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Corporate Bond Markets in the Finance and Development Debate: The Case of Brazil

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List of abbreviations:

A

ABMI. *Asian Bond Markets Initiative*
ACC. *Advances on Foreign Exchange contracts*
ADB. *Asian Development Bank*
ANBID. *Associação Nacional dos Bancos de Investimento/ National Association of Investment Banks*
ANBIMA. *Associação Brasileira das Entidades dos Mercados Financeiro e de Capitais/ Brazilian Association of the Entities of the Financial and Capital Markets*
ANDIMA. *Associação Nacional das Instituições do Mercado Financeiro/ National Association of Financial Market Institutions*

B

BACEN. *Banco Central do Brasil/ Brazilian Central Bank*
BB. *Banco do Brasil/ Bank of Brazil*
BIS. *Bank for International Settlements*
BNDE. *Banco Nacional de Desenvolvimento Econômico/ National Bank for Economic Development*
BNDES. *Banco Nacional de Desenvolvimento Econômico e Social/ National Bank for Economic and Social Development*
BNH. *Banco Nacional da Habitação/ National Housing Bank*
BVRJ. *Bolsa de Valores Rio de Janeiro/ Stock Exchange of Rio de Janeiro*

C

CBMD. *Corporate Bond Market Development*
CDB. *Certificados de Depósito Bancário/ Bank Deposit Certificates*
CEF. *Caixa Econômica Federal/ Federal Savings Bank*
CMN. *Conselho Monetário Nacional/ National Monetary Council*
COPOM. *Comitê de Política Monetária/ Monetary Policy Committee*
CPMF. *Contribuição Provisória sobre Movimentação Financeira/ Provisional Contribution on Financial Transactions*
CVM. *Comissão de Valores Mobiliários/ Securities Commission*

D

DI. *Depósito Interbancário/ Interbank Deposit*

F

FAPI. *Aposentadoria Programada Individual/ Individually Scheduled Pension Fund*
FAT. *Fundo de Amparo ao Trabalhador/ Workers' Assistance Fund*
FDI. *Foreign Direct Investment*
FFEX. *Financiamento à Exportação/ Export Financing Fund*
FGC. *Fundo Garantidor de Créditos/ Credit Guarantee Fund*
FGCE. *Fundo Garantidor de Comércio Exterior/ Foreign Trade Guarantee Fund*
FGP. *Garantidor de Parcerias Público-Privadas/ Public-Private Partnerships Guarantor Fund*
FGTS. *Fundo de Garantia por Tempo de Serviço/ Employees Severance Guarantee Fund*
FIDC. *Fundo de Investimento em Direitos Creditórios/ Receivables Investment Fund*
FINAME. *Agência Especial de Financiamento Industrial/ Special Industrial Financing Agency*
FIP. *Fundo de Investimento em Participações/ Private Equity Funds*
FIRCE. *Foreign Capital Department of BACEN/ Departamento de Capitais Estrangeiros do Banco Central do Brasil*
FSB. *Fundo Soberano do Brasil/ Brazilian Sovereign Wealth Fund*

G

GDP. *Gross Domestic Product*
GFD. *Global Financial Development Report*
GFSR. *Global Financial Stability Report*

I

II PND. *Segundo Plano Nacional de Desenvolvimento/ Second National Development Plan*
IMF. *International Monetary Fund*
IOF. *Imposto sobre Operações Financeiras/ Financial Transactions Tax*
IPCA. *Índice Nacional de Preços ao Consumidor - Amplo/ Broad Consumer Price Index*
ISI. *Import Substitution Industrialization*
IT. *Inflation Targeting*

L

LBC. *Letra de Câmbio do Banco Central/ Bill of Exchange*
LF. *Letra Financeira/ Financial Bills*
LFT. *Letra Financeira do Tesouro/ Treasury Financial Bills*
LTN. *Letra do Tesouro Nacional/ National Treasury Bills*

N

NMRF. *Novo Mercado de Renda Fixa/ New Market for Fixed-Income Securities*
NTN-B. *Notas do Tesouro Nacional, série B/ The Series B National Treasury Notes*
NTN-C. *Notas do Tesouro Nacional, série C/ The Series C National Treasury Notes*
NTN-F. *Notas do Tesouro Nacional, série F/ The Series F National Treasury Notes*

O

OLS. *Ordinary Least Squares*
ORTNs. *Obrigações Reajustáveis do Tesouro Nacional/ Re-adjustable Obligations of the National Treasury*
OTC. *Over the Counter*
OTNs. *Obrigações do Tesouro Nacional/ Obligations of the National Treasury*

P

PAC. *Programa de Aceleração do Crescimento/ Growth Incentive Program*
PASEP. *Programa de Formação do Patrimônio do Servidor Público/ Public Servants' Investment Fund*
PBM. *Plano Brasil Maior/ Greater Brazil Plan*
PGBL. *Plano Gerador de Benefício Livre/ Free Benefit Generator Plan*
PIS. *Programa de Integração Social/ Social Integration Program*
PND. *Programa Nacional de Desestatização/ National Program of Denationalization*
PPFs. *Private Pension Funds*
PROEF. *Programa de Fortalecimento das Instituições Financeiras Federais/ Program for Federal Financial Institutions*
PROER. *Programa de Estímulo à Reestruturação e ao Fortalecimento do Sistema Financeiro Nacional/ Program for Stimulating the Restructuring and Strengthening of the National Financial System*
PROES. *Programa de Incentivo à Redução do Setor Público Estadual na Atividade Bancária/ Program for Encouraging a Reduction in the Participation of State-owned Banks in the Financial System*
PROEX. *Export-Financing Program*
PT. *Partido dos Trabalhadores/ Workers' Party*

R

RAET. *Regime de Administração Especial Temporária/ Temporary Special Administration Regime*
RDB. *Recibo de Depósito Bancário/ Receipt for Bank Deposit*
RFB. *Secretaria da Receita Federal do Brasil/ Federal Revenue Service*

S

SCP. *Sociedades em Conta de Participação/ Participation Companies*
SCR. *Sistema de Informações de Crédito/ Credit Information System*
SELIC. *Sistema Especial de Liquidação e Custódia de Letras do Tesouro Nacional/ Special System for Settlement and Custody of National Treasury Bills*
SFH. *Sistema Financeiro de Habitação/ Financial System of the Housing Sector*
SFN. *Sistema Financeiro Nacional/ Brazilian Financial System*
SISBEX. *Sistema de Negociação de Títulos Públicos/ Secondary Market for Sovereign Bonds*
SMEs. *Small and Medium Enterprises*
SND. *Sistema Nacional de Debêntures/ National Debentures System*

SPB. *Sistema de Pagamentos Brasileiro/ Brazilian Payment System*
SPE. *Sociedade de Propósito Específico/ Special Purpose Entities*
SUMOC. *Superintendência da Moeda e do Crédito/ Superintendency of Money and Credit*

T

TJLP. *Taxa de Juros de Longo Prazo/ Long-term Interest Rate*
TN. *Tesouro Nacional/ National Treasury*

U

UNCTAD. *United Nations Conference on Trade and Development*

V

VGBL. *Vida Gerador de Benefício Livre/ Free Benefit Generating Life Insurance Plan*
VIX. *Volatility Index of the Chicago Board Options Exchange*

1 Introduction

Economic development is closely related to the financing conditions of companies. In developing and emerging market economies, the domestic financial system usually does not offer adequate financial instruments for companies that want to realize investment projects, which require a long-term commitment. Instead, the companies in these countries can often only choose from short-term finance and/or foreign currency denominated funding sources. As a consequence, the companies either incur higher maturity and/or exchange rate risks or they desist altogether and less investment projects are put into action. While the first option raises financial fragilities, which might cause a financial and/or currency crisis with adverse effects on the real economy, the second option hampers economic development more directly. The establishment of a domestic corporate bond market can help to solve these problems by providing a market for long-term debt securities in local currency. The question is how a country might be able to promote the development of a domestic corporate bond market.

Although academic literature has shown increased interest in this question for the past two decades and several cross-country studies were completed that pointed towards important determinants, only few in-depth analyses of country cases were conducted that are capable of detecting the interrelations between different factors, which might explain more accurately the drivers and barriers of corporate bond market development in a specific context. In particular, the role of the state is still poorly understood. Research has focused on preconditions for the establishment of a corporate bond market such as macroeconomic stability, judicial protection and legal certainty, which the state was expected to provide. Furthermore, it recognized the strong relationship between sovereign and corporate bond markets, but it lacked, for the most part, a more thorough analysis of the underlying mechanisms at work. This lack of attention is significant because knowing about the channels through which the state is able to promote corporate bond market development will provide policy makers with new insights as to how improve state actions and policies in order to foster the development of these markets. Well-developed corporate bond markets, in turn, enhance economic development and mitigate financial fragilities, which is especially important in emerging market and developing economies.

In order to address the problem of the under-examined role of the state, this thesis will analyze three notable determinants of corporate bond market development in Brazil, i.e. the influence of public debt management, monetary policy, and public finance for development. A case study is best fit to understand the underlying mechanisms and relationships. The case of Brazil was chosen for several reasons that will be explained further below. The research design followed a mixed method and triangulation approach to combine the results of the conducted field research including expert interviews with those of the descriptive data analysis and the literature review. The analytical framework is built on Post Keynesian theories explaining the processes of capital formation

and asset choice in a world reigned by uncertainty. Due to uncertainty, market participants take their decisions based on their expectations, which can be influenced by the actions of the state in the fields of public debt management, monetary policy, and public finance for development. That is how the state is able to foster or hamper the evolution of corporate bond markets within this framework. This thesis will answer the question of how the Brazilian state influenced the development of a domestic corporate bond market through its actions in the three policy fields mentioned. The hypothesis is that the Brazilian state had a protagonist role in the development of the domestic corporate bond market, but only exerted it passively and not constructively.

1.1 Context: short-term finance, long-term funding, and economic development

For centuries, economists have inquired into the connection between finance and economic development. Although there is strong evidence in favor of a causal relationship, there is also room for doubts in this respect, for example, related to recurring financial crises. As a consequence, a lively and wide-ranging finance and development debate emerged and some of its most important strands are presented in chapter 2.1. A large body of literature analyzed the finance and growth nexus (see chapter 2.1.1), which can be explained with the functions that a financial system provides including risk diversification, reduction of transaction costs, improved capital allocation, as well as monitoring and supervision. The majority of research is of empirical nature and dates back to Goldsmith (1969), who first found a positive correlation between financial development and growth, but it was only during the 1990s that the finance and growth literature provided empirical evidence for the causal relationship.

The discussion of financial vulnerabilities associated with underdeveloped financial markets and related topics such as financial and currency crises represents another important strand of literature in the finance and development debate (see chapter 2.1.2). A typical characteristic of developing and emerging market economies is a high share of foreign currency debt, which makes them more vulnerable to exchange rate fluctuations. The limited number of hedging instruments available in these underdeveloped financial markets aggravates the financial fragilities. Furthermore, monetary policy is restricted in its implementation by the limited functionality of its tools in a less developed money market, with implications on its open market operations and on the exchange rate. Hence, financial development can enhance the macroeconomic stability of a country with positive effects on its long-term growth rate.

Due to the strong impact of financial and currency crises on the economic development of a country, it became crucial to understand these crises. Three

generations of models explaining currency crises emerged, pointing towards the worsening of macroeconomic indicators, speculative attacks triggered by self-fulfilling market expectations, and financial system fragilities, which might cause balance sheet effects, a concept that shifted the focus from flow variables such as the GDP to stock variables such as external debt. Exchange rate fluctuations and interest rate adjustments can deteriorate economic agents' net wealth, if they have currency and/or maturity mismatches in their balance sheets. In emerging market and developing economies market participants often take on foreign currency debt, while generating income in domestic currency, causing a currency mismatch; or they take on short-term liabilities while carrying long-term assets, causing a maturity mismatch. A maturity mismatch (as well as interest rate indexed debt) raises the risk that a debtor becomes unable to pay his or her¹ debt due to an interest rate increase. Conversely, net creditors holding long-term fixed rate debt securities are also exposed to the interest rate risk and suffer from a reduction of the market value of their assets in case the interest rate increases. Since different types of mismatches are usually connected both within individual balance sheets and across sectors, they can reinforce each other.

The balance sheet approach pointed out the increased risk of suffering from financial and currency crises by opening up the capital account and engaging in financial integration into global markets. Moreover, it showed monetary policy options for net debtor countries and emphasized the important role of domestic financial market development in diminishing their vulnerability to a volatile exchange rate. Furthermore, it highlighted policies that may foster a reduction of vulnerabilities, including public debt management, incentives for the private sector to avoid balance sheet exposures, and the buildup of foreign exchange reserves. The original sin literature, based on the empirical observation that most emerging market and developing economies are neither able to borrow abroad in their own currencies (international component), nor to borrow domestically with long maturities and fixed interest rates in their own currencies (domestic component), corresponds to the balance sheet approach with respect to the emphasis of the adverse effects of net external debt, but differs in the evaluation about the problem solving power of macroeconomic policies. Both approaches are relevant for this thesis, because they show the important role of domestic capital market development.

¹ Gender aspects are not treated here, so that the male version is used for both sexes, unless noted otherwise.

1.2 Problem and significance: lack of long-term funding through domestic corporate bond markets

Most studies analyzing questions related to financial and economic development focused on the banking sector and the equity market. Important contributions were made in literature strands analyzing financial fragilities as well as the finance and growth nexus, among other things. More recently, the attention of a few researchers was caught by a surge in bond issuance by companies from emerging markets that were placed on international markets, termed “The Bon(d)anza” by Bastos, Kamil, and Sutton (2015): Between 2009 and 2014, annual volumes of non-financial corporate bond issuance registered a more than threefold increase (Ayala, Nedeljkovic, and Saborowski 2015, 4). However, the majority of research on domestic bond market development only enquired into sovereign bonds, which reflects the initial intend of governments to build up a bond market in order to finance their fiscal deficits, on the one hand, and the very incipient stages of domestic corporate bond markets in most emerging market and developing economies, on the other hand.

Although a large body of literature on the development of domestic bond markets emerged over the last two decades and several cross-country studies identified important determinants, there are only few in-depth country case studies that could discover the links and mutual relations of different factors, which is important for a comprehensive understanding of the relevant determinants that might hamper and/or foster the development of a domestic corporate bond market in a specific context. Among the determinants detected by large-n studies were structural variables like the country size, macroeconomic variables such as inflation, and institutional variables including judicial uncertainty. A country might be too small to bear the costs of establishing a domestic bond market alone, so that it might be more reasonable to engage in efforts to create a regional bond market, which happened in Asia. Large macroeconomic instabilities, e.g. expressed in high inflation rates, impede the formation of long-term expectations, which are vital for the development of a market for corporate bonds – on both sides of the market: Companies will not supply the market with bonds, i.e. ask for funding resources, if they are unable to make plans about the profitability of their investment project and wealth holders will not demand bonds, if they are unable to preview the real, i.e. inflation-adjusted, value of their financial yields and assets. Similarly, the lack of a reliable and efficient jurisdiction might hamper the development of a corporate bond market, because economic agents hesitate to engage in long-term debt contracts.

Among the most relevant literature guiding this thesis was the compilation of research on Latin American bond markets published by Borensztein et al. (2008a), including an examination of the Brazilian bond market development by Leal and Carvalhal-da-Silva (2006), and the analysis of determinants of bond market development in Brazil by Paula et al. (2009) that was part of a research project examining the role of Brazilian public banks in domestic financial market development. Both studies contributed to an improved general understanding of corporate bond market development (CBMD) in Brazil and identified the central

relationship between the public and the private bond markets. However, they fell short in further exploring the role of the state in CBMD. The impact of different state actors and their policy measures on the evolution of the private bond market was not made explicit. As a consequence, the influence of the state as a key player not only in the domestic financial system, but also in the Brazilian economy as a whole, on CBMD could not be thoroughly understood, implying that its policy actions could neither be properly evaluated, nor aligned accordingly.

1.3 Response: the role of the state in corporate bond market development

This thesis will perform a case study to examine the link between state actions and corporate bond market development. The case study approach allows one to perform more in-depth analysis of the relevant determinants, actors, structures, and institutions. Moreover, the researcher is able to draw more substantiated conclusions from a small-n study, however with the disadvantage that the result cannot be generalized as easily (Ragin 1997). The case selection was based on various factors that led to the choice of Brazil. The first reason to choose Brazil was the strong role that the state played in the Brazilian economy, turning the argument reasonable that it also occupied an important part in the development of a corporate bond market. Secondly, and closely related, the public bond market in Brazil was very large so that the (lack of the) market creation effect could be examined. A third point is related to the provision of macroeconomic stability, which markedly increased after the implementation of the *Plano Real*, but continued to post a challenge to the Brazilian authorities with important implications for the evolution of the corporate bond market. Another reason for the case selection was the central role of the public finance for development system in the Brazilian economy, especially in the funding of long-term projects. Finally, the author's prior acquaintance with the country together with his academic advisors' existing institutional as well as personal relationships to Brazil facilitated the realization of the research project.

The aim of this research is to spell out the relevant impact vectors of state actions with respect to the development of a domestic corporate bond market in Brazil. Accordingly, the main research question asks about the role of the Brazilian state in CBMD. Based on a Post Keynesian theoretical framework, the evolution of the Brazilian corporate bond market and the influence of the state are examined over the period of two decades, between 1995 and 2014. In order to define the main determinants of (corporate) bond market development in Brazil, the conducted expert interviews in the country were particularly helpful and led, together with an extensive literature review, to the definition of three major determinants of CBMD in Brazil: namely public debt management,

monetary policy, and public finance for development. Therefore, we can further specify the main research question by asking, first, how the state influenced CBMD through these policy variables and, second, whether the state hampered or fostered CBMD in this way. In other words, this thesis intends to show how the independent variable, the influence of the Brazilian state on CBMD through its public debt management, monetary policy, and public finance for development, determined the dependent variable, the development of the Brazilian private bond market.

The hypothesis of this thesis is that the Brazilian state had a protagonist role in the development of the domestic corporate bond market, but only exerted it passively and not constructively. In order to adequately answer the research questions and test the hypothesis, the evolution of the market for corporate bonds is divided into three sub-periods that allow a more precise examination of the determining factors at work. Furthermore, the complex interrelations between important actors in the market as well as connections and feedback effects of the determinants of CBMD in Brazil are best captured and exposed by a narrative description and exploration of the arguments together with a historical, structural, and institutional contextualization of the analysis.

Following a mixed method and triangulation approach, this thesis gained its insights from the back and forth between the relevant literature, expert interviews, and bond market data. The data covered the period from 1995 to 2014, included information on the volume issued on the primary markets and the stock of outstanding bonds in the secondary markets, and was openly available at the websites of several Brazilian institutions such as the Brazilian central bank (Bacen), the Brazilian Association of the Entities of the Financial and Capital Markets (Anbima), or the Securities Commission (CVM).

The expert interviews were conducted during three field research stays in Brazil between 2010 and 2012 that lasted between six weeks and three months. In total, thirty interviews were carried out with experts from academia, state institutions such as the CVM or the Bacen, private institutions such as Anbima, the securities exchange BM&F Bovespa as well as capital market institutions, including not only banks, but also investment and pension funds. According to the interview partners, the interviews were grouped into four categories: university professors (U), associations (A), financial market participants (F), and state institutions (S). The category abbreviations serve, together with a number to make each interview identifiable, as source reference for citations throughout the thesis. Citing an interview partner who belongs to a state institution might be referenced with "S03", for example.

The semi-structured interviews followed pre-defined guidelines that included open questions about key issues and were adjusted throughout the research process according to newly gained insights. The shortest interview lasted about fifteen minutes and the longest almost two hours. On average, the duration of the interviews was a little more than one hour. Each round of field research was followed by a period of interview analysis, data analysis, and literature study in order to explore the subject, narrow down the research questions, define the appropriate theoretical approach, and pinpoint novel scientific findings, which in

turn led to the preparation of the following field research that aimed at answering open questions, understanding important interconnections, and discovering relevant drivers and barriers of bond market development in Brazil.

My original contribution to knowledge is an assessment of the impact of state policies on the development of a domestic corporate bond market in Brazil. More specifically, this thesis reveals how public debt management determines CBMD through different effects that stem from changes in the structure of the public debt. Furthermore, I demonstrate that a low and stable monetary policy rate is a necessary, but on its own not sufficient condition for the development of a corporate bond market. Finally, I show that public finance for development schemes generally hampered CBMD in Brazil, despite recent efforts aiming more directly at its promotion.

Apart from that, my piece of research contributes to the theoretical understanding of the topic primarily with respect to three aspects. First, the impact vectors of how the different policy variables influence the development of a corporate bond market are examined in detail and the workings of the mechanisms are spelled out explicitly. Second, this thesis puts the development of a corporate bond market in the context of emerging market and developing economies that are usually marked by structural heterogeneity with different modes of production and points out how CBMD conduces to the propagation of the monetary economy. Third, I can broaden the Monetary Keynesian view of the capital formation process by expounding the role of bonds as a source of funding, because Monetary Keynesians have so far been negligent of funding in the capital formation process by emphasizing the central role of finance and key actors such as the banker and the entrepreneur in the development process.

1.4 Roadmap

The research is structured into four chapters. This introduction is followed by the theoretical discussion in chapter two. The empirical analysis is presented in chapter three. Finally, chapter four draws the conclusions.

The theoretical part begins with sub-chapter 2.1 that gives an overview of the finance and development debate, emphasizing those threats of the discussion that are most important for this research. In section 2.1.1, the finance and growth nexus is explored in more detail. Section 2.1.2 displays the causes of financial fragilities that usually pose a threat to emerging market and developing economies. According to the balance sheet approach, these countries suffer from maturity and currency mismatches. Moreover, this literature shows that both the buildup of a domestic market for long-term debt securities and the implementation of public finance for development schemes can help to reduce financial fragilities. State interventions according to developmentalist state

policies and the role of public finance for development institutions are explained in section 2.1.3. Since the adverse effects of market failures in the financial system are usually more severe than those of government failures, the state should intervene and foster financial development, in particular CBMD.

The state of the art sub-chapter 2.2 covers different aspects of domestic bond market development, starting with a classification relative to equity and banking markets in section 2.2.1, which comes to the conclusion that economic development is generally independent of the financial structure of an economy. While the banking sector evolves first and attends better the needs of smaller companies, capital markets evolve later and serve better larger companies. Section 2.2.2 discusses the main advantages of domestic bond market development, including reduced financial vulnerability due to balance sheet effects, improved capital allocation and risk sharing, as well as better implementation of fiscal and monetary policies. The determinants and preconditions for the development of a domestic bond market are described in section 2.2.3: The economy must not be too small, the legal, institutional and macroeconomic environment of the country has to be strong, and the necessary financial market infrastructure needs to be installed. In section 2.2.4, a more focused literature review is conducted, compiling the latest research on domestic (corporate) bond market development in Latin America and, more specifically, in Brazil. As a result, the main research gaps are identified, pointing to previous negligence of the role of the state in CBMD. The sub-chapter closes with an appreciation of the influence of three policy variables on CBMD, already mentioned beforehand throughout the theoretical discussion. The choice of the policy variables public debt management, monetary policy, and public finance for development was based on insights acquired both from the expert interviews and the literature review.

The first two sub-chapters laid the foundation for the Post Keynesian analytical framework that is developed in sub-chapter 2.3. The framework makes clear how the state is able to influence CBMD through the policy variables public debt management, monetary policy, and public finance for development. The first of three sections explains the Post Keynesian capital formation process, which can only function smoothly if there are instruments for long-term funding such as bonds. Section 2.3.2 examines how economic agents form their expectations in order to understand the (portfolio) decision making process in a monetary economy that is marked by uncertainty. After the wealth holder is introduced as the ultimate decision maker, the competition to win over the favor of wealth holders between financial assets, in particular between public and private bonds, is addressed. The expectation formation process is discussed as well as the concept of liquidity preferences, which are both influenced by the above mentioned policy variables and, together, form the basis for economic agents' asset choices. In principle, that is how the state can hamper or promote the development of a corporate bond market.

A more detailed analysis of the impact vectors is performed in section 2.3.3. In the model of general asset choice presented in this section the total yield of an asset is determined by four attributes (expected values for the yield, cost, appreciation, and liquidity premium of the asset) that, in turn, depend on various

factors including the currency premium and institutional market liquidity. The section elaborates the influence of the policy variables on each of these attributes and factors, and therefore also on wealth holders' asset choices. Additionally, it clarifies the implications for the development of a domestic corporate bond market. As a result, we gain an in-depth understanding of how the state, through its policy variables, affects CBMD. The final sub-chapter 2.4 briefly summarizes the knowledge gained in the theoretical chapter. By focusing on the most relevant points and emphasizing the links with the policy variables, it serves as a preparation for the subsequent empirical chapter.

The third chapter contains the case study of the role of the Brazilian state in the development of corporate bond market development. The empirical part begins with sub-chapter 3.1, which gives a focused historical account of the financial system development with references to relevant macroeconomic, political, and international events, emphasizing those evolutions that are most relevant for CBMD. It is divided into two sections, of which the first one relates the financial history up to the implementation of the *Plano Real* in 1995, and the second one from then onwards up to 2014. The central aim of section 3.1.1 is to provide the historical context for a better understanding of the evolution of key institutions. Section 3.1.2 covers the period of investigation and mainly aims at providing the necessary background for the subsequent in-depth analysis of CBMD in Brazil. The section is structured according to three sub-periods that are predetermined by changes in the development of the Brazilian corporate bond market. The closing section 3.1.3 briefly summarizes the main points of the first, contextualizing sub-chapter.

The core of the empirical research is presented in the second sub-chapter. Its structure also corresponds to the three sub-periods referred to above. Each sub-period is analyzed in a separate section, always following the same pattern: After a short introductory review of major events, the role of the state and its influence on CBMD through the policy variables public debt management, monetary policy, and public finance for development are examined. Each policy variable is discussed in a separate sub-section, resulting in three sections with three sub-sections.

The first section of sub-chapter 3.2 describes the years following the implementation of the *Plano Real*, from 1995 to 2003. Even though Brazil regained inflation control, macroeconomic instabilities persisted and the domestic corporate bond market continued to play only a very minor role in the Brazilian financial system. Section 3.2.2 covers the years from 2004 to 2008. During this phase of strong and sustained growth, the public debt structure was markedly improved. However, the monetary policy rate remained on an elevated level, so that most of the funding seeking companies opted for the issuance of shares instead of bonds on the domestic capital markets. The third sub-period, from 2009 to 2014, is analyzed in section 3.2.3. In reaction to the international financial crisis, the Brazilian government implemented counter-cyclical policy measures that provided for a fast economic recovery, but the upturn did not endure for long. Moreover, various measures that specifically aimed at the promotion of the corporate bond market in Brazil did not lead to a clear breakthrough in market development.

The key arguments of the case study are resumed in sub-chapter 3.3. It briefly recapitulates the origins of the corporate bond market in Brazil, before elaborating on the main points of the conducted analysis.

Chapter four summarizes the analysis and draws the conclusions. In section 4.1 the key findings are briefly summarized. Based on this recapitulation, the main results are discussed and conclusions are drawn in section 4.2.

2 Theoretical background: bond market development in the finance and development debate

There is a general consensus among economists about the positive impact of a country's financial development on its economic growth (see for example Levine 2005, 1997). Since foreign indebtedness has been a long-standing and bitter issue for developing countries and emerging markets, they have become highly interested in alternative ways of financing, namely the development of domestic debt markets (Borensztein et al. 2008a). Empirical evidence also points in this direction: "Our analysis implies that the domestic versus external public financing is relevant to growth and highlights the importance of the development of the domestic bond markets to promote long-lasting economic growth." (Kutivadze 2011, 20–21). Historically, developing countries and emerging markets were only able to issue debt in foreign currency and/or short-term. Domestic bond markets promise to offer a solution to this problem, because they provide instruments for long-term debt in domestic currency. Given certain conditions of controlled inflation, widespread trust and sufficient savers, government bond markets are supposed to pave the way for the private market (Borensztein et al. 2008a): Building up the necessary infrastructure and signaling the interest rate path, large and liquid public bond markets can have positive effects on corporate bond markets.

