seu relativo sucesso e perspectivas de crescimento. A experiência americana é brevemente descrita. Estatísticas sobre o mercado brasileiro de dívida são apresentadas. O mercado brasileiro de dívida oferece grandes oportunidades para o mercado de dívida privada, apesar da forte existência do mercado de dívida pública.

Neste trabalho, o autor investiga o *spread* entre os CRIs, títulos da dívida pública e as debêntures locais. Os resultados preliminares indicam um comportamento oportunístico de mercado ao se apropriar de ganhos adicionais em momentos de ajustes econômicos.

Com o objetivo de aprofundamento do conhecimento e do maior uso deste tipo de dívida estruturada, as principais recomendações deste trabalho são: (i) o incentivo ao mercado primário e secundário por meio de padronização das emissões; (ii) maior disponibilidade de informações detalhadas para comparação com benchmark de mercado; (iii) menor exigência de valor mínimo para compradores desses instrumentos; (iv) a existência de um benchmark de vencimento longo assim como de curva de juros pré-fixada de longo prazo. Em resumo, há boas perspectivas para crescimento no mercado de dívida privada, em especial para instrumentos de dívida estruturada.

Palavras-chave: CRI, securitização, *spread*, Financiamento Imobiliário, precificação.

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The Brazilian Real Estate Securitization Market: a Comparative Analysis of Spreads

ABSTRACT

This paper is aimed at presenting the context of real estate backed securities (MBS, or CRI in the Portuguese acronym) in Brazilian debt market, its recent developments and a comparative analysis of spreads.

Previous authors have written about the underdevelopment of the Brazilian bond market. However, a deeper analysis of these structured debt securities can elucidate the reasons for its development and future growth prospects. Recent American experience is also briefly reviewed. Overall figures present the status of Brazilian debt market. Brazilian market offers conditions of growth of private debt market, albeit the existence of a strong public debt market.

In this paper, the author investigates the spread between real estate asset backed securities (CRIs), versus public debt (Treasury) and local debentures. Preliminary results indicate an opportunistic behavior of the market by grasping additional gains in times of economic adjustments.

In order to contribute for more widespread use of this type of structured debt issuance, the main recommendations of this paper are: (i) the fostering of a primary and secondary market by standardization of issuances; (ii) higher accessibility to CRIs detailed information in comparison to the current benchmark; (iii) lower minimum ticket requirements for buyers of these instruments; and (iv) the existence of a benchmark of long maturity and prefixed yield securities. Overall, there are good prospects for growth in private debt market especially for structured finance instruments.

Key-words: CRI, securitization, spread, Real Estate Financing, pricing.

1. INTRODUCTION

Structured finance is a recent and growing phenomenon in Brazil after stabilization of inflation. Gatti (2005) points out that there are different forms of structured finance, which are asset securitization, project finance, structured lease and leveraged corporate acquisition activities (mostly LBOs).

Pinto, Marques and Megginson (2014) address two main economic benefits provided by structured finance: a solution for unavailable financing and reduction in the cost of funding. The use of private debt instruments, such as the bond market, could substitute traditional forms of debt in times of crisis. Park (2012) relates Korea and Chile as markets where the private bond market served as a buffer, an alternative source of funding for companies. Other markets presented less efficient pricing and short track record of borrowers.

Desa (2005) points out that Brazil has become the regional leader of the Latin American securitization market. The country still presents an underdeveloped primary market, mainly in the lower income sector. According to Desa (2005), a well-functioning system of securitization requires a legal structure that facilitates heavy reliance on a market system.

The Brazilian typical MBS named CRI (Certificado de Recebíveis Imobiliários) is a fixed income security, nominative, book-transferable, backed by mortgages issued by securitization entities. It was first mentioned in Brazil in 1997 through Law 9514 (the Housing Finance System – SFI - Act). In 1998, the National Monetary Council (CMN), through resolution 2517/1998, considered the CRI as a security, and therefore regulated and supervised by the Securities Commission (CVM). Through CVM Instruction 414/2004, CVM established rules for the registration of securitization companies and public offerings of CRI. Due to the impact of the Real Estate sector in the economy by generating wealth, employment, and well-being, special attention has been given by regulators and the market.

Where do CRIs stand in the Structured Finance Instruments spectrum?

