

# **Textos para Discussão FEE N° 104**

*Secretaria do Planejamento, Gestão e Participação Cidadã*  
Fundação de Economia e Estatística Siegfried Emanuel Heuser

**A Proposal of Change in the Interest Rate and in the Price Index  
Variation Applied on the Contractual Debt between the State of  
Rio Grande do Sul and the Federal Government in Brazil**

**Uma proposta de mudança na taxa de juros e no índice de  
variação de preços aplicados na dívida contratual entre o Estado  
do Rio Grande do Sul e o Governo Federal do Brasil**

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**Porto Alegre, maio de 2012**



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# **A Proposal of Change in the Interest Rate and in the Price Index Variation Applied on the Contractual Debt between the State of Rio Grande do Sul and the Federal Government in Brazil\***

## **Uma proposta de mudança na taxa de juros e no índice de variação de preços aplicados na dívida contratual entre o Estado do Rio Grande do Sul e o Governo Federal do Brasil\***

### ***Abstract***

*The conditions established on the refinancing contracts of debts of the Brazilian States with the federal government, which were signed in the late 90's under the Law 9.497/97, could be then considered at a reasonable level, but today are overpriced. That is because a wide range of factors in the economic and institutional environment in Brazil has changed since then, and in general, these changes were very positive. Some clauses need to be changed in order to avoid some imbalances, to promote a more equitable relationship among the federation levels, and to encourage a faster economic growth promoted by new investments in infrastructure at the state level. For this, we outlined a plan to make it possible to replace the price index and lower the interest rates applied to the contracts of debt of the states, based on a replacement of National Treasury bonds in the market and on a designing of an account book for this purpose. This plan basically consists of a program of adjustment on the issuing schedule of Treasury securities and a programmed transfer to the States of the current interest rates practiced in the market of government securities, to be applied on the contractual debts with the federal government, in replacement to the current charges.*

***Key words:*** debt of the states; renegotiation of debt; proposal public debt.

### **Resumo**

*As condições financeiras estabelecidas nos contratos de refinanciamento das dívidas estaduais com o Governo Federal, que ocorreram no final dos anos 90, sob o amparo da Lei n. 9.496/97, se razoáveis naquela época, hoje estão excessivamente pesadas. Isso porque uma variedade de fatores no ambiente econômico e institucional do Brasil mudou substancialmente desde então, e, em geral, essas mudanças foram muito positivas. Algumas cláusulas precisam ser alteradas, a fim de evitar alguns desajustes, para promover uma relação mais equitativa entre os níveis da Federação e para encorajar um crescimento econômico mais rápido, promovido pelos novos investimentos em*

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\* O autor é Agente Fiscal do Tesouro do Estado da Secretaria da Fazenda do Rio Grande do Sul. O texto foi originalmente apresentado como trabalho final no curso Minerva Program, na George Washington University, em dezembro de 2011, tendo como orientador o Prof. William Handorf.

*infraestrutura em nível estadual. Em vista dessa situação, elaboramos um plano para tornar possível a substituição do índice de correção e reduzir as taxas de juros aplicadas aos contratos de refinanciamento da dívida dos Estados, com base em uma substituição de obrigações da dívida mobiliária federal e na criação de uma conta contábil para essa finalidade. O plano consiste basicamente de um programa de ajuste no cronograma de emissão dos títulos do Tesouro Nacional e uma transferência programada aos Estados das atuais taxas de juros praticadas no mercado desses títulos, em substituição aos atuais encargos.*

**Palavras-chave:** dívidas dos estados; renegociação de dívida; proposta para a dívida pública.

**Classificação JEL:** H74, H63.

## Introduction

When the federal government in Brazil, between 1997 and 1998, put in course the process of federalization of the Brazilian states' debts, it was pulling out states from a black hole of an increasing debt level, in the form of bonds shortly rolled over in a market eager to bid the highest interest rates as it could. The Federal Law 9.496/97 enabled the Brazilian government to assume states' debts, replacing them with a single contractual debt for each state. According to this Law, these new contractual debts have included special characteristics. It did not take so long, though, for some criticisms from all points of view become to appear.

The Federal Law 9.496/97, of September 1997, was designed to solve the problem of the debts of the states, magnified by the high primary interest rate level of the economy, settled by the Central Bank. This policy of high interest levels was related, at that moment, to fighting inflation and the macroeconomic stabilization program in progress as a whole. The "Plano Real" launched in 1994, was being threatened by an international crisis affecting the balance of payments, and putting pressure over an anchor of the macroeconomic program – the fixed interval for exchange rate. Therefore the government decided to maintain the fixed interval exchange rate system in order to prevent inflation pressures, and pushed up the interest rate. As a consequence, real interest rates approached as much as 40% per year, in 1998 and early 1999.

In January 1999, Brazil was forced by a foreign exchange crisis to abandon the cambial anchor and let the currency fluctuate according to the market forces. And in June 1999, a system of inflation targeting as the guideline to the monetary policy was implemented, by the Decree 3.088/99. The system of inflation targeting was implemented with the intention to give Brazilian currency – the Real – a new inflation anchor. Fortunately, the scenario of potential inflation and high interest rates began to dissipate some time later, opening space for a more optimistic outlook about the Brazilian economic trend.

As time passed, and the Brazilian economy went into a more stabilized path, more criticism arose over the contract general clauses and over the burden this brought upon states' finances. Today, there are several voices claiming a change in the agreements of 1997 and 1998 that refinanced the states' debts. Most of them recognize the importance of the agreements for the economic stabilization process that has taken place in the country and that must continue, so they do not argue about the foundations of the agreements, but they raise question about the rigor of some financial clauses.

We have been collecting some opinions in newspapers for a couple of years, of prominent professionals in favor of substantial changes in the financial clauses of the contracts. Eduardo Augusto Guimarães, a former National Treasury Secretariat's director, argues in an article of *Valor Econômico* (30/06/2011), that if the contractual index overcomes systematically the inflation rates, the gap originates a bonus in favor of the creditor, like a windfall profit. The reputed economist Paulo Rabello de Castro wrote in *Revista Época* (14/02/2011), that the rigorous clauses in the renegotiation contracts were never changed, that today the federal government would have cash and credit to review them, that the states are still paying its debts based on an incorrect and more costly inflation index, and that the federal government could charge the states less in order to let them invest more. In *O Estado de São Paulo* (24/03/2011), Cid Heráclito de Queiroz, a former General Attorney of the National Treasury, advocates that Brazilian states and municipalities have the right to re-ratify contracts, that the IGP-DI can and must be replaced by a more appropriate index, and that the *ratio legis* of legal disposals were to prescript a substantial aid to the highly indebted states and municipalities, not to create financial gains to the central government.

During the last couple of years, several proposals have been presented in the National House and, specially, in the Senate, with respect to changes in the states' debt rules. The Senate in Brazil, according to the Constitution (article 52<sup>a</sup>), disposes over the public debt, authorizes new borrows and determine global limits, in the three governmental levels: federal, state and municipality. A recent proposal of Senator Vanessa Grazziotin, the Senate Law Proposition (PLS 364/2011), authorizes the states' debt contract charges to be changed to the TJLP (Long Term Interest Rate). Another proposal was presented recently by Senator Eduardo Braga (PLS 334/2011), that authorizes the shift to an indexation based on the IPCA (Ample Consumer Price Index), and a decrease in the interest rate to 2% a year. We have been collecting and paid attention to all major proposals in Congress regarding adjustments in the rules of the states' debts with the federal government. Many of them are still proceeding in the departments and committees of the Congress. Some of them have been discussed a lot, but no proposal with substantial changes on the actual rules prospered, so no major change have taken place since the debt refinancing contracts were launched in 1997 and 1998.

During the last years, a group of managers of finances of the Brazilian states (the GEFIN), that was formed in 2004 as an advisory council to the CONFAZ (National Council of Treasury Policy), has been very active in discussing and making proposals for the states' debt problem. In particular, the GEFIN developed a very comprehensive proposal to change the Law 9.496/97. Among several reforms, this proposal provides a replacement of the IGP-DI (General Price Index of the Fundação

Getúlio Vargas) by the IPCA (Ample Consumer Price Index of the IBGE) as the index price to be applied over the outstanding debt, a substitution of installments calculus method based on the Price System (level) by the Gauss method and an up to 2 percent points reduction on the payments limit (from 13% to 11%) of the state's real net revenues (Receita Líquida Real), in order to allow the difference to be applied exclusively on infrastructure investment projects.

In an audience in the Commission of Economic Affairs (CAE) of the Federal Senate, on May 3, 2011, the Minister of Finances, Mr. Guido Mantega, has made some striking comments related to the issue. On a question of Senator Eduardo Suplicy about the persistence of an indexation system in the economy, he has said that we need to change the price index applied to public services contracts, because in the past, the chosen price index was the IGP-M, which is not a good index. Why? – he has asked. Because it reflects the movement of commodities prices, the inflation outside – he has answered. And he has added that so, gradually, when we are to renew the concession contracts of the federal government, we are already making an adjustment, we are changing for the IPCA, for an index that reflects the inflation in Brazil and not the outside inflation. On another question, of the Senator Luiz Henrique, the Minister has said: “The preoccupation of yours with the debt of the states is legitimate, because in the past these debts were indexed to the IGP-M plus an interest rate of 6% to 9% (...) and in fact, as the interest rates in the country were much higher than nowadays, that rate could not be considered too high. Now, it is to be considered high (...) So, how to do a change in this clause without changing the Law of Fiscal Responsibility? It is one of the fundamentals of the Brazilian economic solidity that I will seek to maintain. We will find a way for this as well”.

As of this speech of Minister Guido Mantega, we can pick up some principal ideas reflecting points of view of the Brazilian government economic area. First, the IGP is not a good index because does not reflect well the inflation in Brazil. Second, the preoccupation with current high interest rates of 6% to 9% applied to the debt of the states is legitimate. Third, the government admits to review clauses since it does not require the Law of Fiscal Responsibility (LFR) to be altered. The Minister wanted to refer to the article 35<sup>o</sup> of LFR, which states that the federation entities are not allowed to borrow themselves, neither in the forms of novation, refinancing or postponement of former debts. The LFR had its initial term on May 4, 2000, therefore after the refinancing process of the debt of the states that had taken place between 1997 and 1998, and has been a landmark in the finance legislation in Brazil, especially because of its role over the enforcement of fiscal responsibility in the public administration.

## Chapter 1

### The State of Rio Grande do Sul debt refinancing contract

Some years after the “Plano Real” was launched in 1994, the Brazilian government realized it should go further in some reforms in order to be successful in the macroeconomic stabilization process. One of the problems to be solved was the growing state and municipality level debts. Because of the weak fiscal situation prevailing in

many states and some large municipalities, and the pushing upward trend in domestic real interest rates, some of them were experiencing difficulties in rolling over their debts in the bond market. The risk of default was something to be considered.

So, the federal government headed by the former President Fernando Henrique Cardoso engaged in a mega plan to rescue states and municipalities. This plan consisted of the take on the states' debt in bonds and other debts by the federal government. These debts would be refinanced and replaced by a single contractual debt for each state, in which the federal government would become the new creditor.

To accomplish that, the federal government edited the Provisory Act (Medida Provisória) nº 1.560, of December 1996. This Act was reedited sevenfold, and finally it was replaced by the Law nº 9.496, of September 11, 1997, which established the so called Program to Support the States' Restructuring and Fiscal Adjustment.

It is important to mention that at this time the fiscal difficulties of Brazilian states were being magnified by shocks of internal interest rates that Central Bank was putting in practice aiming to accomplish stabilization in inflation. The Graph 1.1 shows the trend of SELIC (the nominal interest rate determined by the National Monetary Council) during the period of 1996 and 1999. It is possible to observe that SELIC was not only maintained at a high minimum level of 18% per year but it suffered at least three important shocks that have lifted it to as high as 46% per year. The first shock was in the late 1997, due to a currency exchange problem that was a reflection of the Asian countries' financial crisis. In late 1998 the Brazilian currency itself was threatened by speculative movements that forced the Central Bank to raise nominal interest, in the will to keep unchanged the exchange rate regime (flexible fixed-interval) and to maintain inflation under control. Nevertheless, in January 1999, under a strong new speculative attack over the Brazilian currency, the government was forced to abandon the cambial anchor system and let the currency fluctuate. A new push up in the nominal interest rate was necessary in order to achieve stability of prices in the very new context of flexible exchange rates.

Graph 1.1 – The Path of SELIC Interest Annualized – 1996-1999



Source: Banco Central do Brasil ([www.bcb.gov.br](http://www.bcb.gov.br)).

The Law 9.496/97 established the rules in which the transfer and the refinancing of the debt securities and other debts of Brazilian states by the Brazilian central government would take place. Besides establishing financial general conditions for the new refinancing contracts, it engaged the states to follow a program to be agreed upon with the federal government, containing compromises and goals related to fiscal performance, governance and debt sustainability.

In this same context of adjustments in the Brazilian state level, was launched, later on, by the Provisory Acts 1612/1997, 1900-40/1999 and 2192-70/2001, the Program of Incentives to Reduction of the State Public Sector in Banking Activity (PROES). By this program, the federal government lent money to the states for the repairing, privatizing or liquidation of the state-owned banks. This program had also an important impact in the debt of the states. The loans opened by this program ended being consolidated in the respective outstanding balance of the Law 9.496/97, as these loans had nearly the same conditions determined by the latter, and the Provisory Acts allowed to the states compute them in the applicable limit of payment of 13% of the RLR.

At the final of the process, in the early 90's, the total amount of debt of Brazilian states refinanced by the federal government under the Law 9.496/97 and PROES reached R\$ 110.5 billion, corresponding to 11.7% of gross domestic product (GDP).

In September 20, 1996, the State of Rio Grande do Sul and the Brazil's federal government signed a protocol of intention to refinance the state debt in securities and the state debt with Caixa Econômica Federal, a federal bank.

Finally, in April 15, 1998, the Contract of Confession, Promise of Assumption, Consolidation and Refinancing of Debts (Contract nº 014/98/STN/COAFI) was undersigned, supported by the Law Federal 9.496/97, of September 11, 1997, and by the Senate Resolution nº 104/96. By this contract, the federal government assumed all debt represented by securities issued by the state and the contracts between the state and Caixa Econômica Federal, totalizing R\$ 9.427 billion. Discounting a subvention of R\$ 1.645 billion, the total refinanced debt of the state reached R\$ 7.782 billion.

According to the Contract, the State must pay the new debt with the federal government in 360 successive payments on a monthly basis, where the installments are calculated in the Price System basis (level), but the payments are limited to 13% of the state net revenue ("Receita Líquida Real"). If installments exceed the limited outlay of 13%, the excess must be separated and be accumulated, to be paid in the forward periods in which the calculated installments start to be less than the limited payment. If, eventually, after 360 monthly payment, the outstanding debt persists due to the application of the limited outlay of 13%, the debt can be refinanced in up to 120 monthly and successive parcels, incurring the same charges of the initial refinancing.

The specific charges determined were: (i) annual real interest of 6% and (ii) a system of indexation of outstanding debt based on the price index variation of IGP-DI (General Price Index – internal availability) calculated by the Fundação Getúlio Vargas.