For that reason, public debt management is an important determinant of corporate bond market development (CBMD), which also depends on sound monetary policy to provide macroeconomic stability. At last, financial development in the context of emerging market and developing economies usually requires an active role of the state, including public finance for development schemes that might be guided by developmentalist state policies and implemented by public development banks. Ocampo and Vos also emphasize the relevance of an economic and financial development strategy along these lines:

"[M]erely focusing macroeconomic policies on low inflation and restoring the fiscal balance may be too narrow of an approach to achieve [the] desired growth gains, especially if the emphasis on monetary restrictions and fiscal prudence depresses economic activity in the short run and restricts broader developmental policies. [...] The potential contribution of financial development to economic growth is considerable [...]. However, [...] these contributions to growth cannot be taken for granted, and the growth impact depends on the construction of the appropriate institutional structure. [...] What matters is that the financial sector ensures adequate finance for productive investment of enterprises [...] and for long-term investment. Depending on the stage of development, doing so may imply ensuring a domestic bond market for long-term financing in the domestic

currency and reserving an important role for public sector banks (particularly development banks)” (Ocampo and Vos 2008, 38).

Even though the term “developing country” conveys a mistaken image of economic development as a predetermined path, on which less developed countries are “catching-up” with more developed countries, it is used here in accordance with common practice in economic literature, yet not without expressing strong reservations about its application. Economic literature customarily uses terms such as “developing countries”, “emerging markets”, and “emerging market and developing economies” to describe low- and middle-income countries, based on the classifications of the IMF and the World Bank. The main criteria used by the IMF to classify the world into advanced economies, on the one hand, and emerging market and developing economies, on the other hand, are the level of per capita income, export diversification, and the degree of integration into the global financial system. Despite the fact that these terms are being widely used, they are based on an old concept of narrowly defined development (cf. Thirlwall 2006; Willis 2011). It has been overcome by a much broader notion of development, understood as a multifaceted, non-linear process comprising increasing well-being, equality, and economic sustainability (Lepenies 2008). Furthermore, economic development includes long-term growth of the per-capita income (cf. Meier 1995, 7ff.), improvements with respect to income distribution, quality of living, health, environment, education, job creation, and poverty reduction, while not being restricted to these aspects (cf. Stiglitz et al. 2006; Willis 2011). Necessarily referring to a long time frame, where a series of investment projects possibly promotes various structural and institutional changes (Hermann and Paula 2011, 3–4), economic development is a “dynamic process involving systematically shifting interaction patterns among different aspects of development and therefore requiring predictably changing policies and institutions over time” (Adelman 1999, 25). This thesis applies this multi-faceted approach of economic development to macroeconomic, and more specifically, financial and monetary questions.

This chapter is structured as follows: Sub-chapter 2.1 (on important strands of the finance and development debate) lays the foundation together with sub-chapter 2.2 (on the state of the art of research on domestic bond market development) for sub-chapter 2.3 that introduces a theoretical framework for the analysis of the influence of state policies on the development of a corporate bond market. We learn about structural imbalances of financial markets (that warrant state intervention) and how corporate bond markets can help to stabilize and complement financial systems by providing domestic, long-term financial instruments. The main findings of the chapter, including the identification of three main policy variables (namely public debt management, monetary policy, and public finance for development) and how they impact CBMD, are resumed in sub-chapter 2.4.

2.1 The finance and development debate: main strands and important findings

Ever since economists have analyzed the development of market-based economies, they wonder about the role of finance in this process and even though for Nobel laureate Merton Miller the idea “that financial markets contribute to economic growth is a proposition too obvious for serious discussion” (Miller 1998, 14), economists have not reached a consensus on the question what role finance plays in economic development. Adam Smith (1776) recognized that money lowers transactions costs, allowing producers to spend more resources on specialization, which in turn fosters technological innovation. Alexander Hamilton (1781, published 1961, 618), who would later become one of the creators of the US financial system, described banks as “the happiest engines that ever were invented” for spurring economic growth. Walter Bagehot (1873) was very much aware that “[m]oney is economical power” (Bagehot 1873, 2) and showed the importance of finance for the understanding of economic development. The discussion about the link between finance and growth is explored further in section 2.1.1, but, in the first place, the following paragraphs give a quick overview of several other important strands in the finance and development debate. In sections 2.1.2 and 2.1.3, two threads of the debate that are especially relevant for this study are discussed in more detail, scrutinizing financial fragilities and the role of the (developmentalist) state.

Curiously, development economists attributed problems of underdevelopment to the “real economy” and neglected the issue of finance, for decades (cf. Stallings and Studart 2006, 1). A collection of essays under the title “pioneers in development” (Meier and Bauer 1984) didn’t discuss the subject of finance at all. Joan Robinson (1954, 86) argued that “where enterprise leads finance follows”. According to this view, the “financial sector”, instead of causing growth, merely responds to changing demands from the “real economy”. In the same vein, Robert Lucas (1988) affirms that finance as a determinant of economic growth is “over-stressed”.

The theoretical debate about the central position money and credit occupied in economic development and growth was essentially initiated by Joseph Schumpeter (1912), who emphasized the pivotal role of financial intermediaries in economic development, together with John Maynard Keynes (1936, 1937), who explained the relevance of both finance and funding for the realization of investment projects, which are necessary for economic development. Theoretical work followed that explicitly referred to the financial system including seminal articles by Gurley and Shaw (1955), McKinnon (1973), Shaw (1973), and Minsky (1986). Post Keynesians putting less emphasis on Keynesian “final demand” and “fiscal policy”, but instead highlighting the supremacy of the financial over the real goods and factors sphere are known as Monetary Keynesians (Nitsch 1995, 61) and formulated a theory of managing wealth in uncertain conditions as a

“universal principle of economic activity” (Riese 1990, 37)². This doctoral thesis stands in the Monetary Keynesian tradition and applies a Post Keynesian analytical framework that will be developed in sub-chapter 2.3.

In opposition to Keynes, the theory of finance that mainly built on the work of McKinnon (1973) and Shaw (1973) as well as development strategies and policy advices derived from it (see for example Fry 1995; World Bank 1989; Drake 1980) suggested that the main barrier to economic development was not the lack of investment opportunities, but insufficient savings: Financial repression hampered development and financial deepening³ could be achieved through financial liberalization, referring both to the deregulation of the domestic financial system and the opening up to the international financial system. After several Latin American countries were among the first to implement the liberalization strategy in the late 1970s, they suffered from frequent and costly crises, culminating in the major debt crisis of the region, which led to the “lost decade” in Latin America and was well captured by Diaz-Alejandro’s article “Good-bye financial repression, hello financial crash” (1985). Later, the UN organization responsible for economic development UNCTAD established that the neo-classical model had failed in explaining and predicting the relationship between finance and development (UNCTAD 2008, 67). That is one important reason for the pursuit of a Post Keynesian approach in this thesis.

One explanation for the particularly damaging effects of the liberalization of financial markets relative to other markets was developed by Kindleberger (1978), who built on the writings of Marshall (1923), Keynes (1936), and Minsky (1977a) and conceived financial crises as responses to previous excessive behavior of economic agents in the financial markets, noting that this would be more common in liberalized financial systems. Reinhart and Rogoff (2008) studied the tendency of financial markets towards boom-bust cycles in historical perspective and showed their recurrent appearances, suggesting that this was a central market failure of financial systems. International capital flows to emerging market and developing economies followed a similar pattern, characterized as surges and reversals (Ffrench-Davis and Griffith-Jones 1995), the latter more famously termed “sudden stops” by Calvo and associates, who showed that the surge of capital flows into Latin America was largely determined by external factors, such as the base rate in the USA (Calvo, Leiderman, and Reinhart 1993). Since the mid-1990s, several emerging market and developing economies were involved in and suffered from a series of financial and/or

² Major contributions to the discussion in English can be found in the Journal of Post Keynesian Economics and came from Davidson (1984), Kregel (1980), Minsky (1980, 1977b), and Moore (1979), while the discussion in German is mainly conducted by Riese (1989, 1986a) and his “Berlin School” with Paula, Fritz, and Prates (2015), Nitsch (1993), Tober (1991), Herr (1989), Lüken-Klaßen and Betz (1989), Riese and Spahn (1989), Hauptmann (1987), and Stadermann (1986).

³ Both financial deepening and financial broadening refer to financial market development and are somewhat overlapping so that the concepts are best understood together (Barger 1998, 11): While deepening refers to the increase of the financial asset to GDP ratio, broadening refers to the expansion in terms of number and variety of both participants and instruments.

currency crises that gave rise to new theoretical models attempting to explain the underlying causes, which are presented in section 2.1.2.

Another approach to explain financial crises was given by Stiglitz (1994), who argued that market failures in the financial sector are likely to be endemic, because financial markets are very information intensive, raising the relevance and disruptive consequences of asymmetric and imperfect information as well as incomplete contracts with respect to other sectors of the economy (Stiglitz and Weiss 1981). The implications of financial sector turbulences for the real economy were outlined by Mishkin (1996, 17):

“A financial crisis is a nonlinear disruption to financial markets in which adverse selection and moral hazard problems become much worse, so that financial markets are unable to efficiently channel funds to those who have the most productive investment opportunities.”

As a consequence, government failures in the financial system tend to have less detrimental effects than market failures, turning state interventions especially beneficial, e.g. through financial market regulation, capital account management, or public finance for development schemes. This is an important finding with regard to this thesis, which attributes an important role to the state in CBMD and more particularly explores the role of public debt management, monetary policy and public finance for development institutions.

Several examples of bank failures, capital market bubbles, as well as systemic banking and currency crises in the history of finance (Reinhart and Rogoff 2008) provoked a vast production of literature on financial fragility and its counterpart financial stability, which is especially relevant for emerging market and developing economies⁴. Financial deepening and liberalization might not only spur growth, but can also be sources of risks and fragilities, for example due to the maturity transformation of banks, as shown by the Diamond and Dybvig (1983) model. Apart from historic surveys and case studies, there are several systemic cross-country studies exploring the causes, determinants and socioeconomic costs of financial fragility (Beck 2012, 3–4). The literature on banking crises was discussed by Demirgüç-Kunt and Detragiache (2005) and the literature on sovereign debt crisis management was discussed by Nitsch (1995, 70ff.). Teunissen and Akkerman (2004) edited a book that was contributing to the formulation of a new development agenda in the post-Washington-Consensus era. In the same vein, Griffith-Jones (2013) called for a more prudent approach towards financial liberalization. Financial stability is also a recurring topic in the IMF working paper series (see for example Almarzoqi, Naceur, and Kotak 2015; Sahay et al. 2015).

Furthermore, the finance and development debate comprises of literature that treats several international aspects of finance, for example by exploring topics such as global financial architecture (Crotty 2009; Eichengreen 1999), regional monetary cooperation (Mühlich 2014; Dullien et al. 2013), and international capital flows in their various forms, including foreign direct investment (FDI), international commercial bank loans and portfolio flows, bilateral and

⁴ Financial fragilities are also the subject of (sub-)sections 2.1.2, 2.3.1.3, and 2.3.3.4.

multilateral aid, e.g. stemming from official development assistance (ODA) or multilateral development banks (Ocampo, Kregel, and Griffith-Jones 2007), as well as migrants' remittances (Fritz, Ambrosius, and Stiegler 2008; Ratha 2005). For a broad review of the literature on international financial integration and its benefits as well as its costs, see Kose, Prasad, Rogoff, and Wei (2009).

Since the beginning of the 1980s, financial innovations related to the development of derivative and more liquid secondary markets caused a securitization trend that changed the structure of financial systems throughout the world in a way that increasingly blurred the distinction between short- and long-term (debt) securities⁵ and resulted in a short-termist bias, because wealth holders saw their financial applications mainly as portfolio investments, which they instantly adjusted as soon as new opportunities emerged and their expectations changed (F. J. C. de Carvalho 1997, 476ff.). Not only the demand side of capital markets, but also the supply side contributed to this trend (F. J. C. de Carvalho 1997, 479):

“The placement of securities as an alternative to borrowing from financial intermediaries has increasingly become a favored option both for those debtors that command the confidence of investors and for the intermediaries themselves that may minimize the costs they bear and the risks they run with this kind of deal.”

For a critical assessment of the phenomenon that is known as financialization see, for example Amato and Fantacci (2014), Hardie (2012), and Epstein (2005).

The literature on finance and politics, critically reviewed by Haber and Perotti (2008), is not restricted to financial sector regulation or the political economy of the financial and judicial system (Beck and Levine 2005), but also encompasses topics such as subsidized credit programs, public development banks and other public finance for development institutions and schemes that might be part of developmentalist state policies, which are discussed in more detail in section 2.1.3. Moreover, finance is often key to political power struggles, because non-financial companies⁶ depend on finance and funding for the realization of investment projects, which “makes the financial sector critical in the attempt of ruling elites to entrench their socioeconomic dominance and prevent entry of competitors” (Beck 2012, 4). The subject of distributional effects of financial development has only recently gained more attention from researchers and policy-makers (see for example Naceur and Zhang 2016). Subsequent to the recent global financial crisis, a large body of literature has emerged that discusses possible reforms of financial regulation, mostly related to advanced and emerging market economies (see for example IMF 2012a; Griffith-Jones, Ocampo, and Stiglitz 2010).

⁵ Securities are tradable financial assets and might refer to equity or debt. Here, the term “(debt) securities” will be used, to accentuate the focus of this thesis on bonds. The conceptual differences between equity and debt funding are discussed in Hicks (1967, 47) and Davidson (1978, 410–13).

⁶ Here, the terms “companies”, “firms” and “entrepreneurs” are used interchangeably.

Closely related to the finance and politics literature and equally important in the finance and development debate is the literature on institutions and development (Acemoglu, Johnson, and Robinson 2005). Pertaining to this literature strand, the contributions to the book edited by Haber, North, and Weingast (2008) questioned the literature strand that attributes the development of financial markets to the legal origins of a country, i.e. whether it is a common law or a civil law country (for a quick overview of the literature on the legal origins view, see the introduction in Rajan and Zingales 2003). The legal origin of a country and its type of legal system apparently does not predetermine whether it has investor-friendly laws, because the empirical evidence shown by Porta et al. (1997, 1996) in favor of common law countries, was challenged by Rajan and Zingales (2003), who found evidence in favor of civil law countries and by Musacchio (2008a), who showed that domestic capital market development in Brazil varied too much to be solely explained based on its legal origin.

In a recent contribution to the finance and development debate, Beck (2012) critically analyzed three literature strands, namely the finance and growth literature, the literature on financial fragility, and the finance and politics literature. Due to their relevance for this thesis, a more profound discussion of these three important strands of the finance and development debate is provided in the following sections: Section 2.1.1 examines the finance and growth nexus, section 2.1.2 relates to the financial fragility literature with a focus on models explaining financial and currency crises together with the literature on balance sheet effects and original sin, and section 2.1.3 gives a quick overview of the literature on developmentalist state policies with a focus on public finance for development institutions.

Before turning to these topics, a few basic terms are defined. Following Schmidt, Hackethal, and Tyrell's (2001, 3–4) distinction of the terms financial system, sector, and market, the financial system encompasses everything from financial institutions and markets, including financial instruments, to the regulatory framework, while the financial sector is understood relative to the other sectors of the economy by offering financing solutions, investment opportunities, as well as related advisory and intermediation services; and the financial market is the place where the demand and supply side of the financial sector meet to realize financial intermediation, either institutionally based, e.g. through banks, or market based, e.g. through securities exchanges. Additionally, the informal financial sector and self-financing are both relevant forms of finance in emerging market and developing economies.

Commonly financial markets are classified according to the maturity structure of the assets traded, distinguishing the short-term money market from the mid- to long-term capital markets, the latter including both the equity (or stock) market and the debt (or bond) market (Mishkin and Eakins 2012, 254ff.). Financial market development can be conceived in terms of increases in market size, liquidity, and capitalization. The market size is usually measured as the market capitalization to GDP ratio and indicates the sophistication of market infrastructure as well as the number of trading partners, so that the larger a financial market, the more opportunities to finance and hedge exist for market

participants (financial and non-financial institutions alike) at lower set-up, settlement, and clearing costs (Demirgüç-Kunt and Levine 2001b). Market liquidity is usually measured by the turnover ratios of traded securities, but there are other common measures, too, including price measures such as bid-ask spreads or covered and uncovered interest rate parities (for an overview, see Sarr and Lybek 2002). The market liquidity indicates the development of secondary markets, where the securities are traded that had been issued before on the primary markets. Moreover, market liquidity is an important determinant of the liquidity of an asset, which reflects the ease of being converted into money: “Therefore we may say that an asset is as liquid as the time required for its convertibility is short and the expected change in its value is small” (F. J. C. de Carvalho 1992, 86). Market capitalization is usually measured by multiplying the number of securities issued by their respective values and serves as an indicator for the capacity to realize financing operations and to diversify risks, which also shows how accessible the market is (McCauley and Remolona 2000; Eichengreen, Hausmann, and Panizza 2005). By definition, low market capitalization coincides with small market size.

2.1.1 The finance and growth nexus

The literature on the finance and growth nexus corresponds to the core of the finance and development debate. Levine (2005, 1997) analyzed in much cited literature reviews theoretical and empirical studies about the connections between financial and economic development. The evidence gathered by him suggests a causal relationship between finance and growth, though subject to qualifications, and a need for further research. By first outlining the theoretical appraisals of the finance-growth nexus, Levine (2005) gathered the knowledge on the subject at that time. In theory, financial markets, instruments, and institutions lower information and transaction costs, that way altering incentives and restrictions on decisions to invest and to undertake innovative enterprises, and thus eventually also raise long-run growth rates. While he found few theoretical models that analyze the dynamic interactions between finance and growth, he records a vast theoretical literature that compares different types of financial systems, i.e. bank-based vs. market-based systems, to which we'll return in section 2.2.1.

According to Levine (2005), finance may be conducive to economic development mostly through (i) risk diversification and risk management by mobilizing and pooling of savings (cf. Bagehot 1873); (ii) facilitation of exchange by reducing transaction costs, e.g. through the provision of a payment system; (iii) improved capital allocation by producing ex ante information about investment projects, i.e. spreading fixed costs of collecting information (cf. Levine 1997; Merton 1992); and (iv) increased willingness of wealth holders to invest and finance new projects by ensuring ex post monitoring and corporate governance. By providing these four mechanisms financial systems become functionally efficient and promote economic growth, in contrast to inefficient financial systems, which might lower economic growth rates by misallocating resources and raising the

probability of costly financial crises (Panizza 2013, 6). We will return to the subject of financial system efficiency and functionality in sub-section 2.3.1.4.

Empirical research on the link between finance and growth has also produced an extensive literature, ranging from broad cross-country growth regressions, time series analyses, and panel techniques, to detailed country studies as well as analyses that were based on more microeconomic approaches (Levine 2005, 868). The first to provide empirical evidence for the positive correlation between financial development and growth was Goldsmith (1969). However, such a correlation neither controls for other factors associated with the observed variables, nor can it tell anything about the direction of causality. In order to control for other factors, i.e. country characteristics associated with differences in growth rates across countries, the early empirical literature on finance and growth (King and Levine 1993a, 1993b) used ordinary least squares (OLS) regressions and showed that financial development robustly predicts growth of per capita GDP, and that this result holds for banking sector as well as for equity market development (Levine and Zervos 1998). Later, time series and instrumental variable techniques were applied to rule out the possibility of a reverse causation or omitted variable bias (Beck 2012, 11–12). For example, Beck, Levine, and Loayza (2000) and Levine, Loayza, and Beck (2000) confirmed the positive relationship between finance and growth by using dynamic panel techniques with lagged values of financial sector indicators and the legal traditions of countries as historic country characteristics to explain differences in financial development across countries. In a similar way, Bekaert, Harvey and Lundblad (2005) and Henry (2003) analyzed the impact of financial liberalization on growth.

An alternative method to show the finance and growth nexus is based on a better understanding of the mechanisms at work that cause financial development to accelerate economic growth, which implies testing for varying effects of financial development on diverse industries or sectors (Beck 2012, 12–13). Rajan and Zingales (1996) applied this differences-in-differences technique in a seminal paper to show that industries with a higher dependency on external financing expand faster in financially more developed countries. Several studies followed using the same technique to find evidence for the impact of financial development with respect to the growth of industries that have more opportunities to expand, that rely more on intangible assets, and that are comprised of relatively more small companies (see for example Beck et al. 2008; Raddatz 2006; Braun and Larrain 2005; Beck 2003; Fisman and Love 2003; Beck and Levine 2002).

In addition to reviewing the empirical results, Levine (2005) critically observes shortcomings in the empirical methods, namely the econometric models⁷ as well as the proxies, which fail to measure financial development. More recently, a consensus has emerged that the most appropriate indicator of financial development in terms of activity, efficiency, and transaction costs is the ratio of credit to the private sector as a share of GDP, purposely leaving out public sector

⁷ Beck (2009) also reviewed the econometric methodologies underlying the empirical finance and growth literature.

lending as its correlation with important functions of an efficient financial system such as credit allocation, risk management, and corporate control is probably low (Panizza 2013, 6; Demirgüç-Kunt and Levine 2001a, 195ff.). Svirydzenka (2016) introduced a financial development index that takes into account a variety of measures, in order to better reflect the complex multidimensional nature of financial development. Levine (2005) arrived at three main results, which can be summarized as follows: (i) growth depends on a well-functioning financial system, yet there is not much difference between bank-based and market-based economies; (ii) the first result is not driven by a simultaneity bias; and (iii) by alleviating external financing constraints, well-functioning financial systems facilitate the expansion of companies, which appears to be one mechanism through which financial development spurs growth.

2.1.2 Financial fragility literature

Emerging market and developing economies usually suffer from a large burden of foreign currency denominated obligations and even though underdeveloped financial markets are identified as a major cause of financial vulnerabilities, the relationship between exchange rate volatility and financial market development is not well studied (Mühlich 2014, 4–5; cf. Bordo and Flandreau 2003). Moreover, most of these countries are characterized by financial market fragility, expressed by few possibilities to hedge against fluctuations in net wealth (Eichengreen and Hausmann 1999). The development of a financial market is reflected in its diversity, liquidity, and capitalization, corresponding with more options to hedge, for public and private market participants alike. Due to the lack of hedging options, countries with underdeveloped financial markets are more vulnerable to exchange rate fluctuations (P. Aghion et al. 2009). The problem is aggravated where a large part of the country's net assets or net liabilities are denominated in foreign currency, because the holding of foreign currency denominated net assets or net liabilities results in net wealth fluctuations according to movements in the exchange rate (Hausmann et al. 1999).

Market participants in a less developed domestic financial system are exposed to a higher risk of wealth loss (Mühlich 2014, 5–6). In case of a sudden reversal of financial flows, for example, the financial crisis might be accelerated by the underdevelopment of the domestic financial markets, because they lack the necessary insurance mechanisms against such a reversal of financial flows. This shows that the more solid and developed domestic financial markets are, the less a country will suffer from economic and monetary shocks. Correspondingly, a less developed financial system hampers monetary policy in its attempts to ameliorate adverse effects, because its implementation is based on the interest rate in the money market, on open market operations, or the exchange rate (Dullien 2009). More specifically, the monetary policy space can be restricted in the following ways: (i) the base rate needs to follow closely the international interest rate level in order to avoid strong pressures on the exchange rate due to international financial flows; (ii) exchange rate fluctuations need to be avoided to prevent repercussions on net wealth, depending on the currency

denomination of net assets and liabilities; and (iii) the ability of the central bank to act as a lender of last resort in its own currency is weakened to the extent financial instruments prevail that are denominated in a foreign currency. Domestic financial market development can thus be an important contribution to a more stable macroeconomic environment that is conducive to economic development. The important connection between monetary policy and financial development in general, and CBMD, in particular, is a recurrent issue throughout this thesis. The following paragraphs explore the link between domestic financial development and the prevention of financial and/or currency crises further.

There are three generations of models to explain currency crises, each evolving after the experience of a new surge in currency and financial crises (Setser et al. 2002, 10–11; Mühlich 2014, 50). While the first-generation models, prevailing until the mid-1990s, predicted currency crises based on the worsening of macroeconomic indicators such as deteriorating fiscal accounts, rising debt levels, or diminishing foreign exchange reserves, which these models saw at the root of the crisis triggering them rather mechanically (see, e.g. Krugman 1979; Flood and Garber 1984), the second-generation models explained the outbreak of a currency crisis with self-fulfilling market expectations causing speculative attacks on the exchange rate based on uncertainty towards the monetary policy stance. Speculators react to news about possible future changes in macroeconomic fundamentals before these changes have actually materialized, that way contributing to the unfolding of the crisis (see, e.g. Obstfeld 1986, 1994; H. L. Cole and Kehoe 1996). These tendencies are aggravated by intrinsic features of international capital flows that are related to the institutional setup of international financial markets, e.g. the pro-cyclical behavior and methodology of rating agencies (Reisen 2003; Goodhart 2010), giving very short-term incentives to major market participants, such as investment banks or pension funds acting on an international scale, which contributes to herding behavior (Griffith-Jones 1998; Devlin, Ffrench-Davis, and Griffith-Jones 1995). At the end of the 1990s, after the Asian crisis, the third-generation models evolved, which saw currency crises as a consequence of financial system fragilities, possibly causing balance sheet effects, related to net debt denominated in foreign currencies, failures in prudential regulation, and the liberalization of the capital account (see, e.g. Chang and Velasco 2000; Dornbusch 2001).

In the face of currency and/or maturity mismatches, balance sheet effects might cause a currency crisis by deteriorating the net wealth and net income of economic agents as a consequence of changes in the exchange and/or the interest rate, respectively (Mühlich 2014, 40–42; Setser et al. 2002, 12ff.). The concept of balance sheet effects has emerged with the third-generation literature on currency crises. While standard economic analysis had almost exclusively focused on flow variables, e.g. the GDP, international capital flows, or the balance of the current account, the new view analyzing balance sheets shifted the focus to stock variables, i.e. the stock of assets and liabilities, at a certain point in time. By emphasizing the importance of stock variables such as external debt or foreign exchange reserves, balance sheet analyses actually broadened the perspective, because it made clear that stocks and flows are interrelated: The value of the stock of net assets (or liabilities) changes according to movements in the valuation, i.e. the price, of the existing stock of assets and liabilities, on the

one hand, and the alterations of the size or volume of the stock caused by net flows during the respective antecedent period, on the other hand.

Even though the literature on balance sheet effects distinguishes various types of mismatches that pose a credit risk in the event of an external shock to economic agents and, at the aggregated level, to the country as a whole, this thesis focuses on the maturity and the currency mismatch, as these are the most relevant types for emerging market and developing economies (Mühlich 2014, 40–42; Setser et al. 2002, 12ff.). The maturity mismatch typically refers to the disparity between long-term assets and short-term liabilities, which elevates the risk of being unable to service one's debt in case interest rates rise. This interest rate risk can also arise with longer-term liabilities that are indexed to the interest rate. While these types of risks concern the debtor side, creditors holding long-term fixed rate debt can also be exposed to the interest rate risk, if a rise in the interest rate reduces the market value of their debt. This is especially relevant for financial institutions that hold long-term assets and usually finance themselves with deposits, representing short-term liabilities. Maturity mismatches furthermore create the risk of maturing liabilities not being refinanced, obliging the debtor to pay the debt in cash, which is referred to as the rollover risk.

The currency mismatch commonly describes the discrepancy between assets denominated in domestic currency and liabilities that are denominated in foreign currency, which raises the risk of suffering losses in net wealth from exchange rate variations (Mühlich 2014, 40–42; Setser et al. 2002, 16–17). Especially in emerging market and developing economies, market participants from the private as well as the public sector are prone to suffer from currency mismatches in their balance sheets, because they are often unable to finance their production or consumption and to fund their investment projects in domestic currency and, thus, have to take on foreign currency debt, while generating income in domestic currency. Even if one sector is able to hedge against the currency risk, e.g. the banking sector by borrowing abroad and lending to companies in the same foreign currency, this will only pass the currency mismatch on to another sector. Yet, there are some sectors that have a natural hedge. For example, net exporting companies that hold liabilities denominated in foreign currencies may not suffer from balance sheet effects in the event of exchange rate fluctuations. When there are currency mismatches, exchange rate fluctuations might have far reaching consequences by deteriorating the net worth and creditworthiness of the private sector, which might exert adverse effects on domestic economic activity and on international capital flows, straining the foreign exchange reserve holdings of the country (Jeanne and Wyplosz 2003), and eventually leading to a financial crisis.

All types of mismatches are usually connected both within individual balance sheets and across sectors, therefore may reinforce each other, which raises not only uncertainties, but also the risk of a solvency crisis in a systemic way (Mühlich 2014, 40–42; Setser et al. 2002). The balance sheet approach points towards policies that may foster a reduction of vulnerabilities, including public debt management, incentives for the private sector to avoid balance sheet exposures, and the build-up of foreign exchange reserves. By emphasizing the importance of such policies, authors applying the balance sheet approach relate

the problem of foreign currency and short-term borrowing mainly to macroeconomic policy failures. The balance sheet approach together with the third generation of literature on currency crises were important for emerging market economies, because they showed monetary policy options for net debtor countries and emphasized the relevance of domestic financial market development in diminishing their vulnerability to a volatile exchange rate (P. Aghion et al. 2009). Well-diversified domestic financial markets, including domestic bond markets and public finance for development institutions, contribute to lower net balance sheet exposures and offer more hedging instruments. As a consequence, countries that successfully strengthened their financial systems may be less exposed to financial and currency crisis risks (Rojas-Suarez 2005). The original sin literature, to which we shall return shortly, also points out the crucial role of well-developed financial markets (Eichengreen and Hausmann 2005). This underscores not only the significance of developing a domestic market for corporate bonds, but also the mutual influence of CBMD and the policy variables public debt management, monetary policy, and finance for development.