Different from banking regular debt and equity operations such as stock issuances, different forms of Structured Finance Instruments have grown in volume and importance. CRI is a recent development in a market that is familiar with alternative forms of debt such as debentures, securitization funds (FIDC) or equity/debt funds such as Real Estate Funds (FII). More recently, debentures and promissory notes comprise the highest volumes of private debt whereas securitized funds (FIDC), real estate funds (FII) and mortgage-backed securities (CRI) have lower volumes. Real Estate instruments and securities have been fostered by tax exemption to individual investors through FIIs, CRIs and other forms of debt such as LCI (Letra de Crédito Imobiliário).

The issuance of CRI accounted for about 9% of issuances of securities in the period between Jan/2014 to May/2015. Its popularity derives from the easiness of issuance as it can be made by limited partnerships (Sociedade de Responsabilidade Limitada) in contrast with debentures that can be issued only by corporations (Sociedades Anônimas). Together with the format of business in real estate through limited partnerships and the need for long term capital funding, CRIs have brought capital market tools to more companies. The most common forms of funding are still (1) debentures with 48% of issuances, (2) promissory notes with 18% of issuances, and (3) stocks with 16% of issuances.

In 2011, around 90% of the private bonds were linked to the DI rate. Only 1% was fixed rated. This fact is consistent with the crowding out of private debt explained by the high returns of the public debt. Moreover, the growth of the private debt market is through the similarities of indexations and maturities. More than 60% of the funds are invested in the Brazilian public debt, according to Anbima association.

CRIs as a source of funding have been fostered by the tax exemption incentive provided to individual investors and incentives to banks that invested in them until early 2015. Individuals who invest in fixed income are taxed from 15% to 22.5%, however CRI holders are exempt from income tax. Until May 2015, banks who invested in CRIs could count them in their mandatory allocation of savings accounts into the real estate segment. The National Monetary Council, responsible for such rules, created a 20% extra multiplier that incentivized this type of security bought by banks until May/2015.

In order to understand the private debt market, the buyers are usually the most informed of the firms' situation i.e. the banks. The Brazilian market has a long way to evolve towards a more developed debt market in terms of buyers' diversification.

Rather than only individuals, institutional buyers are present when CRIs are concerned. Real Estate Funds (REITs, or FIIs, in the Portuguese acronym), Multimarket Funds (FIM) and Securitization Funds (FIDC) are often allowed to purchase CRIs either as a strategy or as a financial allocation of liquidity. As represented by Table 1, Brazilian funds have concentrated portfolios in fixed income (88.7%). CRIs are included in the "other fixed income" bracket which totals only 17.4% of the R\$ 2.7 trillion under management by the Brazilian funds in Jul/2015.

Table 1: Investment Funds: Portfolio holdings (%)

	I	II	III	IV	V	VI	VI I	VI II	IX	X	XI	XI I
	Committed Operation *	Federal Public Debt	CDB/RDB	Promissory Notes	Debentures	Other Fixed Income	Fixed Income Subtotal	Stocks	Other Var.Income	Variable Income Subtotal	Total	Net Worth (R\$ trillion)
May-15	27.6%	37.1%	2.9%	0.1%	3.5%	17.4%	88.7%	11.1%	0.3%	11.3%	100.0%	2.7

* Federal Public Debt and others

Source: Global ranking of Asset Management, Anbima, extracted in July/2015

Where do companies get funds?

Brazil is a country that presents high growth opportunities for companies. This growth has been substantially funded by shareholders' own equity or bank loans and since Plano Real, in 1994, by a growing amount of private debt issue.

Private debt responded to only 19.5% of the liabilities and 14.6% of the source of funding to private non-financial companies in 2012 (Leal & Carvalho-da-Silva, 2008). The main types of corporate bonds are domestic bonds, bank loans, international bonds, suppliers, and asset-backed securities.

Construction and Services sectors are heavier users of the capital markets for bonds. Banks are present in every sector and are a frequent choice of funding, as shown in Table 2.

Table 2: Sources of Funding by Industry (number of firms that use / number of firms in the sector)

	Trade	Industry	Construction	Services
Banks - Free resources	82%	75%	74%	72%
Foreign Investment	46%	49%	22%	51%
Capital Markets (Bonds)	41%	39%	78%	69%
BNDES	68%	53%	30%	61%
Special lines	23%	50%	41%	41%
Derivatives	0%	1%	0%	1%
Banks - Earmarked resources	5%	4%	37%	0%

Source: IBMEC - Contas Financeiras do Centro de Estudos do IBMEC, 2012

Private debt has very low levels if compared to the stock market participation and the public debt in relation to the GDP. In 2014, Debentures issues totaled approximately R\$ 70.6bn, Promissory Notes issues totaled approximately R\$ 30.5bn, Securitized Funds (FIDCs) totaled approximately R\$ 6bn, MBS (CRIs) totaled approximately R\$ 15bn, as shown in Table 3. These four debt forms account for approximately R\$ 122bn BRL whereas treasury bonds balance was raised by approximately R\$180bn from R\$ 2,122 bn in Dec/2013 to R\$ 2,300 bn in Feb/2015 (Anbima, 2014).