Along with these charges, the 16<sup>th</sup> Clause of the Contract determined the obligation that the State, until pay off the new debt, must comply with compromises and goals included in a program to be



established on agreement with federal government, the Program of Restructuring and of Fiscal Adjustment (PAF). This Program, related to fiscal performance, governance and debt sustainability must be reevaluated annually, and must contain goal and compromises on:

- Ratio of debt over the Real Net Revenue (RLR);
- Primary balance;
- Expenditure with public servants;
- Own tax collection;
- State reform, patrimonial adjustment and property alienations; and
- Investment expenditures

In the context of the Program of Incentives to Reduction of the State Public Sector in Banking Activity (PROES), the State of Rio Grande do Sul and the federal government celebrated the PROES-RS, consisting of a loan with the purpose of cleaning up and improving financial balances of the states' financial system institutions, including the state-owned bank, the Barrisul S.A., and the transformation of SULCAIXA in a fomentation agency.

Table 1.1 shows data of the stock of the debt of Rio Grande do Sul constituted by the refinancing originated by the Law 9.496/97 and the PROES, over the period of 1998 and 2010. The portion called "residue" is presented in the second column, and the relation between "residue" and total debt, in percentage, is presented in the third column. At the end of 2010, the percent relation of the "residue" reached 40%.

Table 1.1 – The Outstanding Debt of Rio Grande do Sul  
Law 9.496/97 and PROES - 1998-2010

YEAR*	UNITS OF R\$		
	TOTAL DEBT	RESIDUE	RESIDUE/TOTAL DEBT
1998	9,566,256,666	322,058,765	3.37%
1999	11,781,038,711	873,261,287	7.41%
2000	13,416,675,967	1,098,681,684	8.19%
2001	15,189,725,398	1,715,715,843	11.30%
2002	19,102,094,954	2,785,197,980	14.58%
2003	21,209,776,955	3,842,412,341	18.12%
2004	24,158,995,691	5,216,711,406	21.59%
2005	25,793,127,894	6,434,019,866	24.94%
2006	27,675,714,196	7,746,866,498	27.99%
2007	30,041,353,684	9,280,004,839	30.89%
2008	33,903,392,224	11,485,284,579	33.88%
2009	33,759,526,401	12,359,312,810	36.61%
2010	37,040,476,306	14,884,369,202	40.18%

\* The amounts of debt correspond to the amounts at the end of each period.

As we mentioned, the new debt of the refinancing Contract under the Law 9.496/97 presents a special characteristic, that of the accumulation of "residue". Whether each installment – calculated in

the Price System basis (level), an interest rate of 6% per year and an index system based on the IGP-DI – overcomes the limit of 13% of the Real Net Revenue (RLR), the difference remaining goes to a residual account. This residual account grows systematically, as long as calculated installments persist above 13% of RLR, yielding new incorporations to this account. Furthermore, the residual account itself increases because it accumulates an interest rate of 6% per year and index price variation of the IGP-DI.

Table 1.2 shows a picture of the payments of the debt refinancing, and the annual transfer for the residual account, that occurred in the last six years. As the installments surpass the payment limit, a significant amount goes to the “residue”. In the meantime, the “residue” itself has been capitalized by interest of 6% per year.

Table 1.2 – Payments of the Debt of the Law 9.496/97 and PROES

PARCELS / YEARS	THOUSANDS OF R\$					
	2005	2006	2007	2008	2009	2010
INSTALLMENTS	1,439,686	1,496,515	1,577,247	1,753,187	1,799,490	1,880,763
PAYMENTS LIMITED TO 13% OF RLR	822,266	989,760	1,119,155	1,275,832	1,432,744	1,579,724
TRANSFERS TO “RESIDUE”	617,420	506,755	458,092	477,355	366,746	301,039
CAPITALIZED INTEREST ON ACCOUNT “RESIDUE”	350,221	420,959	506,559	628,244	716,466	816,042

\* Payments in this table correspond only to the intralimit part of these debts.

Regarding Table 1.2, we observe two important aspects. Although a good portion of installments still have been transferred to “residue”, the table shows a clear downward trend. On the other hand, the capitalized interest on the account “residue” goes up along the period, since the account balance increases over the time.

The most important causes for the nominal increase of the outstanding debt of the Law 9.496/97 and PROES are: (i) the nominal variation according to the general index price (IGP-DI) that is applied monthly over the outstanding debt, and (ii) transfers to the residual account, and the interest upon this account, since the interest is not paid but is added to the residual account.

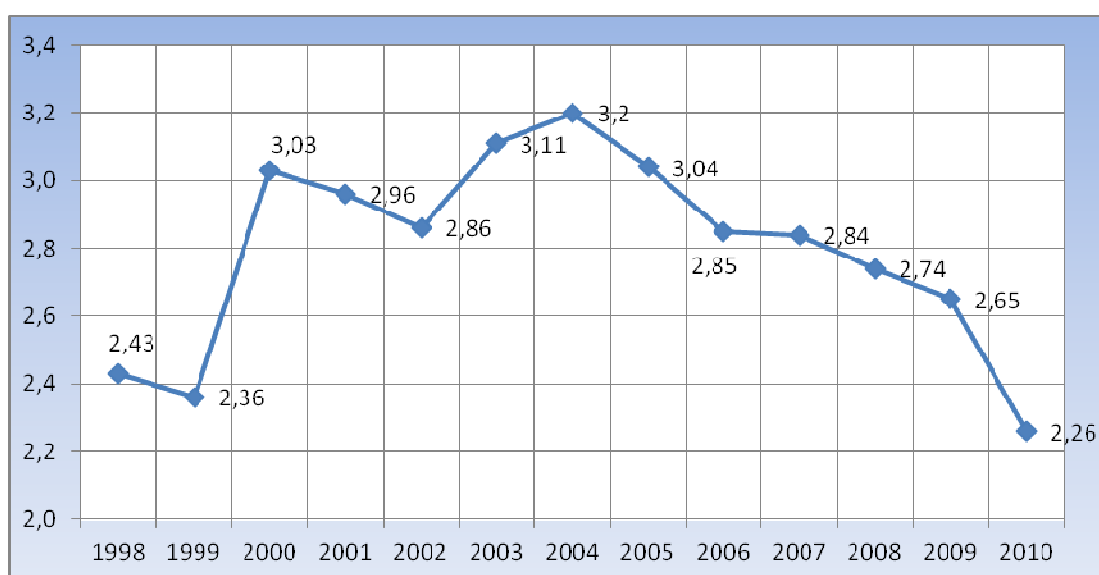
The refinanced debt under the Law 9.496/97 and PROES corresponds to approximately 91% of all outstanding debt of Rio Grande do Sul. Therefore, close attention has been paid to its performance, since it is decisive in all analysis of debt sustainability. The most recent analysis of debt sustainability produced by the Debt Management Office of Rio Grande do Sul focuses on the extent of the residual account that will result in 2028. According to the Contract, in that year, the “residue” will be refinanced for ten more years, and payments will be calculated solely on a level basis. So the larger the “residue” will get by 2028, the larger will be the parcel of debt payments thereafter, in relation to the state revenues.

With the use of a comprehensive model of the state's debt and long term projections for the state revenue, the Debt Management Office can foresee the overbalance of the “residue” at that future point, assuming different growth rates for the RLR. In the most probable trend, the RLR will grow 3%

per year, and the residue account will be approximately R\$ 20 billion. In a more pessimistic scenario, the RLR will grow 2.5% per year, and the residue account will sum R\$ 23 billion in actual value. In these two assumptions, the parcel of the debt service in relation to the RLR after 2028 will be less than 13%.

Relative to the compromises and goals of the Program of Restructuring and of Fiscal Adjustment (PAF), the State has complied with its main clauses. The principal compromise related to the debt, which is the ratio of debt over RLR, is slowly decreasing over time. Even though all payments and compromises related to the debt service have been met, the ratio of debt over RLR increased in some years, as we can observe in Graph 1.2. This is not because of a fault in the debt management or in the state fiscal management, but because of changes in the outcomes of IGP-DI and RLR over the period. According to the trajectory considered in the PAF, a ratio of debt over RLR below 2 will be reached in 2016, and a ratio below 1 will be reached much later in 2026.

Graph 1.2 – The Ratio Debt / Real Net Revenue (RLR) – 1998-2010



Source: National Treasury Secretariat (STN).

## Chapter 2

### Why the contract conditions became overpriced and why this should change

In this chapter we will try to explain why some contractual conditions that could be considered to be at a reasonable level in the late 90's, today are overpriced. Specifically, it is because a wide range of factors in the economic and institutional environment in Brazil have changed since then.

Moreover, we will try to explain that a change in some clauses are required in order to avoid some maladjustments, to promote a more equitable relationship among the federation levels, and to encourage a faster economic growth promoted by new investments in infrastructure at the state level.

We will start to mention the “inflation targeting” system that was implemented in 1999. By the Presidential Decree nº 3.088, of June 21, 1999, the system of “inflation targeting” was established as the guideline for the monetary policy regime. By this system, the Central Bank must take all the necessary measures in the monetary area to ensure the accomplishment in the economy of a predetermined rate of inflation, in a specified interval of tolerance, fixed by the National Monetary Council (CMN). The Resolution nº 2615, of June 30, 1999, of the National Monetary Council (CMN) established the Ample Consumer Price Index (IPCA) as the inflation index to be used in the “inflation targeting” system, and has fixed the inflation targets for 1999, 2000 and 2001 as follows:

- 1999: inflation target of 8%, with an interval of tolerance of 2%
- 2000: inflation target of 6%, with an interval of tolerance of 2%
- 2001: inflation target of 4%, with an interval of tolerance of 2%

The IPCA has been calculated by a governmental organization, the Brazilian Institute of Geography and Statistics (IBGE), since 1979. The IPCA measures the variations in consumer prices in 11 metropolitan areas (Belém, Fortaleza, Recife, Salvador, Belo Horizonte, Rio de Janeiro, São Paulo, Curitiba, Porto Alegre, Brasília and Goiânia), and reflects price changes in a typical basket of goods that households with income range between 1 to 40 minimum wage consume.

The adoption of the IPCA as the inflation target by the government was a landmark for the economy. As the IPCA came to be accepted as the “official” index, it played a role of offsetting another known index. Up to then, the major economic references for prices were the General Prices Index (IGP) of the Fundação Getúlio Vargas, a private institute based in Rio de Janeiro. The IGP-DI and the IGP-M used to be the macroeconomic widespread references for price variations and largely used in contracts as a reference for price revisions.

The IGP were conceived in the late 1940's to be a wide measure of the movement of prices. Thus, they were designed to comprehend not only the different economic activities, but the distinct stages of the productive process. This way the IGP could be used as a deflator of the business activity evolution. The IGP is the weighted arithmetic average of three other price indexes: the Ample Producer Prices Index (IPA), the Consumer Price Index (IPC) and the Construction Cost National Index (INCC). The weight of each index corresponds to its contribution in the Gross Internal Expenditure, resulting in the following distribution:

- 60% for the IPA;
- 30% for the IPC;
- 10% for the INCC

Moreover, the IGP presents three versions with chained collects of prices, each one depending on the collecting period: the IGP-DI, the IGP-M and the IGP-10.

Table 2.1 shows the evolution of the IGP-DI and the IPCA since 1998, and unveils the different path taken by these two indexes.

Table 2.1 – Annual Changes and Base Indexes of IGP-DI and IPCA – 1997-2011

	IGP-DI annual change%	IGP-DI (Dec. 1997=100)	IPCA annual change%	IPCA (Dec. 1997=100)
1997		100.00		100.00
1998	1.70	101.70	1.65	101.65
1999	19.98	122.02	8.94	110.74
2000	9.81	133.99	5.97	117.36
2001	10.40	147.92	7.67	126.36
2002	26.41	186.99	12.53	142.20
2003	7.67	201.33	9.30	155.42
2004	12.14	225.77	7.60	167.24
2005	1.22	228.53	5.69	176.75
2006	3.79	237.20	3.14	182.30
2007	7.89	255.92	4.46	190.43
2008	9.10	279.20	5.90	201.67
2009	-1.43	275.21	4.31	210.36
2010	11.30	306.31	5.91	222.79
2011*	4.72	320.77	5.43	234.89

\* Until October 2011.

Source: Fundação Getúlio Vargas, IBGE and Institute of Applied Economic Research (IPEA).

The much larger increase in the IGP- DI compared to the IPCA is striking. While the IPCA increased 2.35 times, the IGP-DI increased 3.2 times in the period. In addition to this, the IGP-DI has been much more volatile, with a standard deviation of 7.2%, while the IPCA presented a standard deviation of only 2.7%.

Behind this difference, lies the difference in the methodology. While the IGP-DI is strongly influenced by the wholesale prices sector, the IPCA only focuses on the consumer prices. And some reviews indicate that the IGP-DI has been influenced by the increasing trend in exporting commodity prices in the period much more than the IPCA.

Some criticisms have arisen over the still large use of the IGP in contracts, as the argument goes that the IGP does not represent the “real” inflation for the households in the domestic market, but is largely influenced by the international market prices.

Paulo Rabello de Castro, in an article in Folha de São Paulo (19/03/2003), has argued that, especially after the change in the exchange rate regime in 1999, the wholesale prices have been able to disconnect widely from the prices of the retail sector. Though, contracts negotiated since then among private agents, or between particulars and governments – the case of public services contracts –, or between different government levels – the case of federalization of state debts -, have the IGP as a reference. This relationship has been perverse for the debtor party, since the IGP carries

60% of the influence of the wholesale prices. He argues, because of this, that the IGP is carrying an important distortion as a measurement of the general inflation, and so should be “retired with glory”.

In the same line, Roberto Macedo, in *O Estado de São Paulo* (27/03/2003), opined that it is urgent to repair the IGP or its employment. Some goods that are measured by the IPCA are being readjusted by the IGP, and then leading to more inflation measured by the anterior, which is the index that orients the inflation targeting policy of the Central Bank. Subsequently, the Central Bank raises the interest rate more than it should to combat inflation. As a consequence, occur undue gains, favoring financial investors with assets linked to the IGP, whereas the debts of the states, also indexed to the IGP, increase more than the tax revenues increase. Roberto Macedo concludes, making reference to the surpassing of the legal limit indebtedness of the State of São Paulo, that it should not be considered a case of fiscal irresponsibility of the State government, but a case of “indexation irresponsibility”, in which legislation blesses the use of a distorted index and whose creator does not repair.

These two reputed economists defend that the IGP is distorting and is no longer a fair index, and therefore they suggest that it be retired or reformed.

The consequences for the Brazilian states derived from the use of this index are enormous. So this discussion should be very important in any debate about federalism, fiscal adjustment programs and economic development programs.

How high would the debt of the states be today if the index, since the signing of contracts, would have been the IPCA instead of the IGP-DI? It would certainly be much lower than it is.

According to a numeric exercise done by the Debt Management Office of Rio Grande do Sul, if it were the IPCA instead of the IGP-DI the contractual index applied on the outstanding debt, considering payments already made unchanged, there would be a difference of R\$ 13.4 billion on the outstanding debt, so the actual debt would be 36% less. That is because the total amount of inflationary variation would be less, and consequently the interest total applied as well.