Another merit of the balance sheet literature is that it has pointed out the increased risk of suffering from financial and currency crises by opening up the capital account and engaging in financial integration into global markets, which is especially true for those countries that experience high exchange rate volatility and are exposed to maturity and/or currency mismatches (Mühlich 2014, 39–40; Stiglitz 2000). This insight is particularly noteworthy, because until recently mainstream economists considered a liberalized capital account as an essential precondition for economic development (Fritz and Prates 2014; Kose et al. 2009). Meanwhile, most economists agree that emerging market and developing economies display certain financial fragilities, which cause these countries to benefit when they abstain from further integrating financially by raising their macroeconomic stability as well as gaining monetary autonomy (Ostry et al. 2012; Crowe et al. 2009).

Among the lessons learned from the major financial and currency crises during the late 1990s and early 2000s in emerging market and developing economies was an increased awareness of the importance of transparency and prudent risk management by both, private financial institutions and central banks (Klein and Shabbir 2007). Financial market reforms should therefore also include measures that aim at improved corporate governance, more specifically protecting minority shareholder rights, promoting full disclosure and transparency, strengthening the role of the board of directors as independent overseers, offering conflict of interest resolution mechanisms, and preventing the use of insider information, apart from the already mentioned more cautious stance towards financial liberalization, including the implementation of an appropriate exchange rate policy allowing more flexibility with room for exchange rate management; as well as the promotion of financial development in the sense of completing the scope of capital market instruments and institutions, which shows the relevance of domestic bond market development and its close connection to monetary policy.

The original sin literature differs from the balance sheet literature mainly by emphasizing the inability of macroeconomic policy measures alone to redeem a country tainted by original sin (Mühlich 2014, 42–44; Eichengreen, Hausmann, and Panizza 2005; Eichengreen and Hausmann 2005, 1999). Both approaches are similar in discussing the adverse effects and negative consequences of net external debt as well as their relevance for this thesis by emphasizing the important role of domestic capital market development. The concept of original sin is in the first place merely an empirical observation, from which theoretical conclusions are drawn. It describes the inability of most emerging market and developing economies to borrow abroad in their own currencies (international component) and the inability to borrow domestically with long maturities and fixed interest rates in their own currencies (domestic component).

The empirical results of the original sin literature show that macroeconomic fundamentals of a country are far less important for the currency denomination of its investment and financing contracts than the size of its economy as a whole and of its financial markets. One important implication of original sin, i.e. unhedged net foreign currency liabilities, is that it may stifle economic growth and development by limiting the monetary policy space with respect to exchange rate adjustments, leaving the main burden to the interest rate channel. As a result, interest rates become more volatile, reacting pro-cyclically, that way raising economic volatility. In periods of economic recession and when the exchange rate depreciates, monetary policy needs to elevate the interest rate in order to attract net external capital inflows, despite the adverse effects on investment and economic growth. During periods of economic expansion, the interest rates fall, which is problematic, because it further accelerates the boom phase.

The recent trend of emerging market and developing economies increasingly issuing local currency debt on international markets, on the one hand, and on their domestic capital markets, on the other hand, is less a sign of redemption from original sin, according to the authors, and more a sign of abstinence (Hausmann and Panizza 2011). In other words, it is mainly a reduction in net debt that has caused a reduction of currency mismatches and the low participation of foreign investors in domestic markets shows that these countries are still tainted by original sin. Apparently, these countries avoid financial integration, because external debt is associated with high risks, and it seems worthwhile to develop the domestic financial system, especially capital markets. In Brazil, the presence of international investors in the sovereign bond market has been much higher than in the corporate bond market, as we will see in chapter 3.

The presented issues are fundamental to this thesis due to the financial fragility mitigating potential of CBMD. For that reason, we will return to address the topic of financial fragilities throughout the theoretical chapter, in particular in the course of presenting the analytical framework and, more specifically, in sub-section 2.3.1.3 on financial fragilities in the process of capital formation and in sub-section 2.3.3.4 on the concept of currency premium.

2.1.3 Developmentalist state policies

All approaches in the finance and development debate are based on two essential premises (cf. Hermann and Paula 2011, 1–2): That development depends on investment, and that investment depends on the financing conditions. Public finance for development tries to improve the financing conditions in order to increase investment, and that way, promote development. While finance for development schemes may be a part of developmentalist state policies, the latter are characterized by a broader set of measures. Developmentalist state policies were differentiated by Bresser-Pereira and Theuer (2012, 813–14) from liberal state policies, i.e. from a state that tries to draw back from the (supposedly) more efficient market as far as possible, only safeguarding civil rights and contract enforcement, as opposed to the developmental state⁸, which directly intervenes in the economy with the aim to foster economic development.

Initially, developmentalist state policies had a nationalist component, which didn't have any ethnic aspect and was only to be understood in economic terms (Bresser-Pereira and Theuer 2012, 813–14). It was a consequence of the Post Keynesian and structuralist economic analysis of a subordinate center-periphery relationship between advanced economies on the one side, and emerging market and developing economies, on the other, causing the latter to follow an import-substitution industrialization (ISI) strategy, in some countries starting as early as the 1930s. The debt crisis during the 1980s brought an end to Latin-American developmentalist state policies, which were replaced by the liberal state policies advocated by the Washington Consensus. Yet, after the failure of these policies to revive the development process, developmentalist state policies returned to many countries in the region. These policies were still guided by Post Keynesian and structuralist macroeconomic analysis that were mostly based on theoretic models developed by economists like Celso Furtado, Albert Hirschman, Arthur Lewis, Gunnar Myrdal, Ragnar Nurkse, Raul Prebisch, Paul Rosenstein-Rodan, and Hans Singer during the 1940s and 1950s (cf. Bielschowsky 1988).

The concept of developmentalist state policies is closely related to East Asian countries that have successfully completed a reorientation of the economy towards high technology and value added manufacturing (Amsden 1989; Campos and Root 2001; Johnson 1982, 1987). Although the Brazilian developmentalist state policies have not rendered overall results that fare as well as the East Asian benchmark cases, a disaggregated sectoral approach reveals that these policies have contributed to several outstanding success stories, although there are also examples of failures (Schneider 2015). The literature on developmentalist state policies has established that the effectiveness of such policies depends mainly on four factors: Weberian bureaucracy, political support, reciprocity, and what Evans (1995) termed “embedded autonomy”, i.e. collaborative relations between the public and the private sectors (Kohli 2004; Amsden 2001). Most of the Brazilian success stories involved state-owned enterprises and, therefore, it was not necessary to

⁸ In this thesis, the term most frequently used is developmentalist state policy or policies, but other terms such as developmental state are used in the same spirit.

elaborate refined schemes for reciprocity and collaboration between business and government as a precondition for effectiveness, so that the first two conditions, i.e. Weberian bureaucracy and political support, were more important in these successful cases. Overall, the Brazilian developmental state policies showed great variation across the four factors and across time (Kohli 2004; Amsden 2001; P. Evans and Rauch 1999; P. B. Evans 1995; Haggard 1990).

Effective developmentalist state policy intervention is facilitated by institutions that are capable of collecting and processing information, which are crucial for monitoring the implementation of the selected policies and, thus, closely related to the issue of reciprocity due to the implied principal-agent problem of public finance for development schemes (Schneider 2015, 118; Rodrik 2004; Amsden 2001, 1989). Information is also highly relevant for the functional collaboration between the public and private sectors with respect to the quality of implementation, on the one hand, and the quality of policy, on the other hand. Just as the endorsement of a policy by the private sector leads to a more rigorous application, the quality of a policy improves with the feedback of its beneficiaries. In practice, these relations of embedded autonomy were found, for example, in deliberation councils, which were very common in Asian countries. The Brazilian councils did not raise the collaboration between the private and the public sectors, mainly because of membership restrictions, refusing access to relevant actors (Schneider 2015, 119; Doctor and Paula 2007; Schneider 2004; Campos and Root 2001; Schneider 1992; Vianna 1987). Another example of embedded autonomy is an institutional arrangement where private business associations are in charge of implementing the developmental state policies and become “developmental associations” (Doner and Schneider 2000; Maxfield and Schneider 1997). Even though developmental associations are not very common, such institutions have been involved in training programs in the Brazilian manufacturing sector (Schneider 2004).

Public finance for development institutions may be key actors in a developmentalist state, because of their ability to generate relevant information and to monitor the implementation of developmentalist state policies (Schneider 2015, 118–19, 127–29). In Brazil, the public development bank⁹ BNDES has played a very important role by exercising these functions in several sectors, though not with respect to a comprehensive evaluation of overall programs. The BNDES made not only significant contributions to the success of developmentalist state policies through acquiring valuable research capabilities, but also through its involvement in the privatization process, mainly during the 1990s, so that even during the period when liberal state policies dominated, which caused the privatization of several state-owned enterprises, Brazil retained various mechanisms that would facilitate the return of developmentalist state policies, later. First of all, the country did not privatize all of its state-owned enterprises and maintained (majority) ownership of some of the largest and most strategic companies, such as the oil company Petrobras or the development bank BNDES itself. This selective privatization process is strongly related to the second of the four factors fostering effectiveness

⁹ Aghion (1999, 83) defines development banks as “government-sponsored financial institutions concerned primarily with the provision of long-term capital to industry”.

mentioned above, political support, because it allowed politicians in favor of developmental state policies to focus their efforts on specific sectors, while other politicians more inclined towards liberal state policies continued their agenda in other sectors.

Related to this, even in those state-owned enterprises that participated in the privatization process, state influence has in most cases not terminated (Schneider 2015, 128): In order to facilitate and finance privatization sales, the development bank in charge of managing the privatization process acquired minority participations. As a consequence, the public finance for development institution ended up as the largest institutional investor of Brazil. Furthermore, the state kept what we know as “golden shares” in many of the privatized companies, granting it veto power in strategic decisions, which protected these companies from hostile takeovers, enabling their path to becoming, in some cases, multi-national corporations and even global market leaders. As part of the privatization process, new regulatory agencies were created to monitor the formerly state-owned companies. The regulatory agencies were endowed with substantial authority as well as funding to fulfill this task without neglecting developmentalist state policies, which was further facilitated because members of the management of former state-owned enterprises as well as personnel from the competent authorities for supervision were readily employed by the new agencies, that way ensuring embedded autonomy.

In emerging market and developing economies, the level of bureaucratic competence of different agencies in a country usually varies considerably so that developmentalist state policies should be designed in a way that efforts are focused within the more efficient agencies, which are known as “pockets of bureaucratic competence” (Rodrik 2004, 23–24): “If the development bank is in good shape but tax administration is a mess, promotion may need to be done through directed credit rather than tax incentives.” Although it is important that developmentalist state policies closely target the market failure, it might be more efficient to deploy an instrument related to a highly competent agency with a less direct influence on the market failure, in that sense a second-best instrument. Economic development depends on the realization of investment projects by entrepreneurs, who need finance and funding for their typically risky enterprises, which is usually insufficient because private sector sources such as corporate debt markets, equity markets, or venture capital funds are either inexistent or underdeveloped in these countries (Rodrik 2004, 26–27). Especially in emerging market and developing economies, therefore, the supply of public finance for development is crucial and the state can take advantage of a variety of instruments, including public development banks, publicly funded venture capital funds, public guarantee schemes for commercial bank lending to specific sectors or for longer terms, as well as the use of a share of public pension fund resources for the acquisition of riskier assets.

Public development banks have played a crucial role in the rapid industrialization process of Japan and most European countries, which was documented and analyzed as early as the 1950s (Yasuda 1993; W. Diamond 1963; Gerschenkron 1962; Cameron 1953). The less successful public finance for development institutions in emerging market and developing countries only

received limited attention until the 1980s (World Bank 1989, 1984; Gordon 1983). Criticism of development banks handing out loans with subsidized interest rates arose in the 1960s and 1970s, mainly after the seminal works of McKinnon (1973) and Shaw (1973). The criticism was theoretically based on the concept of financial repression. Within this view, “the existence of public financial institutions, such as development banks, was – almost by definition – seen as negative” (Cozzi and Griffith-Jones 2015, 9).

One important characteristic of financial repression is the fixation of low interest rates. According to the McKinnon-Shaw models, interest rate fixation distorts the economy in the following ways (Fry 1989, 16–17): Deposit rate ceilings not only bias the decision between current and future consumption, thus, impeding saving and investment to reach their socially desirable levels, but also encourage potential depositors to prefer direct investment opportunities, even relatively low-yielding ones, over bank deposits, which could enable the bank to finance loans for the realization of higher-yielding investment projects. Furthermore, a cap on the loan rates creates a bias in favor of more capital-intensive investment projects. That is how, according to these models, lower than market clearing interest rates for deposits and loans have a detrimental effect on both the volume and the quality of investment activities.

In the 1990s, the importance of financial institutions at early stages of development started to draw the attention of economists and while most focused on commercial banks (see e.g. Acemoglu and Zilibotti 1996), a few authors also showed interest in market failures and the role of public finance for development institutions (B. A. de Aghion 1999; Dewatripont and Maskin 1995; Bardhan and Roemer 1993). Within a decade, a large amount of literature examining public banks evolved with some studies focusing on state-owned commercial banks, some on public development banks, and others on the influence on the industrialization process (Lazzarini et al. 2015; Ferraz, Além, and Madeira 2013; Dinç 2005; Mian and Khwaja 2004; Rodrik 2004; Porta, Lopez-de-Silanes, and Shleifer 2002; Amsden 2001). Apart from theoretical analyses of the role of public banks in the financial system (Hermann 2011; Aronovich and Fernandes 2006; B. A. de Aghion 1999; Bruck 1998a), several qualitative case studies were conducted (e.g. Hermann 2010b; S. Cole 2009; Amsden 1989; Fordwor 1981; Ndongko 1975). Recently, the first issue of a new World Bank series called “Global Financial Development Report” (GFD) aimed at “Rethinking the Role of the State in Finance” (according to its title) (World Bank 2013) and the 2015/16 issue of the GFD emphasized the importance of domestic bond markets for development (World Bank 2015, ch. 3).

Closing section 2.1.3, which defined and discussed developmentalist state policies, we can summarize the main arguments of this sub-chapter 2.1 as follows. This section showed that especially public finance for development institutions help the state to improve financing conditions, thus, facilitate investment activities and, consequently, foster economic development. As we learned in section 2.1.1, financial system development spurs economic growth through the provision of adequate finance and funding for expanding companies and their productive investment projects. The balance sheet as well as the original sin literature presented in section 2.1.2 point to financial fragilities that

are common in emerging market and developing economies and usually related to maturity and currency mismatches. The integration of bond markets and public finance for development institutions into the domestic financial system raises not only its diversification, but also its functionality and stability.

One of the important findings of the finance and development debate is that financial systems are prone to suffer from market failures such as boom-bust cycles as well as surges and reversals of financial flows. Generally speaking, the adverse effects of market failures in the financial system are stronger than those resulting from state interventions. On these grounds, government action to promote financial development including bond markets is warranted. This sub-chapter 2.1 introducing the finance and development debate already highlighted some aspects of the pivotal role that public debt management, monetary policy and public finance for development play in this respect. After recapturing key points in the following paragraphs, the remainder of the chapter will continue to examine the link between these policy variables and CBMD.

The policy variable public finance for development was mainly analyzed in section 2.1.3. The basic insights are summarized in the following. On the one hand, public finance for development institutions are criticized, for example, based on the concept of financial repression, arguing that their market distortions cause lower investment volume and quality. On the other hand, public finance for development is seen as a crucial complement to domestic financial systems, among other things, due to the above mentioned market failures. Especially in early development phases, countries might benefit from public finance for development institutions that are particularly apt to monitor developmentalist state policies and to support their implementation by gathering information.

Monetary policy is another central policy variable of this thesis. Among the key challenges that emerging market and developing economies face is a restricted monetary policy space. Due to the underdeveloped financial systems of these countries, monetary policy does not dispose of well-functioning bond, money and foreign exchange markets to efficiently conduct open market operations as well as interest rate and exchange rate policies. As a result, monetary policy is forced to gear the domestic base rate towards the international interest rate level in order to prevent swings in financial flows that cause strong fluctuations of the exchange rate. In case of currency mismatches the monetary policy space is restricted, because it is required to aim at a relatively stable exchange rate in order to circumvent balance sheet effects. In a similar vein, all three generations of currency crises models emphasize the relevance of exchange rate policy. Original sin literature also points out the restricted flexibility of exchange rate policy, which needs to consider unhedged net foreign currency liabilities. As a consequence, monetary policy has to almost exclusively resort to the interest rate channel, increasing its volatility and pro-cyclical behavior. Respectively, in case of maturity mismatches the monetary policy space is confined by the need to avoid strong changes in the interest rate, which would otherwise cause balance sheet effects. Furthermore, a large fraction of foreign currency denominated financial assets might hamper the central bank to fulfill its function as a lender of last resort.

Not only does the development of a domestic bond market help to lift some of the limits of the monetary policy space, monetary policy is also one of the main policy variables that determine CBMD. A domestic market for corporate bonds depends on a stable macroeconomic context that needs to be guaranteed by a sound monetary policy stance. Inflation needs to be controlled, although monetary policy must not be too tight, either, in order to avoid depressed economic activity in the short run and to facilitate developmentalist state policies in the long run. A steady and predictable interest rate path also serves as a signal for CBMD. Furthermore, monetary policy can contribute to the development of a corporate bond market by regulating and monitoring financial markets. The experience of several crises in emerging market and developing economies around the turn of the millennium showed the importance of central banks insisting on transparency and prudent risk management. The exposure of these countries can also be reduced through less international financial liberalization together with an appropriate exchange rate policy. The literature on balance sheets furthermore mentions the vulnerability-alleviating policy of building up foreign exchange reserves. These measures help the country to elevate its macroeconomic stability and to gain monetary autonomy, implying positive effects on CBMD.

Another key challenge that emerging market and developing economies face, namely that their debt is mostly denominated in a foreign currency and/or of short-term nature, is strongly related to the policy variable public debt management. While the first generation of crises models cites rising debt levels as a relevant macroeconomic indicator, the third generation of crises models lays the focus on foreign exchange denominated net debt that might cause financial fragilities. The debt problem is also referred to by the original sin literature, which states that these countries were unable to borrow in their own currency and/or long-term without resorting to indexation. Correspondingly, the balance sheet approach focuses on currency and maturity mismatches, which are commonly interconnected and mutually reinforcing, that way systemically raising the risk of a solvency crisis. Since domestic bond markets lower the dependency of a country from external capital inflows and their adverse effects, they offer a solution to these types of debt problems. In addition, as public bond markets pave the way, public debt management is an important determinant of CBMD. The policy variable can exert its influence by reducing vulnerabilities, as advised by the balance sheet literature. Moreover, public debt management determines the development of a corporate bond market through its signaling effect and by installing essential elements of bond market infrastructure.

After this sub-chapter 2.1 gave an introduction to the finance and development, the following sub-chapter 2.2 will describe the state of the art of literature on domestic bond market development. Some aspects of the relationship between CBMD and the policy variables public debt management, monetary policy, and public finance for development were already touched upon and these interrelations will be examined further in the following.

2.2 Domestic bond market development: state of the art

A key subject matter of this thesis, a domestic market for corporate bonds, is generally defined as a more or less organized market for long-term debt securities that are issued by public, semi-public, and/or private companies. Most commonly, bond markets are organized as over-the-counter (OTC) or as securities exchange markets, not necessarily involving an electronic trading platform, and distinguished according to the issuer between sovereign (or public) and corporate (or private) bond markets, albeit in this thesis, corporate bonds are more specifically only those issued by non-financial corporations, excluding issuers pertaining to the financial sector. Clearly differentiated from bank lending as well as equity (or stock) markets, corporate bond markets comprise of fixed rate and floating rate debt securities with a minimum term to maturity of at least one year and do not include collateralized debt obligations, mortgage-backed or asset-backed securities. Since both government as well as private issuers can place their bonds either on the domestic market or abroad, the definition of a domestic bond market might seem straightforward. Nevertheless, it needs to be specified further with respect to the currency denomination of the bond and the nationality of the issuer. This thesis considers all bonds issued on the domestic market as part of the domestic bond market, including those of foreign issuers and those denominated in or indexed to a foreign currency, while explicitly excluding domestic currency denominated bonds issued on a foreign market.

In the specific context of emerging market and developing economies that are characterized by weak currencies, market forces might not work in favor of the establishment of a local bond market. Apart from the difficulties of financial development under the circumstances that are typical for these countries, domestic bond market development is generally associated with high fixed costs that derive from the build-up of the required market infrastructure. Although the development of a domestic market for corporate bonds is far from being an easy task, the effort may be worthwhile. Among the most important reasons for the creation of a local market for debt securities are the possibilities to strengthen the country's currency, its financial and macroeconomic stability, as well as its growth potential. Considering the adverse contextual factors together with the beneficial opportunities of domestic bond market development in emerging market and developing economies, an active developmentalist state policy to support the development of local bond markets appears justified.

In the following, the literature on the development of a local market for bonds in contrast to equity and banking markets is discussed, before examining the advantages of and preconditions for domestic bond market development. The sub-chapter closes with a review of the literature on (corporate) bond market development in Latin America, and more specifically, in Brazil.

2.2.1 Financial structure: banks, markets, and economic development

An important strand of the finance and development debate has been committed to find out whether bank-based or market-based financial systems are more conducive to economic growth and development, which is also highly relevant for this thesis. Levine (2002) and Stulz (2001) offered excellent surveys on the subject and Allen and Gale (2000) designed a comparison framework for the two types of financial systems. A central finding in the literature is that neither market-based nor bank-based systems are able to generate better results than the other in terms of long-term growth rates and economic development (Demirgüç-Kunt and Maksimovic 2002; Levine 2002; Beck et al. 2001; Demirgüç-Kunt and Levine 2001a). On the contrary, both markets and banks have a role to play in providing access to finance and fostering economic growth. For example, when banks hand out loans to finance business enterprises and pool savings in the form of sight-deposits, they transform short-term liabilities into long-term assets, which reduces the savers' liquidity risk and enables long-term investment projects (cf. D. W. Diamond and Dybvig 1983). Liquid capital markets function similarly by pooling financial resources in exchange for securities, thus providing finance and funding to realize long-term investment projects, while allowing the securities holders to liquidate their financial assets at short-term notice (cf. Levine 1991).

With respect to the different roles markets and banks take on in the finance and growth nexus, the leading view in the literature establishes that bank-based lending is usually more adept to finance smaller companies, while equity and bond markets hold a comparative advantage in efficiently providing finance and funding sources for larger and more established companies (Borensztein et al. 2008a; de la Torre, Gozzi, and Schmukler 2008; Eichengreen, Borensztein, and Panizza 2006; C. O. Arteta 2005; Levine 2002). As a consequence, banking and capital markets incorporate different risks and the diversification of funding sources not only leads to more efficient capital allocation, but also improves risk sharing with beneficial effects on economic development. While this thesis pays special attention to the development of domestic bond markets due to their ability to reduce vulnerabilities related to balance sheet effects caused by maturity and/or currency mismatches, equity and banking markets are not less significant for the stability and economic development of a country¹⁰. In general, bank and equity markets evolve jointly with bond markets, even though one can observe that economies reaching higher levels of income undergo a change towards increasingly more market-based financial systems (Demirgüç-Kunt, Feyen, and Levine 2012).

Empirically, the issuance of bonds on domestic markets did not show pro-cyclical behavior in advanced economies (Becker and Ivashina 2014; Adrian, Colla, and Shin 2012; Kashyap, Stein, and Wilcox 1993), while bank lending as well as private bond issuance on international markets was subject to strong cyclical

¹⁰ In fact, net balance sheet exposure might be significantly reduced through equity issuance, because equity contracts don't imply any mandatory payments as opposed to debt contracts (de la Torre and Schmukler 2007; Eichengreen 2006b).

fluctuations (Francis, Aykut, and Tereanu 2014). In response to the Asian financial crisis, Greenspan (1999) among others suggested the development of local bond markets as “spare tires” that borrowers can rely on when access to international markets and bank loans becomes unavailable. However, while companies might substitute bank finance for bond issuance through the business cycle in advanced economies, empirical evidence showed that this channel did not work as well in emerging market and developing economies and became especially weak in strongly disruptive conditions, i.e. when most needed. Eichengreen (2007) questioned whether domestic bond markets could operate properly in the face of a full-blown banking crisis. Indeed, Allen, Gu and Kowalewski (2012) found that bond and banking markets reacted to banking crises as complements rather than substitutes. In the aftermath of sovereign crises, similarly, companies received less financing resources both through bank loans as well as through bond issues (C. Arteta and Hale 2008). Resuming the argument: While bond markets might neither be able to prevent financial crises nor offer a readily available tool for crisis solution, they can help to reduce vulnerabilities and thus avoid the emergence of crisis situations by providing long-term financial instruments denominated in local currency.

Relatively early on, studies with a focus on emerging market and developing economies were conducted that took on a corporate finance perspective (e.g. Singh 1994). Glen and Pinto (1994) analyzed how corporate finance changed in these countries due to greater financial liberalization efforts and the growing importance of capital markets. They found that costs and ownership control were the two most important determinants of financing choices of companies. Booth et al. (2006) showed in a cross-country study with 10 emerging market and developing economies that, even though specific country factors also had an influence on capital structure choices, the principal theoretic models of capital structure¹¹ held in these countries as well as in industrial countries. Pagano, Panetta, and Zingales (1995) discussed the main benefits and costs of publicly listing a company in the sense of an initial public offering (IPO) of equity shares. The benefits strongly depend on the liquidity of the company shares, i.e. the possibility of a negotiation of large volumes of the shares without significantly affecting its price. Shares with low liquidity need to offer a premium to investors, in form of a low price, which is equivalent to high capital costs for the company. High liquidity additionally draws the attention of analysts, who will disseminate more information about the company, among other advantages.

The benefits of an IPO include: (i) easier access to funding: Companies in need of large funding volumes might be subject to high interest rates or credit restrictions, which might be alleviated by issuing stocks; (ii) liquidity: Stocks of publicly owned companies can be traded in stock exchanges, which is possible at low cost for small shareholders who want to make transactions within short time periods. This advantage for the shareholders reflects in higher prices of the company shares, and consequently, lower capital costs; (iii) more bargaining

¹¹ Booth et al. (2006, 99) refer to the static trade-off model, the pecking-order hypothesis, and the agency theoretic framework as the conventional capital structure models, in all of which the choice of a company between debt and equity is influenced by institutional as well as firm-specific determinants.

power with banks: A company, as a client of a bank, might be faced with the problem that the bank tries to take advantage of its privileged information about the credit quality of the company and charge increased interest rates. Disseminating the information across the market creates competition for its lenders, that way guaranteeing lower capital costs and higher funding volumes; (iv) portfolio diversification: With the decision of going public, the initial shareholders of a company will be able to diversify their portfolio, which is usually highly concentrated in the company that they own. Either the shares are directly sold or the capital raised through the IPO is used by the company to diversify its risks by buying shares of other companies; (v) change of control: An IPO might represent the first step of a greater strategy to sell the company. The sale of an initial tranche of the company shares can raise the value of the remaining shares.

The first three benefits also apply correspondingly to the issuance of corporate bonds, which is also true for the costs of going public that are related to: (i) underpricing: One of the most serious obstacles of going public is that shares usually need to be sold with a discount at the IPO. Theory suggests that this commonly termed underpricing is related to the information asymmetry between the underwriters selling the shares and the investors buying them. As such, the underpricing can be seen as a premium claimed by investors with less information. Underpricing is related to the initial distribution of the shares and, therefore, depends on the efficiency of the underwriters and on the level of uncertainty regarding the issuing company; (ii) administrative costs: Apart from the initial underpricing, an IPO implies various direct costs, such as: commission of the underwriter, registration fees etc. Additionally, one has to consider regularly occurring costs related to auditing, publication of financial statements, fees for the stock exchange or monitoring entities. A lot of these expenses will not rise proportionally with the size of the issue and, therefore, weigh more heavily on small companies; (iii) loss of confidentiality: The status of a publicly owned company requires disclosure of information, which might cause an important competitive disadvantage. To adhere to this information standard implies also that the companies are under a closer watch of the fiscal authorities, narrowing down the space for tax avoidance.