Table 3: Total Issue of Securities

Year	Stocks	Debentures	Promissory Notes	CRI (MBS)	FIDC	FII	Total
2007	75,499	48,073	9,726	1,520	12,088	1,030	147,936
2008	34,882	24,049	25,438	4,809	12,878	678	102,734
2009	47,131	27,614	22,643	3,242	10,112	3,488	114,229
2010	150,285	52,293	18,737	7,592	13,720	10,889	253,516
2011	18,982	48,500	18,019	12,427	14,734	16,102	128,764
2012	14,300	88,446	22,652	10,361	6,058	15,230	157,047
2013	23,895	66,136	20,809	14,480	5,923	12,709	143,952
2014	15,410	70,571	30,514	14,497	6,154	6,407	143,553
2015*	16,107	21,410	4,995	3,328	1,705	2,348	49,893
Total	396,491	447,092	173,533	72,256	83,372	68,880	1,241,624
Relative Share	32%	36%	14%	6%	7%	6%	100%

Year	Stocks	Debentures	Promissory Notes	CRI (MBS)	FIDC	FII	Total
2007-2010	307,797	152,029	76,544	17,163	48,798	16,084	618,415
Relative Share	50%	25%	12%	3%	8%	3%	100%
2011-2015*	88,694	295,063	96,989	55,093	34,574	52,797	623,210
Relative Share	14%	47%	16%	9%	6%	8%	100%

Source: Anbima. Notes: * until Jun 2015

The stock market reduced its expansion after 2010. Other instruments have a growing trend with special attention to the FII and CRI expansion since 2010.

The cost of funding is very high for the majority of small firms, even higher than the ROA they deliver. According to the analysis of Rocca (2013), 40% of the firms have higher debt costs than their ROA. Not surprisingly, their average leverage was 25% whereas public companies are leveraged at 63% and the large private companies at 43%, as shown in Table 4.

Table 4: Cost of Liabilities within firms

Firms	Average Cost of Liabilities Costly (gross rate)	Average Cost Costly Liabilities (net rate of tax)	Leverage	Participation in Total Assets
Public companies	12.9%	8.5%	63.3%	42.1%
Major private companies	18.9%	12.5%	42.7%	19.0%
Other private companies	32.1%	21.2%	25.2%	38.9%

Source: Rocca, 2013

The impact of crowding out of private debt is mainly due to the high returns by investing in treasury bonds. Furthermore, macroeconomic conditions also play an important role. Paula & Faria Jr (2012) relate the lack of track record and the macroeconomic instability in Brazil from 1980 to 1994, as the main reasons for the profile of the Brazilian private debt, being of short term and largely indexed at the Selic rate and the DI rate (interbank interest rate that correlates closely to the Selic rate).

What are the main characteristics of CRIs?

The certificate presents the characteristics of a fixed income security such as nominal value, duration and rates. Amortization curves and grace periods can vary. Excluding TR-indexed CRIs which are structured and purchased mostly by banks, most of CRIs are indexed at inflation (mostly IPCA and IGPM) plus a spread or are priced at a percentage (or a spread over) the DI rate (interbank rates that proxy the Selic rate) as presented in Table 5. The underlying credit may rely on one contract (such as a rental contract), a corporate risk or on several contracts (receivables). CRIs usually rely on junior tranches or over collateral in form of extra cash flow and may contain other relevant guarantees such as properties and endorsements.