Table 2.2 – Inflationary Variation plus Interest on the debt of the Law 9.496 and PROES of Rio Grande do Sul, considering the IGP-DI or the IPCA – 1998-2010

THOUSANDS OF R\$		
INFLATIONARY VARIATION + INTEREST IN THE PERIOD 1998-2010		
IGP-DI (A)	IPCA (B)	DIFFERENCE (A-B)
40,000,823	26,608,923	13,396,900

The Brazilian economy has experienced in the last decade a macroeconomic scenario with much more stability than it used to have in the past. The country has attained a more manageable inflation rate. For several years it has been within the interval of the inflation targeting system – the target has been 4.5% in the last years. The Brazilian currency fluctuates according to the flexible exchange regime, and has not experienced any serious threat. In fact, it has been experiencing a slight gradual appreciation in relation to the dollar. Even in the peak of the world economic crisis in 2008, despite a turning movement toward depreciation, no threat of a currency crisis was considered. Brazil

has accumulated international reserves of USD 350 billion ([www.bcb.gov.br](http://www.bcb.gov.br), 26/09/2011), thus has been able to avoid significant threats in the currency. Moreover, Brazil has sustained good performances on the trade balance, on economic activity growth and on the path of debt/GDP ratio.

All this has enhanced significantly the external system perception over the fundamentals of Brazilian economy. This better perception made it possible to Brazil to issue in the external market, for the first time, in September 2005, sovereign debt securities denominated in the Brazilian currency, the Real. The National Treasury has accomplished, since 2005, nine successful issuances of Brazilian bonds in Reais. According to Table 2.3, the coupon has been fixed in 10.25% per year, and the estimated yields to maturity have been below 9% per year, in the last three issuances in the external market of Brazilian bonds denominated in Reais.

As a remarkable achievement, on April, 2008, the agency Standard & Poor's has upgraded the Brazil's rating from BB+ to BBB-, on the long-term foreign currency country's debt, and received a credit ranking as of "investment grade" for the first time. The raise in the Brazilian credit ranking to "investment grade" was followed by agencies Fitch (May, 2008) and Moody's (September, 2009).

Table 2.3 – Foreign Bond Debt in Brazilian Currency (Brazilian Reais) –Characteristics of the Voluntary Issuances

BONDS	Settlement Date	Maturity Date	Manager(s)	Volumes Original Currency	Tenor (years)	Coupon % per year	Frequency	Yield % per year
Global BRL 2016	26.09.2005	05.01.2016	J.P. Morgan Securities Inc. Goldman Sachs & Co	3.400.000.000	10 anos	12,500%	semestral	12,750
Global BRL 2022	13.09.2006	05.01.2022	Citigroup Global Markets Inc. J.P. Morgan Securities Inc.	1.600.000.000	15 anos	12,500%	semestral	12,875
Global BRL 2022 (Reop.)	13.10.2006	05.01.2022	Merrill Lynch UBS Securities LLC	650.000.000	15 anos	12,500%	semestral	12,466
Global BRL 2022 (Reop. 2)	11.12.2006	05.01.2022	Morgan Stanley & Co. Goldman Sachs & Co	750.000.000	15 anos	12,500%	semestral	11,663
Global BRL 2028	14.02.2007	10.01.2028	J.P. Morgan Securities Inc. UBS Securities LLC	1.500.000.000	21 anos	10,250%	semestral	10,680
Global BRL 2028 (Reop.)	27.03.2007	10.01.2028	Citigroup Global Markets Inc. Barclays Capital Inc.	750.000.000	21 anos	10,250%	semestral	10,279
Global BRL 2028 (Reop. 2)	17.05.2007	10.01.2028	Deutsche Bank Securities Inc. HSBC Securities (USA) Inc.	787.500.000	21 anos	10,250%	semestral	8,938
Global BRL 2028 (Reop. 3)	26.06.2007	10.01.2028	J.P. Morgan Securities Inc. Credit Suisse Securities (USA) LLC	750.000.000	21 anos	10,250%	semestral	8,626
Global BRL 2028 (Reop. 4)	27.10.2010	10.01.2028	Deutsche Bank Securities Inc. Barclays Capital Inc.	1.100.000.000	17 anos	10,250%	semestral	8,850

Source: National Treasury Secretariat (STN) ([www.tesouro.fazenda.gov.br](http://www.tesouro.fazenda.gov.br)).

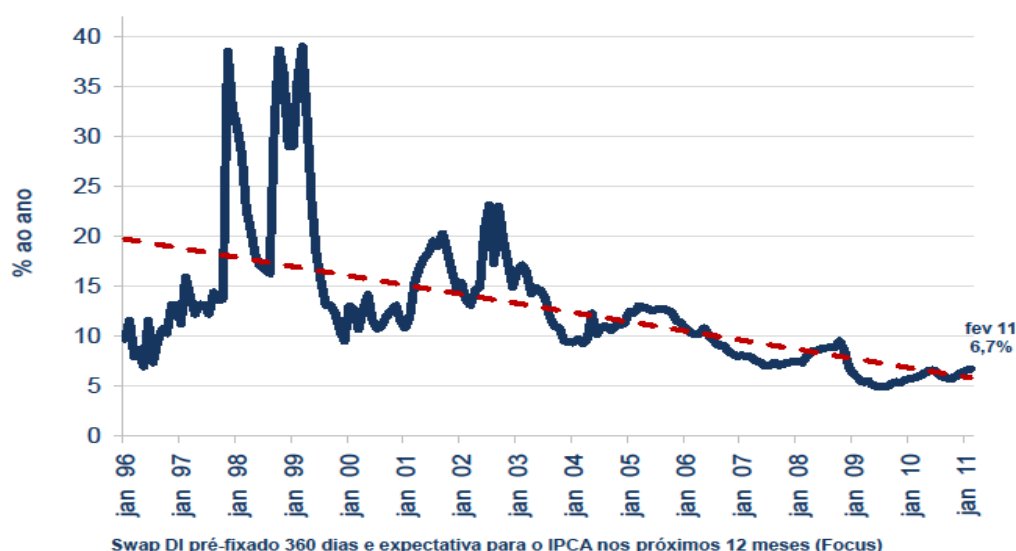
This good framework has impacted the real domestic interest rates' level as well. The Central Bank of Brazil has administered the benchmark interest rate of the economy – Selic – to achieve low inflation rates within the limits of the inflation targeting system. The real interest rate in the economy is the nominal interest rate (Selic) minus inflation. The President of the Central Bank, Alexandre Tombini, in a presentation to the Commission of Economic Affairs of the Senate (CAE), on March 22, 2011, presented the slide below (Graph 2.1) that shows the pathway that the real interest rate in Brazil has been following. As we can observe, the real interest rate has been gradually decreasing since the upward "Selic shocks" in 1998 and 1999. This movement is slow, but clearly downward, and there is a trend to the real interest rate in the economy in the near future to stand below 6% per year. In fact, as

we will explore just ahead, shorter and longer term Treasury bonds are already paying less than 6% per year.

In order to get the most recent information about the real interest rate in Brazil, we have compared data of expectations for the IPCA for the forthcoming 12 months from Focus Report ([www.bcb.gov.br](http://www.bcb.gov.br)), and the data for swaps of annual interest rate – DI vs. pre-fixed, of Mercantile & Futures Exchange ([www.bmf.com.br](http://www.bmf.com.br)). The swaps give us the market expectation for the nominal interest rate for the next 12 months. Differences between swap rates and expectations for inflation will result in the real interest rate. The results are plotted in the Graph 2.2. The swaps of interest rates dropped a lot recently, and therefore the real interest rate, resulting mainly from the decision of COPOM (Committee of Monetary Policy) of decreasing the SELIC to 12% per year in the last meeting on August 30 and 31, 2011. According to this method, today Brazil presents annual real interest rates below 5%.

Graph 2.1 – Trajectory of Real Interest Rates – Central Bank of Brazil

## Taxa Real de Juros



Fontes: BM&FBovespa / BCB

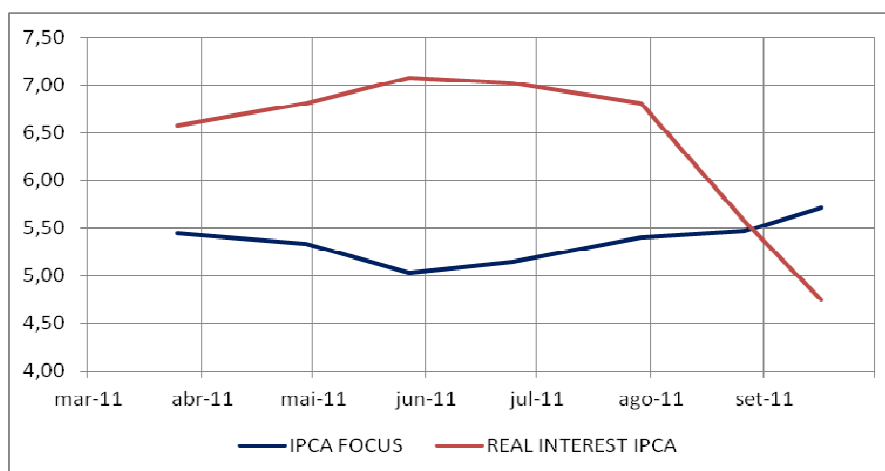
BANCO CENTRAL DO BRASIL 57

Source: Central Bank of Brazil, presentation of Mr. Alexandre Tombini in the Commission of Economic Affairs of the Senate of March 22, 2011.

This hopeful situation have led some authors to question the future of the debt agreement of the states in an economic scenario possible for this decade of a prolonged period of real interest rates of 4% or 5% per year, in which the states would be in a good condition to ask for revision on clauses (Giambiagi, Blanco e Ardeo, 2008).

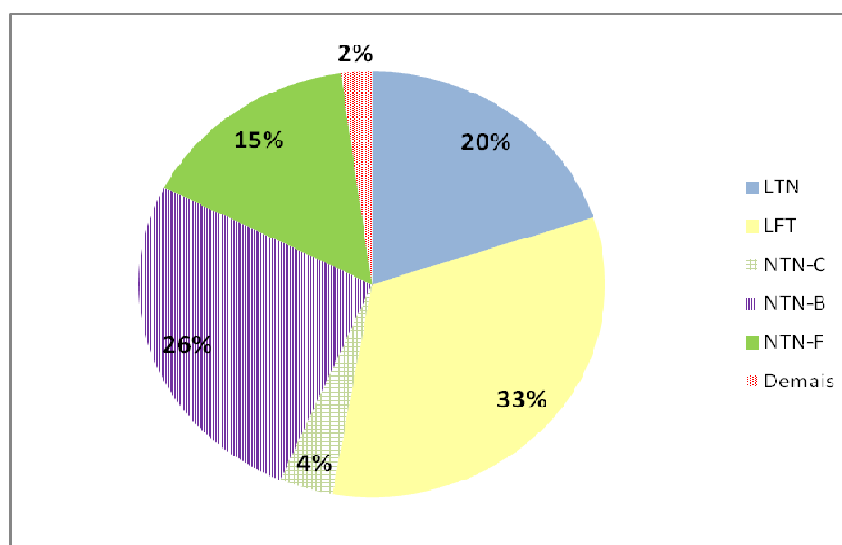


Graph 2.2 – Expectations for the Annual IPCA and Real Interest Rates in %



The National Treasury Secretariat (STN) is the entity in charge of the federal debt management in Brazil. In the domestic market, STN manages a set of three main kind of bonds. The first kind of bond is called LFT, a Selic linked bond, which pays interest in the corresponding amount of the Selic variation up to its maturity. The second kind of bond are the prefixed bonds and are called LTN and NTN-F, which pays the interest negotiated in the moment of the issuance of these bonds. The third kind of bond is called NTN-B, which is adjusted by a price index – the IPCA – and pays in its maturity the variation of the IPCA plus an interest negotiated in the moment of purchase. The total federal internal debt in the market, of R\$ 1.676 trillion, is represented among these different kinds of bonds as shown in the Graph 2.3.

Graph 2.3 – Total Federal Internal Debt – Stocks in Market



Source: National Treasury Secretariat (STN), data of July, 2011 ([www.tesouro.fazenda.gov.br](http://www.tesouro.fazenda.gov.br)).

About 4% of the federal internal debt in the market – R\$ 62 billion – is still represented by NTN-C, a kind of bond adjusted by the IGP-M, which STN issued until 2006. These bonds were the only ones referenced by a price index, until 2004, when the STN introduced the NTN-B, the government bond adjusted by the IPCA. Since then, new issues of NTN-C were gradually replaced by new issues of NTN-B. The STN decided not to issue NTN-C anymore, and in December, 2006 they issued the last series of this bond. Behind this decision was the federal government's desire of, after introducing the IPCA as the reference of the inflation targeting system and of the monetary policy, replace the IGP for the IPCA as the usual index to adjust contracts and financial assets. Some people say this was a clear evidence of governmental acknowledgement of the inadequacy of the IGP as a good measure of inflation. The adoption of the consumer price index as reference to government bonds' adjustments, by the way, is observed by the United States Treasury (Treasury Inflation-Protected Securities) and by the English Treasury (Index-Linked Treasury Stock).

What we would like to highlight here is the decrease in yield to maturity of Treasury bonds over this last period. Anyone who consults the site of "Tesouro Direto", a site of public direct negotiation of Treasury bonds with STN, is able to verify the yields to maturity of bonds, as follows. Table 2.4 was extracted from this site on 11/24/2011. According to this table, yields to maturity of NTN-B are in general between 5% and 6%, reaching even less than 5% for shorter term bonds.