2.2.2 Advantages of developing domestic bond markets

The initial driving force behind the efforts of governments to develop local bond markets often was the urgent need to finance their fiscal deficits (Turner 2002). Bordo, Meissner and Redish (2003) found that several former British colonies had to cope with the fact that they were cut off from access to international capital markets as a consequence of external events such as World War II, which provoked these countries to develop domestic bond markets. Borensztein et al. (2008b, 8–9) gave various examples of Latin American countries, where a crisis served as a catalyst for domestic bond market development and the Asian financial crisis triggered the Asian Bond Markets Initiative (ABMI). A country may benefit from local capital markets, and in particular from domestic bond markets, not only because they improve risk sharing as well as capital allocation,

but also because they help to implement fiscal, monetary, and exchange rate policies (Laeven 2014, 4–5).

There are several complementary advantages of developing domestic bond markets that reinforce each other. To begin with, domestic bond markets allow governments to finance large fiscal deficits without the need to incur external debt, which would imply exchange rate risks, or to force sovereign debt upon the banking sector, which would cause financial repression. Moreover, domestic money and bond markets facilitate the conduct of monetary policy by producing valuable information about economic agents' expectations and by providing necessary instruments for the implementation of monetary policy, that way strengthening the monetary transmission channels (IMF 2004), and for the sterilization of external capital inflows. Also, the formation of a yield curve¹² in the public bond market serves as a benchmark for the private market, allowing investors and savers to identify the opportunity costs of different assets (Paula et al. 2009, 6). The deficiency of a yield curve, i.e. a term structure of interest rates determined by market forces, might lead to inadequacies in the internal discount rate of companies and over- or under-investment, cause mispricing on capital markets, and raise hedging costs so that market participants take on higher than efficient financial and/or foreign exchange risks, which also increases financial crisis vulnerability (Herring and Chatusripitak 2000). Furthermore, without any competition, banks can become “too big” and contract mostly short-term credit, which in turn hampers the realization of long-term investment projects, while making the financial system more vulnerable to liquidity shocks.

The development of domestic bond markets is also advantageous by making long-term funding instruments available, which allows economic agents to improve their interest rate and maturity risk management in order to avoid balance sheet effects (Stallings and Studart 2006). Similarly, the development of domestic bond markets provides instruments denominated in local currency, which helps economic agents to manage inflation and exchange rate risks, again, lowering the chances to suffer from adverse balance sheet effects (Ocampo, Kregel, and Griffith-Jones 2007, 156). What is more, domestic bond markets offer an alternative funding source for companies and, thus, provide a healthy competition to the banking sector. Additionally, domestic capital market development can help to increase financial stability by improving risk sharing and by complementing the financial system, providing an expedient addition to banking markets. The development of domestic bond markets helps to mitigate financial instabilities, including currency and maturity mismatches, but might also create new risks associated with lower market liquidity, a smaller investor base, and indexation (Jeanneau and Tovar 2008b).

The liberalization of domestic capital markets is ambiguous because, on the one hand, it might expand the investor base by creating access for foreign investors, which could lower capital costs, relieve credit constraints, and foster international risk sharing, among other things, but on the other hand, it could also hamper the development of domestic markets by facilitating access to

¹² A yield curve displays different yields corresponding to different maturities of similar debt securities, in this case sovereign bonds.

international financial markets, where trading could migrate to, which would have adverse effects on domestic market liquidity, possibly lowering the quality of issues on the domestic market, because the best credits tap international markets (see, for example, de la Torre, Gozzi, and Schmukler 2008) or because the requirements on the domestic markets are relaxed in order to prevent primary market activity to move abroad. Furthermore, opening up the capital account would actually work against the initial intent of stabilizing the financial system (Eichengreen 2006a). Governments that want to accelerate the process of building up a domestic bond market this way should aim at building up the necessary market infrastructure first, before they engage in financial liberalization. Related to this point is the dilemma that countries face with respect to the choice of their exchange rate regime. The European experience showed that a stable exchange rate has a very strong and positive effect on corporate bond market development, however, the Asian crisis showed that more flexible exchange rate regimes are helpful in tailoring exchange rate and monetary policy according to domestic needs. “Hence, the exchange rate regime consistent with financial stability in the short run may not be conducive to bond market development in the longer run” (Eichengreen 2006a, 6). The empirical evidence is not conclusive, though, and domestic bond market development might, depending on the specific country context, not be hampered by a more flexible exchange rate regime.

In the absence of a well-functioning domestic corporate bond market, companies might seek finance through bond issuance in the world’s major financial centers, where they encounter a more extensive and efficient bond market infrastructure (Borensztein et al. 2008b, 2). Bond market development, hence, might not only refer to domestic markets (de la Torre and Schmukler 2007), but could also include bonds denominated in local currency that are issued abroad (cf. Borensztein et al. 2008a). Different arguments favoring each option were lined out by Eichengreen, Borensztein and Panizza (2006, 5ff.). To set-up a domestic bond market is a major investment and it might not be clear from the outset that it will ever reach the necessary scale to operate efficiently, which turns the alternative, i.e. to use international capital markets that are well established and offer successfully tested processes with standardized information, into the easier option. However, international funding sources may dry up very quickly as soon as market sentiment towards emerging market and developing economies turns negative. Moreover, small and medium enterprises (SMEs) as well as less-established companies may particularly benefit from the development of domestic bond markets, because the local market gives them easier market access compared to an international bond issuance.

2.2.3 Bond market development: preconditions and determinants

Emerging market and developing economies can benefit from the development of domestic bond markets, because of their growth enhancing and financial vulnerabilities mitigating properties, as we have seen in the previous section. However, literature points to various preconditions in order for a domestic bond market to function well, so that its development usually requires the

intervention of the state and even then it won't easily be achieved – if the build-up of a well-functioning bond market in a particular country is possible at all (Laeven 2014, 7–17; Borensztein et al. 2008b, 1–7). Some countries might simply be too small, because bond markets require a large investor base, sufficiently large companies that are able to bear the issuance costs of a bond placement, and extensive financial market infrastructure in order to function. Since the size of the economy is clearly not an issue in the case of the G-20 member state Brazil, this section will focus on other important determinants and preconditions that need to be fulfilled for the development of domestic bond markets, including a stable macroeconomic as well as strong legal and institutional environment. Since these preconditions cannot suddenly arise, but evolve over time as part of the general economic and financial development, this case study of the Brazilian bond market development is embedded in a historical contextualization (see section 3.1.1).

The relevant financial market infrastructure mainly refers to the necessary installations of a securities exchange, consisting of a physical or electronic trading platform including payments and settlements systems and regulatory as well as financial institutions to ensure that the information produced and used by the market is efficiently processed, evaluated, and validated (Laeven 2014, 15–16). The financial market regulator together with self-regulatory measures and institutions form the regulatory apparatus. Rating agencies and credit guarantors are in charge of generating and supporting the rating process. Direct access to capital markets is usually barred for SMEs and small investors, because it is associated with high fixed costs that stem from listing requirements, transaction fees, and elevated auditing costs. Since the build-up of a well-functioning infrastructure is a time-consuming and difficult task, domestic capital markets are usually developed in stages, with the establishment of markets for equity and public bonds generally preceding the development of domestic currency or corporate bond markets¹³ (cf. Paula et al. 2009, 6). The latter not only require a more developed infrastructure and legal framework, but also a strong private (or semi-public) sector with a critical mass of companies that are large enough to issue a corporate bond (cf. Borensztein et al. 2008b, 1–2).

The establishment of the necessary infrastructure of a public bond market, ranging from an adequate payment system and a clearing mechanism to brokerage firms, rating agencies, primary dealers, etc., facilitates the build-up of a private bond market, because a large part of the existing infrastructure may be used and adapted to the needs of a corporate bond market. In contrast to public bond markets, which the government usually creates as a way to finance its fiscal deficit, the development of equity and corporate bond markets are often the result of private sector initiatives and the government exerts its influence on the

¹³ The development of equity markets depends less on strong financial infrastructures and investor rights than that of bond markets, because an equity contract implies an unlimited potential upside return, which can more easily compensate for the perceived risks of weak financial infrastructures and investor rights than the limited return of a bond, whose yield is capped by the promised interest rate (cf. Herring and Chatusripitak 2000).

process through supervision and legislation as well as by setting standards and providing financial infrastructure (Schinasi and Smith 1998). The existence of a domestic market for public bonds denominated in local currency, which provides market liquidity and a yield curve benchmark to price bonds against, can be a catalyst for the development of a corporate bond market, as empirical evidence suggests that shows the tendency of more developed private bond markets in countries with deeper sovereign bond markets (Laeven 2014, 17). This market creation effect, which subsumes the positive influences of the sovereign on the corporate bond market, is closely related to the signaling effect, which a public bond market sends out (cf. Paula et al. 2009). The public bond market serves as a point of reference to market participants by setting benchmarks, such as the yield curve. At the same time, there is competition between public and private bonds, which are just like any other financial asset looking to win the favor of wealth holders. That is why public debt management is one of the three main policy variables directed at the promotion of CBMD. How this policy variable and the signaling effect works, will be explained in more detail in section 2.3.2 below.

Many emerging market and developing economies don't have a sufficiently large investor base that is necessary to ensure depth and liquidity of domestic capital markets (cf. Eichengreen, Borensztein, and Panizza 2006). This restriction might be loosened by opening up to foreign investors through international financial integration, which is not without risks, or by establishing local pension funds, which the government might promote by launching a funded pension system (see, for the case of Sweden, Giannetti and Laeven 2009; and for the case of Chile, Cifuentes, Desormeaux, and Gonzalez 2002). Pension reforms in the sense of a transition from a pay-as-you-go to a fully funded private pension system have an ambiguous effect on bond market development (Borensztein et al. 2008b, 11). On the one hand, the shift to a fully funded private pension system automatically increases the demand for domestic bonds by private pension funds, whose asset-liability management requires them to invest in long-term (debt) securities. On the other hand, most of these institutional investors follow a buy-and-hold strategy, which is counterproductive for the liquidity and price-signaling function of the market. The existence of organized secondary markets is another crucial factor in the development of corporate bond markets (Paula et al. 2009, 5–6). The liquidity of a long-term bond will increase if it can be traded in a secondary market. That is why the demand for such assets will be stimulated by the existence of a secondary market and discouraged by the lack of it.

Domestic capital market development can furthermore benefit from pension funds and other institutional investors, because these investors push for improved accounting and auditing standards, request accurate and timely disclosure of relevant information, encourage improvements in broking and trading arrangements and contribute to higher efficiency and reliability of the clearing and settlement system (Laeven 2014, 16–17). According to Vittas (1992), institutional investors can foster private sector performance, because they promote sound corporate governance, contribute to corporate ownership dispersion, and make procedures during privatizations easier. Although private pension funds did not contribute much to capital market development in emerging market and developing economies in the past (with the notable exception of Chile), this can mainly be attributed to legal restrictions that favored

the acquisition of public bonds, and because these regulations have lately changed towards a more liberal legislation, the role of private pension funds has become more important in these countries.

Macroeconomic stability is a necessary precondition for the existence of a corporate bond market, with the control over inflation being particularly important (Borensztein et al. 2008b, 13; Burger and Warnock 2007; Braun and Briones 2006). When investors are reluctant to hold long-term debt securities, bank credit might be the more feasible financing option because bonds only become cost-effective when the high fixed costs of issuing a bond can be spread both over a large issuance volume and a long maturity. The sound macroeconomic framework comprises not only of a stable monetary policy stance, ensuring price stability as well as avoiding excessive interest rate and exchange rate volatility, but also a reasonable public debt management that follows and communicates a clear issuance strategy.

The close link between domestic bond market development and monetary policy will be analyzed in further detail below, but a few aspects are worth noting already. Since the middle of the 1990s, the transmission mechanisms of monetary policy in emerging market and developing economies have changed drastically (Mohanty and Turner 2008), moving away from direct monetary tools, such as credit ceilings or interest rate controls, to more market-based instruments. As a consequence, the effectiveness of monetary policy depends increasingly on well-developed and efficient capital and money markets, and conversely, the development of domestic bond markets also depends on sound monetary policy (Jeanneau and Tovar 2008a). By creating reference points for the medium- and long-term ends of a domestic yield curve, bond markets are particularly important and help to strengthen the interest rate channel. A well developed money market, in turn, is an important precondition for a smooth functioning of monetary policy by guaranteeing that its actions don't cause excessive interest rate volatility, which would hamper corporate bond market development (Laeven 2014, 17).

Debt in emerging market and developing economies tends to be foreign currency denominated, short-term and floating rate, i.e. not fixed rate. This debt structure is problematic, because it makes financial instabilities more likely. Since a sudden change of the debt structure towards domestic currency denominated, long-term fixed rate debt is not realistic, a sequencing approach seems more promising (Turner 2002, 4–5). For countries with a history of high and volatile inflation rates that issue most of their debt in a foreign currency, some sort of floating rate debt (i.e. debt with an indexation, most commonly to the exchange rate or the inflation rate) might be an improvement, even more so if it turns out to be an intermediate stage leading to fixed rate debt in local currency. Inflation indexed debt is seen as more safe than exchange rate indexed debt, because the inflation rate usually suffers less abrupt changes compared to the exchange rate.

Country risk is the key macroeconomic variable that best explains variation in corporate financing choices between bonds and syndicated loans in emerging market and developing economies, according to Hale (2007). Comparing the larger bond markets of advanced economies to those of Asia and Latin America,

Eichengreen and Luengnaruemitchai (2006) showed that macro policies to some extent and, more clearly, institutional impediments help to explain the difference in size. Goldstein and Turner (2004) suggested that in emerging market and developing economies, bond market development is mainly determined by the economic policies and institutions of the country. The build-up of strong institutions and a reliable legal system are important in order to guarantee the protection of creditor and investor rights, in particular with regard to minority interests (cf. Burger, Warnock, and Warnock 2010; Burger and Warnock 2007; Eichengreen and Luengnaruemitchai 2008; Porta, Lopez-de-Silanes, and Shleifer 1999; Porta et al. 1997, 1996). The literature has established that regulation of capital markets is of crucial importance and should aim at empowering market forces by establishing mandatory standards of disclosure and liability (Laeven 2014, 11). Furthermore, domestic capital market development, in particular equity and bond markets, can be promoted by strengthening corporate governance as well as by avoiding a strong concentration of corporate ownership, e.g. through legislation that facilitates takeovers.

The development of banking and bond markets can complement each other (Laeven 2014, 12): Policies and regulations that aim at the protection of investors and the development of domestic bond markets also promote creditor rights and the banking sector; the growth of the bond and of the banking markets mutually reinforce each other, because banks are commonly large holders of bonds, especially public bonds (Hawkins 2002); and empirical results show that domestic bond markets are often more developed in countries with a more developed (Burger and Warnock 2007) or more competitive (Eichengreen and Luengnaruemitchai 2006) banking sector. There might also be a downside to the close connection between banking and bond markets, when it becomes excessive and turns into a form of financial repression, reflected in directed government lending by banks through the acquisition of sovereign bonds (Reinhart and Sbrancia 2011), whose undesirable consequences were recently observable in the euro area (Gennaioli, Martin, and Rossi 2014).

2.2.4 Reviewing the literature on the subject and the region

As the previous sub-chapters have shown, there is a vast literature contributing to the finance and development debate and various strands of this literature are related to the subject of this thesis, i.e. the development of domestic bond markets in emerging market and developing economies. Apart from the works cited above, there are several more recent contributions to the debate analyzing different aspects of financial development with a regional focus (see for example Heng et al. 2016; Barajas, Chami, and Yousefi 2013), or even with a specific reference to Brazil (see for example Garcia-Escribano and Han 2015; Claessens, Klingebiel, and Lubrano 2000). Yet, most of the literature in the finance and development debate focuses on the banking sector, especially those studies related to emerging market and developing economies, which are often countries that rely heavily on bank finance. Hence, it is not surprising that Beck (2012, 25–38) narrowed his survey on financial fragility down to the fragility of banks and that Panizza (2013) stated in a footnote that his account of “Financial

Development and Economic Growth: Known Knowns, Known Unknowns, and Unknown Unknowns” only covers the banking sector.

Furthermore, even the part of the debate on finance and development that isn't limited to the analysis of banks, usually leaves out the study of bond markets, or in the words of Herring and Chatusripitak (2000, 1): “Although the literature addresses ‘capital markets’, on closer inspection the main focus is really equity markets. Bond markets are almost completely overlooked.” Gozzi et al. (2015) confirm that most literature focuses on equity markets when looking at corporate funding on capital markets and emphasize that this way, it disregards the major volume of funding in domestic and international capital markets, which is in corporate bond markets¹⁴. The omission of corporate bond markets might be justified by three main factors (cf. Herring and Chatusripitak 2000, 1): (i) domestic corporate bond markets play a minor role in most countries, compared to the banking system and the equity market; (ii) therefore, data on bond markets is less readily available; and (iii) theoretical results are obtained from a comparison of equity and debt contracts and since bank lending might, on a high level of abstraction, serve as a proxy for any kind of debt, ignoring bond markets could be justifiable for certain theoretical considerations.

Despite the fact that the majority of the finance and development literature is on banking and equity markets, there is also a large amount of specific literature on bond markets. Most of the studies on bond market development in emerging market and developing economies, implicitly or explicitly, focus on sovereign bonds, i.e. “on the questions of why and how governments should establish a domestic bond market to finance their debt” (Borensztein et al. 2008b, 6), discussing the benefits and determinants of domestic bond markets in these countries (see for example Felman et al. 2014; Panizza 2008; Abbas and Christensen 2007; Claessens, Klingebiel, and Schmukler 2007; IMF 2007, chapter 3; de la Torre and Schmukler 2005; IMF 2002, chapter 4; Mihaljek, Scatigna, and Villar 2002; Turner 2002; Harwood 2000). Blommestein and Santiso (2007), for example, showed that risk-based public debt management and liquid domestic sovereign bond markets are important and mutually reinforcing factors to raise financial stability while benefitting from global financial integration. While the IMF working paper series published lately several studies discussing different aspects of public bonds in emerging economies (see for example Ebeke and Kyobe 2015; Arslanalp and Tsuda 2014; Ebeke and Lu 2014; Jaramillo and Weber 2013, 2012), earlier studies with a focus on the Latin American bond market development analyzed both the establishment of domestic markets (Jeanneau and Tovar 2006) and the issuance of local currency denominated bonds on international markets (Tovar 2005).

In line with the idea that public bond markets evolve first and private bond markets follow, companies in emerging market and developing economies only recently started to issue corporate bonds with a significantly larger volume (cf.

¹⁴ Bond issues accounted for almost 80% of the total volume raised worldwide by companies through bond and equity issues between 1991 and 2013 (Gozzi et al. 2015, 532–33). However, most countries registered lower corporate funding volumes in their domestic markets for bonds than in their local banking and equity markets.

Ayala, Nedeljkovic, and Saborowski 2015, 4) and the body of literature is relatively small, including a chapter in the September 2005 issue (IMF 2005b) of the Global Financial Stability Report (GFSR) on “Development of Corporate Bond Markets in Emerging Market Countries”. The April 2005 issue (IMF 2005a) of the GFSR included a chapter on “Corporate Finance in Emerging Markets” and the Bank for International Settlements (BIS) Paper 36, resulting from a meeting held in Mexico City in May 2007, contained various studies on the subject with a focus on Latin America (see for example Jeanneau and Tovar 2008b). In the introductory chapter, Tovar and Quispe-Agnoli (2008, 4) emphasized that sovereign bond markets in the region increased remarkably, yet the development of corporate bond markets disappointed. While the chapter by Ananchotikul and Eichengreen (2008) detected corporate governance as a reason, participants at the meeting named a number of other possible reasons for low corporate bond market development, including market segmentation, i.e. only large and creditworthy companies had market access, tax regimes, e.g. tax-exemption only for yields on public bonds, liquidity enhancing measures aiming exclusively on public bond markets, and the lack of international investors.

Leal and Carvalhal-da-Silva’s affirmation that “[t]here is a vast literature on bond market development providing cross-country evidence but not much is known about the specific case of the Brazilian bond market” (Leal and Carvalhal-da-Silva 2006, 6) is less true now, a decade later, due to various research projects that have been undertaken since. Among the work that Leal and Carvalhal-da-Silva could already build upon was Zervos’ (2004) account of issuance costs in the Brazilian, Chilean and Mexican capital markets as well as Anderson’s (1999) analysis of the design of financial contracts in the Brazilian corporate bond market. Furthermore, Moreira and Puga (2000) found that smaller companies relied more heavily on internal financing (63% of total financing sources) than larger companies (44%). Beck (1999) showed that debt financing in Brazil, including the issuance of bonds, was predominantly short-term. According to Pereira (2000) companies were able to increase their value to shareholders by making use of debt as a form of external finance, which is in line with the idea that debt exerts a positive influence on the conflicts of interest between controlling and other shareholders.

Subsequent research mainly focused either entirely on the public bond market (see for example Amante, Araujo, and Jeanneau 2007) or on the private bond market, including studies that analyzed the impact of macroeconomic factors on corporate bond issues (see for example Eid Jr. and Matsuo 2009; Krauter 2007). Several studies with a corporate finance perspective analyzed the capital structure of Brazilian companies. Brito, Corrar, and Batistella (2007) found that risk, firm size, fixed assets and growth were determining factors for the capital structure of the largest companies in Brazil, while profitability had no significant influence. Furthermore, the leverage ratio was not affected by the status of a company as publicly owned or privately held. Crisóstomo, Iturriaga, and González (2014) analyzed a panel data set of 199 Brazilian non-financial companies for the period from 1995 to 2006 and found that these companies were faced with financial constraints so that they mainly depended on internal funds (in line with the findings of Moreira and Puga 2000 cited above). Paiva (2011) analyzed the influence of company ratings on corporate bond spreads

and found a significant relationship, yet the rating only explained 10% of the variability of the spread. Other significant variables included the maturity of the bond, the issuance volume relative to the market size, and the current GDP growth rate. Martins, Santos, and Hillbrecht (2015) used the corporate bond market as a proxy for long-term credit in Brazil and ran into difficulties by trying to estimate a five-year forecast of credit risk, reflecting the lack of a long-term horizon.

Moreover, the book edited by Haber, North, and Weingast (2008) on finance and institutions, challenging the legal origins view, contained two chapters that analyzed the bond markets in Brazil from a historic perspective with a focus on political institutions and creditor rights (Musacchio 2008b; Summerhill 2008). Leal and Carvalhal-da-Silva (2006) conducted their study on the Brazilian bond market development as part of a larger research project that led to the publication of the book “Bond markets in Latin America: on the verge of a big bang?” by Borensztein et al. (2008a). Their results suggested that the Brazilian corporate bond market development was hampered mainly by low secondary market liquidity and market capitalization as well as judicial uncertainty. Furthermore, they also pointed towards the problems of high interest rates and short maturities. They listed various factors that fostered CBMD including the stabilization of the Brazilian economy, capital market regulation, investors’ demand for fixed income securities and the lack of sufficient long-term credit provided by the banking sector. At the same time, they found major impediments to the development of a corporate bond market in Brazil including factors that raised the cost of credits such as large interest rate spreads and credit default rates as well as the increasing public bond issues exerting a crowding-out effect on corporate bonds due to their attractive monetary returns and “favorable prudential rules treatment of government debt relative to corporate debt” (Leal and Carvalhal-da-Silva 2006, 7).

As part of a research project on the role of public banks in the development of the Brazilian financial markets, Paula et al. (2009) analyzed important determinants of the development of the bond markets in Brazil. The authors laid a focus on the macroeconomic context and the relationship between the public and the private bond markets, which they found to be more of a competitive and less of a complementary nature. In other words, their findings pointed towards difficulties of corporate bonds to prevail against the competitive advantages of the Brazilian sovereign bonds and showed few signs of a market creation effect. One important conclusion was that large macroeconomic instabilities caused the Brazilian debt structure, including private as well as public bonds, to remain stuck in the short-term. Finally, the study of Torres Filho and Macahyba (2012) took stock of recent efforts of the government to foster the development of the corporate bond market in Brazil and included policy advice as to how the measures might be improved, based on the insight that most of the relevant market participants were either unaware of the benefits granted by the government or did not fully understand the regulatory changes.

At this point, we can take the conducted literature review as a basis to identify the main research gaps with respect to the development of the corporate bond market in Brazil. First, due to the date of publication the latest evolvments of

the public debt structure and the monetary policy stance could not be analyzed by the above cited, relevant studies. Although the most recent study by Torres Filho and Macahyba (2012) took most of these developments into account, they were not the focus of the study, which concentrated on discussing recent regulatory adjustments by the government to foster the market expansion. Second, the important role of the state, in general, and the public finance for development schemes, in particular, were not explored in detail. Neither Leal and Carvalhal-da-Silva (2006), who emphasized institutional and legal shortcomings together with macroeconomic instabilities, nor Paula et al. (2009), who also pointed to the relevance of the macroeconomic environment, exposed the crucial role of the Brazilian state in the build-up of a domestic market for corporate bonds. Although the latter study undertook a more complete investigation of the relationship between the public and the private bond market, it didn't inquire further on the influence of the public finance for development system – despite it being part of a research project that explored the role of public banks in the Brazilian financial system. This thesis aims at filling these research gaps by providing a deep and up-to-date analysis of the role of the state in the development of the Brazilian corporate bond market. To examine the responsibilities of the state, three policy variables are used, whose relevance was clarified also in this sub-chapter. The following paragraphs will briefly recapitulate the main points concerning the policy variables public debt management, monetary policy, and public finance for development and their link to CBMD, as displayed in this sub-chapter.

The primary concern of public debt management, to find safe and cheap ways to fund the existing public debt and to finance the fiscal deficit, was presented as the initial driving force to develop public bond markets. By establishing these markets, public debt management can furthermore reduce vulnerabilities that are related to balance sheet effects. In order to build up a domestic bond market, public debt management might help to install financial market infrastructure, to strengthen institutions and to expand the investor base. That way, it not only sets up a domestic market for public bonds, but also promotes corporate bond market development. Apart from its contribution to CBMD as part of a sound macroeconomic framework, public debt management exerts a market creation effect, as shown in this sub-chapter: The benchmark setting yield curve of sovereign bonds serves as point of reference and important characteristics of the public debt structure exert signaling effects on CBMD. Finally, the literature review indicated that an abolishment of preferential rules for and favorable tax treatment of public bonds could additionally advance CBMD, implying a conflict of interest for public debt management.

The main arguments for the promotion of domestic bond market development that are interesting from a monetary policy perspective include the strengthening of the currency and growth potential of the country as well as its financial and macroeconomic stability. A public bond market allows a country to finance large fiscal deficits without the need to cause exchange rate risks or financial repression by taking on external debt or obliging banks to contract sovereign debt. A corporate bond market improves risk sharing and capital allocation by offering an additional funding source and by creating competition to banks. Furthermore, the implementation of fiscal, monetary and exchange rate

policies is facilitated, because bond markets provide instruments that enhance the monetary policy transmission channels as well as the sterilization of external capital inflows, generate information on market expectations, and create reference points for the medium to long-term end of the yield curve. The more complete the yield curve, the stronger the interest rate channel and the easier to identify the opportunity costs of different assets, which has important implications for the internal discount rate of companies, lowers hedging costs and helps to avoid mispricing on capital markets. Since the mid-1990s, emerging market and developing economies experienced a significant shift in their monetary transmission channels from direct monetary tools to more market-based instruments.

Not only does monetary effectiveness depend on well-developed money and capital (including bond) markets, bond market development also depends on sound monetary policy. More specifically, monetary policy can promote the development of domestic bond markets by contributing to the capital market infrastructure in terms of supervision and monitoring of the financial system, ensuring efficient payment and settlement systems and providing for strong regulatory institutions. Empirical evidence cited above shows that differences in legal and institutional environments explain the relatively small size of the Latin American bond markets compared to advanced economies. Related to this issue, bank and bond market development are complementary in many respects: investors and creditor rights are protected by the same rules and regulations; banks commonly hold large volumes of bonds in their portfolio; and countries with a more developed as well as a more competitive banking sector empirically have more developed bond markets.