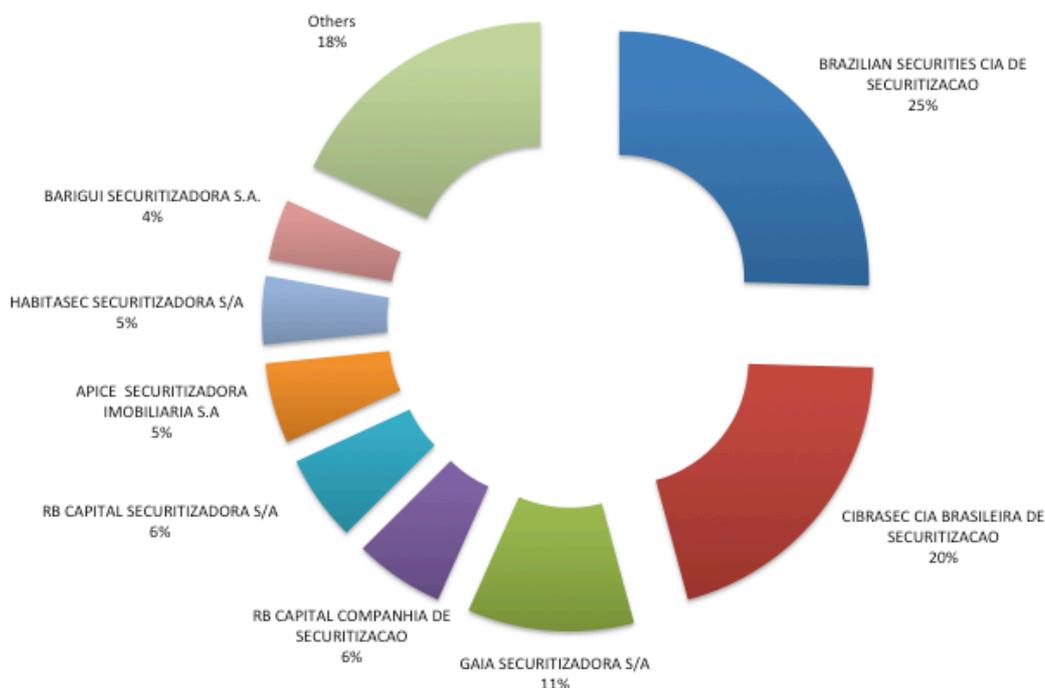
Table 5: Structure of CRI issued by index (% of total)

Indexation	2000-2010 R\$	2000-2010 Relative share	2011-2015 R\$	2011-2015 Relative share	Total 2000-2015	Relative share
DI	1,619	12.1%	7,763	14.2%	9,382	13.8%
IGP-DI	270	2.0%	670	1.2%	940	1.4%
IGP-M	2,411	18.0%	3,580	6.5%	5,992	8.8%
INCC-DI	0	0.0%	54	0.1%	54	0.1%
INCC-M	0	0.0%	275	0.5%	275	0.4%
IPC-FIPE	0	0.0%	10	0.0%	10	0.0%
IPCA	3,074	23.0%	10,085	18.4%	13,159	19.3%
POUPANÇA (Savings)	0	0.0%	522	1.0%	522	0.8%
PREFIXED	390	2.9%	3,497	6.4%	3,887	5.7%
TR	5,597	41.9%	28,305	51.7%	33,902	49.8%
Total	13361	100.0%	54,759	100.0%	68,120	100.0%

Source: CETIP (data extracted in May/2015)

While asset managers can issue shares of REITs (FIIs) and banking institutions (among others) can issue real estate credit bonds (LCIs), only securitizing entities are allowed to issue CRIs. Currently, eight securitizing entities concentrate 82% of all issuances of CRIs. This concentration can be seen in Figure 1.

Figure 1: Historical Market Share in nr of issuances (%)



Source: CETIP, May 2015

Primary Market for CRIs

In 2013 and 2014, total issuances of CRI reached R\$ 16 billion annually. Since 2010, issuances have surpassed the R\$ 6 billion annual figure. Since the first issuance in 2002, CRIs totaled R\$78.9 billion in issuances until Jun/2015.

Around 50% of all issuances have been acquired by banks that have used it as a tool for real estate lending, as it could be counted for the mandatory allocation of resources of savings accounts by a multiplier 1.2x. As stated, in May/2015, this rule has been changed by the regulator (CMN) and is no longer valid.

The years that enjoyed the highest growth of issuances of CRI were years with low Selic rates, ie. 2008 onwards. The average base rate for the Brazilian economy for the period 2009 – 2014 was 10.7% pa and remained below 12.0% pa until 2015, as shown in Table 6.