Table 2.4 – Prices and Rates of Treasury Bonds Available to Purchase

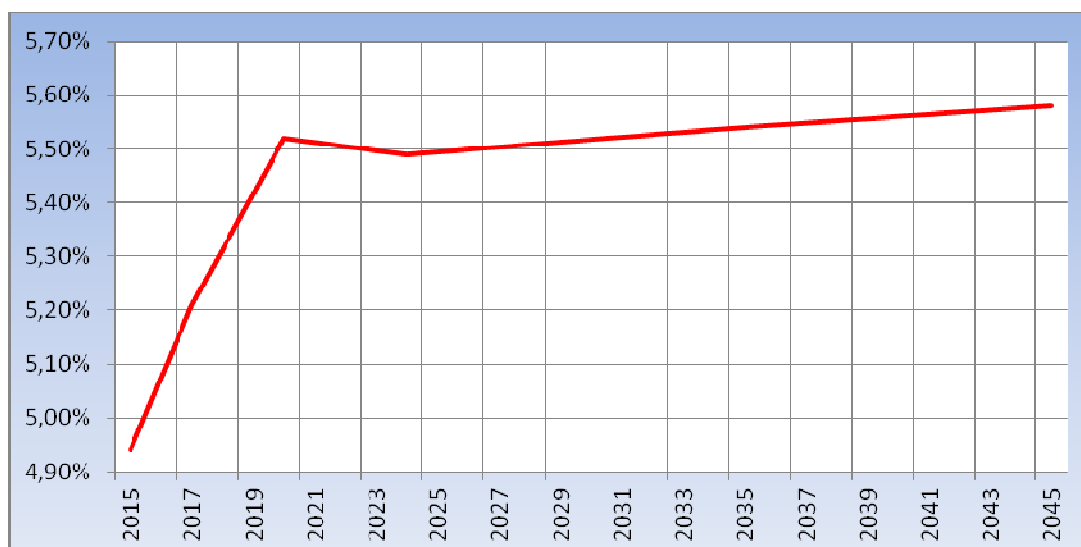
Título	Vencimento	Taxa(a.a.)		Preço Unitário Dia	
		Compra	Venda	Compra	Venda
<b>Indexados ao IPCA</b>					
NTNB Principal 150515	15/05/2015	4,99%	-	R\$ 1.765,67	-
NTNB 150515	15/05/2015	4,94%	-	R\$ 2.162,39	-
NTNB 150517	15/05/2017	5,21%	-	R\$ 2.171,06	-
NTNB 150820	15/08/2020	5,52%	-	R\$ 2.193,27	-
NTNB 150824	15/08/2024	5,49%	-	R\$ 2.221,97	-
NTNB Principal 150824	15/08/2024	5,54%	-	R\$ 1.055,06	-
NTNB 150535	15/05/2035	5,54%	-	R\$ 2.221,63	-
NTNB Principal 150535	15/05/2035	5,59%	-	R\$ 585,68	-
NTNB 150545	15/05/2045	5,58%	-	R\$ 2.229,40	-
<b>Prefixados</b>					
LTN 010113	01/01/2013	9,82%	-	R\$ 902,15	-
LTN 010114	01/01/2014	10,26%	-	R\$ 814,30	-
LTN 010115	01/01/2015	10,65%	-	R\$ 730,19	-
NTNF 010117	01/01/2017	11,06%	-	R\$ 1.000,47	-
NTNF 010121	01/01/2021	11,25%	-	R\$ 973,02	-
<b>Indexados à Taxa Selic</b>					
LFT 070315	07/03/2015	0,00%	-	R\$ 4.968,85	-
LFT 070317	07/03/2017	0,00%	-	R\$ 4.968,85	-

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Source: National Treasury Secretariat ([www.tesouro.fazenda.gov.br](http://www.tesouro.fazenda.gov.br)).

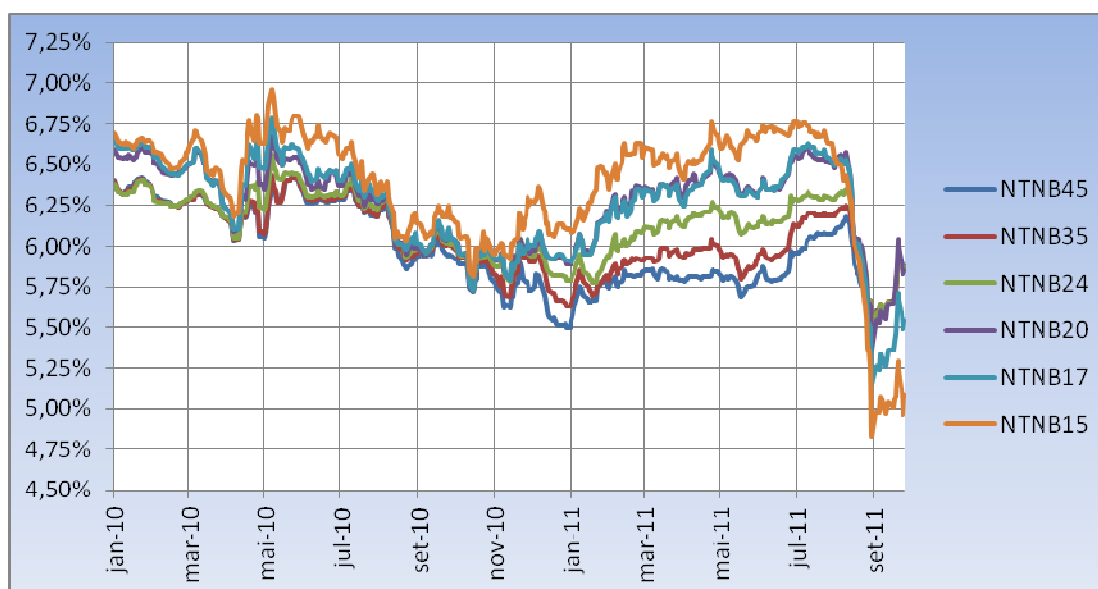
In the Graph 2.4 we used data from Table 2.4 to describe the term structure of interest rate and depict the yield curve for the IPCA linked bonds – the NTN-B.

Graph 2.4 – The Yield Curve of NTN-B



The Graph 2.5 depicts the track of yields to maturity to investors that was observed on bonds negotiated over the period 2010 and 2011 (until Sept.) for NTN-B with different times to maturity (NTNB45, for instance, is a NTN-B maturing in 2045).

Graph 2.5 – Yields to Maturity for NTN-B of Different Maturities – 2010-2011



Elaborated by the author with data from the National Treasury Secretariat ([www.tesouro.fazenda.gov.br](http://www.tesouro.fazenda.gov.br)).

We believe from this analysis that the cost of federal treasury bonds are below IPCA plus 6% per year. They were in a clear downward trend in 2010, but they suffered an increase in 2011, up to

July, and in August they tumbled especially quickly due to the unexpected cut by the COPOM (Monetary Policy Council) of the benchmark interest rate – SELIC – which dropped to 12% per year. We should examine carefully from now on the movements of implicit variables here, but we have many reasons to believe that the yields in the treasury bonds will remain below 6% per year, and will continue to decrease gradually in the medium and long run.

During these changes, the interest rates in the international economy have been remarkably low. From the outbreak of the world financial crisis in September, 2008, the Libor-dollar (floating interest rate in the London interbank market) dropped from the level of 4% per year to less than 1% per year, in an interval of few months, and for more than two years has been below 0.5% per year. Presently, the Libor-dollar for loans of 1 and 3 months are quoted in 0.24% and 0.37% per year.

These very low interest rates result from central banks' policies in developed countries, notably in the United States, to provide liquidity to the system, in order to react to the slowdown in the economy. The economic activity in the United States is still very weak, despite all measures taken. A warning sign toward Europe has been posed, since the risk of default in some Euro-zone countries has contributed to a prognostic of an extended recession. The Federal Reserve in the United States has recently announced important measures – “Operation Twist” – to ensure that the low interest rates in the present will continue for longer periods, by means of managing Treasury securities of short and long term, and mortgages (The Wall Street Journal, September 21, 2011). So, we tend to affirm that the low rates in the main international markets will prevail for the next years.

The State of Rio Grande do Sul, with the intention to take advantage of the lower interest rates in the international market, was successful in September, 2008, in obtaining an international loan with the World Bank of USD 1.1 billion, in order to restructure part of its debt portfolio. This was the first loan taken by any state or subnational unit in Brazil for a debt restructuring operation after the release of the Law of Fiscal Responsibility. This debt restructuring operation was framed under the §7<sup>o</sup>, article 7<sup>o</sup>, of the Senate Resolution 43/2001. The main purposes of Rio Grande do Sul were smoothing on debt payments concentrated in the period 2008-2012, extension of average time to maturity and replacement of debts with high interest rate by debts with lower interest rate.

Through this debt restructuring process, implemented between 2008 and 2010, and composed of two main tranches (USD 650 Million released in Sept-Oct, 2008, and USD 450 Million released in Aug 2010), Rio Grande do Sul could pay back, among other debts, a small part of the debt with the federal government under the Law 9.496/97. Thereby, the State was able to replace an expensive debt determined by the financial clauses of the Law 9.496/97 (IGP-DI plus 6% per year) by other one determined by Libor plus currency exchange variation.

Because of the differences in the interest rates, in the currency and in the repayment schedule, the Debt Office estimates that the state incurred in savings in the debt cash flow until now of R\$ 500 million with to the replacement of debts. This result by now has quite overcome the original estimates produced during the period of designing and negotiating prior to September, 2008. Aside of this, was estimated a gain of present value of R\$ 670 million, i.e., an analysis of present value using market

references for financial assets applied over the schedule of the loans' repayments has estimated a gain of R\$ 670 million due to the property differences in these two debts, the debt displaced and the new debt.

Due to the unprecedented nature of this operation, the National Treasury Secretariat (STN) issued the Conjunct Note n° 22/2008/STN, determining the following basic assumptions for the analysis of proceedings of restructuring/recomposing of debts:

- a) the loan amount for restructuring debt operations shall be used exclusively to the reduction or the payoff of existing debts;
- b) the present value (PV) of the restructured debt shall be lower or equal to the present value of prior debt, and a prudent risk level shall be preserved;
- c) the restructuring process shall be used to the payoff of debts' principal;
- d) the new loan shall not have any grace periods, but a customized repayment schedule may be applied.

The successful experience of Rio Grande do Sul in this process has encouraged other Brazilian states and large municipalities to make similar operations, and the State itself is presently considering making a new design for a new loan of debt restructuring.

Would the STN be willing to agree to the replacement of the debt of the states with the federal government by new debts with multilateral organisms or private sector banks, in a larger scale?

Giambiagi, Blanco e Ardeo (2008) discussed a proposal of "recreation" of a state and municipal debt with the private sector. They have formulated a financial engineering of bonus swaps, in which a new debt of states and municipalities would be placed with the private sector, allowing a flattening of the debt payments of subnational governments. They argue that this would allow the National Treasury to reduce simultaneously important parts of its assets represented by the debt of subnational units, and its own liabilities represented by debt securities, thus reducing the federal gross debt in up to 12% of GDP, favoring the perception of credit risk rating agencies like Standard & Poors, and favoring further improvements in the rating of the country.

In Blanco *et alli* (2008), authors go further and propose a comprehensive market solution for the public debt of the states, in which they would be allowed again to issue their own securities, guaranteed by collateral – National Treasury bonds – in a five years long program.

Most of the analysis about the program of federalization of the debt of the states under the Law 9.496/97 recognizes that this program was quite successful, contributing decisively to the country's fiscal and economic stability during past several years. Such program improved the fiscal practices and consequently the fiscal outlook, since the states have begun to, under the sponsor of annual programs of fiscal and management performance goals agreed with STN, engender consecutive fiscal surpluses. This framework of fiscal control was reinforced by the Law of Fiscal Responsibility, passed in 2000, through which, several objectives and rigid limits for the fiscal conduct of states and municipalities were established, while to the federal government was assigned the role of controlling and inspection. The limits and fiscal targets of the Law of Fiscal Responsibility are related mainly with: a downward

trajectory of government debt, measured by the financial debt over revenues ratio, the achievement of positive primary balances, the maintenance of civil servants' payroll under limits, and the improvement in the level of own revenues collection. Under the Law of Fiscal Responsibility, the federal government was no longer allowed to refinance debt of subnational entities. This Law also imposed strict rules for new borrowing, reinforcing the existing very strong limits over the states to be financed via indebtedness.

We would like to point out the real support provided by the states and municipalities to the achievement of surpluses in the national accounts balances and to the macroeconomic stabilization process in Brazil, under this framework.

The Brazilian States recovered from the 90's financial crisis and moved to a more solid condition. After five years (1995-1999) of negative primary balances, peaking in 1997-1998, primary consolidated balance for the 27 states became consistently positive after 2000, according to Piancastelli e Boueri (2008), in a discussion paper in which the authors produced a comprehensive balance of the renegotiation of the debt of the states, ten years after its launching.

Table 2.5 shows the primary balance of the whole public sector in Brazil as it relates to the GDP in the last five years. The states and municipalities contributed to the achievement of the governmental consolidated sector's primary balance an average of 25%. This means that consolidated primary balance of states and municipalities represented 0.86% of GDP on average in this period, out of a primary total balance of governmental consolidated sector of 2.94% of GDP.

Table 2.5 – Primary Balance as Percent of GDP

	2006	2007	2008	2009	2010	AVERAGE
Public Sector Consolidated	3.2	3.3	3.4	2.0	2.8	2.94
Central Government	2.2	2.2	2.4	1.3	2.1	2.04
States	0.7	1.0	0.9	0.6	0.5	0.74
Municipalities	0.1	0.1	0.2	0.1	0.1	0.12
Government Owned Companies	0.2	0.0	0.1	0.0	0.1	0.08

Source: Bulletin of Central Bank of Brazil (2010).

The States as well were unquestionably successful in cutting the previous growth of their debts. The ratio of debt over the Net Current Revenue (RCL) presents an important decrease over time (Table 2.6). According to Piancastelli and Boueri (2008), this ratio has decreased from 1.70 in 2000 to 1.43 in 2006. Only one state actually presented an increase in this ratio during this period – Minas Gerais. While this ratio in 2000 was higher than 2.0 in seven states, in 2006 only two remained above this level – Alagoas and Rio Grande do Sul. According to 2010 data, in aggregate, the states have decreased even further the ratio debt over RCL, which reached 1.12. Twenty have lowered this ratio below 1. However, for the four most indebted states – São Paulo, Minas Gerais, Rio de Janeiro and Rio Grande do Sul – this ratio is still above 1.5. The total debt of these four states currently reaches R\$ 311 billion and corresponds to more than 3/4 of the Brazilian states' debt.

Table 2.6 – Ratio of Debt over Net Current Revenue (RCL) in the Brazilian States

MILLIONS OF R\$

STATES	2000	2006	2010		
	DEBT/RCL		DEBT	RCL	DEBT/RCL
AC	1.04	0.52	1,423	2,635	0.54
AL	2.23	2.22	6,799	4,223	1.61
AM	1.00	0.33	2,007	7,433	0.27
AP	0.05	0.11	449	2,494	0.18
BA	1.64	1.02	9,057	17,417	0.52
CE	0.87	0.60	2,680	9,571	0.28
DF	0.36	0.33	2,082	11,567	0.18
ES	0.98	0.34	1,416	8,329	0.17
GO	3.13	1.82	13,680	10,523	1.30
MA	2.58	1.15	4,398	6,766	0.65
MG	1.41	1.89	60,499	33,241	1.82
MS	3.10	1.81	6,335	5,193	1.22
MT	2.50	1.10	3,928	7,142	0.55
PA	0.57	0.44	2,610	9,000	0.29
PB	1.53	0.76	1,810	5,028	0.36
PE	0.86	0.67	4,799	12,305	0.39
PI	1.73	0.85	2,443	4,524	0.54
PR	1.29	1.26	15,130	17,000	0.89
RJ	2.07	1.72	53,953	34,585	1.56
RN	0.71	0.26	1,167	5,557	0.21
RO	1.11	0.72	2,010	3,722	0.54
RR	0.31	0.10	74	1,850	0.04
RS	2.66	2.53	43,437	20,298	2.14
SC	1.83	1.09	7,464	11,848	0.63
SE	0.88	0.57	1,541	4,670	0.33
SP	1.93	1.89	152,728	99,822	1.53
TO	0.35	0.13	635	3,969	0.16
AVERAGE	1.70	1.43	14,983	13,360	1.12

Source: Piancastelli and Boueri (2008) for data of 2000 and 2006. National Treasury Secretariat for data of 2010.

Another important approach to be examined, in order to underline the adjustment process taken by the Brazilian states, is the participation in the net debt of the overall public sector. The Brazilian states had a fundamental role in the declining trend of the ratio of debt to GDP in the Brazilian public sector in the last ten years. In the period 2001-2011, the overall public sector debt decreased from 52% to 39.2% of GDP, and the debts of state governments decreased from 15.6% to 9.9% of GDP (Table 2.7). Thus, in terms of participation in GDP, the Brazilian states reduced their debt by about one third, in this period. We can observe, though, that this decrease was faster in other debts than in the renegotiated debt under the Law 9.496/97 and Proes.