Another prerequisite of bond market development, a large investor base that guarantees market depth and liquidity, is linked to monetary policy in its roles as market regulator and supervisor as well as participant in the foreign exchange market: The investor base might be enlarged by financially integrating further internationally, implying risks of external shocks and repercussions for the exchange rate regime, and by establishing local pension funds, who have an ambiguous effect on bond market development due to their buy-and-hold strategies. Apart from their additional demand for long-term (debt) securities, institutional investors might foster CBMD by encouraging more transparency and elevated standards; corporate governance efforts; improvements in broking and trading arrangements; dispersion of corporate ownership; and simplified privatization procedures. The main contribution of monetary policy to promote bond market development is to provide for a stable macroeconomic environment, in particular price stability. A steady monetary stance that avoids excessive volatility of the exchange rate as well as the interest rate enhances the demand for long-term debt securities. This is in accordance with key findings of two of the most relevant studies for this thesis (Paula et al. 2009; Leal and Carvalhal-da-Silva 2006), namely that economic stability fosters CBMD in Brazil and that elevated interest rate levels as well as short maturities hamper it.

Finally, this sub-chapter reviewing the literature on the thesis subject pointed to several requirements of CBMD that might be improved by public finance for development. Domestic bond markets not only depend on a large investor base,

but also on a solid private and/or semi-public sector with sufficient companies that can handle the issuance costs of placing a bond. Public finance for development schemes can help to reach this minimum level of big enough companies. Since SMEs are often not capable of bearing the high fixed costs of entering the capital markets, it might be expedient to subsidize their market entry. Alternatively, certain procedures of an IPO could be provided by public services, that way lowering the costs for SMEs. Similarly, the necessary market infrastructure of a domestic bond market might be completed by public finance for development institutions. For example, publicly funded credit guarantee schemes could make an important contribution to the rating process. There might also be other ways, in which public finance for development institutions help to efficiently evaluate and process the generated market information. Additionally, the participation terms of the public finance for development schemes might call for improved corporate governance and, in this manner, foster CBMD.

After this brief summary of the interconnections between corporate bond market development and the policy variables public debt management, monetary policy, and public finance for development, the next few lines will serve as a wrap-up of sub-chapter 2.2. Starting off with a definition of domestic corporate bond markets, the state of the art sub-chapter was divided into four sections. The first section was on financial structure and stated that neither market-based nor bank-based economies are generally more apt to promote economic development. There seems to be evidence that markets work better for larger companies and banks better for smaller companies. Also, the banking sector usually evolves first and capital markets later. Section 2.2.1 moreover discussed the benefits and costs of an IPO. Among the advantages of developing a domestic bond market, displayed in section 2.2.2, is the reduction of financial vulnerabilities that are related to mismatches and balance sheet effects. Besides, diversifying funding sources improves capital allocation and risk sharing. Moreover, the establishment of a domestic bond market supports the implementation of fiscal, exchange rate and monetary policy. In section 2.2.3 preconditions and determinants of bond market development were delineated. Apart from the size of the economy, the relevant literature established that bond market development requires a strong legal, institutional and macroeconomic environment. Another necessary precondition concerns the existence of financial market infrastructure, which is, at least initially, mainly installed for the public bond market, that way exerting a market creation effect on the development of a corporate bond market. The literature review with a thematic and regional focus in section 2.2.4 revealed that corporate bond market development is a relatively less analyzed issue compared to the development of public bond markets. The majority of studies in the finance and development debate analyze the banking sector. Studies that take capital markets into account mostly focus on equity markets, thereby ignoring the markets for debt securities, such as bonds.

The reviewed literature together with the identified research gaps as well as the interconnections between the policy variables and CBMD serve as a basis for the following sub-chapter 2.3, which will develop an analytical framework to examine the impact of the state on the development of a domestic bond market.

2.3 A Post Keynesian framework to analyze the impact of state policies on corporate bond market development

Many emerging market and developing economies such as Brazil are marked by structural heterogeneity. In a market economy that is characterized by structural heterogeneity, different modes of production coexist and are articulated with each other. Under these circumstances, the promotion of corporate bond market development (CBMD) helps the monetary economy (translated from the German term "*Geldwirtschaft*" that was coined by Monetary Keynesians) to gradually advance while driving back other modes of production, including the state economy, the semi-feudal *Coronelismo* as well as the family-led economy. In Brazil, the domestic corporate bond market develops from the remaining modes of production towards a functional monetary economy, with initial financing for the Schumpeterian entrepreneurial activities and long-term funding, inter alia, through corporate bonds. Before discussing the credit-driven monetary economy in more detail throughout this sub-chapter, the logic of behavior of the other modes of production is briefly spelled out.

The semi-feudal *Coronelismo* describes a system of patrimonial and oligarchic nature, where the control of patronage is centralized in the hands of a few rich and powerful families, who hand out favors in return for loyalty. As the development of a domestic corporate bond market progresses, issuing a bond might become a viable option for the companies of these families, that way contributing to the progressive implementation of the monetary economy. In contrast to the rich families' businesses, which are referred to under the heading of semi-feudal *Coronelismo*, the family-led economy is comprised of SMEs and poor families' businesses. In the family-led economy, the work is carried out by family members (possibly with the help of a few workers) and the business logic is precariously balanced with the logic of the household. There is no social division of labor between wealth holder, entrepreneur, and worker/ consumer, and hence, the social division of labor is not organized according to creditor-debtor-relationships (Nitsch 1999). The decisive factor distinguishing a family-led economy from a monetary economy is related to the reversal of the dominance cascade. In a family-led economy, the wealth holder is not the sovereign, but the family's needs of consumption, which determine and dominate its business activities. One important implication, explaining self-exploitative phenomena, is that the family-led economy continues to produce, as long as manpower cannot be used for a more rewarding task. From this perspective, labor is not a cost factor, but a productive force. As opposed to the monetary economy, the valorization of resources does not take place through reallocation via the financial sector, and money serves primarily not as means of payment to meet financial obligations, but as means of exchange. As such, the family-led economy is actually quite well described by models of economic classics like Adam Smith.

The state economy encompasses not only corporatist public/ private partnerships in the traditional style, including entanglements of the state with trade unions, business associations and chambers as well as private companies

(entanglements that are characterized by mandatory membership, trade union duties, and other taxes and charges), but also state-owned companies, which might issue corporate bonds, and the treasury, here especially relevant as the issuer of sovereign bonds. The state acts as a market participant, either directly as an operator of state-owned companies, public development banks, and social security funds, or less directly, as an assistant to private companies. If workers compulsorily acquire pension entitlements, which are pooled in funds, remunerated below market rates and then made available to the state, the state is able to provide business owners with off-market profits (Nitsch 1999). This set-up is not a consequence of a “fragile state” or “corrupt elites”, but in the context of low currency premium countries, rather a functional necessity, which should not be removed, but molded, in order not to risk general investment reluctance. Related to this role of the state are discussions about economic rents, stemming from state-owned companies, and their distribution among the political and the economic sovereign, as well as fundamental mismanagement risks. Apart from its role as market participant, the state acts as a regulator, mainly guaranteeing property rights and the rule of law (Riese 1995). The central bank, for example, competes with its domestic currency on international markets with other central banks and their currencies for wealth holders’ preferences. At the same time, it sets the discount rate, at which commercial banks are able to go in debt with the central bank, in order to finance investment projects of entrepreneurs. “Economic policy means to safeguard a market situation by sending out price signals, yet leaving the adjustment of quantities to the market” (Riese 1995, 10 [my own translation]).

After sub-chapter 2.1 gave an overview of important strands of literature in the finance and development debate and sub-chapter 2.2 provided for deeper knowledge about research on domestic bond market development, this sub-chapter 2.3 sets out to develop a Post Keynesian framework that will help to analyze, in the subsequent chapter 3, the influence of the state on the development of the Brazilian corporate bond market. While the analytical framework is drawn up throughout this sub-chapter, influences and interactions with the three main policy variables, namely public debt management, monetary policy, and public finance for development, are emphasized. Based on the insights gained from the sections that discuss the capital formation process (2.3.1) and the liquidity preference theory (2.3.2), we will see how economic agents exercise choice over different financial assets (2.3.3), which will help us to understand how the three policy variables can influence CBMD. More specifically, public debt management and monetary policy together with public finance for development might work as instruments of the developmentalist state policies aiming at the stimulation of CBMD in the following way:

Taking the economic situation of a country including its institutional, structural, and macroeconomic context variables as a point of departure, the development of a corporate bond market might be encouraged by target-oriented policies that affect the parameters, which are relevant for the economic agents’ expectation formation process. In this way, developmentalist state policies may be able to exert an influence on economic agents’ expectations, which will translate into an improved development of the (corporate) bond market. The expectations of wealth holders, together with their preference for liquidity determine their

portfolio decisions, i.e. which financial assets wealth holders want to buy, hold, or sell. Together with the expectations and liquidity preferences of other economic agents, e.g. companies that decide to issue a debt security, the demand and supply of financial assets are established. In this way, the respective markets for public and private bonds evolve, resulting in a specific public debt structure as well as a further development of the corporate bond market. These market outcomes, in turn, are part of a new economic situation, which may serve as yet another point of departure in this theoretical framework.

If the government aims at deploying developmentalist state policies, the measures that are outlined below can easily be integrated. But even if the government does not commit itself as clearly to interventionist policies, the impact vectors presented in this framework point clearly towards the advantages of active policies in support of CBMD. This relates to a key finding of the finance and development debate, namely that financial development contributes to economic growth and development (see section 2.1.1). However, one must be aware of financial fragilities (see section 2.1.2), to which we return in this sub-chapter in sub-sections 2.3.1.3 and 2.3.3.4. In the former, we understand how financial instabilities emerge in the capital formation process and in the latter, we learn about the interconnections between financial fragility and the instability of the currency of a country. A country will best reap the benefits of a well-functioning market for local corporate debt securities, if it is able to carefully adjust its public debt management, monetary policy, and its policies directed at providing public finance for development according to the workings of the impact vectors delineated in this framework. Sub-chapter 2.3 presents the most important factors determining CBMD and their relationship to the three main policy variables, through which the state is able to foster the development of a market for corporate debt securities.

2.3.1 The role of bonds in the Post Keynesian capital formation process

Keynes (1939, 570) summarized the orthodox notion of the capital formation process as a sequence of three phases: “The first consists in the setting aside of savings out of current income; the second stage in streams of ‘funds’ becoming ‘available for investment’; and the third stage in the actual outlay of money for the acquisition of capital goods”, in opposition to the (Post) Keynesian approach, where capital formation is a twofold process. Keynes described the financial requirements of this process as follows:

“The entrepreneur when he decides to invest has to be satisfied on two points: firstly, that he can obtain sufficient short-term finance during the period of producing the investment; and secondly, that he can eventually fund his short-term obligations by a long-term issue on satisfactory conditions. Occasionally he may be in a position to use his own resources or to make his long-term issue at once; but this make no difference to the amount of ‘finance’ which has to be found by the market as a whole, but only to the channel through which it reaches the entrepreneur and to the

probability that some part of it may be found by the release of cash on the part of himself or the rest of the public. Thus it is convenient to regard the twofold process as the characteristic one” (Keynes 1937, 664).

In order for an investment project to be realized, the entrepreneur¹⁵ not only needs to convince the bank to finance him through short-term borrowing, he must also carry the risk of not being able to (re-)fund the debt (F. J. C. de Carvalho 1997, 473). The entrepreneur will only accept to carry this risk, if he expects to become, in a later stage, capable of settling his debt with the bank by issuing longer-term (debt) securities in the market (cf. sub-section 2.3.1.3). In analogy, the same is true for the bank, which shares the risk of not being able to fund the debt with the entrepreneur and also needs to be convinced that the short-term obligations will be funded. In other words, ideally, the bank provides short-term finance for the entrepreneurial activities (see sub-section 2.3.1.1), which are later funded through a long-term issue, e.g. of corporate bonds (see sub-section 2.3.1.2). This shows the importance of both, expectations and a well-functioning and diversified financial system (cf. sub-section 2.3.1.4), which are two basic factors of the framework that explains the main impact vectors of policies aiming at the development of corporate bond markets.

2.3.1.1 Finance

The first stage of the process of capital formation, finance, typically involves the entrepreneur and the banker. Schumpeter (1912) focuses on their relationship, as it is crucial for economic development. Ideally, the entrepreneur has an innovative business idea, yet lacks any real assets, which leaves him with nothing to lose but his reputation (Nitsch and Diebel 2008, 80ff.). In case the entrepreneur convinces the banker of his idea, the banker finances the entrepreneur’s investment project. The act of granting the loan, overdraft or credit implies one of the most important discoveries of Schumpeter’s theory: There are (in contrast to neoclassical theory) no prior savings needed – a point also stressed by Keynes¹⁶ (1936, 1937, 1939) – because the banker and the entrepreneur together create the credit *ex nihilo* (Schumpeter 1912, 109), and as long as sight deposits at this bank are considered equivalents to central bank money, the bank creates “bank money”, which does not involve any real resources, i.e. savings, yet depends on the refinancing conditions of the central bank¹⁷. The alteration of conditions according to which commercial banks may

¹⁵ A functional separation of economic agents into entrepreneur, wealth holder, financial intermediary, consumer, and worker facilitates the theoretical analysis (see also Nitsch 1999).

¹⁶ For a more recent critique of the prior-savings approach, see Studart (1995a).

¹⁷ Schumpeter grasped with his discovery that credit is created *ex nihilo*, how capitalism let the genie out of the bottle (including all of its diabolic sides), because the unlimited creation of credit *ex nihilo* among banks is also possible – as well as its corresponding destruction. Here, the development and deepening of monetary structures through corporate bonds are being analyzed and interpreted, but not automatically advocated. The normative dimension would require a separate chapter.

refinance their activities by the central bank is an important instrument of monetary policy to influence the economic development of a country.

While outlining his perspective on the capital formation process, Keynes was less concerned about questions related to economic growth (cf. F. J. C. de Carvalho 1997, 472), and primarily exposed the differences between the orthodox view and his approach, which is mainly given by its monetary character. Keynes recognized that banks “hold a key position in the transition from a lower to a higher scale of activity” (Keynes 1937, 668), because aggregate expenditures can only increase, if new (bank) money is created. As long as economic agents’ liquidity preferences remain unchanged (impeding any dishoarding), new money creation is only possible through credit expansion by banks. If aggregate expenditures remain constant (and given a constant velocity of money), finance is a revolving fund, nourished by the existing stock of money, which circulates. Whether the economy grows or not, investment expenditures always need to be financed through the provision of money, which is provided independent of prior savings¹⁸. According to neoclassical theory, increased savings are a precondition for a rise in investment, but in Keynesian theory, saving cannot precede investment, because the impact of an act of saving does not reach beyond its reduction of current demand:

“An act of individual saving means – so to speak – a decision not to have dinner today. But it does not necessitate a decision to have dinner or to buy a pair of boots a week hence or to consume any specified thing at any specific date. Thus it depresses the business of preparing today’s dinner without stimulating the business of making ready for some future act of consumption. It is not a substitution of future consumption-demand for present-consumption demand, - it is a net diminution of such demand” (Keynes 1936, 210).

In another quote, Keynes states the no-prior-savings approach even more clearly:

“The investment market can become congested through shortage of cash. It can never become congested through shortage of saving. This is the most fundamental of my conclusions within this field” (Keynes 1937, 669).

If the entrepreneur is able to acquire finance, he uses this money to realize the investment project, i.e. by spending it on investment goods (F. J. C. de Carvalho 1997, 465). Due to the entrepreneur’s expenditures another agent generates income, which is (during this period) not available for consumption, so that the investment expenditures create savings in exactly the same amount. On yet another occasion, Keynes repeats his emphasis of this fundamental difference to the prior-savings argument of the orthodox approach:

“Increased investment will always be accompanied by increased saving, but it can never be preceded by it. Dishoarding and credit expansion provides not an alternative to increased saving, but a necessary preparation for it. It

¹⁸ Keynes did not consider non-bank financial actors.

is the parent, not the twin of increased saving” (Keynes 1939, 572, emphasis in original).

As a consequence, the development of a domestic corporate bond market cannot be hampered by the lack of savings, in a Post Keynesian world. One of the implications of this important finding is also relevant with respect to the crowding-out effect, which is discussed early on in the following section 2.3.2. Despite the sufficient volume of savings, market development can still be hampered, because the owner of the savings might want to keep them in more liquid assets instead of acquiring corporate bonds. For that reason, corporate bond market development can be impeded by the lack of demand for long-term debt securities, as the following sub-section on funding explains.

2.3.1.2 Funding

Money creation is not all that is necessary for a sustained investment process, due to the maturity mismatch in the balance sheets of banks and companies involved, which needs to be dissolved by transforming short-term debt into long-term liabilities such as corporate bonds (F. J. C. de Carvalho 1992, 150–51). Therefore, it is in the second stage of the (Post) Keynesian capital formation process, i.e. funding, where the development of a corporate bond market comes into play. By offering a long-term financial instrument, CBMD may fulfill a vital role in the investment process, and thus, in economic development, in general. In short, the ideal-typical capital formation process is divided into initial finance through bank lending and long-term funding through corporate bonds.

The fact that investment expenditure purchases long-lived assets, distinguishes it from other classes of spending and raises the problem of how to fund the loans, which were incurred in order to acquire the assets. As savings increase together with investment, the necessary amounts (of savings) to fund the entrepreneurs' debt are created simultaneously with investment expenditures. The fact that savings are created automatically by the implementation of an investment project, does not mean though, that savings are automatically available for funding (F. J. C. de Carvalho 1997, 469). Savings will only fund investments, if they translate into demand and supply for long-term assets. It is not clear, however, whether the additional savings as a whole, or even a fraction, will ever become available to fund the entrepreneurs' debt. This will depend on the liquidity preferences of the wealth holders, who dispose over the additional savings. In the next section, there will be a more detailed analysis of liquidity preferences and of the central role of wealth holders as well as their asset choices. For now, it should suffice to know, that it is reasonable to expect – in a monetary economy marked by Knightian uncertainty – that part of the wealth increase is always destined to liquid assets and that savings will not turn into funding immediately. Rather, it will take some time, before the newly generated savings will induce an additional demand for long-lived financial assets.

The time lag between the creation of savings and the application to fund investments may be due to a decision making process, during which the saver formulates accumulation strategies, in order to best apply the additional savings

(F. J. C. de Carvalho 1997, 469–70). Uncertainties concerning the future value of (debt) securities, which depend on the future path of the monetary interest rate, influence the formulation of these strategies. Once such uncertainties disseminate a bearish sentiment in the (debt) securities market, savers are encouraged to remain liquid. For that and other reasons, monetary policy should commit to maintain interest rates low, in order to induce savers to demand long-term (debt) securities. Such a commitment of the central bank is essential for the reduction of uncertainties and, hence, the funding of investment projects. A convincing commitment of monetary policy to low and stable interest rates is not only important for the reduction of uncertainties, which will prolong the investment horizon of wealth holders, but also for the increase of the demand for fixed rate bonds. The demand for fixed rate bonds depends on the expected path of the monetary policy interest rate, because an elevation of the base rate would render a bond whose yield was set at the former base rate level less attractive. The monetary policy stance is also an important factor for planned investment expenditures, because it directly influences economic agents' expectations. The entrepreneur will only realize an investment project, if he expects – among other things – that monetary policy will not significantly raise the base rate.

2.3.1.3 Financial fragilities in the capital formation process

This sub-section builds on the concepts and models of the financial fragility literature presented in section 2.1.2 and shows how financial fragilities evolve in the capital formation process. The focus here lies on the inevitable emergence of financial instability as part of the normal workings of a monetary economy, highlighting the need for greater financial diversification, which can be achieved through the promotion of CBMD. The problem of external debt only plays a minor part in this sub-section, but during the discussion of the currency premium in sub-section 2.3.3.4 the issue will be raised again.

When a bank grants a credit to an entrepreneur, both agents incur a long-term commitment to the investment project, leaving them with a maturity mismatch in their balance sheets and a dependency on the success of the investment project. From a microeconomic point of view, the bank and the entrepreneur share the interest of funding the commitment on a stable basis, in order to dispose of the uncertainties associated with the rolling-over of short-term liabilities, which depends on future interest rate levels and credit conditions (Studart 1995a, 58–59). From a macroeconomic perspective, funding plays an important role, too, by mitigating growing financial fragilities that are inherent to the growth process in a monetary economy. According to Minsky's (1977b) financial instability hypothesis, the mechanisms of a monetary economy, including an increase in asset prices as well as leverage during boom phases, contribute to a deterioration of its financial stability. Capital markets play an ambiguous role in the process of sustained growth, as they may be a remedy against, but also a source of instability (Hermann and Paula 2011, 6).

There are different explanations for the destabilizing effects of capital markets that are related to speculation, leverage and opacity. Speculators¹⁹ are important participants in the capital markets, as they supply the markets with liquidity, but they also contribute to the prevalence of a short-term view. Most speculators and professional investors in capital markets are

“largely concerned, not with making superior long-term forecasts of the probable yield of an investment over its whole life, but with foreseeing changes in the conventional basis of valuation a short time ahead of the general public. They are concerned, not with what an investment is worth to a man who buys it ‘for keeps’, but with what the market will value it at, under the influence of mass psychology, three months or a year hence” (Keynes 1936, 154–55).

As short-termism prevails, pro-cyclical behavior may lead to boom-bust-phases, the build-up of asset price bubbles, and eventually financial crises. During periods that are marked by general economic optimism, entrepreneurs and speculators will tend to raise their level of indebtedness, and banks, sharing this optimism, will try to lend more by reducing safety margins (Studart 1995a, 54). Highly sophisticated financial markets might exacerbate the problem of increasingly leveraged positions of economic agents by facilitating the access to finance, e.g. through securitization, at the cost of transparency. The construction, issuance and negotiation of ever more complex financial instruments makes it increasingly difficult to disentangle connections between the involved economic agents, as well as their responsibilities (Amato and Fantacci 2014).

Even though capital markets may contribute to financial fragilities, they serve, at the same time, as a useful instrument to combat financial instability. In a monetary economy, the growth process is typically accompanied by greater financial fragility, because entrepreneurs usually face the problem of how to match their long-lived investment assets with their liability structure (cf. Hermann and Paula 2011, 6; Studart 1995a, 60–61). That is why funding, and capital markets as the *loci* where funding most conveniently takes place, play such an important role in mitigating the increase of financial fragility during the process of growth and development, and hence, the relevance of developing a domestic bond market for corporate issues. The transformation of debt maturities is necessary for the reduction of financial fragilities in the balance sheets of companies and banks alike. Capital markets can help to reduce financial instabilities by mediating between wealth holders with a demand for (debt) securities and companies that want to fund their short-term liabilities with long-term issues.

A successful financial intermediation will not only ease the maturity mismatch in the balance sheets of entrepreneurs and banks, but also achieve a more appropriate application of financial assets for institutional investors, such as

¹⁹ A speculator is someone, who buys and sells assets “in the hope of making a large profit, but with the risk of a large loss” (cited from <http://www.merriam-webster.com/dictionary/speculation>, date accessed: 2016/03/28). According to Minsky, an entrepreneur assumes a speculative financial posture in case the maturity of his liabilities is shorter than that of his assets (cf. F. J. C. de Carvalho 1992, 154).

pension funds. Institutional investors that collect individual savings and promise a stable return over long time horizons, have a natural interest in long-term (debt) securities. Keynes description of the twofold process of capital formation with the distinction between finance and funding corresponds with the classic institutional setting in the USA as described by Davidson (1986), where commercial banks finance investment projects with short-term loans, which are then funded through security issues in long-term capital markets, where institutional investors such as pension funds or security companies acquire these (debt) securities.

The lack of organized and well developed capital markets, i.e. the lack of funding mechanisms, can result in growth enhancing finance that is marked by short maturities, the possible occurrence of credit rationing, and an increasing fragility of the financial positions of both companies and banks (Stuart 1995b, 283–84). Especially in emerging market and developing economies, the general assumption might not be met, that there is a diversified financial infrastructure, enabling companies to assess different possibilities in the capital markets and opt for a satisfactory combination of equity and debt, in order to fund its short-term liabilities (Hermann and Paula 2011, 7–8). For a sustained growth and development process, there is a need to establish and maintain a favorable environment for the formation of a diversified financial system with private, public, and regulatory institutions as well as competing and/or complementing instruments, like corporate debt securities, that offer different sources of finance and funding to firms and risk protection to savers. Public debt management as well as monetary policy are two essential determinants of such a favorable environment. Historically, both market-based and credit-based financial systems have enabled economic development, but there are only few countries that have developed financially and economically in a synchronized way without recurring to a public finance for development system, that was in charge of large public banks and/or development agencies (Zysman 1983). In emerging market and developing economies, foreign debt was also an important component of the financing structure of economic development.

Usually, capital markets operate under conditions that make them systematically incomplete and dysfunctional, which is especially true in the case of emerging market and developing economies and their underdeveloped capital markets (Hermann and Paula 2011, 9–10): In periods marked by pessimistic 'long-term expectations' (Keynes 1936 ch. 12), any progress in the economic development process tends to be prevented by limited spontaneous investment and the lack of available financing sources, except for public finance for development. In periods marked by optimistic expectations, given the scarcity of appropriate sources for finance in these economies, planned investment projects may be financed by some combination of equity, short-term credit, and, if available, foreign loans. This financing structure is inappropriate for investment projects due to its inherent maturity and currency mismatches, resulting in higher default risks. In other words, increased investment is accompanied by augmented financial and/or external fragility, when the financial system fails to meet the requirements of the economic development process, aggravating the risk of a banking and/or currency crisis (cf. Minsky 1986; Paula and Alves Junior 2000).

Therefore, the development of a corporate bond market is very important, especially in emerging market and developing economies.

2.3.1.4 Functionality and efficiency of financial systems

The notion that a financial system should support economic development by supplying the necessary financial resources for the realization of investment projects, on the one side, and by offering funding mechanisms to avoid financial instabilities, on the other hand, is reflected in the concept of financial functionality.

“Functionality is defined as follows: a financial system is functional to the process of economic development when it expands the use of existing resources in the process of economic development with the minimum possible increase in financial fragility and other imbalances, that may halt the process of growth for purely financial reasons” (Studart 1995a, 64).

The concept recognizes that even though investment projects generate their own aggregate savings, sustainable economic growth depends on financial system development, not only to avoid financial constraints, which may halt investment decisions, but also to better channel ex-post savings, so that companies may fund their liabilities under improved conditions. As Hermann and Paula rightly note: “One cannot expect that such financial tools [promoting financial functionality] are created spontaneously by the private financial markets, especially in case of developing countries” (Hermann and Paula 2011, 10–11), emphasizing the requirement of some form of public finance for development and developmentalist state policies.

Related to the concept of financial functionality is the notion of financial system efficiency, understood as the extent to which the financial system socializes uncertainty (F. J. C. de Carvalho 1992, 153ff.). Since uncertainty is part of a monetary economy and nothing, not even the most efficient financial system, will eliminate it, the question is how to distribute financial uncertainties inherent to investment projects.

“An efficient financial system socializes uncertainty, reducing its burden on the entrepreneur and sharing it with savers and financial institutions” (F. J. C. de Carvalho 1992, 157).

Part of the investment decision is the choice of financial means to support it, i.e. finance and funding. Minsky’s model of financial fragilities helps us to better understand how financial uncertainties are shifted, by outlining three prototype financial postures: hedge, speculative, and Ponzi. Minsky showed the unlikelihood of all agents obtaining sufficient funding to operate with fully compatible balance sheets and by explicitly analyzing different choices of financial postures, his approach facilitates the search for possible ways to deal with the financial fragilities identified. While a “hedger” is assured that he will not suffer from changes in financial market conditions during the relevant period, an entrepreneur embarking on a “speculative” investment project might become

insolvent, even if the expected yields are confirmed, in case financial market conditions change in a way that impedes him to roll-over his debt or to acquire the necessary funding. A Ponzi posture is even more dependent on beneficial conditions over a long period in the financial markets. Development banks or other schemes of public finance for development are usually created to increase the efficiency of the financial system (F. J. C. de Carvalho 1992, 154–55). By allowing more hedgers to emerge, such public financial schemes turn investment projects feasible that would otherwise only be implemented, if the entrepreneurs were animated by exceptionally high ‘animal spirits’.

In the end, both concepts – financial system functionality as well as efficiency – express the relevance of funding mechanisms for the economic development of a country. Yet, since the concept of financial system functionality points out the ambivalence of financial development, this term will preferably be used in the following. Furthermore, both concepts have revealed, that public finance for development contributes to the efficiency and functionality of financial systems by increasing the funding potential. In this manner, more investment projects are undertaken, and hence the economic development of the country is propelled. At the same time, financial fragilities are reduced, because public finance for development is usually offering long-term loans. Consequently, public finance for development institutions form a sensible complement to the financial system of a country and may be designed to support financial development, and in particular the build-up of corporate bond markets. For, notwithstanding the increase in financial fragility inherent to private financial market development, the sole reliance on public finance for development would incur severe problems, as well. Among the various problems associated with public banks granting subsidized credits are corruption, rent-seeking behavior, “*amigo-banking*”, and the misallocation of resources.