Table 6: Average Selic Rates x Issuances of CRI

Year	Selic (%p.a.)	CRI issuance (R\$ million)
2000	17.6%	171
2001	17.5%	222
2002	19.1%	142
2003	23.3%	287
2004	16.2%	403
2005	19.1%	2,102
2006	15.3%	1,071
2007	12.0%	1,520
2008	12.4%	4,809
2009	10.0%	3,242
2010	9.8%	7,592
2011	11.7%	12,427
2012	8.5%	10,361
2013	8.2%	14,480
2014	10.9%	14,497
2015*	12.7%	5,217

Source: BACEN and Anbima
**Until June 2015*

Paula & Faria Jr (2012) argue that the persistent issuance of treasury bonds indexed at the Selic rate curb the fostering of the primary market for private bonds, because they are the risk free alternative at relatively high returns. In addition, it hinders the development of the secondary private bond market, by curbing primarily the development of the secondary public debt market and hence the secondary private debt market.

Secondary Market for CRIs

Much has been discussed under Anbima structure for the development of the Secondary Market for Private Debt Instruments. They are mainly the creation of the new market for debentures and the listing of conditions of debentures and other instruments. More recently the CRI (MBS) database in October 2014.

Major authors describe the obstacles and improvements needed for the development of the bond market and other related. Park (2012) in its “Brazil’s Capital Market: Current Status and Issues for Further Development” states that the Brazilian market is still very concentrated in short duration rates, with a limited investor base and less diversified issuers. More investors and issuers would be attracted if an efficient market could provide incentives and entry/exit ways for investors.

Both Saito et al. (2005) and Park (2012) mention the secondary market as a major limitation. The low liquidity and the lack of a lower yield curve environment are parts of this limitation. The consequence of their study is that the private fixed income market is not a significant long-term financing source for non-financial corporations.

The bond market enjoys more volume issued and can be more easily traded in the Brazilian Market. However, with high proportions in the hands of banks, the liquidity in the secondary market is harmed.

Both bond and securitization instruments are granted with higher liquidity by standardization and the accessibility to their detailed information in comparison to the current benchmark. It also facilitates the entrance of smaller investors, granted the minimum ticket requirements are met.

What are the obstacles for future growth?

The fostering of a primary and secondary market involves the standardization of issuances. Anbima has set rules for disclosure of every new issue from December 2014. CRIs detailed information in comparison to the current benchmark is generally limited. This measure should improve the general level of public information on issuances.

Possibly due to specificities of these instruments, there is a minimum ticket requirement for buyers of these instruments (R\$ 1 million upon issuance) and R\$ 300 thousand per certificate. As the market evolves, this limitation should not be justified.

The current benchmark has low risk and high returns, ie treasury debt. A solution consists of a construction of long maturity and prefixed yields through a directed monetary policy. And this appears to be the directive, as depicted in Table 7.

Table 7: Structure of Public Debt by index (% of total)

	Exchange	TR	IGP	Selic	Prefixed	IPC-A	Other	Total
Dec-00	22.3%	4.7%	5.9%	52.2%	14.8%	0.0%	0.1%	100%
Dec-01	28.6%	3.8%	7.0%	52.8%	7.8%	0.0%	0.0%	100%
Dec-02	22.4%	2.1%	11.0%	60.8%	2.2%	1.6%	0.0%	100%
Dec-03	10.8%	1.8%	11.2%	61.4%	12.5%	2.4%	0.0%	100%
Dec-04	5.2%	2.7%	11.8%	57.1%	20.1%	3.1%	0.0%	100%
Dec-05	2.7%	2.1%	8.2%	51.8%	27.9%	7.4%	0.0%	100%
Dec-06	1.3%	2.2%	7.2%	37.8%	36.1%	15.3%	0.0%	100%
Dec-07	1.0%	2.1%	6.5%	33.4%	37.3%	19.8%	0.0%	100%
Dec-08	1.1%	1.6%	5.7%	35.8%	32.2%	23.6%	0.0%	100%
Dec-09	0.7%	1.2%	5.0%	35.8%	33.7%	23.6%	0.0%	100%
Dec-10	0.6%	0.8%	4.8%	32.5%	37.9%	23.3%	0.0%	100%
Dec-11	0.6%	0.8%	4.2%	30.8%	38.3%	25.4%	0.0%	100%
Dec-12	0.6%	0.6%	4.1%	22.2%	41.2%	31.4%	0.0%	100%
Dec-13	0.6%	0.5%	4.1%	19.5%	43.3%	32.0%	0.0%	100%
Dec-14	0.6%	0.5%	4.0%	19.2%	43.1%	32.7%	0.0%	100%

Source: Central Bank of Brazil – Depec (data extracted in July/2015)

International Experience

From an international point of view, Leal & Saito (2003) argue that Brazilian firms use retained earnings more than firms in many other countries. Saito & Schiozer (2005) reinforce this vision by

affirming that the use of derivatives is used by non-financial firms for risk management purposes (exchange risk, interest rate risk, commodities exposure) rather than speculation or primary funding.