According to Piancastelli and Boueri (2008), all this adjustment process presented a negative side that was the expressive reduction in states government's investments. They were reduced from 2.2% in 1995 to 0.94% of GDP in 2006. In the same period, the ratio of investment expenditures and total spending, at the state level, dropped from 16.62% to 9.75%. These authors say this reduction was due to the efforts to the accomplishment of the higher debt payments, and the achievement of the fiscal targets, since the investments expenditures were treated as an adjustment variable in the process. We believe this is true in the case of Rio Grande do Sul, which presented a downward trend

in investment spending since 1998, in relation to the Net Real Revenues (RLR), according to the Graph 2.6.

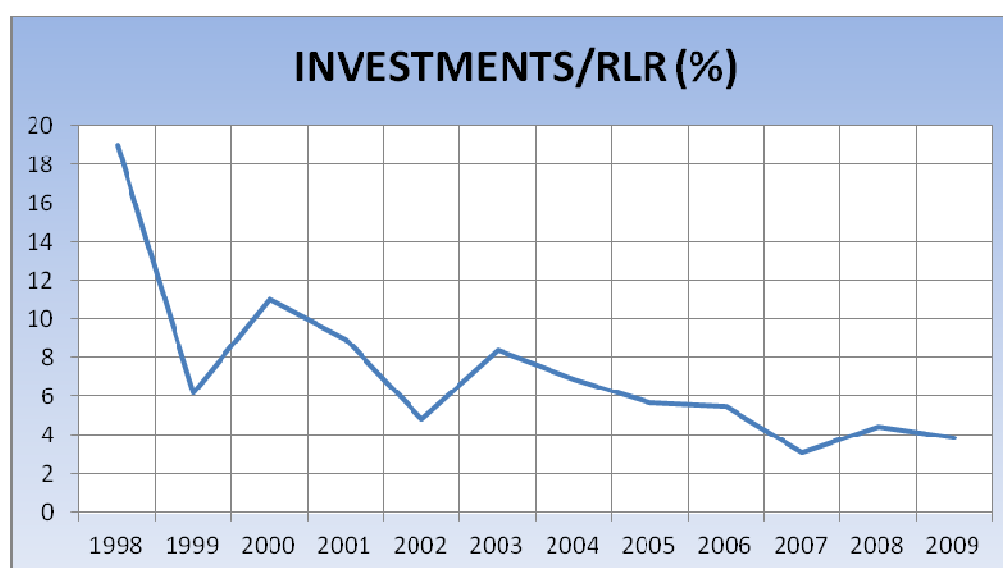
Table 2.7 – Overall Public Sector Debt in Brazil relative to GDP (%)

Discrimination	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011 *
<b>Total Net Debt (A)</b>	<b>52.0</b>	<b>60.4</b>	<b>54.8</b>	<b>50.6</b>	<b>48.4</b>	<b>47.3</b>	<b>45.5</b>	<b>38.5</b>	<b>42.8</b>	<b>40.2</b>	<b>39.2</b>
Federal Government	32.2	38.3	34.4	31.4	30.7	30.7	30.4	25.1	30.5	28.4	28.1
Central Bank of Brazil	-0.6	-0.4	-0.3	-0.4	0.2	0.4	0.3	-1.1	-1.2	-1.2	-1.1
State Governments	15.6	17.5	16.4	15.8	14.2	13.4	12.2	11.9	11.0	10.5	9.9
Renegotiation (Law 9.496/97+Proes)	11,8	12,9	12,5	12,5	11,7	11,2	10,7	10,6	9,9	9,5	9,1
Renegotiation (Law 8.727/93)	2,0	1,8	1,7	1,5	1,3	1,1	1,0	0,8	0,7	0,5	0,4
Other Debts	1,7	2,7	2,2	1,8	1,2	1,0	0,5	0,5	0,4	0,5	0,3
Municipalities	2,0	2,4	2,3	2,3	2,1	2,0	1,8	1,8	1,8	1,7	1,7
State Enterprises	2,8	2,6	2,2	1,5	1,2	0,9	0,8	0,8	0,7	0,7	0,6
Net Domestic Debt	42.4	44.7	43.7	42.7	45.3	48.4	53.0	49.5	52.0	49.9	50.7
Net Foreign Debt	9.6	15.7	11.2	7.9	3.2	-1.2	-7.5	-11.0	-9.2	-9.8	-11.5

\* For 2011 we present data until August.

Source: Central Bank of Brazil (www.bcb.gov.br).

Graph 2.6 – Investment Expenditures relative to the Net Real Revenue (RLR) in Rio Grande do Sul – 1998-2009



Source: State of Rio Grande do Sul, State Public Debt, Annual Report 2010.

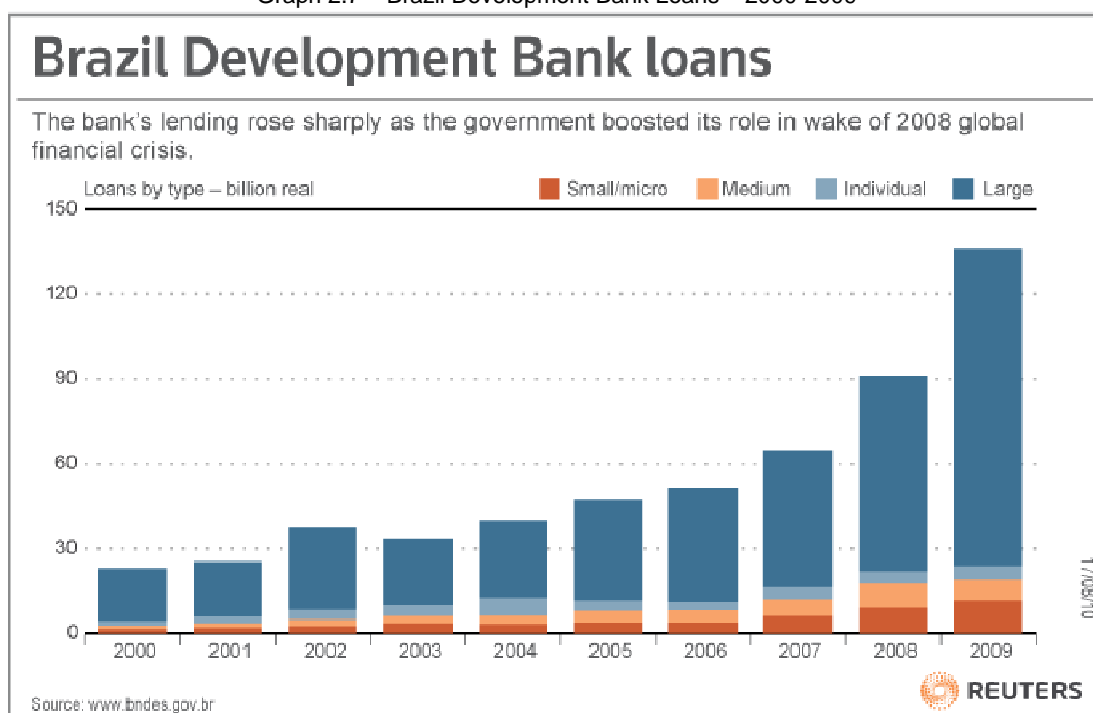
We would like to make a few comments about the recent policies for the Brazil national development bank – BNDES – and the recent funding process that took place. The Brazilian Treasury has capitalized on the BNDES to the amount of R\$ 180 billion in the last two years, and the government has advertised it was a crucial step to keep credit flowing in the economy during and after the global financial crisis.



On a loan of BNDES is paid interest, in general, the TJLP (Long Term Interest Rate) plus a margin ranging from 1 to 2%. The TJLP is quoted now at 6% a year. Therefore, one can infer that the cost of its loan is far lower than the market cost and of the rates paid by the Treasury to fund its debt, which can be roughly compared to the cost of public funds to taxpayers. In reality, BNDES loans are government subsidized loans. Moreover, criticisms have arisen over the fact that its lending are directed to, in general, the same few large companies. For Geraldo Biasoto, an executive of the São Paulo state government, for instance, it should not be acceptable to restrict the capacity of the states to invest more, while the federal government dramatically increases the allocation of funds toward investment agencies like the BNDES. According to him, in the period of December, 2008 to September, 2010, the total loans of these agencies increased from a size corresponding to 1.4% of GDP to 7.4% of GDP, and today this corresponds to R\$ 254.4 billion. In other words, in just less than two years these loans reached an equivalent amount to 75% of the overall debt of the states (O Estado de São Paulo, 29/11/2010).

The decision to boost BNDES credit lines instead of applying these resources anywhere else was rather a political choice. Why not allocate these subsidized credits or part of this to allow the increasing of infrastructure investments of the states? We affirm that the infrastructure investments at the state level are very important for boosting the country's economic growth. However because of the high charge with debt payments that the States are committed to, these investments are much lower than they should be.

Graph 2.7 – Brazil Development Bank Loans – 2000-2009



To finalize this chapter, we try to close some most important ideas. The need to replace the IGP-DI, as the inflation index applied on the contractual debts, is imperative. The IPCA could be a good successor of the IGP-DI, since it is more adherent to SELIC, and less related to wholesale prices and international prices of commodities. Moreover, it is a more stable index, and does not fluctuate as much as the IGP-DI. The federal government acknowledged that the IPCA is a more adequate inflation measure when, in 1999, established the inflation targeting system. Therefore, it should be recognized that the replacement of the index is not a privilege but is intended to provide an effective interest rate of 6%.

The country is presenting an economic scenario of real interest rates far below the ones that prevailed in the past fifteen years wherein the country is stepping towards interest rates as low as 4% and 5% a year. The yield to maturity of Treasury bonds linked to the IPCA is presently ranging from 4.94% to 5.59% per year. So, the cost of funding of the National Treasury is clearly below the cost of the refinanced debt of the states. All this leads us to the conviction that the federal government would have the fiscal instruments to provide to the states better cost conditions regarding their contractual debts. By providing this in a general restructuring debt plan, the government would discourage individual efforts, and even prevent political pressures for instituting, accidentally, inefficient and not transparent short term solutions.

The program of federalization of the debt of the states under the Law 9.496/97 – Program to Support the Restructuring and Fiscal Adjustment of States – has been a quite successful program. It unveiled a new era of fiscal responsible practices, which contributed decisively to the country's economic stability. The advent of the Law of Fiscal Responsibility in 2000 reinforced fiscal responsibility and transparency in the government sector. In this context, municipalities and states have contributed substantially to the surplus in the primary balance and in the reduction of the overall debt of the government sector.

The negative effect of this process of fiscal adjustment was the decrease in the investments expenditures by the States in regional infrastructure projects. This sets a problem, as the country seeks to increase government infrastructure investments. In fact the government is engendering huge investment programs under the umbrella of the Program of Growth Acceleration (PAC), and part of this is expected to come from investment programs on a state level. In this context it is somewhat surprising the efforts of the federal government for capitalizing the National Economic and Social Development Bank (BNDES) with huge amounts of money – the Treasury has directed about R\$ 200 billion for the funding process taken place in 2008 and 2009 – in order to provide, mainly to the private sector, loans at long run below the market rates, while to the states have been denied the additional space to invest.

In the next chapter we will try to draft a simple plan, to make it possible to replace the price index and lower the interest rates applied to the contracts of debt refinancing of the states, based on a replacement of Treasury bonds in the market and on designing of an account book for this purpose.

This draft is intended to be, as much as possible, beneficial to the central government and beneficial to the states. We will also shortly discuss regarding the article 35<sup>th</sup> of the Law of Fiscal Responsibility, which is viewed as an impediment to changes in the clauses of the contracts.

## Chapter 3

### An outline to a conversion of the states' debt

The plan that we outline in this chapter basically consists of a program of adjustment on the issuing schedule by the Treasury of the IPCA linked bonds, the replacement of the IGP-DI linked bonds, and a programmed transfer to the states of the new interest rates practiced in the bond market, to be applied on the contractual debts with the federal government, in replacement to the current charges, which consists of IGP-DI plus interest of 6% per year.

For this purpose, we will first look on an asset-liability management viewpoint, over the gross and net debt balance of the National Treasury. The debt of the states renegotiated under the Law 9.496/97 is an important asset in the balance of the National Treasury. This debt, together with others credits of the Treasury – like other debts in which the states and municipalities are debtors, and other loans which the lender is the Treasury – diminishes the gross debt to result in the net debt. The amount of the National Treasury credit related to the debt of the states under the Law 9.496/97 corresponds to R\$ 361.5 billion, which totals 9.1% of the GDP. The overall credit with subnational governments corresponds to R\$ 480.5 billion. Other credits under the titles “domestic availabilities”, “credits with indirect entities” and “credits administered by STN” totals R\$ 1.053 trillion. In the debtor side, there are three main groups that accrue R\$ 2.479 trillion: “debt securities held by the public”, “debt securities held by the Central Bank” and “external debt”. The gross debt of the Treasury corresponds to R\$ 2.463 trillion (62.3% of the GDP), but the net debt, i.e., the gross debt discounted by total credits, is much less, corresponding to R\$ 929.0 billion (23.5% of the GDP). A clear outlook of this is presented in Table 3.1, which we designed with data until August, 2011, provided by the monthly edition of the bulletin National Treasury Balance.

As in many balances, in this National Treasury balance, the characteristics of the assets and of the liabilities do not match, presenting different currencies, maturities, coupons, grace periods, bonus schedule, etc. In this special group of Federal Debt Securities held by the Public, the Treasury presents a portfolio of bonds with different characteristics. As we recall from Chapter 2, the STN manages a set of three main kinds of bonds:

- LFT – bonds linked to Selic (the benchmark interest rate)
- LTN and NTN-F – bonds with pre-fixed interest
- NTN-B – bonds linked to the IPCA (inflation linked bonds)

Table 3.1 – National Treasury's Gross and Net Debt

MILLIONS OF R\$	
	August, 2011
I. NET DOMESTIC DEBT	854,024.60
I.1. DOMESTIC DEBT	2,387,596.20
Federal Debt Securities held by the Public	1,692,957.50
LFT	560,437.30
LTN	347,775.00
NTN-B	432,793.10
NTN-C	61,341.70
NTN-F	256,328.20
Other Debt Securities	34,282.20
Federal Debt Securities held by the Central Bank	711,318.90
LFT	248,068.60
LTN	133,125.40
Others Securities in the Central Bank Portfolio	330,124.80
(-) Applications in Public Securities	( 28,320.60)
Other Domestic Obligations	11,640.40
I.2. INTERNAL ASSETS	1,533,571.60
Domestic Availabilities	402,637.10
Credits with Subnational Governments	480,493.90
Debt Renegotiation (Law 8.727/93)	30,521.40
Debt Renegotiation - States (Law 9.496/97)	361,507.80
Debt Renegotiation - Municipalities (MP 2.185/01)	58,483.90
Others	29,980.80
Credits with Indirect Entities	244,872.30
Credits Administered by STN	405,568.40
II. NET EXTERNAL DEBT	75,012.00
II.1. EXTERNAL DEBT	75,434.50
Securities	61,024.80
Euro	4,077.20
Global US\$	45,225.70
Global BRL	11,595.60
Other Securities	126.30
Contractual Debt	14,409.70
Multilateral Organisms	10,370.70
Private Creditors and Governmental Agencies	4,039.00
II.2. EXTERNAL CREDITS	422.50
III. NET DEBT OF NATIONAL TREASURY (I+II)	929,036.60
NET DEBT OF NATIONAL TREASURY/GDP	23.50%
IV. GROSS DEBT OF NATIONAL TREASURY	2,463,030.70
GROSS DEBT OF NATIONAL TREASURY/GDP	62.30%

Source: National Treasury Secretariat ([www.tesouro.fazenda.gov.br/hp/resultado.asp](http://www.tesouro.fazenda.gov.br/hp/resultado.asp)).