This section described the Post Keynesian two-fold capital formation process that is composed of finance (see sub-section 2.3.1.1) and funding (see sub-section 2.3.1.2). Short-term bank finance allows entrepreneurs to realize their investment projects and the no-prior-savings approach implies that CBMD cannot be hampered by the lack of savings. The second step of the capital formation process, funding, dissolves maturity mismatches. It depends on economic agents’ expectations of a stable monetary policy stance and reflects the central role of bond markets for the development process. Sub-section 2.3.1.3 emphasized that capital markets play an ambiguous role in a monetary economy as they might create financial instabilities, but can also alleviate them. The stabilizing effect of capital markets, including bond markets, is important for sustained economic growth and the development process of a country. The concept of financial functionality, presented in sub-section 2.3.1.4, captures the notion that a financial system works best in terms of supporting economic growth and development, when it is able to do both: offer financial resources for finance and funding, while mitigating financial fragilities at the same time. While CBMD is an important contribution to the diversification of the financial system, especially in emerging market and developing economies, incorporating public finance for development might be necessary to achieve financial system functionality.

The following section will show how CBMD is determined by economic agents' (portfolio) decisions, which are based on their expectations together with their liquidity preferences and influenced by the policy variables public debt management, monetary policy and public finance for development.

2.3.2 Economic agents' decision making as a determinant of corporate bond market development

The determinants of CBMD are well captured by the liquidity preference theory, which provides a useful tool for the analysis of economic agents' (portfolio) decisions, by explaining the expectation formation process of economic agents in a world reigned by uncertainty. While the existence of entrepreneurs that realize investment projects is indispensable for the development of a corporate bond market, Monetary Keynesians (cf. Nitsch 1995, 61–62, 1999, 186ff.; Nitsch and Diebel 2008, 83) clarify the pivotal role of wealth holders in a monetary economy (see sub-section 2.3.2.1), who would need to be convinced to acquire domestic financial instruments, be they shares or bonds, issued by the state or private companies (cf. sub-section 2.3.2.2). Wealth holders evaluate the net return of an asset by considering expected values of its yield, carrying costs, appreciation, and liquidity premium (as will be outlined in the upcoming section 2.3.3). The liquidity of an asset, in turn, depends largely on the currency, in which it is denominated, as well as the market, where it is traded. Economic agents take this large range of various parameters into consideration when forming their expectations (cf. sub-section 2.3.2.3), which serve as a basis together with their liquidity preferences (cf. sub-section 2.3.2.4) for their portfolio decisions. The state is able to promote CBMD by purposefully exerting an influence on these relevant parameters through public debt management, monetary policy, and public finance for development.

2.3.2.1 Wealth holder as sovereign of monetary economy

According to his liquidity preference and risk propensity, the wealth holder disposes over his portfolio and that way determines inter alia whether money is held or spent, loans are redeemed and financial instruments are traded. That is why, in a monetary economy, the wealth holder is the sovereign, as opposed to a neoclassical economy, which is ultimately governed by the decisions of its consumers. Since he holds property rights to (real) assets, the wealth holder is in a position, where he can decide whether to keep the real assets, or to sell them in exchange for any type of financial asset, including money. The financial assets can be categorized into money, understood here as a non-interest bearing financial asset, bank deposits, as well as debt and equity securities. The wealth holder's decisions ultimately determine the production and employment of companies, and thus, the economic development of the country – provided that a large or even dominant part of its structurally heterogeneous economy functions as a monetary economy.

During the capital formation process, the wealth holder can interfere to facilitate, re-direct, or hamper the development path of the country. For instance, the entrepreneur depends on the willingness of the wealth holder to dispose of his real assets, in order to realize the investment project. Through his portfolio decisions, the wealth holder exerts the most important influence, yet not always directly, but more commonly jointly with financial institutions. By including financial institutions in the process, the wealth holder delegates part of his sovereignty. Additionally, the power of the wealth holder is restricted by the central bank as the money issuing institution and provider of liquidity to the banking system, according to its refinancing conditions. A rather direct way of influencing the capital formation process is given by the net wealth holder granting a credit to a specific company or directly acquiring a share of the company. Usually, financial institutions are involved in the process of capital formation, and due to their autonomy in disposing over financial assets, they can be considered to act not only as financial intermediaries, but also as wealth holders, depending on their net asset positions. A commercial bank, for example, might follow the rationale of a wealth holder, if it grants a credit to an entrepreneur. Another example could be the underwriting of a debt security issuance by an investment bank. When a pension fund buys or sells (debt) securities in the financial markets, it also illustrates how a financial institution might act as a wealth holder. These portfolio decisions depend on the wealth holder's liquidity preference and determine the financing and funding conditions for entrepreneurs.

Since uncertainty is a fundamental ingredient of the monetary economy, wealth holders, when taking decisions, are also subject to it. Due to the uncertain future, the function of money as a medium of exchange in spot markets is of less relevance compared to its function as a store of value between today and the unforeseeable future. Hence, interest is paid as a "reward for parting with liquidity [and not as] a return to saving or waiting as such. [...] For if a man hoards his savings in cash, he earns no interest, though he saves just as much as before" (Keynes 1936, 167). To highlight the ability of the financial sector to channel these "hoardings" towards productive investment projects, as long as the granting of the credit appears justified in accordance with collaterals and expected yields, is the main contribution of Monetary Keynesianism, and of Post Keynesians in general, as we have seen in the concept of financial functionality. However, ex-post savings are not necessarily channeled towards long-term financial assets, and could just as well be hoarded or channeled towards short-term financial assets. How ex-post savings are used, depends on the availability of adequate financial assets, on the one hand, and on the savers' liquidity preferences, on the other hand.

2.3.2.2 Public vs. private bonds: the competitiveness effect

The portfolio decisions of wealth holders are also relevant for this thesis, because they imply that public and private bonds compete for the favor of wealth holders. This competition might cause a result that is similar to one that, from an orthodox point of view, follows from the crowding-out effect: a much smaller

corporate bond market compared to the sovereign bond market. Since the mechanisms at work are very distinct, this thesis prefers to establish the term “competitiveness effect” instead of using the term “crowding-out effect”. In order to avoid misunderstandings, two different terms are used to describe two different phenomena. The crowding-out effect is inherently related to the loanable funds theory and explains the rise in interest rates after an increase of government spending. According to this theory, there is only a fixed amount of loanable funds, represented by the supply curve in the money market. Interest rates rise then, because the demand curve shifts to the right, resulting in a new equilibrium with higher interest rates. As a result, public bonds are “crowding-out” private bonds.

From a Post Keynesian viewpoint, the mechanism works differently: There is no crowding-out due to increased government spending, which can always be financed through credit creation *ex nihilo* by banks²⁰. Thus, in a monetary economy, when public bonds drive back corporate bonds, it is the result of a competitiveness effect. In other words, the competitiveness effect describes the effect of the inferior competitiveness of corporate compared to public bonds in winning over the favor of wealth holders. The term refers both to the competitiveness of the bond and of the company issuing it, which faces a trade-off between the two²¹. Since the wealth holders, as the sovereigns of the monetary economy, can decide what to do with their wealth, and if they decide to invest, are free to choose between various financial and real assets, entrepreneurs will only be able to “attract the financial means necessary for real investment, [...] if they can offer a return on investment which can compete favorably with the alternatives” (Nitsch 1995, 63), i.e. all other options open to the wealth owner. Due to this competition among the (financial) assets, public bonds offering a higher interest rate, relative to their liquidity premium, might drive back corporate bonds as a result of the competitiveness effect; and because wealth holders evaluate more than the pecuniary return of financial assets, public bonds might also push back corporate bonds due to characteristics other than the higher interest rate, such as shorter maturities or greater liquidity in secondary markets, etc. The dominating position of public bonds and their commanding competitiveness can thus be explained by their perceived superiority by wealth holders.

As a consequence, there are only three circumstances (from a Post Keynesian perspective) under which an increase in government spending that is funded through an increase in public debt on the domestic bond market could lead to an increase of the interest rate and a competitiveness effect on corporate bonds (Hermann and Gentil 2014): First, if there was a lack of coordination between

²⁰ Increased public borrowing, which in the orthodox view causes crowding-out, actually may lead to a crowding-in from a Keynesian perspective, depending on the multiplier process and on what it is spent.

²¹ For example, if a company decided to issue its corporate bond with a higher than initially planned monetary return, this would render the bond more attractive for investors, raising its competitiveness, but at the same time, it would raise the financial obligations of the company, limiting its financial scope and, thus, potentially reducing the competitiveness of the company.

monetary and fiscal policy; second, if sovereign bonds were rejected by the market; and third, if there was a high preference for liquidity, which is the money-market reflection of an unfavorable macroeconomic environment. The first point can and should be avoided, and the second point is an extreme case related to a crisis situation. The third point is the most interesting, because it is related to the notion of loanable funds: In an unfavorable macroeconomic environment, there is a high preference for liquidity in the money market, creating a situation similar to that described by the loanable funds theory. If the government decides to increase public spending in such a situation and wants to finance it by issuing government debt securities, this might cause interest rates to rise. Due to the high liquidity preference, participants in the money market will only accept to alter their current portfolio position and exchange cash (most liquid assets) for public bonds (less liquid assets), if they are compensated by higher interest rates. In this case, the competitiveness effect also, just like the crowding-out effect, results in an increase of interest rates and a push-back of corporate bonds by public bonds. Nevertheless, as already indicated, the causal relations are very distinct.

Notwithstanding the possibility of a competitiveness effect, public and private bond markets can also have a complementary relationship, as already discussed above (cf. section 2.2.3). Sovereign bond markets might exert a market creation effect on private bond markets by building-up a trading infrastructure and a broad investor base, supplying better information about the future path of interest rates, and providing a benchmark yield curve (McCauley and Remolona 2000). Furthermore, public debt management is able to support (or hamper) the development of a corporate bond market by improving (or worsening) the structure of the public debt. This impact vector works mainly through a signaling effect, where the public debt structure is related to the yield curve and reflects current market sentiments, and through the competition of different debt securities, where the public bonds' characteristics determine corporate bond market development.

A panel study of 41 countries has shown that the size of the public bond market had no impact on the private bond market growth (Eichengreen and Luengaruemitchai 2006). The authors interpreted their finding as the result of two offsetting effects: On the one hand, (what they call) the "crowding-out effect" and on the other hand, better market infrastructure and higher liquidity. Trying to figure out this puzzle, Eichengreen et al. (Borensztein et al. 2008a chapter 9) conducted a study where they differentiated between the effect of an increase in public debt and an increase in the stock of public bonds on the corporate bond market, proving that there was a market creation effect. Two case studies (Borensztein et al. 2008a chapter 5 and 6) presented evidence in favor of the crowding-out effect: In Colombia, slow growth of the corporate bond market was explained (at least in part) by the continued rise in government debt, and in Chile, the cut in public domestic debt helped to stimulate private bond market performance.

The mixed picture of whether the dominant effect was the market creation or the crowding-out effect could also be found in the answers given by institutional investors to opinion surveys (Borensztein et al. 2008b, 22–23). In Brazil, one

might even get the impression that the Brazilian investors' answers were contradictory. On the one hand, the majority of respondents supported two affirmations in favor of the market creation argument and against the crowding-out argument: More than 70% of Brazilian investors in the survey agreed that "the yield curve provided by public bonds is crucial for pricing corporate bonds" and more than 60% did not see government and corporate bonds as substitutes in their portfolio (Borensztein et al. 2008b, 23). On the other hand, most of the Brazilian investors disagreed with one statement that would be in line with the market creation argument: Only about 30% of the surveyed investors in Brazil confirmed that "a large stock of public sector bonds is important for the development of the corporate bond market" (Borensztein et al. 2008b, 23). The apparent contradiction might be resolved by taking a closer look at the statement last referred to and its possible interpretations in the context of Brazil. In a country where the financial system was lacking any kind of bond market, the build-up of a certain volume of government bonds might really be a necessary precondition for the development of a private bond market. In Brazil, there already existed a very large stock of public bonds at the time of the survey, while the private bond market was at a very incipient stage. In this context, the result might rather be interpreted as reflecting the respondents' experience, than as a widespread belief in the crowding-out hypothesis among Brazilian institutional investors. Apparently, the respondents had the impression, that other factors than the size of the government bond market were more important for the development of the Brazilian corporate bond market.

This sub-section established that there is a general competition between financial assets, which is also true for public and corporate bonds. As any other financial asset, these debt securities compete for the wealth holders to be invested in, offering different liquidity premia. If a public deficit needs to be funded through the issuance of sovereign bonds, these bonds will have to offer a net return that is high enough for wealth holders and their liquidity preferences. In certain moments, when a high volume of public bonds clutters primary markets and, at the same time, available funds are scarce due to high liquidity preferences of wealth holders, there might be a competitiveness effect. Therefore, the competitiveness effect might be more relevant in times of financial distress, when the public borrowing requirements need to be met at any cost, hardening competition to a point where private bond issuance becomes unviable. But here comes another argument into play: In times of crisis, private bond issuance will decline anyhow, because investment projects will be postponed and funding needs will be lower. For these reasons, the focus of this study lies less on the sheer size of the public debt and public bond market, but more on the structure of the public debt and the characteristics of the public bonds as determinants of the development of the corporate bond market.

2.3.2.3 Central role of uncertainty and expectations

After discussing the important role of wealth holders and their portfolio decisions (including the implications of the competitiveness effect) for the development of corporate bond markets, we can now turn to the theoretical

concept of liquidity preferences: A notion of time preference is common to both classical and Keynesian theory, but only as far as it determines how much of current income is spent on currently produced consumption goods and services (Davidson 2005, 457). Both theories differ in the analysis of what the other fraction of current income is spent on, based on this time preference. In classical theory, all income earned in any accounting period is spent on the current production and time preference determines how it is divided between spending income on consumption goods and services, which are currently produced, and spending income on currently produced capital goods, which will help to produce future consumption goods. (Post) Keynesian theory, in contrast, emphasizes that economic agents use the remaining part of current income, which – according to time preference – is not designated to current consumption, to save by purchasing liquid assets. As a consequence,

“there is a second decision step, liquidity preference, where the income earner determines in what liquid assets should his/her saved income be stored in order to be used to transfer purchasing power of saving to a future time period” (Davidson 2005, 457, emphasis in original).

In short, the economic agent does not only have to decide how much to save, but also how to store these savings. The latter decision is guided by “the extent to which the saver prefers safety to enrichment” (F. J. C. de Carvalho 1992, 147), or in other words, his liquidity preference. Given a certain set of economic agents’ current liquidity preferences, the state might be able to foster or hamper the development of corporate bond markets through its activities in public debt management, monetary policy, and public finance for development. The following (sub-)sections will elaborate further on the framework to analyze the role of the state in determining CBMD.

In the previous section, the central role of uncertainty in a monetary economy was already emphasized. Due to uncertainty, the hoarding of real assets as well as holding on to liquidity in the form of non-interest bearing financial assets, such as money, may be a rational strategy for a wealth holder (Nitsch 1999, 190). Accordingly, full employment is only attained by chance, instead of being a standard equilibrium outcome. Since the future is unknown both to the finance and funding seeking entrepreneur as well as to the potentially lending wealth holder, optimistic expectations become crucial for the initiation of the investment process, and thus, economic development (Hermann and Paula 2011, 4ff.). In addition, uncertainty impedes that any coordination mechanism for investment financing, even deliberate development policies, achieves the goal of eliminating excess demand for finance. The development process is further complicated by the heterogeneous and partly incipient nature of investment projects, increasing the difficulty of assessing and forecasting the risks involved (Hermann 2011, 9). Increased risk premia, in turn, inhibit potential borrowers to ask for funds. Eventually, the higher degree of uncertainty increases risks for creditors and debtors alike (Minsky 1986).

In emerging market and developing economies, the process of capital formation and hence, economic development, is moreover aggravated by the low currency premium of these countries, which is the subject of sub-section 2.3.3.4. Since the

wealth holder is free in his decision, as to how he wishes to keep his wealth, he can choose between different asset types and classes, between real and financial assets, including various options as to the currency denomination and the corresponding currency premium (Nitsch 1995, 63).

The development process might be complicated, because the wealth holder needs to take his decision under uncertainty, so that he cannot base his decision on factual information, but needs to rely on his expectations. Since these autonomous expectations ultimately shape market results, the analysis of how expectations are formed becomes crucial, as has been pointed out by Post Keynesians (cf. Chick 1983; Keynes 1936, ch.5; Harvey 2001; Dow 2002). By emphasizing that there is a fundamental difference between uncertainty, reflecting an unknown future, and risk, understood as a calculable probability, Davidson (1978, 2002) became one of the founders of a research strand that elaborated further on Keynes' statement, that the information for mathematical calculations to base one's decision on, is lacking. For Keynes, "human decisions affecting the future, whether personal or political or economic, cannot depend on strict mathematical expectations, since the basis for making such calculations does not exist" (Keynes 1936, 162–63). On another occasion, he wrote: "There is no scientific basis on which to form any calculable probability whatever. We simply do not know" (Keynes 1973, 114).

If there is nothing to be known about the future, how do economic agents behave? Faced with fundamental uncertainty in a monetary economy, economic agents are governed in their investment behavior by convention and the confidence with which they hold this convention (Keynes 1936, 152). Consequently, the wealth holder is concerned about forming the right expectations with regard to future conventions, in order to maintain the value of his portfolio. If a wealth holder anticipates changes in conventions, he will trade his financial assets accordingly. That is how Keynes explains the price formation process in capital markets. Harvey (2010) as well as Kaltenbrunner (2011) applied this approach to the foreign exchange market and Alves, Ferrari, and Paula (1999) applied it to the analysis of financial and currency crises. This dissertation shares this view of expectation formation being crucial in explaining (changes in) prices of financial assets in capital markets. Accordingly, this analysis of CBMD will use insights from these earlier studies about the expectation formation process. It is justified to apply the analysis of money and different currencies as financial assets to debt securities such as (corporate) bonds, since Keynes himself pointed out that the line between "money" and "debts" can be drawn "at whatever point is most convenient for handling a particular problem" (Keynes 1936, 167). Moreover, Keynes' formulation of the liquidity preference applies to financial assets in general, and not only to money (Paula, Fritz, and Prates 2015).

In the presence of fundamental uncertainty, expectations are mainly anchored by social conventions and the confidence with which they are held. Consequently, expectation formation is always context and time specific (Kaltenbrunner 2011, 90–91). The specific structure of the market, as well as its institutions, its dominant actors and various other factors, e.g. the dissemination of indexation clauses in contractual agreements, shape social conventions, which might be

subject to sudden changes. Such alterations might be triggered by psychological processes, similar to Keynes' famous beauty contest and animal spirits, and might lead to what is referred to as herding, momentum, or simple feedback trading behavior (Tversky and Kahneman 1974; Harvey 2010). Newly available information is filtered by measuring it against a variable called "medium term expectations" (following Schulmeister 1988) that changes according to the current state of the market, which can be either bullish, bearish, or neutral.

Some critical points about Harvey's (2010) approach are discussed by Kaltenbrunner (2011, 71–72), e.g. that the model falsely assumes financial flows as a uniform category with a homogenous expectation formation process. Instead, one needs to recognize, that expectation formation must be a necessarily institutionally and historically contingent process (e.g. Lawson 1985; Crotty 1994; Chick and Dow 2005). Furthermore, by stressing the central role of economic agents' expectations, this approach might run the risk of becoming indeterminate. Yet, this risk is minimized by introducing social conventions, which ensure orderliness and uniformity in expectations (F. J. C. de Carvalho 1983). Integrating social factors into the model as if these were an exogenous guideline, which agents may choose to follow, brings about two problems. First, this would presuppose that individuals have the power to choose, which might not actually be the case (Lawson 1985, 919). Second, the relational aspect of institutions, which dynamically links and constraints agents' expectations and actions over time, would be lost. The most prominent Post Keynesian to underline this relational aspect is Minsky, who pointed out the debtor-creditor relationship and the importance of financial commitments in shaping agents' expectations and behaviors.

(Post) Keynesian analysis of the behavior of economic agents in a monetary economy marked by uncertainty goes beyond the explanation of how agents form their expectations, by stressing the structural and institutional implications of this uncertainty (Kaltenbrunner 2011, 73).

"Although individuals' values, preferences, modes of understanding, and so forth are socially constructed, through individual and collective action people transform their decision-making environment over time by, among other things, creating new institutions and adopting new practices designed to reduce the harmful effects of uncertainty" (Crotty 1994, 13).

The emergence of money is one of the most important institutional inventions in this context and exemplifies how institutions are established to manage and disperse uncertainties.

"The system reacts to the absence of the information the market cannot provide by creating uncertainty-reducing institutions: wage contracts, debt contracts, supply agreements, administered prices, trading agreements. Since all are meant to reduce uncertainty over time, it is natural that their value be denominated in the unit whose value is most stable over time – money (...)"(Kregel 1980, 46).

The elevated level of uncertainty in emerging market and developing economies turns uncertainty-reducing institutions all the more relevant and may lead to

peculiar manifestations in the institutional setup of the domestic financial system, for example the indexation of debt contracts. An active role of the state in the creation of a more stable outlook might be necessary in these countries, which would also foster corporate bond market development. In particular, reassuring measures in the fields of public debt management, monetary policy, and public finance for development can contribute to the promotion of CBMD.

Keynes acknowledged that the existence of time had important implications for economic activity, because its passing creates uncertainty between the past and the future. Uncertainty reigning in a monetary economy explains why economic agents have a preference for liquidity. Keynes defined liquidity preference as an individual's "schedule of the amounts of his resources, valued in terms of money or of wage-units, which he will wish to retain in the form of money in different set of circumstances" (Keynes 1936, 166). Actually, he laid out more specifically, why an economic actor might want to hold money, even though it is a financial asset offering no yield. Keynes spelled out three reasons that became famous as the transaction, the precautionary, and the speculative motives.

2.3.2.4 Preference for liquidity

The first of the motives for holding money, the transaction motive, reflects "the need of cash for the current transaction of personal and business exchanges" (Keynes 1936, 170) and resembles what money represents in neoclassical theory, i.e. a medium of exchange (Kaltenbrunner 2011, 83–84). The innovative perspective of (Post) Keynesian theory on money is articulated in the other two motives, which display reasons why money is held as an alternative to other assets. These motives for liquidity preference are connected to the financial circulation of money:

"(ii) the precautionary-motive, i.e. the desire for security as to the future cash equivalent of a certain proportion of total resources; and (iii) the speculative-motive, i.e. the object of securing profit from knowing better than the market what the future will bring forth" (Keynes 1936, 170).

Even though some authors have interpreted the precautionary motive as a subsumable concept of the transaction motive (Chick 1983), the focus of this dissertation on the analysis of (corporate) debt securities justifies accentuating the demand for liquidity to meet outstanding liabilities. This power of money to discharge contractual obligations is not only one of the most important reasons to demand liquidity, but also closely related to the functional roles of money as unit of account and as store of value. According to Carvalho (1992) the primary function of money is to serve as the unit, in which contracts are denominated. All of its other properties are derived from this function. Due to its function as unit of account, the liquidity premium of money is the highest. In Keynes' General Theory, the precautionary motive had received relatively little attention, which is surprising, since it directly concerns uncertainty, one of the pillars of Keynes' revolutionary approach. Given its great importance in determining the preference for liquidity, the precautionary motive will be analyzed more thoroughly in this dissertation, after discussing the speculative motive.

The third motive, commonly named speculative motive, is considered more extensively in the General Theory, where speculation and the speculator are essential and recurrent topics. In chapter 12 of the General Theory on the state of long-term expectations, Keynes defines his understanding of speculation, i.e. the purchase of securities in order to profit from their sale at a higher price later, which he differentiates from the motive to acquire securities for long-term income generation (Toporowski 2005). Within the framework of the liquidity preference theory, spelled out in chapters 13 and 15, speculation about future interest rates and thus bond prices makes the important connection between liquidity and the interest rate. There is a demand for money, because holding money promises liquidity, which is necessary to profit from changes in expected interest rates. When interest rate expectations deviate from what the economic agent subjectively perceives as a “normal” interest rate, he reacts by buying or selling financial assets, because the changed interest rate expectations are going to be reflected in the price expectations of financial assets.

As we have seen in sub-section 2.3.1.2, the funding mechanism crucially depends on low and stable monetary policy rates. Savings are not automatically available to fund investments, only if they translate into demand for long-term assets. This decision of the wealth owner depends on his expectations about the future course of the base rate: If he expects the base rate to stay low, his demand for money due to the speculative motive will be low as well. He parts more easily with liquidity, and consequently, his demand for long-term assets will rise. If the wealth owner expects an increase of the base rate, his liquidity preference will be higher due to the speculative motive and he will prefer to wait and purchase fixed rate bonds later, when they are issued with higher interest rate in the primary market or have become cheaper in the secondary market.

The findings obtained from Keynes’ analysis of speculation in the context of bond and money markets on the one hand and securities markets on the other hand, can equally well be applied to any other kind of asset, as Chick notes (1983, 209): “there is no reason to limit one’s speculation to this kind of asset. Speculation needs only two things: a lively market and sufficient variation in prices to make the game worth playing.” This point is very important in the context of this thesis, because of its consequences for bonds that are indexed to the base rate: This type of indexation prevents that the price of the bond adjusts in response to expected or actual interest rate changes, stripping it off the main reason to acquire a bond for speculative motives, with adverse effects on its liquidity. Similar to Chick’s observation, Kaldor (1939) mentions in his general theory of speculative asset demand two conditions for speculation, where he also alludes to, alongside low carrying costs of the asset, the market, which needs to be perfect or at least semi-perfect. This feature of the market is to be understood in the sense of “perfect marketability”, and as such similar to Keynes’ concept of liquidity and also very close to the “institutional” liquidity that is discussed in sub-section 2.3.3.3. According to Kaldor’s analysis, these conditions are best met by future claims or titles to property, bonds and shares. That is why their low carrying costs and their liquid markets make financial assets perfectly suitable for speculation.

In Minsky's (1975) analyses, speculation and the speculative motive play an important role, too, but he lays the focus more on the liability side of balance sheets by emphasizing the relevance of future price developments for the generation of sufficient cash flows to meet outstanding obligations. By focusing more on the liability side, this approach also shows the close relation to the precautionary motive, when it comes to determining the money demand. That the demand for money does not only depend on short-term speculative expectations, reigned by animal spirits, is a position taken up by Monetary Keynesians after Riese (1986b, 2001), such as Herr (1992), Lüken-Klaßen (1993) or Herr and Hübner (2005). At least as important in determining the demand for money, and consequently also for currencies, is the investor's medium-term evaluation of the currency premium, which will be explained later in more detail (in sub-section 2.3.3.4). The currency premium, in turn, shows to what extent a currency is able to preserve wealth and to meet outstanding liabilities, when compared to other currencies. The Monetary Keynesian approach stresses the competition between the leading currencies and the other convertible currencies (Paula, Fritz, and Prates 2015; Lüken-Klaßen 1993; Herr 1992; Riese and Spahn 1989; Stadermann 1988).

Based on the view that investors assess the currency premium of a country, Herr (1992) detects "Keynesian fundamentals", which refer to the economic policy stance of a country and to what degree the country guarantees the stability of its currency. More concretely, the Keynesian fundamentals deal with the assessment to what extent the country is able and also willing, to fight inflation, conquer currency crises, and defend the present currency regime. By referring both to ability and willingness, the concept stresses the confinedness of emerging market and developing economies due to their currency premium, while revealing possibilities of policy measures that might raise the currency premium (see also Paula, Fritz, and Prates 2015). In this context, the public debt management, the monetary policy stance, as well as the public finance for development system, preferably coordinated by developmentalist state policies, are of key importance. In order to better understand the impact of these measures on the development of corporate bond markets, the next section will outline a model of general asset choice, which will serve as a key component to the analytical framework outlined in this sub-chapter.

Before we turn to the detailed analysis of the components of the model of asset choice, a few points of the debate about the role of Keynes' liquidity preference theory for the level of the interest rate are presented. In the mentioned debate, the "Horizontalists", like Marc Lavoie, who take the view that the interest rate is exogenously determined by the central bank, stand against those Post Keynesians, who indeed attribute some role to the liquidity preference theory. The last-mentioned include Minsky (1975), Kregel (1980, 1982), Dow (1996), Chick and Dow (2002), as well as Bibow (2009). These authors argue that interest rates are at least partly set endogenously in the banking sector and therefore reflect market expectations according to the liquidity preferences of banks. When banks, following this line of reasoning, not only passively service money demands from the real sector, but instead raise the price for giving up liquidity, i.e. money, in other words, when banks adjust interest rates in accordance with their liquidity preferences and their balance sheets, then

monetary policy is incapable of completely controlling domestic interest rates, even if it ensures a totally accommodative money supply.