When Brazil compares to the United States, its bonds market is very timid, and disproportional in the relation stock market to bond market, as shown in Table 8. One could expect the Brazilian bond market to be double or triple its current size as of 2010. Ananchotikul and Eichengreen (2008) mention that the size of corporate bond markets, the number of companies listing on equity markets, and market liquidity remain disappointing in Brazil when compared to other regions.

Table 8: Stock Market and Bond Market in % GDP, 2010

Countries	Stock Market in % GDP	Bonds in % GDP	Stocks/Bonds
United States	118	31	3,8
France	75	17	4,4
United Kingdom	137	26	5,3
Brazil	74	6	12,3

Source: Rocca, 2013

Desa (2005) addresses the development of securitization market in Latin America. They suggest a constant change in the laws to meet investors' requirements. They state that the USA, for example, which began securitizations of mortgage loans in the early 1970s, has regularly revised its legal frameworks to encounter the requirements of securitized transactions and the demands of investors. In countries like Brazil, a civil law jurisdiction, authorities must enact detailed securitization laws to diminish uncertainties that stem from the formality of civil codes, the inability to rely on equitable principles, and the scarcity of precedent to define the law.

In the USA, according to Vickery (2013), the issuance of mortgage-backed securities have been concentrated in bonds issued with a credit guarantee by government agencies (Fannie Mae, Freddie Mac, or Ginnie Mae) after August 2007. The mechanism of issuance in the USA is 90% concentrated in the to-be-announced (TBA) market whereby the exact securities to be delivered to the buyers are chosen just before delivery. The study presented by Vickery and Wright (2013) indicates that TBA eligibility increases MBS prices and lowers mortgage rates.

2. COMPARATIVE ANALYSIS OF SPREADS

By studying 2015 issuances of CRIs registered in CETIP clearance (available online), their rates are compared to the treasury rate and a correspondent risk debenture. The methodology under test is to relate risk and return so that the excess spread is measured. Spread must be related to either liquidity risk or credit risk.

Less than half of CRIs issued have a rating agency report upon issuance. This is a clear obstacle for a broad comparison between securities of the same maturity. Notwithstanding, by comparing the 31 issuances from January to April 22 in 2015, 52% (14) are disregarded for being issued and acquired by banks. The remainder 48% (13) are analyzed against the yields of a same maturity treasury bond and a debenture (as long as rated by a rating agency).

The sample consisted of 14 issuances with an average size of R\$ 44.3 million. Preliminary results relate a general 4.6 p.p. spread over the correspondent yield curve of the treasury bond and 1.3 p.p.

to 3.7p.p. spreads over a correspondent debenture offer. The lower the maturity the lower the spread over a correspondent debenture offer (a 4.2y duration indicated the lowest spread at 1.3p.p. versus a 6.2y duration indicated the highest spread at 3.7p.p.).

The sample is limited and small. Future research will present more extensive results as more than 870 issuances have been made. A hypothesis to be tested is whether spreads are larger during periods of credit crisis or trends of upward interest rates. Although structured finance instruments provide issuers with an alternative in times of crisis, they may be an expensive form of funding. As it seems, due to worsening of expectations in times of economic adjustments, the market may take advantage of less liquid markets to grasp additional gains.

3. CONCLUDING REMARKS

There are good prospects for growth in private debt market especially for structured finance instruments.

The Brazilian market offers conditions of growth of private debt market, albeit the existence of a strong public debt market.

The results shed lights on the need to understand the key features that characterize risk and pricing factors for CRIs. Issuances would benefit from rating assessments by third agents by providing deeper knowledge of structures used by issuers. Preliminary results indicate an opportunistic behavior of the market by grasping additional gains in times of economic adjustments.

In order to contribute for more widespread use of this type of structured debt issuance, the main recommendations of this paper are: (i) the fostering of a primary and secondary market by standardization of issuances; (ii) higher disclosure and accessibility to CRIs detailed information in comparison to the current benchmark; (iii) lower minimum ticket requirements for buyers of these instruments; and (iv) the existence of a benchmark of long maturity and prefixed yield securities. Overall, there are good prospects for growth in private debt market especially for structured finance instruments.

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