In addition to these bonds, there is the NTN-C, another inflation-linked bond, which is adjusted by the IGP-M.

We propose that the National Treasury coordinates efforts in the federal securities debt management in an integrated plan to make it possible the replacement of the present remuneration of the debt of the states, of IGP-DI plus 6% per year, by a remuneration of IPCA plus 4% per year or

below. These efforts would mainly consist in a profile adjustment of securities portfolio toward a more IPCA linked profile.

In this plan there would be no discount or reduction on the outstanding debt of the states, but a change for the future in the inflation index and in the real interest rate.

In the debt restructuring process between 1997 and 1998, the federal government put in place a program of new issues of Treasury bonds (LFTs), in coordination with the Central Bank, in order to assume securities and contract debts of the Brazilian states, and replace them in each state for a single contractual debt. For this purpose, the National Treasury issued R\$ 115.6 billion in new securities. An extra issuing program of R\$ 61.9 billion was implemented to cover the Program of Incentives to Reduction of the State Public Sector in the Banking Activity – PROES. In this process the Brazilian government sector as a whole obtained a substantial gain, since the risky debt of the states were replaced by new securities and contracts administered by STN, presenting lower interest rates.

This time, there is no need of any new special issuing program of securities, like in 1997 and 1998. There is the only need of an adjustment in the regular issuing schedule of the STN, in order to the portfolio be moved more toward IPCA linked bonds, and generate a clearance where a matching degree, in the assets-liabilities framework, that be satisfactory to the Treasury, will be attained, in a scenario which the charge of the debt of the states will gradually be converted to IPCA plus 4% per year.

We propose the creation of a mere account book, which will be called “States Debt Conversion Account”. This Account will guide the change of the profile of the debt of the states along a period of about twenty four months. This account will be constituted of a share of 25% of total new issues of federal debt securities in the domestic market. Thus, a quarter of every new federal securities’ issue will be an entry in this Account, until the current amount of refinanced debt of the states will be covered. This will provide the National Treasury the sufficient time to put in place the required adjustments in its securities portfolio.

Table 3.2 shows the volume of issuing and of buyback of Federal securities by the National Treasury in the domestic market in the last twelve months. The first two columns show total volume of transactions including transactions with the Central Bank. The following columns show only transactions in the primary market, comprehending total transactions and transaction with the IPCA linked bonds – NTN-B. Total issuing in the period corresponded to R\$ 703.6 billion, while issuing of NTN-B in the primary market corresponded to R\$ 130.2 billion.

Table 3.2 – Issuing and Buyback of Federal Securities in the Domestic Market

BILLIONS OF R\$

	TOTAL includes transactions w/ Central Bank		PRIMARY MARKET			
			TOTAL		NTN-B	
	ISSUING	BUYBACK	ISSUING	BUYBACK	ISSUING	BUYBACK
Sep./10	114.1	104.6	103.7	107.0	6.9	5.5
Oct./10	47.1	42.9	47.1	42.9	6.3	1.4
Nov./10	21.9	18.7	21.9	15.6	5.2	9.7
Dec./10	48.1	36.1	48.1	36.1	19.2	16.3
Jan./11	72.7	160.6	36.8	113.6	6.6	2.4
Feb./11	40.8	15.2	39.0	11.7	10.8	7.7
Mar./11	70.8	67.6	48.9	40.0	10.7	0.9
Apr./11	58.2	26.8	52.7	26.8	12.5	2.5
May./11	47.3	63.1	42.3	48.4	9.8	45.7
Jun./11	75.3	37.5	71.2	22.6	19.2	2.4
Jul./11	73.8	176.1	41.0	125.0	12.9	1.3
Aug./11	33.5	13.9	26.5	10.2	10.1	7.6
TOTAL	703.6	763.1	579.1	600.0	130.2	103.2
AVERAGE	58.6	63.6	48.3	50.0	10.9	8.6

Source: [www.tesouro.fazenda.gov.br](http://www.tesouro.fazenda.gov.br)

Based on the average of the last twelve months, we can project forward the volume of new issues of securities in the domestic market and consequently the required time to form an account with sufficient funds to cover a comprehensive conversion of the debt of the states under the Law 9.496/97. Considering a contribution of 25% of total new issues of federal debt securities to the States Debt Conversion Account, the required value corresponding to the outstanding debt would be covered in 24.67 months, as can be demonstrated as follows:

$$T = \text{SOD} / (\text{AVISSUES} * \text{S}\%)$$

T = time in months

SOD = states' outstanding debt in billions of Reais

AVISSUES = average issues in billions of Reais

S% = contribution to the Account

$$T = 361.507 / (58.6 * 0.25) = 24.67 \text{ months}$$

As can be observed, the suggested percentage contribution of 25% to the Account is close to the share of new issues of NTN-B on the total issues of securities in the domestic market, which average of last twelve months was 22.5%.

We suggest some joint efforts that could be taken in order to the accomplishment of this outline:

- make an aggressive buyback program of IGP-M linked bonds (NTN-C), since maturities of these bonds are: July, 2017 (R\$ 9.06 billion), April, 2021 (R\$ 18.14 billion) and January, 2031 (R\$ 34.14 billion);
- orientate the funds of investments of Brazil's Sovereign Fund, created by the Law 11.887/08, toward a more NTN-B weighted portfolio. According to the Management Report of 2010, the investments of the Fund, that total R\$ 18.7 billion, are concentrated in Federal Debt Securities (NTN-B and NTN-F) and stocks of government controlled companies (Banco do Brasil and Petrobrás). The investments in financial assets in Brazil must have minimum return equivalent to TJLP (Long Term Interest Rate).

In the end of this process, the National Treasury will present a debt portfolio more weighted in IPCA linked bonds, opening secure room to the proposed change in the contractual conditions of the debt of Brazilian states, which represent for the National Treasury a very important asset in its balance. Notwithstanding, no shift in nominal balance will take place, because there will be no change in nominal value in the debt of the states.

Unlike the launch of debts renegotiation in the late 90's, no special issuing program will be necessary this time, affecting the size or quality of federal debt security. At the same time, no one can postulate that the process will produce any deterioration in the Treasury's balance, since the Treasury is able to obtain new funds with interest rates very close to the conditions of replacement proposed to the debt of the states, and make any necessary adjustment in its portfolio of securities.

Because no other change is being proposed, the states must continue to comply with all its obligations in respect to the contracts, including the payments based on a percentage of its revenues and the compliance to the fiscal and governance goals agreed in the Program of Restructuring and of Fiscal Adjustment (PAF), including the attainment of primary balance surpluses and a declining ratio of debt over revenue.

Thus, a general overview would conclude there will be no deviation on fiscal responsibility proceedings. The states will benefit by lower cost conditions that will impact, for many of them, in lower long run payments, but all of this is due to a transfer of costs that the federal government can make, because of the better environment in capital markets. This does not imply any discount, no shift in nominal debts, no change in short run payments and specially no deviation of the fiscal and governance goals agreed in the contracts. We consider such a plan in accordance with the fiscal responsibility line the country has followed in the past years, because among other things, no burden is being transferred. Therefore, because of that, no one threat should be considered in the perception of the country's debt risk, mainly by foreign investors and credit rating agencies.

When we propose an account book and we suggest a time for this account be fulfilled, we mean a time sufficient for the federal government to make the desirable adjustments in its debt portfolio. In fact, in order to make the mentioned shift in the contract of debt of the states, the federal government can implement a program to make this shift gradually, or implement it at one time either. There may apply a gradual shift program over this period of time estimated in twenty four months, in

which there would have a schedule that over the time each state would have remade its contract, in a predetermined order. Or even we could have a period of partial shifts on the outstanding debt in every state, until overall debt would be covered. However, the federal government could implement the conversion of contracts in a single time, even before starting the program of adjustments in debt securities profile, because there is no formal link between them, that is, there is no formal link between the contractual debt of the states (credit) and the debt securities portfolio (debt) of the federal government, except what the article 12<sup>th</sup> of Law 9.496/97 states: “The repayments of debt refinancing of states and Federal District, in the terms of this Law, must be utilized for the reduction of federal debt of responsibility of the National Treasury.” Thus, no impediment exists for the federal government to put forward the conversion of states’ debt, and promote the adjustments in its debt securities portfolio the period right following.

Through this conversion plan of the contractual debt of the states, underlies the idea that the federal government can transfer better interest rates to the states based on the present funding costs of the Treasury, indicated by current yielding on new securities issues, in particular, the issuing of NTN-B. Underlies also the assumption the interest rates will keep its decreasing trend in the forthcoming years, which is a very plausible assumption. Therefore, the federal government providing the states the cost represented by IPCA plus 4% per year, is providing a cost very close to its actual funding cost or at least a cost it might face soon.

In the box below we describe some characteristics of the IPCA linked bonds, as described in the website of National Treasury Secretariat (STN), section “Tesouro Direto”. There are two main different kinds of NTN-B: one pays the principal plus interest only in the maturity (bullet), and the other pays semiannual coupon and the principal in the maturity.



### 1) Characteristics of National Treasury Note, series B (NTN-B) - Principal

- Adjustment of Nominal Value by the IPCA (IBGE).
- Redemption of principal at maturity date.
- No coupon payment.
- The NTN-B Principal prices observed in the website "Tesouro Direto" reflect the premium or discount on the adjusted nominal value (ANV) of the bond, in the clearance sale date, thus, the profitability of this bond will depend of the IPCA plus this premium or discount.

Profitability Calculation Method:

$$\text{Quotation} = (\text{Price} * 100) / \text{ANV}$$

$$\text{Rate} = [(100 / \text{Quotation}) ^ (252 / \text{WD})] - 1$$

where: **quotation** reflects the premium or discount over the bond, **rate** is the annual profitability of the bond, **ANV** is the nominal value adjusted by the IPCA between the base date and the clearance sale date, and **WD** is the number of workdays between the clearance sale date and maturity.

Example:

Bond: NTN-B 150515

Purchase date: 07/14/2005

Clearance sale date: 07/15/2005

Data-base value (07/15/2000): R\$ 1.000,00

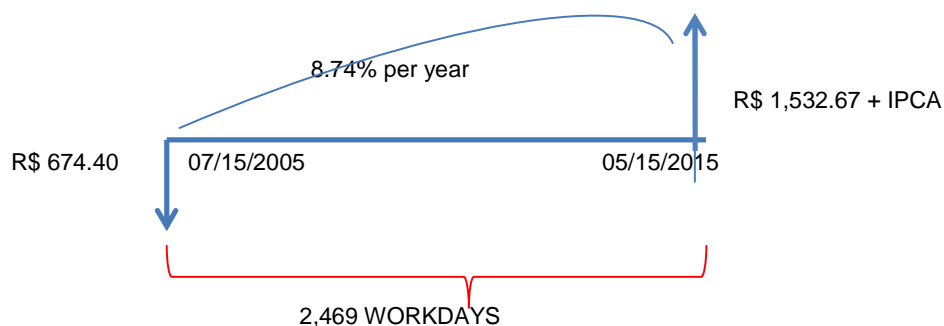
Maturity date: 05/15/2015

Purchasing price: R\$ 674.40

Adjusted nominal value in 07/15/2005: R\$ 1,532.670225

Quotation =  $(674.40 * 100) / 1,532.670225 = 44.0016377$

Rate =  $[(100 / 44.0016377) ^ (252 / 2469)] - 1 = 0.0874 = 8.74\%$



## 2) Characteristics of National Treasury Note, series B (NTN-B)

- Adjustment of Nominal Value by the IPCA (IBGE).
- Redemption of principal at maturity date.
- Coupon payments of 6% per year in a semiannual basis.
- The NTN-B value is adjusted by the IPCA inflation rate, plus an interest rate established in the purchase moment.
- The NTN-B prices observed in the website "Tesouro Direto" reflect the internal rate of return of the cash flow of coupons and the premium or discount over the adjusted nominal value (ANV) of the bond, in the clearance sale date.

Profitability Calculation Method:

Quotation = (Price \* 100) / ANV

$$COTAÇÃO = \left[ \frac{(1,06)^{\frac{DU1}{252}} - 1}{(1 + TIR)^{\frac{DU1}{252}}} \right] + \left[ \frac{(1,06)^{\frac{DU2}{252}} - 1}{(1 + TIR)^{\frac{DU2}{252}}} \right] + \dots + \left[ \frac{(1,06)^{\frac{DU_n}{252}} - 1}{(1 + TIR)^{\frac{DU_n}{252}}} \right] + \left[ \frac{1}{(1 + TIR)^{\frac{DU_n}{252}}} \right]$$

where: **quotation (COTAÇÃO)** reflects the premium or discount over the bond value, **ANV** is the nominal value adjusted by the IPCA between the base date and the clearance sales date, **1.06** is 1 plus the coupon of interest rate, **TIR** is the internal rate of return (annual) and **DUi** is the number of workdays between the clearance sale date and coupon payments dates.

Example:

Bond: NTN-B 150806

Purchase date: 09/12/2003

Clearance sale date: 09/15/2003

Data-base value (07/15/2000): R\$ 1.000,00

Maturity date: 08/15/2006

Purchasing price: R\$ 1,207.74

Adjusted nominal value in 09/15/2003: R\$ 1,354.492078

Quotation = (Price \* 100) / ANV = (1,207.74\*100)/1,354.492078 = 0.891662

1st coupon date: 02/15/2004, workdays: 108

2nd coupon date: 08/15/2004, workdays: 233

3rd coupon date: 02/15/2005, workdays: 358

4th coupon date: 08/15/2005, workdays: 484

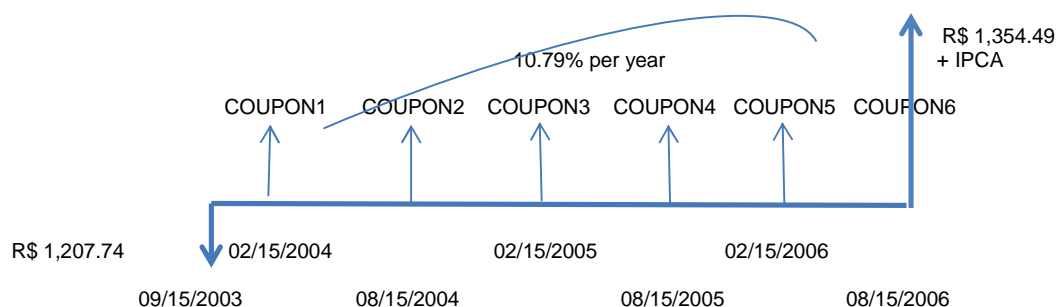
5th coupon date: 02/15/2006, workdays: 612

6th coupon date: 08/15/2006, workdays: 735

In order to obtain the TIR from the quotation, the investor can use financial functions of Excel.