Lavoie (1996) holds that the divergent views in the debate presented above differ only very slightly, in the end, and are essentially reducible to the treatment of different interest rates. Accordingly, Post Keynesians might be divided on the level of the spread between lending rate and base rate, and in this respect on the role of the liquidity preference schedule of banks, but most would agree that the central bank exogenously sets the monetary policy rate. It is important to note, however, that Lavoie's argument depends crucially on the assumed capability of the central bank to accommodate any increase in the money demand. This assumption must be scrutinized in a world of hierarchically ordered currencies. Actually, it might only hold in one special case: the country, where the central bank issues the currency with the highest liquidity premium. This special central bank may be capable of completely accommodating a rising demand for money, but all other central banks might eventually reach a point, where their limited foreign exchange reserves constrain their ability to supply the demanded liquidity. That is why any secondary central bank may be forced to increase the base rate due to changes in the international liquidity preferences or due to a decline of the liquidity premium of the currency. Therefore, the monetary policy interest rate is not generally exogenously set by the central bank, but endogenously determined, as liquidity preference theory suggests.

Section 2.3.2 described how economic agents make their decisions and that these decisions determine the development of corporate bond markets. Sub-section 2.3.2.1 showed that the wealth holder as the sovereign is the ultimate decision maker. Economic agents come to a decision based on their expectations and liquidity preference. The expectation formation process is explained in sub-section 2.3.2.3 and the motives for preferring liquidity as well as liquidity preference itself are discussed in sub-section 2.3.2.4. How the decision-making of economic agents determines CBMD is exemplified in sub-section 2.3.2.2, where the competitiveness effect is introduced. More generally, the state determines CBMD through the influence of three main policy variables on the decision making process. Public debt management affects the decisions of economic agents through adjustments in the public debt structure that might cause a competitiveness effect or a signaling effect and/or a market creation effect. Among the institutional inventions to reduce uncertainties is the establishment of indexed bonds. The indexation to the monetary interest rate has adverse effects on liquidity and should therefore be avoided by public debt management.

Monetary policy can foster CBMD through the provision of a low and stable base rate that induces less preference for liquidity and, consequently, raises the demand for bonds. The power of the central bank in emerging market and developing economies is restrained by its foreign exchange reserves, which reflects in the currency premium of the country. The lower currency premium of these countries can be compensated by public finance for development schemes. However, there is always excess demand for finance in a monetary economy reigned by uncertainty. Uncertainty raises risks for both debtors and creditors and public finance for development institutions can help to socialize risks. The institutional context determines economic agents' expectations, so that public

debt management, monetary policy, and public finance for development can work together to create a more stable outlook and contribute to optimistic expectations that are crucial for the development of domestic bond markets. After we understood, how economic agents form their context and time specific expectations together with their liquidity preference that serve as a basis for their (portfolio) decisions, we can next discover a general model of asset choice, the composition of the total yield of an asset and how it is influenced by the policy variables.

2.3.3 The influence of public debt management, monetary policy and public finance for development on asset choices

Keynes' liquidity preference theory in combination with his analysis of the own-rates of interest forms a model of general asset choice in a monetary economy characterized by uncertainty (F. J. C. de Carvalho 1992, 81ff.). This model of general asset choice will allow us to analyze under what circumstances the wealth holders are increasing their demand for corporate bonds and how public debt management, monetary policy, and public finance for development might impact these choices. To capture the total yield of an asset, Keynes developed a concept, which would allow him to include non-monetary rewards, and which he called the own-rate of interest. By integrating non-monetary returns, this model allows one to consider money as an asset.

"In a nutshell, the theory says that, for any given durable good, the divergence between its spot and forward prices, that is between the current price for current delivery and the current price for delivery at specified future date, will reflect the expectation of the market as to the gains to be derived from its possession between the present moment and the specified future date" (F. J. C. de Carvalho 1992, 79).

This spot/ forward price model renders an own-rate of interest for each asset. Those assets with the highest returns are the most wanted by wealth holders who are, by competing amongst each other for the best assets, setting the asset prices. The net return of an asset, its own-rate of interest, is determined by its yield (q), understood as the additional income expected to be gained through its possession, minus its expected carrying costs (c), plus its expected appreciation (a), i.e. the expected price difference between purchase and sale, and the liquidity premium (l), measuring the tradability of an asset (cf. F. J. C. de Carvalho 1992, 83f.; Chick 1983, 298):

$$\text{net return} = q - c + a + l$$

These four attributes embrace a wide range of assets for wealth holders to choose from, including capital assets, which offer a high yield combined with low liquidity and high carrying costs, and financial assets like corporate bonds that combine low carrying cost with relatively high yield and liquidity premium, but also money, which is the financial asset offering the highest liquidity premium at no carrying cost, yet lacking any yield (Kaltenbrunner 2011, 82). Various other combinations of the attributes are possible as long as those assets with a lower

liquidity premium compensate their relative difficulty to be traded for the reference asset, i.e. money, with monetary returns. Since the interest rate is the reward for parting with liquidity, i.e. money, the liquidity preference theory is a theory of the determination of the interest rate. In other words, the interest rate measures the “premium” the market is willing to pay for its preference for liquidity. Given the existing state of liquidity preferences, the model will determine current asset prices, because the trading of assets will equilibrate returns across markets, as long as there is perfect competition and no segmentation in asset markets (F. J. C. de Carvalho 1992, 90ff.).

There are two conditions that allowed Keynes to formally develop this model of general asset choice, which are both noteworthy (F. J. C. de Carvalho 1992, 81ff.). The first is related to the fact that the comparability of assets is usually achieved by discounting expected returns (using a discount rate), a method inappropriate in this case, as it would lead to circular reasoning in a model, whose aim is the determination of the nature of interest rates. Keynes’ ingenious solution was to assume a hypothetical retention period that is identical for all assets, allowing a direct comparison of returns, while capturing the time dimension in the liquidity premium. The second condition is related to the nature of the model, being one of asset choice, and as such determining the decision making process of wealth holders. Consequently, all values considered are necessarily expected values, while current or past values only enter indirectly. Wealth holders might consider realized values when forming their expectations about future yields, but especially long-term expectations may not be very sensitive to current realizations.

An expectation counting more than actual figures is also in line with the notion of fundamental uncertainty reigning the monetary economy and brings about two important consequences (Kaltenbrunner 2011, 85–89). First, the real determinants of asset demand can only be deduced from asset prices, which are representations of the expectations and positions of economic actors. The actual manifestations of these factors may be completely untraceable, and if they can be observed, they depend on the specific context and are prone to changes over time. This is accounted for in the analytical framework by considering more than financial market data and also including structural as well as context variables, underpinned by information extracted from the expert interviews. Second, the concept of the own-rate of interest represents an equilibrium theory, which does not necessarily lead to equilibrium. The apparent contradiction is resolved by drawing attention to the fact that only the expected values are in equilibrium. However, expectations are not always met, especially in a monetary economy.

In the following sub-sections, the four attributes that determine the total yield of an asset are analyzed in more detail. Implications for the development of corporate bond markets are derived and, in particular, the impact of public debt management, monetary policy, and public finance for development on each attribute is explained. While sub-section 2.3.3.1 examines three factors (q , c , and a) that define the pecuniary return of an asset, the remaining sub-sections discuss elements of the liquidity premium of an asset. Sub-section 2.3.3.2 analyzes key aspects of the concept of liquidity premium. Sub-sections 2.3.3.3 and 2.3.3.4 additionally consider two components that influence the liquidity

premium of an asset: the institutional liquidity of its market and its currency premium, respectively.

2.3.3.1 Pecuniary return of an asset

Even though other features of a bond, such as the price, maturity and issuer, are also important, the yield of a bond (q) is its most salient feature, as it resumes its defining set of non-monetary characteristics in a pecuniary return, expressed as an interest rate. Inversely related to the non-monetary characteristics of a bond, the interest rate needs to be high enough to add up to a competitive net return: The lower the liquidity premium of a bond, the higher its interest rate. For analytical reasons, the interest rate paid by a debt security can be divided into a basis, given by the level of the monetary policy interest rate, and a spread, which depends among other things on the liquidity premium and is commonly referred to as the risk premium. The perceived risk of holding a bond may be reduced by indexation, which is an institution that has been introduced to lower the risk premium by transferring the burden of a specific risk to the issuer and will be discussed below, in the context of the role of public debt management with respect to the yield of a bond. In the following, the impact of public debt management, monetary policy, and public finance for development on the expected yield of a bond is discussed.

A yield curve of sovereign bonds can serve as a benchmark for the private bond market, allowing wealth holders and entrepreneurs to identify the opportunity costs of different assets (Paula et al. 2009, 6). Public debt management can facilitate CBMD by improving the structure of the public debt and by creating and extending the sovereign bond yield curve, which would exert a signaling effect on the corporate bond market. The signaling effect influences long-term expectations, which in turn guide the decision of entrepreneurs to realize an investment project, on the one hand, raising the supply of corporate bonds, and, channel the desire of wealth holders to acquire long-term assets, on the other hand, increasing the demand for corporate bonds. The rate of return that is expected from an investment project competes, from the entrepreneur's perspective, with the market interest rate that can be seen as a financing or opportunity cost. From a wealth holder's point of view, the yield of a corporate bond usually needs to compensate for its lower liquidity premium compared to a public bond.

Among securities denominated in a specific currency, sovereign bonds are the least risky asset class, obliging a corporate issuer to offer some kind of risk premium. That means that investors comparing a public with a corporate debt security with otherwise equal characteristics would always prefer the public debt security, because of the lower perceived risk. The development of a domestic corporate bond market depends largely on the conduct of public debt management, not only because of its signaling effects, but also because the public debt structure, which is defined by the characteristics of all public issues, dictates the terms under which corporate bonds need to compete for investors. If public bonds offer certain characteristics, investors might require corporate bonds to offer the same.

As bonds in developing countries and emerging markets are associated with specific risks, bondholders may prefer to buy an indexed bond in order to transfer part of the risk to the bond issuer. Inversely, a country that is able to issue most of its debt with a fixed interest rate would send out a signal of strong reputation and a positive state of confidence. The degree to which the public debt structure is marked by indexation gives an indication as to how far the country is exposed to certain risks, which in turn has important implications for the establishment of a corporate bond market.

With respect to the yield of a bond, one can distinguish between fixed and floating rate bonds. In case of a fixed rate bond, the interest rate is set at the time of issuance and will remain the same for the whole duration of the bond. A floating rate bond, in contrast, has an interest rate, that is adjusted according to the terms defined at issuance. The adjustment usually follows an indicator, such as the inflation or exchange rate, hence their name “indexed bonds”. The indexation of debt securities transfers the related risk (e.g. of increased inflation in case of an inflation indexed bond) from the creditor to the debtor. It is not clear from the outset that the creditor will profit from this transfer of risk, because the perceived risk of – to stick with the example – increased inflation might not actually materialize and the holder of an inflation indexed bond might end up earning less than expected, if the inflation rate turns out to be lower than expected. It becomes clear that risks are always associated with chances and opportunities, a fact that may be well exemplified by GDP-indexed public bonds (similar reasoning would apply to corporate bonds that are indexed to the profitability of the company). The issuance of GDP-indexed bonds might be in the interest of both issuers and holders, because it reduces the likelihood of the debtor defaulting (Borensztein and Mauro 2004). Additionally, investors would profit from an equity-like exposure and the issuing country would benefit from the stabilizing factor such a bond issue would have on government spending. Other types of indexation could also improve the repayment capacity of debtors, e.g. indexing to commodity prices (Ocampo and Vos 2008, 43).

If a significant fraction of the public debt is made up of floating rate bonds, it might be difficult for the private sector to issue fixed rate bonds. Any type of indexation in the public bond market calls the attention of wealth holders, raising their awareness of the respective risk and making it more likely that they request the same type of indexation from corporate issuers, as well. In the following, different types of indexation will be analyzed with respect to their influence on the public debt structure and, thus, on the development of the corporate bond market.

From the public debt manager’s perspective some types of indexation are more desirable than others. For example, this is true for inflation indexed bonds when compared to exchange rate indexed bonds, because the inflation rate is usually more stable than the exchange rate. Additionally, issuing public bonds that are linked to inflation can be seen as a commitment by the government to pursue price stability. Yet, the interpretation could also point in the opposite direction, because a high fraction of this type of bond in the public debt structure could be seen as reflecting high inflation expectations, macroeconomic instability and a poor economic outlook, which would have an adverse impact on CBMD.

If a company issues a corporate bond indexed to the inflation rate, it depends on its business whether it will suffer from the exposure to the inflation risk. The company may be able to raise its prices along with the general price increase and, hence, it won't suffer from balance sheet effects. Yet, if the company can only adjust its prices slower than the inflation rate, it carries the risk of an increasing debt service, which it might not be able to compensate through increased revenues.

As has been pointed out above, due to the relatively high volatility of the exchange rate, indexation to this variable is among the least desired by public debt management. Additionally, exchange rate indexed bonds exert an adverse signaling effect, which is related to the uncertainty about the currency's quality and exchange rate stability that is reflected in this indexation. A positive signaling effect might exist, if the country issues this type of bond in a fixed exchange rate regime. Then, it can be perceived as a commitment by the government to defend exchange rate parity.

When a company issues exchange rate indexed debt, it incurs the risk of a currency mismatch in its balance sheet. If the company mostly operates in the local market and receives revenues predominantly in domestic currency, any change in the exchange rate will cause an adjustment of its net wealth position due to the indexation of the issued debt security. Depending on the outstanding volume of its debt linked to the foreign currency together with the size of the exchange rate adjustment, the company can quickly run the risk of insolvency. In case the company's business is international and it has direct access to foreign currency revenue streams, it might be in the interest of the firm to issue part of its debt with an exchange rate indexation. Otherwise the company would have to hedge against exchange rate fluctuations in order to guarantee a steady flow of local currency income. Even though there is a rationale for such companies to issue exchange rate indexed debt, most of these companies would probably prefer to tap international markets due to lower issuing costs and better financing conditions in the international financial centers. The regular income stream in foreign currency may facilitate access to international financial markets.

The last variable to be discussed here in the context of indexation is the monetary policy interest rate. The issuance of public bonds that are indexed to the base rate is problematic in many aspects that are all interrelated. In Brazil, the issue of base rate indexed sovereign bonds is closely related to the large dissemination of corporate bonds that are indexed to the interbank rate, which strongly correlates with the base rate. First, this type of indexation interferes in one of the channels, through which monetary policy normally works: the wealth effect. Holders of fixed rate-bonds see their net wealth reduced by an increase of the monetary policy interest rate, because the price of their bonds falls as a consequence of the adjustment in the base rate. The lower wealth translates into an inferior overall demand, leading to the desired result, i.e. less inflationary pressures. Interest-rate indexed bonds impede the wealth effect and hence also the normal workings of one of the monetary policy channels.

Second, by automatically adjusting the yield of the bond to the central bank's decisions to raise or lower the interest rate, this type of indexation impedes price reactions of the respective bonds and therefore diminishes the incentive to speculate on changing prices of these bonds, which markedly lowers the trade volume in secondary markets. This might be less problematic for public bonds, but may constitute a barrier to the development of a secondary market for corporate bonds, because a bond that is not traded frequently lacks liquidity.

Third, interbank rate indexation causes a maturity mismatch in the balance sheet of the issuing company. Even if the issued bond has a long maturity, by directly linking it to the interbank rate, the company is faced with similar risks of unexpectedly rising financing costs as if it had taken on short-term debt: As soon as interest rates rise, financing costs for the longer-term investment project increase. In one case automatically through the indexation and in the other case as soon as the short term debt needs to be rolled-over. However, this type of indexation, as any other type of floating rate bond, can also be advantageous for the company, here, if interest rates were unexpectedly lowered in the future.

A fourth aspect is closely related to how the indexation of public bonds to the interest rate is interpreted. Even though it could be seen as a commitment to low and stable interest rates by monetary policy authorities, another interpretation, especially in emerging market and developing economies, might be more appropriate: If the wealth holders ask for this type of floating rate bond, because they feel unable to predict the future course of monetary policy and, therefore, want to hand over the risk of unexpected interest rate adjustments to the debtor, this would be a sign of increased macroeconomic instability, driving up the level of uncertainty and liquidity preferences. Thus, economic agents may see in the existence of base rate indexed bonds a low state of confidence, pointing to weak economic prospects. In this sense, a public debt structure marked by this type of indexation exerts an adverse signaling effect on the development of corporate bond markets.

A fifth aspect of this particular institution, i.e. the indexation to the base rate of public bonds, is connected to the three motives of holding money and the degree to which interest rate indexed bonds might satisfy these motives. The speculative motive states that liquidity is demanded to be able to profit from changes in expected interest rates. These floating rate bonds take the speculation about future interest rates out of the equation, because they are indexed to the base rate. They are similar to money in that their nominal value, i.e. their price, is not altered by interest rate adjustments. In other words, these bonds neither gain nor lose with changes in the base rate and, hence, offer an alternative asset to money. The precautionary motive resembles the demand for liquidity to meet outstanding liabilities, which is closely related to the functions of money in its roles as unit of account and as store of value. Interest rate indexed bonds can perform the role of money as a store of value better than money itself, because they offer a positive yield. Even though these bonds are neither directly serving as unit of account, nor as medium of exchange (necessary to fulfill the transaction motive), they are easily convertible into money, because they are traded in highly liquid markets.

Due to the ease with which they can be converted into the unit of account, they offer an attractive alternative to money, the asset with the highest liquidity premium. The problem with a high-yielding (emerging market and developing economies usually have an elevated interest rate level) sovereign (i.e. with low default risk) bond, which is indexed to the base rate (i.e. stripped-off the market risk, as any change of the market interest rate is automatically incorporated), lies in the discouragement of wealth holders to invest in productive and innovative enterprises as they have a practically risk-free and high-yielding alternative. In this line of reasoning, such a public bond could even be interpreted as the manifestation of a rentier economy.

The monetary policy interest rate of a country, often called the base rate, serves as a lower bound to the interest rate level in a monetary economy, as it defines the price at which commercial banks are able to refinance with the central bank. The base rate also commonly reflects the yield of a short-term sovereign bond, which can be interpreted as the least risky debt security of a country. The central bank might use open market operations to keep the base rate at its designated level, i.e. the central bank buys and sells public bonds in the secondary market, in order to adjust public bond prices until their yield matches the monetary policy interest rate.

The interest rate level in emerging market and developing economies is usually relatively high compared with more advanced economies, not only in nominal, but also in real terms (UNCTAD 2015a, V, 2008, 109–12). A generally elevated level of the interest rate discourages demand for finance in productive activities, because the expected profit of the activity to be financed, i.e. the investment project, needs to exceed the cost of financing. The higher the interest rate and therefore the financing costs, the lower the supply of corporate bonds due to less demand for finance. On the one hand, a company willing to issue a corporate bond is confronted with the competition of other securities in the financial markets and the need to consider especially the benchmark-setting public bonds (this point is related to the competitiveness effect discussed above). On the other hand, this company has to weigh the costs of a bond issue, including subsequent obligations inherent in its characteristics and conditions, against the benefits of the investment project, which it wants to finance with the bond issue. If the costs are too high, the investment project cannot be realized²². It is important to remember that the state generally does not rely on such a comparison when issuing a public debt security²³.

A tight monetary policy stance, including a high interest rate level, is not only discouraging bond issuance, because of the increase in financing costs, but also because it suppresses economic growth prospects and leads to a low propensity to realize investment projects by companies. A company issuing a corporate bond considers economic growth perspectives as an indicator for its sales and

²² This might help to explain why the investment rate in Brazil was relatively low during the analyzed period, as will be discussed in chapter 3.

²³ Nevertheless, countries issuing sovereign bonds are also evaluated by investors regarding their debt sustainability, even though the state is usually not directly confronted with calculations of risk and return when issuing a public bond.

profits, which allow the company to generate the necessary income to pay for its financial obligations. The company will furthermore make predictions about the future course of monetary policy, because the level of the interest rate defines the opportunity cost of capital and the cost of a bank credit. In order to support the establishment of a corporate bond market, monetary policy can always take an investment-friendly stance by reducing the policy rate and hence the cost of finance.

While a tight monetary policy would hamper CBMD, it should not be too loose either, for two main reasons. First, a base rate that is perceived by wealth holders as too low may induce capital flight (UNCTAD 2008, 124). Second, low inflation is an important precondition for the development of a local market for debt securities. Mihaljek et al. (2002) show that low inflation rates are associated with longer average maturities of public bonds. Thus, monetary policy should focus on maintaining the base rate at a relatively low level together with safeguarding macroeconomic stability, in order to avoid rising uncertainty and poor economic prospects, which would have adverse effects on CBMD. In this way, monetary policy could help to improve the state of confidence and build up a reputation of the domestic currency as a stable store of value and widely accepted unit of account without the need to offer prohibitively high interest rates, in order to induce wealth owners to maintain demand for domestic assets.

The expectations of economic agents determine the demand for financial assets together with the conditions, under which risk-adjusted yields as well as the liquidity of these assets are evaluated (Paula et al. 2009, 5). An increase in perceived uncertainty would cause a shift in wealth holders' appreciation from the profitability to the liquidity of an asset, which would cause the risk premium of bonds with longer maturities and lower liquidity premia to rise. Accordingly, a lower perceived uncertainty would elevate the risk propensity of investors, rendering profitability the more important attribute of a financial asset compared to liquidity. Therefore, the liquidity preferences of investors determine their portfolio composition as well as the risk premium charged. As a consequence, investors' perceptions of risk and return determine to a large extent the conditions for the supply of corporate bonds, too. More specifically, macroeconomic context variables, such as economic growth, inflation, and exchange rate movements, together with economic policies, especially monetary policy, play a fundamental role in defining the terms for issuing bonds such as the volume issued, the yield, the maturity, etc.

Despite the relatively high level of the interest rate, demand for corporate bonds is not necessarily strong in emerging market and developing economies, because of two main reasons. First, wealth holders presumably, although not necessarily, avoid high risks, especially in scenarios with a high degree of uncertainty, because they are aware that the increased uncertainty raises either lender risks by making forecasts even more difficult or borrower risks by making funding even more costly (Minsky, 1996). Second, the risk-return tradeoff²⁴ in such

²⁴ The risk-return tradeoff describes the principle that potential return rises with an increase in risk (source: <http://www.investopedia.com/terms/r/riskreturntradeoff.asp> accessed: 06.02.2015). Low levels of uncertainty (low-risk) are associated with low

circumstances usually favors public bonds. If circumstances were different, and the policy interest rate at a very low level, signaling a low level of uncertainty, investments might be pushed towards riskier asset classes, such as corporate bonds, in search for higher yields. But at such an elevated level of the basic interest rate, the public bond is already offering a sufficiently attractive yield in a context of elevated uncertainty, so that most likely only few investors are willing to buy a riskier asset. Furthermore, a corporate bond would have to offer an even higher interest rate than the elevated base rate, which might suggest that it is an extremely risky asset. That way, the increased interest rate level might exert an adverse effect on the development of corporate bond markets on both sides of the market: A high interest rate level not only impedes companies from supplying bonds, it also suppresses the demand for corporate bonds.

Public finance for development also plays an important role in the development of a corporate bond market with regard to the yield of these debt securities, because it offers finance and funding at subsidized rates. Depending on the design of the public finance for development policies, i.e. whether they are structurally competing with or complementing other funding sources such as corporate bonds, they may either hamper or facilitate CBMD. If public finance for development hands out long-term credits at subsidized rates to the investment projects with the best risk-return potential, it will hamper the development of the corporate bond market. The most attractive companies will choose not to issue a corporate bond and pay the market interest rate, if they have the possibility to achieve funding at a subsidized rate. If, on the contrary, public finance for development purposely aims at the promotion of corporate bond market development, e.g. by co-funding companies that issue corporate bonds, this might have positive effects on CBMD in general and on the expected yield of the bonds of the co-funded companies, in particular. The expected yield would rise, because the issuing companies would benefit either from reduced funding costs or from a higher funding volume, or a combination of both.

Apart from supporting the bond issuing companies directly, the public finance for development institutions can foster CBMD by issuing corporate bonds themselves. These placements could set benchmarks in terms of the expected yield by establishing safer forms of indexation or fixed rate bonds with long maturities. Similar to the yield curve of sovereign bonds, the benchmark placements in the corporate bond market would serve as reference points for private companies. At the same time, it would help to build an investor base in the corporate bond market by attracting wealth holders to this segment of the financial markets with attractive yields together with high liquidity premia.

The expected appreciation of a corporate bond can take on positive as well as negative values, because a wealth holder might expect a bond to appreciate or to depreciate, i.e. the price of the bond to go up or down, respectively. There is an inverse relationship of the price of a bond and its yield: The price of the bond increases, if the base rate falls (and vice versa), because the (fixed rate) bond continues to pay the “old” interest rate; but due to the increased demand, the

potential returns, whereas high levels of uncertainty (high-risk) are associated with high potential returns.

bond price rises, causing its yield to decrease accordingly. The net return of an asset and its expected appreciation are positively related. Wealth holders' demand for bonds will rise, if the net return of bonds increases. Therefore, a monetary policy stance that is aiming at a stable or decreasing interest rate level fosters the promotion of CBMD by creating expectations of stable or rising bond prices.

Public debt management can exert a positive influence on the expected appreciation of corporate bonds by improving the structure of the public debt, which would raise the currency premium and therefore also the expected appreciation of any asset denominated in this currency. By prolonging terms in the public bond market, the impact of public debt management is more direct, because it would make room for corporate bonds in the shorter-term segment of capital markets, increasing their demand and, hence, appreciation expectations. Coordinated actions by monetary policy together with public debt management can raise expectations of appreciating corporate bond prices by jointly lowering the base rate and reducing the yield on public bonds, which would increase the demand for higher yielding and riskier asset types such as corporate bonds. Public finance for development institutions could also engage in the acquisition of corporate bonds in order to create expectations of appreciating prices.

It lies in the nature of financial assets, that their carrying costs, i.e. their transaction costs, are relatively low. The main difference in the cost of carrying a corporate bond compared to other financial assets might be due to regulatory or tributary reasons. A frequent feature of public bonds is, for example, that their holders benefit from tax exemptions, which lowers their transaction costs compared to other financial assets, most notably relative to corporate bonds. While such a measure intensifies the competitiveness effect and, thus, makes the development of a corporate bond market more difficult, it also promotes the development of the public bond market, which might exert a market creation effect on the corporate bond market. This market creation effect can be significant with respect to lowering the carrying costs of corporate bonds. For instance, the fees charged by brokers in the corporate bond market might be reduced markedly after the installation of an electronic trading platform. Typically, such an electronic trading platform is installed first by public debt management for the sovereign bond market, and later, the corporate bond market can either directly use the same platform or copy the functioning structure of the existing platform when creating its own platform.

The public issue of a corporate bond usually requires a credit rating as well as an annual audit and public finance for development institutions, due to their expertise in evaluating the economic prospects of companies and their credit worthiness, could offer this kind of service at lower than market prices in order to reduce the expected carrying costs of corporate bonds and, thus, promote CBMD.

2.3.3.2 Liquidity premium of an asset

Out of the four characteristics – yield (q), carrying costs (c), appreciation (a), and liquidity premium (l) – defining the net return of an asset, “the most original of the attributes identified by Keynes is the liquidity premium, a concept that became a cornerstone of Post Keynesian monetary and financial theory” (F. J. C. de Carvalho 1992, 85). Keynes emphasized the peculiarity and non-monetary character of the liquidity premium by noting that (1936, 226):

“There is, so to speak, nothing to show for this at the end of the period in the shape of output; yet it is something for which people are ready to pay something.”

The previous section already discussed some motivations for this willingness to pay, and before we turn to an analysis of the determinants of the liquidity premium of an asset, which include not only its own characteristics, but also the institutional market structure (see sub-section 2.3.3.3) as well as the micro- and macroeconomic financial structure in place, which in turn determines the currency premium (see sub-section 2.3.3.4), the concept of liquidity (premium) is explained in more detail.

Keynes defined the liquidity premium of an asset as the rate of monetary returns that a wealth holder was willing to abstain from, when he received instead “the power of disposal over an asset during a period [which] may offer a potential convenience or security” to its owner (Keynes 1936, 226; F. J. C. de Carvalho 1999). The power of disposal is not only measured in terms of how quickly and easily one can sell a given asset, but also in terms of how large the risk of capital losses are, in the sense of deviations between the observed price on spot markets and the actually realized price. In other words, the liquidity premium measures how quickly and easily the owner of the asset is able to dispose of this asset without incurring large capital losses, considering the degree of capital loss with respect to current market prices. The liquidity premium reflects the opportunity cost a wealth holder is willing to pay for keeping the more liquid asset, even though he could reach higher monetary yields with other assets. Taking the example of money as the asset with the highest liquidity premium, in Keynes’ simple model the bond gives the reference interest rate that the wealth holder is willing to waive by receiving instead the power of disposal over money, because owning money gives the wealth holder a potential convenience or security (by offering liquidity).