TIR = 0.1079 or 10.79% per year

$$COTAÇÃO = \left[ \frac{(1,06)^{\frac{108}{252}} - 1}{(1 + 0,1079)^{\frac{108}{252}}} \right] + \left[ \frac{(1,06)^{\frac{233}{252}} - 1}{(1 + 0,1079)^{\frac{233}{252}}} \right] + \left[ \frac{(1,06)^{\frac{358}{252}} - 1}{(1 + 0,1079)^{\frac{358}{252}}} \right] + \left[ \frac{(1,06)^{\frac{484}{252}} - 1}{(1 + 0,1079)^{\frac{484}{252}}} \right] + \left[ \frac{(1,06)^{\frac{612}{252}} - 1}{(1 + 0,1079)^{\frac{612}{252}}} \right] + \left[ \frac{(1,06)^{\frac{735}{252}} - 1}{(1 + 0,1079)^{\frac{735}{252}}} \right] + \left[ \frac{1}{(1 + 0,1079)^{\frac{735}{252}}} \right]$$



The box above provides an overview of the calculus method of yielding and of cash flows of the Treasury IPCA linked bonds. When we compare the yielding of the NTN-B and the interest rates of the contractual debt of the states we are simplifying, because cash flows of the debt of the states are peculiar. Further, they can be very different among the states themselves. As these debts are paid based on the Price System (level), they are amortized over their whole life, not only in the maturity. But as the residual account may become a significant part of these debts, and as inherent to the Price System, the amortization payments tend to be concentrated more in the second half of the debt life. A reasonable approach to comparing interest rates of Treasury bonds and of the debt of the states would involve the calculus of average time of the state debt, and a comparison with the yielding of a bond with corresponding term. For example, the debt of the State of Rio Grande do Sul presents an average time to maturity estimated in 17.8 years. The best comparable rate in this case would be that of a bond with a maturity term close to that time.

Someone could argue that Treasury bonds will not drop to a 4% interest rate above IPCA so soon, thus the federal government might be providing a subsidy to the states with this plan. We consider that the federal government could require the states, as a way to compensate for this eventual subsidy in the short run, to invest more in joint projects like the ones in the Program of Growth Acceleration (PAC), the flagship program on infrastructure development of the federal government conducted by President Dilma Rouseff. For this purpose, we suggest an adjustment in the revisions of the Program of Restructuring and of Fiscal Adjustment (PAF), in order to reset the sixth compromise as an interval, with minimum and maximum, instead of a maximum limit value. In this interval the state would make a commitment to invest a minimum amount in PAC infrastructure programs.

Making a balance of this plan of conversion for the debt of the states, we consider that it will benefit the finances profile of the states in the short run, but mainly in the long run, providing them with a better debt sustainability outlook, while favoring the federal government in some aspects.

First of all, this plan will enable the states to get rid of a high interest rate over debt that may lead to an unsustainable path, with some particular assumptions. When projected revenues' growth is low enough, for example, it may lead to an unsustainable debt path, because of an excess accumulation in the residual account. Thus, the first benefit will be an enhancement in the debt sustainability, making possible the reduction in expected residual amount and a shortening in the expected time to pay off debt. Secondly, the debt profile itself will be much improved, because of the reduction in two percent points in the interest rate, and the shift to a more stable and less expensive inflation index. This will reflect in a significant decrease in the present value of the overall debt, calculated as the total cash flow discounted by the curve of term structure of interest rates. Finally, the speed in which the debt will be paid off will increase, opening more room in the medium run to borrowing for new investments, because the ratio debt over revenues will decrease faster. An enlarged borrowing capacity is expected in this process and therefore an enhanced investment capacity.

The federal government would benefit in some important aspects. First, it will become possible for the federal government to change the index of an important asset in its balance for another more aligned to its preferences, and adopted as the official inflation index. Second, it may help to foment the new cycle of investments the federal government is sponsoring in the country. By the formula just mentioned three paragraphs ago, of compensation through joint investment programs, significant additional investment expenditures would come from the states budgets. Finally, this plan would be a satisfactory plan that the federal government could present to face increasing pressures among state governors, who claim a change in a situation is considered unfair, while maintaining fiscal responsibility in the public sector of Brazil.

Closing this chapter, we shall comment about the debate in relation to the Law of Fiscal Responsibility (LFR), in particular, the clause that is said to be an impeditive to any renegotiation or amendment in contracts among governmental entities. The 35<sup>th</sup> article states: “Art. 35<sup>o</sup> - It is prohibited the execution of credit operation between a federation entity, directly or by fund, autarky, foundation or dependent state company, and another, including its entities of direct administration, even under the form of novation, refinancing or postponement of debt contracted before. §1<sup>o</sup> It is excluded of the prohibition of the caput the operations between state finance institution and another entity of Federation, including its entities of indirect administration, which are not intended to: I – finance, directly or indirectly, current expenditures; II – refinance debts not contracted along the financing institution”.

The debt contracts between the federal government and states or municipalities, which were signed before the launch of LFR in May of 2000, are refinancing of debt contracted before. A kind of program implemented in the late 90's could not be implemented anymore, because it is not allowed by LFR.

The Brazilian Ministry of Finances understands that today any new change in the contracts of debt refinancing could only be possible if the LFR was altered in this article. In a speech during an audience in the Commission of Economic Affairs (CAE) of the Federal Senate, on May 3, 2011, the Minister Guido Mantega showed an openness to the discussions over a possible change in the interest rates and in the inflation index applied on the states' debt contracts, but he has indicated that for this purpose first the LFR should be changed. For the federal government, the LFR as it is today prevents any new debt renegotiation.

There are, however, some people that understand the LFR would not need to be altered to allow a contractual change in the inflation rate index. Some people believe simply that a change in the inflation index would not constitute a novation in contracts, but a single and necessary adjustment. Cid Heraclito de Queiroz, a former General Attorney of the National Treasury, points out (“O Estado de São Paulo”, 03/24/2011) that the Law 9.496/97 determined the inflation adjustment by the “IGP-DI or other index variation that will come to substitute this”. Therefore, the art 3<sup>o</sup>, of the Law 9.496/97, does allow a substitution of the index, if parts agree. The economist José Roberto Afonso, who helped in the preparation of the LFR, believes there is no need to change the Law for a shift in the inflation index of

contracts, simply because legislation permits it. According to him, the federal government has already altered some documents, for example, through the Provisory Act of the World Cup, without any change in the LFR (“O Estado de São Paulo”, 06/14/2011). Paulo Rabello de Castro (“Folha de São Paulo”, 03/19/2003) advocates that the Fundação Getúlio Vargas should “retire” the IGP and quit its publication, in this case all agents would have to make a pact upon a substitute index. Most contracts are provided of clauses indicating a substitute index. On Rio Grande do Sul debt contract, in case of extinction of the IGP, the new index will be “other which will come to substitute” (Clause 8<sup>th</sup> of Refinancing Contract between Rio Grande do Sul and the Federal Government).

Nevertheless, there is also the change in the interest rate, which is very important in the plan outlined in this paper, and this may not be viewed as a single adjustment, so it may actually depend on a change in the LFR.

In our opinion, for the implementation of the plan, the LFR should be altered previously, to support a novation of contracts that would allow this specific conversion of the debt contracts of the states. The federal government is professedly reticent about any change in the LFR, because they are afraid that a revisional proceeding in the Congress may alter not only parts of the LFR involved with this specific problem of changing the inflation index and the interest rate, but also parts that should not change. A change in a Law that represents a historic landmark in the country public finances is considered a taboo. It is said that there is the risk that the government put forward a proposal to Congress and the parliamentarians use the opportunity to promote a change in other parts of the Law. Economists like Fábio Giambiagi, a BNDES expert, share this preoccupation. He said it is temerarious to touch this Law, because everybody knows how it begins, but not how it will end.

Nevertheless, the alteration of the LFR is a point that inevitably shall be faced right ahead. It is because, we believe, the federal government is considering within a basket of political choices, the concession of a small relief in the burden of the debt of states, without prejudicing the country fiscal performance and without denying the fiscal responsibility behavior, in order to attend pressures of governors and obtain their support to the tax reform project. This is naturally part of a political game, where the more the governors, in particular those from the most indebted states – São Paulo, Rio de Janeiro, Minas Gerais and Rio Grande do Sul – engage in a convincement job toward the Presidency and the Legislative power, more will be the chances of success of a beneficial change over the burden of debts.

## **Chapter 4**

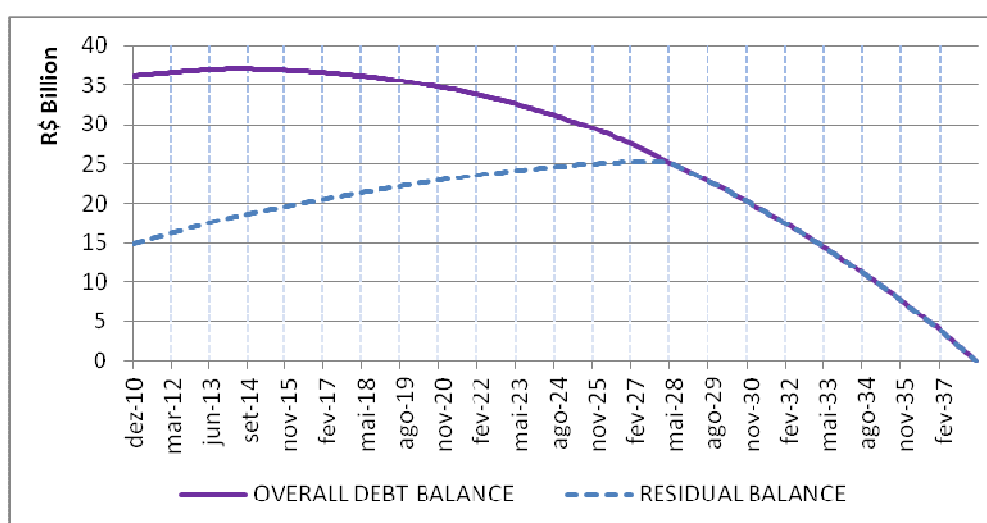
### **A new outlook for the debt of Rio Grande do Sul**

Conversion of debts with the federal government, as outlined in the previous chapter, will enable the State of Rio Grande do Sul to derive a better way in its debt management. It will enhance the debt sustainability, in a long run point of view, and improve a little bit faster the new borrow

capacity for infrastructure investments. No extra major fiscal space in the short run will be provided, except the one possible by extra investment loans that the state will be allowed to obtain because of a faster decrease in the ratio debt over revenues that will be expected. Because of the decrease in the interest rate and the maintenance of payments on a 13% of Net Real Revenue (RLR) basis, the state will anticipate repayments along the time and avoid a big concentration of debt payments in the period 2028 to 2038.

Actual projections for the debt of the State of Rio Grande do Sul, under the Law 9.496/97, made by the Debt Management Office, indicate the residual account balance and the overall balance will track lines like showed by Graph 4.1, until the complete payoff in April, 2038. The residual account will increase until April, 2028, when at this point, as expected by the contract, the overall balance will be refinanced for more ten years. The overall balance presents an increase from now by 2014, because the payments limited by 13% of the Net Real Revenue (RLR) are still at an insufficient point to cover all interest due. Thus, this part of interest due not covered by the monthly payments is being added to the residual balance. From 2014 on, the RLR must reach a point sufficient to generate a payment that will cover all interest due, and begin to permit a real amortization in the debt. We assume in these projections an annual rate of growth of the RLR of 3%.

Graph 4.1 – The Tracks of Overall Debt and of Residual Debt Balance of Law 9.496/97

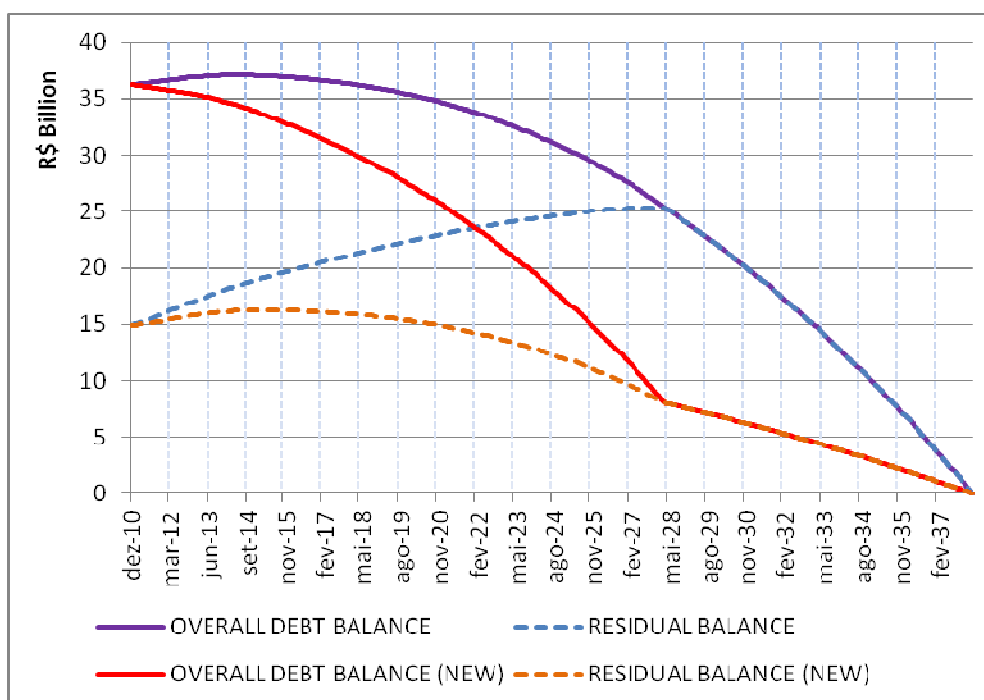


In the scenario where the inflation index and the interest rate are shifted to IPCA plus 4% per year, as proposed in the last chapter, the figure changes significantly. The debt will be paid back faster as indicated by the red and orange lines in Graph 4.2. This graph puts together the tracks showed in Graph 4.1 and the new track lines for the residual account (orange) and for the overall balance (red), considering the new scenario where the IPCA is the new inflation index and the new interest rate is 4% per year. In this new scenario the residual account balance increases in the short run but it will be in a downward path in April 2028. The overall balance presents a decreasing path much faster than

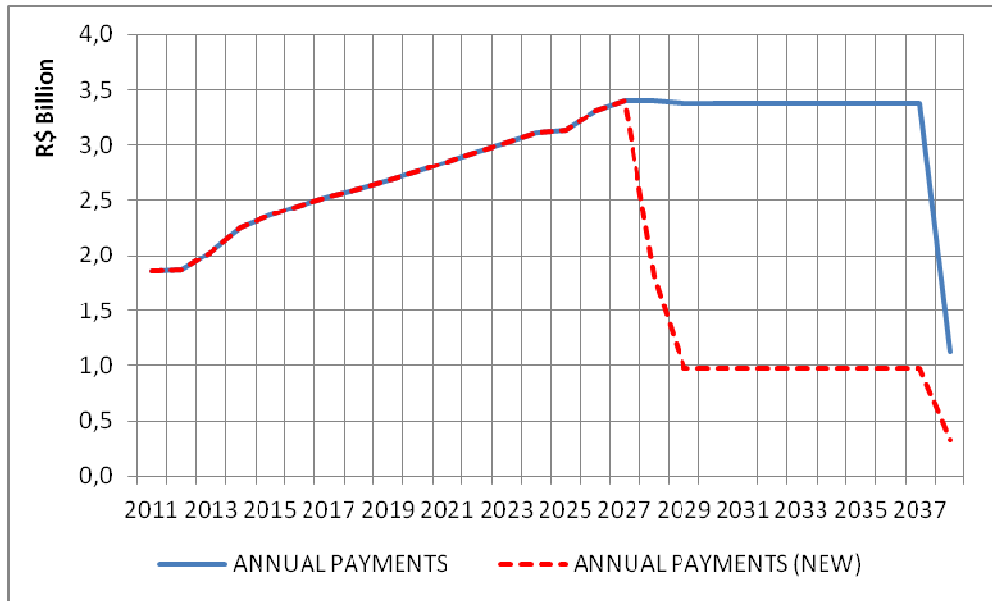
previously, and the total debt that will be refinanced in April 2028 is much less, this form generating lower payments in the period 2028 to 2038.

Projections for the payments of the debt of the State of Rio Grande do Sul are plotted in Graph 4.3. In accordance to the rules in force, the State allocates 13% of the RLR to the payment of the Law 9.496/97 debt. This outcome will not change in the new scenario of converted debt, that is, the State will remain paying 13% of the RLR in a monthly basis, until 2028. Due to the real growth of this revenue over the time, annual payments are expected to increase in an upward movement as showed in the Graph. However, a quite different outcome is expected from 2028 onwards. Because of a balance significantly lower in 2028 under the converted debt scenario, the refinancing of the outstanding debt will generate smaller payments until 2038. Thus, on the assumption that the financial cost clauses will be shifted to IPCA plus 4% a year, the expected payments will be near R\$ 1 billion per year, compared to payments near R\$ 3.5 billion per year that will occur otherwise, if clauses do not change.

Graph 4.2 – The Tracks of Overall Debt and of Residual Debt Balance of Law 9.496/97

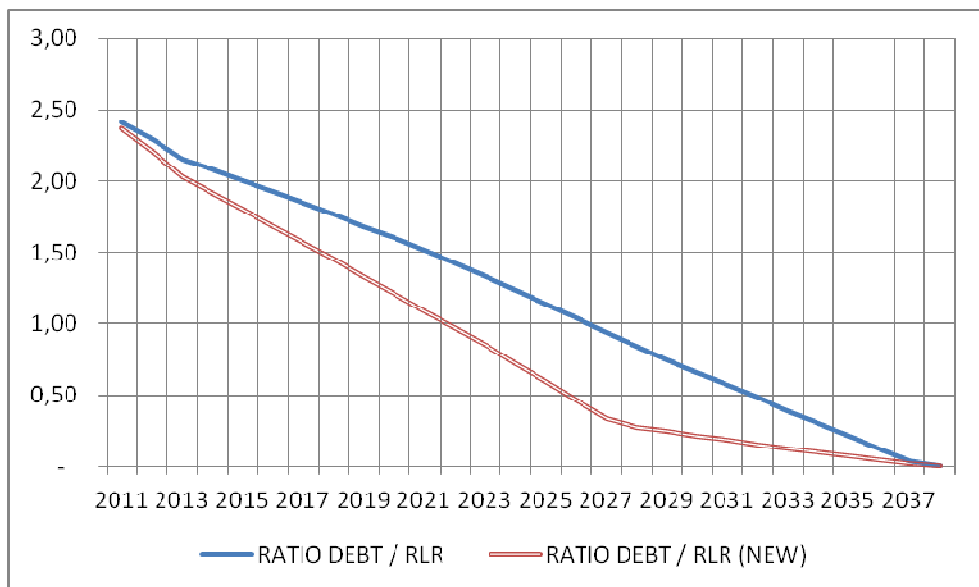


Graph 4.3 – Annual Payments Projected of Law 9.496/97 Debt



In the new scenario of converted debt, the ratio debt over Net Real Revenue (RLR) will decrease faster, as shown in Graph 4.4. The line blue depicts the present projection of this ratio for the period 2011 to 2038. The line red represents the projection in the scenario of converted debt. In this last projection, a ratio debt / RLR that is equivalent to 1 or less is reached in 2022, while in the current projection a ratio debt / RLR that is equivalent to 1 or less is only reached in 2027.

Graph 4.4 – The Ratio Debt / Net Real Revenue (RLR) – 2011-2038





An important consequence of faster decreases in the ratio debt over revenues is an enlargement of borrowing limits. Important limits established by Senate Resolutions are related to the State performance over the debt balance and to the debt payments over net revenues. The Senate Resolution SR 40-2001 determines that the state or municipality with a ratio debt/revenue over 2.0, or above a descendent trajectory designed to reduce the excess 1/15 (one fifteenth) a year is prohibited from hiring a credit operation. The Senate Resolution SR 43-2001 establishes other restrictive conditions and limits for states and municipalities to hire credit operations.

Therefore, in the new scenario, a bit larger space next years to new borrowing is expected, compared to present scenario. This increasing room for new borrowing over the time, though, is still under the strict limits given by Senate Resolutions. Nevertheless, any specific borrowing authorization depends on the inclusion of this borrowing in a specific chart in the Program of Restructuring and of Fiscal Adjustment (PAF), and it depends on the state or municipality be performing a descendent ratio debt over revenue.

Despite being limited, this space for new borrowing is very important, because it allows the states or municipalities to increase their investments programs. This is a very important point, given that often the investments programs in these federated entities have been squeezed to accommodate current expenditures, in order to achieve the minimum targets of primary balance. Other important aspect is the advantageous conditions that can be found in the credit market nowadays. State investments programs in a wide spectrum of finalities can be financed by the Brazilian development bank – BNDES – or by multilaterals such World Bank or Interamerican Bank of Development. The average loan cost of BNDES is TJLP (Long Term Interest Rate) plus 1% or 2% per year. The typical charge of a loan of the World Bank or of the Interamerican Bank of Development is Libor plus an up to 3% spread. The interest rates in such cases are much less than the IGP-DI plus 6% applied on debt with federal government.

Because of compulsory observance of the PAF, and the monitoring work of STN, the amount of new authorized borrowing cannot worsen the relation between debt and revenues, and under this assumption, every new borrow taken in this enlarged room, created in the new scenario, tend to bring up two important favorable results:

- a) the state or municipality will have enlarged amount of funds to place in infrastructure investments or other investment programs that otherwise would not be possible;
- b) the profile of the debt potfolio will get improved, considering that new debts taken nowadays tend to be less expensive than the parameter IGP-DI plus 6%.

An analysis of present value indicates that the gains in the new scenario are very important. The conversion of the debt of Rio Grande do Sul would provide a reduction in present value of the debt of R\$ 7.8 billion, corresponding to 22% of its current face value. This means the flow of payments in the new scenario, discounted by the “coupon curve” of the proper index – the IPCA – will result the lower amount indicated above, compared to the flow of payments in the current scenario discounted by the “coupon curve” of the IGP-DI. The coupon curves represent the market premium that an

investment expressed in IPCA or IGP-DI – like inflation linked bonds or any other kind of securities represented by these indexes – pays. These coupon curves can be built with information provided by transactions carried out in the Brazilian Mercantile & Futures Exchange.

A summary of the present value analysis is presented in Table 4.1. The differences in present value are due mostly to the differences in the present value of payments flow after 2028. The payments flow during the period 2011-2018 does not present any reduction in terms of present value due to the change of IGP-DI by IPCA. The duration, a usual debt risk measure which indicates the average time to maturity, is reduced from 12 years to 9.7 years in the new scenario. Compared to the face value, currently the present value of the debt of Rio Grande do Sul represents 118%. This over 100% ratio may indicate that the debt is overvalued, and probably the debt service level is causing to the debtor incur in payments above the market premium. In the new scenario, the ratio of present value to face value is reduced to 96%.

Table 4.1 – Present Value Analysis Summary

MILLIONS OF R\$			
	ACTUAL SCENARIO (IGP-	NEW SCENARIO (IPCA+4%)	DIFFERENCE
PRESENT VALUE (PV)	42,663	34,842	7,821
PRESENT VALUE/FACE VALUE	118%	96%	22%
PV OF RESIDUAL BALANCE REFINANCING (2028-2038)	11,520	3,388	8,132
DURATION	12 years	9.7 years	2.3 years

## Final considerations

Throughout this paper, we demonstrate that the economic and institutional environment changed substantially in Brazil since the refinancing of the debt of the states with the federal government was undertaken, during Fernando Henrique Cardoso presidency, between 1997 and 1998, under the Law 9.496/97 framework. In general these changes were very positive. The fiscal performance improved in all government level, the inflation is successfully monitored and controlled by an inflation targeting system, the credit risk rating of the nation has been upgraded to investment grade by the main rating agencies and the real interest rate in the economy has dropped from high standards prevailing in the past.

This better outlook of Brazilian economy, together with more responsible fiscal practices that the Law of Fiscal Responsibility has sponsored, is opening a relevant space to the National Treasury lower the cost of government funding represented by debt securities. Most bonds in the domestic market today are paying a real interest rate between 5% and 6% per year, and Brazilian bonds placed

abroad are paying even less. Most economists believe that real interest rates in Brazil will probably continue this decreasing trend in the coming years. As we have drawn, the federal government can implement a plan to transfer this lower cost conditions, prevailing in the government securities market, to the contractual debt of the states. This plan would allow an adjustment in the contracts of debt of the states in order to shift the inflation index to the IPCA and lower the real interest rate for 4% per year.

In accordance with the plan that we traced in this paper, of a “conversion” of the debt of the states, the states will be able to take advantage of the new scenario of lower interest rates in the domestic and international economy. The fiscal responsibility will be preserved and there will be benefits to the nation as a whole. In a medium and long term, states will have enlarged space to investments’ programs funded by new loans, within the limits established by Senate Resolutions. Regional infrastructure investments executed by state governments or local investments executed by municipalities are as important to the nation’s economic development as the federal government investments’ programs. An effective participation of states and municipalities in the Program of Growth Acceleration (PAC), led by the federal government, is a key in the future economic growth of the Brazilian regions.

As from some pronouncements of the Ministry of Finances, the federal government seems to be much more open to discuss changes in the debts of the states than it was before. In a recent speech to the Senate, Minister Guido Mantega acknowledged that the IGP is not an adequate index, and that some rates that were appropriate in the past are not any more appropriate. However, a change in the Law of Fiscal Responsibility (LFR) would be necessary, because for the federal government point of view, the article 35<sup>th</sup> of LFR prevents any debt renegotiation.

A general change in the contracts of the debts of the states is technically possible, as we tried to show in this paper, without prejudicing of the fiscal responsibility behavior in the nation. The fine adjustment in the index variation and in the interest rate that we propose in this paper would open an important room to the enlargement of investments’ spending in the country, sparking more economic development, in benefit of the country as a whole.

The way the states may achieve a beneficial change in the debt contracts is the political via, because it is a political decision the federal government has to take. However, state governors are not enough engaged in an organized movement to change the debt contracts, as should be expected, until now. Maybe it is because the main gains possible in this game would be only in the long run. It is imperative, in our point of view, that the States’ representatives reinforce now joint political efforts, in committees like CONFAZ, to pose pressures on government representatives and on Congress representatives, in favor of a debate and in favor of real changes in the contracts of debt that must be undertaken, because they will benefit the whole nation. In a certain point of view, it depends on this kind of efforts whether the federal government will continue to direct billions of Reais to fund a development bank – BNDES – for example, or to concede a reasonable relief in the debt of the states. As we commented in chapter 3, the federal government may be considering an agreement in respect to a change in the contracts of the debt of the States, in order to attend the pressure of governors and

obtain their support to the tax reform bill. It is naturally a political game, where the more the governors, in particular the governors from the top-four most indebted states – São Paulo, Rio de Janeiro, Minas Gerais and Rio Grande do Sul – engage in a convincement job toward the Presidency and the Legislative, more will be the chances of success of a beneficial change about the present burden of debt.

For Rio Grande do Sul, the proposed changes in the price index and in the interest rate would be very important. The debt will be paid back faster, and more quickly decrease the ratio debt over revenues. An important consequence of a faster decrease in the ratio debt over revenues is an enlargement of borrowing's limits for investment programs. There will be no decreasing of debt payments in the short and medium run, but debt sustainability will enhance significantly. It would permit the State to prevent big residual balance and big concentration of debt payments in the long run, improving in general the finance outlook.

## References

Agência Estado, 14/06/2011. **Governo decide alterar indexador de dívida de Estados.**

Ata da Décima Segunda Reunião da Comissão de Assuntos Econômicos do Senado Federal, realizada em 03/05/2011 ([www.senado.gov.br/atividade](http://www.senado.gov.br/atividade)).

BLANCO, Fernando, e equipe do Banco Mundial. Endividamento Sub-Nacional no Brasil (draft) (2008).

BRIGHAM, Eugene F. and HOUSTON, Joel F. Fundamentals of Financial Management (2009).

CALAZANS, Roberto Balau e FLORES, Luciano Lauri. A Reestruturação da Dívida como Instrumento de Gestão Fiscal no Rio Grande do Sul. Indicadores Econômicos FEE, vol. 37, nº 3, 2009. Fundação de Economia e Estatística do Rio Grande do Sul.

Dívida Pública Estadual, Relatório Anual 2010, Estado do Rio Grande do Sul (State Public Debt, Annual Report 2010).

Folha de São Paulo, 19/03/2003. **Extingam o IGP.** Paulo Rabello de Castro.

GIAMBIAGI, Fábio, BLANCO, Fernando e ARDEO, Vagner. Proposta de Recriação de uma Dívida Estadual e Municipal com o Setor Financeiro Privado. Revista do BNDES, v. 14, n. 29 (2008).

O Estado de São Paulo, 17/03/2009. **Queda da Selic pode forçar revisão de acordos de dívidas dos Estados.** Ribamar Oliveira.

O Estado de São Paulo, 24/03/2011. **Novo ataque à Lei de Responsabilidade Fiscal.** Cid Heráclito de Queiroz.

O Estado de São Paulo, 27/03/2003. **Por um novo IGP.** Roberto Macedo.

O Estado de São Paulo, 29/11/2010. **Estoque da Dívida de Estados com União Reproduz Financiamentos Impagáveis.** Lu Aiko Otta, Renato Andrade.

PIANCASTELLI, Marcelo e BOUERI, Rogério. Dívida dos Estados 10 anos depois. Texto para Discussão nº 1366. Instituto de Pesquisa Econômica Aplicada – IPEA (2008).

Revista Época, 14/02/2011. **Como Dilma pode ganhar os governadores.** Paulo Rabello de Castro.

The Wall Street Journal, 21/09/2011. **Fed Announces \$400 Billion in Operation Twist, Matching Market Forecast. Market Sell Off.**

Valor Econômico, 05/05/2011. **Mudança de indexador das dívidas em negociação.** Ribamar Oliveira.

Valor Econômico, 30/06/2011. **O Indexador da Dívida dos Estados.** Eduardo Augusto Guimarães.