The liquidity premium of a car, for example, is not very high, as it might not be possible to sell it quickly without being obliged to accept a much lower price than listed. Financial assets are usually marked by higher liquidity, yet to different degrees, expressed in varying liquidity premia. To measure the liquidity premium of a corporate bond, whose liquidity in the market is usually limited due to a relatively small investor base, difficulty of comparing it to other financial assets etc., one could imagine a fictitious bond with exactly the same properties except that it would have perfect tradability, i.e. the highest liquidity premium possible. A wealth holder could be compensated with a monetary amount so that he would be indifferent between the two bonds and this monetary amount

reflects the liquidity premium of the bond. In that sense, the liquidity premium takes on a similar function as the risk premium that is common in mainstream economics²⁵.

A precondition for the issuance of securities such as corporate bonds, or in other words, for the existence of primary markets, is the smooth functioning of secondary markets (Studart 1995b, 280–81). Smoothly functioning secondary markets, in turn, depend on the continuous trading of assets, through which liquidity is provided. The provision of liquidity turns long-term securities into attractive assets for savers, who are looking for safe liquidity time machines and rarely want to be locked in a position, where they need to hold on to an asset for a long time (Davidson 1986). The liquidity of secondary markets is also related to another function of these markets: The provision of valuable information to economic actors, e.g. companies issuing securities, underwriters involved in the process of placing an issue, and wealth holders forming a demand for securities. The relevance of secondary markets as providers of information can be summarized in three main points (cf. Bain 1981, 61): First, secondary markets send out price signals that serve as benchmarks for new security issues; second, the business of financial institutions specialized in underwriting becomes less risky; and third, investors' capabilities of evaluating newly issued securities with regard to their prospective profitability are improved.

The introduction of the liquidity premium is not simply an ad-hoc auxiliary in a Post Keynesian model of uncertainty, but enables us to carry out a theoretically sound analysis of its determining factors. Several aspects of the corporate bond, apart from its (expected) yield, carrying costs and appreciation, determine its liquidity premium, including the unit size of denomination, terms of repayment, and whether it is a fixed rate or floating rate bond, and if applicable which type of indexation. For example, an indexation to the interbank rate negatively affects the liquidity by eliminating price fluctuations according to movements in the market. Furthermore, relevant factors of the issuing company, e.g. its capital market track record, rating, reputation, financial situation etc. are important determinants of the liquidity premium of corporate bonds.

Finally, the maturity of a bond has a decisive impact on its liquidity premium. The shorter the maturity of an asset, the higher will be its liquidity premium. Especially in emerging market and developing economies, wealth holders' liquidity preferences might require such an elevated level of the liquidity premium, that it becomes impossible to issue debt securities with longer maturities, even for public bonds. The short maturities of sovereign bonds mirror macroeconomic instabilities and the expectation of an unstable future. In a situation marked by uncertainties, wealth holders' demand for long-term debt securities will be low, due to high liquidity preferences. At the same time, companies postpone long-term investment projects, so that there is less demand for finance and funding. A public debt structure that is marked by short maturities could also hamper CBMD, because of its impact on the corporate

²⁵ There is an inverse relationship: A financial asset with a high liquidity premium would have to offer a relatively smaller risk premium than a financial asset with a lower liquidity premium.

financing choice: Companies more likely opt for bank credits, as short maturities make bond issues relatively more expensive, compared to bank credits (Borensztein et al. 2008a, 13). A company needs to incur large issuing costs when placing a debt security, which might only become cost-effective, if it is able to spread the costs both over a large issuance volume and over relatively long maturities.

Therefore, developmentalist state policies should employ measures, which allow companies to issue more medium- and long-term bonds. While the corporate bond market is still developing, most companies are only able to issue short-term debt. In such a situation, issues in the market for short-term (debt) securities might actually exceed the underlying demand, if public bonds are not moved to longer maturities (Mihaljek, Scatigna, and Villar 2002, 40). Hence, public debt management fosters corporate BMD by expanding the term structure. Additionally, public bonds with long maturities reflect a long-term view in the economy, a stable outlook and a confident perspective for the economy. Public debt management can exert a signaling effect by creating and extending the sovereign yield curve and by reflecting improved market sentiments in the structure of the public debt, which would foster the development of a domestic debt securities market.

As emerging market and developing economies are usually tainted by original sin, they often lack a normal yield curve. The inability to issue sovereign bonds domestically with long durations leads to a cut-off yield curve that has no values for longer maturities. In other words, when public bonds are all concentrated in the short-term, the public bond market cannot supply a yield curve. However, without a yield curve, corporate bonds lack a benchmark. "In the absence of a secondary market in risk-free debt of a comparable maturity, it will be difficult to identify the appropriate opportunity cost of funds" (Mihaljek, Scatigna, and Villar 2002, 25). Basically, that is the reason why public debt management should try to build a yield curve for sovereign bonds.

The importance of a regular yield curve for the development of a corporate bond market is underlined by considering the role of pension funds. These institutional investors need to apply their funds in secure, long-term debt securities (Turner 2002, 5). But even pension funds would prefer to hold short-term debt securities if the yield curve became inverted or markets for long-term issues were illiquid. In case of an inverted yield curve, pension funds would hold short-term paper due to profitability. If pension funds cannot be sure whether they will be able to trade long-term bonds, they will stick to more easily tradable short-term debt securities.

In order to create a yield curve, the maturities of the public debt securities need to be managed. There should be several benchmark issues with different maturities in the market. If there are no long-term issues, the yield curve cannot be expanded. Public debt management can avoid a confused debt structure by organizing the debt issues along the lines of maturity dates instead of durations (Turner 2003, 16). As developing countries and emerging markets generally face difficulties in financing the public debt and rolling-over debt close to its due date, these countries need to take advantage of windows of opportunity. That means

that the issuance of public debt securities cannot always be planned ahead and often has to be adjusted. The wrong way to manage the public debt would be to issue bonds with certain durations (e.g. a 10-year bond) whenever such a window of opportunity opens. Instead, such advantageous circumstances should be used to issue bonds with certain maturity dates (e.g. August 15th 2027), including the option to re-open and expand these bond issues. Then public debt management will find it much easier to maintain an organized debt structure as well as a flexible reaction towards changes in market sentiment.

Liquidity is also crucial in creating a yield curve, since benchmarks can only be established, if these bonds are actually traded. Without regular transactions there are no market prices defining the shape of the yield curve. When public debt management is allowed to repurchase less demanded issues, the remaining fewer issues might enjoy higher turnover ratios. That way it might be possible to improve liquidity and smoothen the yield curve.

2.3.3.3 Institutional liquidity of a market

The liquidity of an asset directly correlates with the way in which the market of that asset is designed. Among the attributes that constitute the “institutional liquidity of a market” rank in particular the density, permanence, and organization of a market (cf. F. J. C. de Carvalho 1992, 86–87; Kaltenbrunner 2011, 85). Market density is determined mainly by the number of potential buyers, because the larger that number, the easier the market will absorb additional supply. Hence, density describes how deep and tight a market is, i.e. how often assets are traded, how substitutable an asset is, how transparent the stream of information is, how costly transactions are, etc. (Orléan 1999). Permanence is the most intuitive of the three attributes and refers simply to the operating time of a market. The longer a market operates, i.e. the more permanent it is, the more liquid the asset becomes due to the increased probability of potential trades being realized, e.g. the present holder, who is looking for a buyer, actually finding one. The third and perhaps most important attribute concerns the organization of the market, which to a large extent also predetermines the density and permanence of the market. Since markets are institutions, they are created and structured through the setting of rules, definition of standards and establishment of acceptable behaviors and procedures. The clearer the institutional setting, i.e. “[t]he better organized a market is, the more orderly the manner in which we can expect the day-to-day transactions to develop” (F. J. C. de Carvalho 1992, 87), which in turn makes the liquidity of an asset more predictable.

Clear market structures help economic agents to form expectations, and an organized market additionally provides mechanisms so that expectations are less likely frustrated, because excessive and potentially disruptive fluctuations of asset prices might lead to solvency crises and should therefore be avoided (cf. F. J. C. de Carvalho 1992, 87–88; Kaltenbrunner 2011, 85). One such mechanism, containing excessive asset price fluctuations, is the institution of a market maker, whose existence is a crucial element of a well-organized market and, hence, of the liquidity of an asset (e.g. Davidson 2002). The more resources market makers

possess, the more efficient they are, because they need to be able to execute operations in the market in order to regulate prices. A market maker might need to possess substantial resources in order to be able to effectively “fight” the market, although he might actually only act on the margin, under normal conditions. This shows, once again, the relevance of economic agents’ expectations.

The efficacy of market makers is, apart from their available resources, conditioned by the extent to which price fluctuations are considered desirable in a given market, in order to signal changes in expectations (cf. F. J. C. de Carvalho 1992, 87–88; Kaltenbrunner 2011, 85). When asset prices move, this reflects at least partly alterations in economic agents’ expectations, but of course, there may also be a speculative element involved. Practically, it is impossible to identify the speculative nature of changes in asset prices, and as a consequence, the acceptance of some speculative activity is evidently necessary in order for financial markets to convey relevant information about changes in the prospective profitability of companies. The problematic role of speculation in highly sophisticated financial markets, is also emphasized by Keynes (1936, 170):

“(...) [T]he question of the desirability of having a highly organised [sic] market for dealing with debts presents us with a dilemma. For, in the absence of an organised [sic] market, liquidity preference due to the precautionary motive would be greatly increased; whereas the existence of an organised [sic] market gives an opportunity for wide fluctuations in liquidity preference due to the speculative motive.”

In Brazil, the central bank has functioned as a market maker in the money market to keep the base rate *Selic* close to its target and in the foreign exchange market in order to avoid strong volatility of the exchange rate. The central bank can increase liquidity in the secondary market of sovereign bonds through its open market operations or by using public bonds as collateral for its lending operations (Turner 2003, 15). Similarly, it could stimulate CBMD by also accepting corporate debt securities as collateral. Public finance for development institutions could also provide liquidity and the function of a market maker in the corporate bond market, for example through the establishment of a liquidity fund that would buy and sell corporate bonds according to market participants’ needs. If transactions are low because the investor base of the incipient market is too small, public finance for development institutions can play the counterpart for those market participants willing to trade.

Public debt management plays an important part in raising the institutional liquidity of a corporate bond market by exerting an already mentioned market creation effect, e.g. through the installation of an electronic trading platform. Keeping a repurchase window for sovereign bonds open ensures public bond holders that they will be able to liquidate their debt security any time before the maturity date. Public debt management needs to provide a minimum degree of liquidity in the public bond market as a precondition for CBMD, by providing the necessary infrastructure and assuring the existence of an investor base. Yet, a very high liquidity in the public bond market makes it hard for corporate bonds

to compete, because at least initially corporate bond markets will normally be less liquid, since liquidity is correlated with market capitalization, size of the issues, and the investor base. If liquidity in sovereign bond markets is artificially increased through some form of state intervention, it will be even harder for corporate issues to compete and, thus, the competitiveness effect is enhanced.

Since the existence of organized secondary markets is a crucial factor in the development of corporate bond markets and secondary market activity can be increased through the standardization of issues as well as through the expansion of the investor base, expanding the investor base not only in terms of the number of potential buyers, but also in terms of the heterogeneity of investors, including retail investors as well as institutional investors such as pension funds with a longer investment horizon, is one of the main challenges in fostering CBMD (Paula et al. 2009, 5–6). However, developmentalist state policies aiming at the promotion of a domestic market for corporate long-term debt securities have to take into consideration that, although institutional investors with a long-term investment horizon can help to raise the demand for long-term corporate bonds, their participation in these markets might also have adverse effects on liquidity, because they usually follow a buy-and-hold investment strategy.

Public debt management needs to support the emergence of institutional investors so that once installed, their size strengthens their growth and they might play a crucial role in the development of a corporate bond market by raising its institutional liquidity: “By pooling resources to a significant extent, they allow these investors to hire professional managers, to reduce transactions costs, to spread risks, and to enjoy better terms for their placement, operating in more sophisticated and diversified markets” (F. J. C. de Carvalho 1997, 482).

Monetary policy also plays an important role in determining and improving the institutional liquidity of bond markets and exerts its influence in different ways. By monitoring, regulating, and supervising the financial system, it shapes institutional as well as micro- and macroeconomic financial structures. While monetary policy can opt for institutional and structural adjustments specifically designed to promote CBMD, it may also contribute to a general effort aiming at confidence building and political stability by trying to lower the transaction costs of banks through improved banking supervision, banking reforms, and training measures; as well as by trying to develop central bank credibility through statute and personnel appointment while keeping the discount window open, in order not to unnecessarily raise reserve holding costs of commercial banks. Especially in emerging market and developing economies, the financial system is often marked by low competition in the banking sector and, as a consequence, a large spread between the base rate and the lending rate. Such a situation, with highly profitable banks charging elevated real lending rates, even in the face of relatively low monetary policy rates, might actually encourage companies to issue debt securities and therefore stimulate CBMD.

With respect to CBMD, development banks are both drivers and barriers. They provide long-term funding, that way complementing the financial system and promoting growth and development in adverse contexts. By improving the economic situation in general, they function as drivers of CBMD. Yet, by financing

and funding companies, they are also competing with corporate bond markets as a source of funding. Public banks offering subsidized credits are more attractive to companies seeking funding than corporate bond markets offering the possibility to issue a debt security at market conditions. So, they can be seen as a barrier to CBMD by exerting competitive pressure, but not only on the demand side: Public banks might also hamper CBMD, because they compete on the supply side of the corporate bond market, by issuing debt securities. In Brazil, the development bank issues debt securities directly via its subsidiary and indirectly via the treasury, when it receives capital transactions. As we have seen above, the effect of sovereign bond issuance on CBMD is not clear: It could have a market creation effect or a competitiveness effect. The same is also true for the issuance of a corporate bond by a public finance for development institution. While a benchmark placement might foster CBMD, an increasing supply of bonds with high liquidity premia from issuers belonging to the public finance for development institutions might have an adverse effect on (potential) private issuers in the corporate bond market, which can only offer assets with lower liquidity premia.

The (re-)financing needs of public banks represent a fiscal cost and as such increase the public debt, which in turn might lead to the issuance of sovereign bonds. This shows the close connection between the public finance for development institutions and the capital markets, and the bond markets in particular. A public development bank directly funding its activities on the domestic capital markets would bring the public and the private segments of the financial system even closer together. As public development banks spend their resources on investment projects, these public expenditures most likely generate a crowding-in effect, because this effect depends on the allocation of public spending.

To include corporate bonds as a complementary funding source into public finance for development schemes might improve these programs and foster CBMD. The government could install a program of combined granting of public credit and corporate bond issuing, through which companies that are eligible for a public bank's credit could choose to increase the amount funded by issuing a corporate debt security in the domestic bond market. The public bank would split the credit granted and release part of the amount directly through the credit and another part only if there was not enough demand for the corporate bond in the primary market. In this case, the public bank acquires a guaranteed amount of the corporate bond issue.

Additionally, public finance for development institutions can help to establish the necessary corporate bond market infrastructure and improve the institutional and structural determinants of CBMD. Since the liquidity of corporate bonds is, at least initially, expected to be low, there will be few, if any, transactions and, therefore, negotiations are further complicated by the lack of observable price trends. Public finance for development institutions could employ their expertise in order to provide for an index or other type of price signal, which might guide private market participants in their evaluation of corporate debt securities available in secondary markets. Furthermore, they could offer company ratings.

It is very common for public banks to provide specially designed credit lines for companies that face a funding gap during the early phases of their innovative business (UNCTAD 2008, 95). These highly innovative startup companies combine a promising business case with a very high risk to fail. Public banks should not only install mechanisms to contain losses from disappointing companies, but also develop structures for follow-up funding for the successful cases. These structures need to involve venture capitalists as well as stock and bond markets. Public banks might push the development of corporate bond markets by establishing mechanisms that allow innovative companies, which receive early financing from public banks, to become bond issuers in later stages.

In general, the set up of public finance for development schemes in a country, especially the role of its public banks and public companies, shapes to a large degree the country specific context, which is one of the “Keynesian fundamentals” (Herr 1992), on which economic agents form their expectations.

2.3.3.4 Currency premium

The liquidity premium of an asset is strongly determined by the currency, in which the asset is denominated. The endogenous nature of the main determinants in liquidity preference theory and the important role of economic agents’ expectations, actions, and positions does not only allow a political interference in the development path, but it also indicates at what economic policy and the development strategy should aim: improving the “state of confidence”, which is not for nothing one of the key terms in Keynes’ General Theory (Keynes 1936, ch.12). By improving economic agents’ “state of confidence” with respect to their expectations towards a certain country, its economic policy strengthens the currency of that country, which also exerts positive effects on corporate bond market development. The expectation formation process builds on social conventions and depends on the country-specific institutional and socio-economic context.

In this sub-chapter, we already learned how to determine the liquidity premium and the net return of an asset. For this purpose we took a closer look at the three motives for holding money and found, that different currencies are expected to differ in their ability to store wealth, on the one hand, and on their ability to meet outstanding liabilities, on the other hand, which is expressed in the currency premium. Accordingly, an international monetary hierarchy evolves, with emerging market and developing economies situated in the lower ranks, due to their lower currency premia. The currency premium reflects the liquidity premium of a currency and as such affects all assets denominated in this currency, which has important implications, especially for emerging market and developing economies and their financial system development. Additional factors, qualifying divergent liquidity premia and, hence, the rank of a country in the international monetary hierarchy, are the size of its financial markets, the operational area, where its currency is used, as well as sufficient political and economic power to underpin its financial and monetary stance (Kaltenbrunner 2011, 95–96).

While the asset side of international balance sheets, i.e. the ability of a currency to store wealth, is important, the emphasis of this thesis lies on the liability side, i.e. the ability of a currency to meet outstanding liabilities, for three main reasons: First, this thesis analyses the development of local debt securities markets, which is obviously strongly interrelated with this latter ability of a currency. Second, since wealth holders are free to choose in which currency they want to hold their assets, the existence of one currency on the top of the currency hierarchy is better explained by the liability side: Economic agents can be forced to contract debt in a certain currency. The third and most important reason is that otherwise relevant structural and relational aspects would be left out of the analysis. Minsky has drawn the attention to this point by noting that (1975, 70): "(...) a portfolio decision has two interdependent facets. The first relates to what assets are to be held, controlled, or acquired; the second relates to how the position in these assets – i.e., their ownership or control – is to be financed."

The main funding currency is on top of the international monetary hierarchy and therefore offers the highest liquidity premium, which serves as a reference to all other currencies. The diminution of the respective currency premium depends on the potential funding needs of the country in question. The less a country is expected to be able to meet its external obligations, the lower its currency premium. Kaltenbrunner (2011, 98–105) detects three structural factors that define the currency premium, i.e. the ability to meet external obligations: a country's net external debt, the cash flow to meet these foreign liabilities, and the institutional market liquidity. Hereafter, each of the three factors will be examined in more detail as well as the impact of public debt management, monetary policy, and public finance for development policies on these factors. Since the analysis is concerned with the expectations of investors regarding solvency, a broad definition of net external debt seems appropriate, incorporating any type of net (short-term) external liabilities. That means that the currency premium may not only be compromised by foreign debt, i.e. in foreign currency denominated debt, but also by (short-term) domestic assets that are held by foreign wealth holders. The impairment is not only a consequence of the emergence of currency requirements, but also due to the possibility of strong and sudden exchange rate reversals, in case foreign investors sell their domestic assets.

The fact that any external liability position, even foreign investment in domestic currency assets, implies possible exchange rate disturbances, and hence potentially lowers the currency premium, deserves special attention in the course of this thesis, because the analysis of domestic bond market development departed from the assumption, that there would be a stabilizing influence on the financial system and hence also on the currency (see also section 2.1.2 on the financial fragility literature). Therefore, it should be stressed that the impairment of the currency premium cannot be attributed to the domestic assets, but to the foreign investors, who – despite playing an important role in the development of domestic bond markets – might cause large and abrupt exchange rate movements, because every time they are funding their investments in domestic currency assets on international financial markets, they exert a direct influence on the exchange rate, by exchanging foreign into domestic currency,

and vice versa²⁶. The occurrence of currency mismatches in the balance sheets of foreign investors might exacerbate exchange rate volatility. Furthermore, the presence of foreign investors in domestic markets might aggravate exchange rate volatility, since they completely assume the currency risk by holding domestic assets, and as a consequence, they possibly react very sensitively to expected exchange rate deviations. On the whole, this interferes in the monetary function of a currency as a stable unit of account, which is why, ultimately, the sustainable development of domestic bond markets depends on the participation of domestic investors. Hence, the focus of this thesis lies on domestic bond markets, and not on bonds denominated in domestic currency, independently of whether they are issued on domestic or international markets.

The findings of the previous sections on financial fragilities (section 2.1.2 and sub-section 2.3.1.3) serve as a basis for the following discussion of the concept of currency premium and its main determinants: As the maturity of net external debt decreases, the pressure on the currency premium rises, due to the increased risk of an immediate reversal of these liabilities. This direct depreciation pressure is augmented by payment obligations on the basis of external debt, which maintain a continuous demand for foreign currency. Apart from debt service payments, dividends and profit repatriations are included, which should actually have a countercyclical effect, as they depend on the economic situation of the country, in theory. Such dividend and profit generating commitments are also expected to be less damaging for the currency premium as compared to other forms of external liabilities, because at least part of the generated resources are expected to be reinvested domestically. These commitments, however, ultimately create foreign currency obligations, too, which will sooner or later increase the pressure on the balance of payments of the country in question (e.g. Lehmann 2002; Paulani 2008)²⁷. Empirical data from the Brazilian balance of payments, for example, shows that profits and dividends stemming from previous equity investments did not act countercyclical during the crisis in 2007 and 2008. Another argument against the desirability of a strong involvement of international investors in domestic capital markets is that it detaches domestic asset price movements from local economic conditions, because any change in international market conditions might provoke an immediate sell-off of domestic assets, completely unrelated to the economic situation of the country.

Despite the negative effects of (short-term) capital inflows, the development of a domestic corporate bond market can also benefit from the participation of foreign investors, by expanding the investor base. Apart from the additional

²⁶ The same applies to domestic actors, who borrow abroad, to invest in domestic assets.

²⁷ In line with this argument, the common advice to follow a growth cum debt strategy is criticized (Nitsch 1999): The savings gap, which supposedly must be filled with external savings is – based on the reformulation of the $S=I+X-M$ equation to $I=S+M-X$ – mathematically correct, yet economically misleading. In order to move up the international monetary hierarchy, a country needs to increase investments and exports, not savings and imports. Thus, the government might be able to improve the state of confidence by implementing confidence building measures and political stability and by trying to leave the debtor position and to achieve current account surpluses.

funding resources raising the demand for corporate bonds, which nevertheless have adverse effects on the currency premium as we have seen above, foreign investors can foster CBMD by prolonging the maturity structure of corporate bonds, because these investors usually have longer investment horizons than domestic wealth holders, who are accustomed to very short terms. Furthermore, foreign investors contribute to the improvement of the corporate bond market because of their expectations with respect to certain characteristics of quality such as transparency, supervision, regulation, etc., lifting these factors up to international standards. Additionally, foreign capital flows to long-term debt securities, such as corporate bonds, have the advantage that the impact of a temporary waning on the financial situation of the issuing companies is less severe, because the company would not be threatened with default immediately, as would it be the case if it had only short-term debt and would be unable to roll-over its debt due to the slowdown of external capital flows.

The development of a domestic bond market can help to improve the currency premium through a reduction of net external debt by giving companies an additional option to exchange foreign for domestic debt. Furthermore, CBMD improves the funding options for companies that would not be able to tap international markets, because domestic wealth holders might appreciate non-pecuniary rewards stemming from nationalist appeals (Nitsch 1995, 65). Foreign exchange controls that increase transaction costs of international financial assets can be another reason why domestic wealth holders prefer domestic corporate bonds. The acceptance and stability of the local currency are not only essential preconditions for the development of domestic bond markets, but for the financial system as a whole (Priewe and Herr 2005, 158). If not even public debt can be issued in local currency, even less so corporate debt. That is why a certain amount of sovereign debt denominated in domestic currency issued in the local market, in a regional context or at an international financial center is an important prerequisite for the development of a domestic market for corporate debt securities.

In emerging market and developing economies, the reduction of their net debtor status is one of the most important contributions to an expansion of their monetary policy space, i.e. to lower the interest rate level and employ monetary policy according to domestic economic needs (Smithin 2002; Kam and Smithin 2004). The political effort to reduce the net debtor status implies a cautious stance towards financial liberalization efforts. More specifically, these countries should avoid the destabilizing effects of short-term financial flows. National treasuries and financial institutions of emerging market and developing economies have tried to induce wealth holders to acquire assets in domestic currency by introducing indexed bonds and other financial instruments (Nitsch 1995, 63–65). Although these instruments might attract funds, which would have otherwise fled abroad, there is the downside of shifting the risk bearing from the investor to the issuer, that way turning this form of funding more expensive for public and private issuer alike. This shows that not only external, but also internal debt might weigh heavily on the currency premium of a country, and especially indexed sovereign bonds increase the probability of a fiscal crisis (Nitsch 1995, 64–65). Therefore, public debt management should try to keep the fraction of indexed public debt low.

After the examination of the first factor that determines the currency premium, i.e. net external liabilities, we now turn to the other two factors that are decisive for the ability of a country to meet its outstanding liabilities by “forcing a cash flow in its favour” (Minsky 1975, 1986). The second structural factor is related to the country’s generation of income to pay for the external obligations and has been termed “foreign exchange productivity” by Minsky (1993) and Herr (1992). Both authors analyze these flows in terms of the balance of payments. Minsky identifies four tiers representing the balance of payments flows according to their ex-ante specification, distinguishing payment commitments on debt (tier 1), the trade balance (tier 2), as well as long-term capital movements (tier 3). Short-term capital movements (tier 4) are mainly introduced as a regulating factor to equilibrate the balance of payments, not denying the possible impact on the exchange rate of short-term capital flows, sometimes driven by speculation. This scheme allows the interpretation of a debtor country as having a chronic deficit in tier 1. If tier 2 flows don’t cover this deficit, in other words, if the current account is in deficit, (short-term) capital flows will have to supply foreign exchange. These capital flows, however, would not only increase the net foreign debt of that country, but also its tier 1 payments, and consequently wear the currency premium down. This illustrates why a large enough trade surplus to meet external obligations serves well as an indicator of the currency premium. The current account in equilibrium or with a positive balance serves as an autonomous source of foreign exchange, but the country might also receive an equivalent cash flow through profit and remittances from previous long-term capital outflows and labor abroad.

By promoting investments in the local economy, especially in innovative areas, in research and development, or infrastructure, public finance for development schemes contribute to the quality of the domestic currency by improving long-term expectations. Since the private sector might hesitate to invest due to increased uncertainty, the state can try to give incentives, send-out stimulating signals, delineate clearly the economic policy stance, and in this way, improve the state of confidence. In order to increase the state of confidence, economic policy should employ a development strategy, which strengthens the domestic currency. That means, that economic policy should aim at an undervalued currency, in order to promote exports. Apart from currency undervaluation, measures to promote high-technology exports and even protectionism should be considered to raise the foreign exchange productivity (Nitsch 1995, 67–68). Development policies are export- as well as investment-oriented and can be supported by public finance for development schemes. For example, a public development bank could directly finance investment projects realized abroad by domestic companies. Similarly, a public finance for development institution could grant a guarantee for such an investment project. Other measures might include privileges for companies in the export sector, which could be combined with incentives to issue corporate bonds, in order to support CBMD more directly.

The exchange rate policy should also aim at an undervalued currency in order to increase exports and demand for local currency (UNCTAD 2008, 70, 113–14)²⁸. As income from export revenues rises, domestic liquidity increases, which might foster CBMD. However, in many cases, the easy option for policy-makers seems to be the incurrence of deficits in the budget and on the current account of the balance of payments, and hence an overvaluation of the currency. In line with this, monetary policy, especially in emerging market and developing economies where the credit channel is dysfunctional due to a low credit-to-GDP ratio, might employ a tight policy stance by raising the interest rate, in order to maintain demand for the currency on foreign exchange markets²⁹. That way, the central bank mostly controls inflation via the exchange rate (E. C. de Araújo and Modenesi 2010). In other words, the overvalued currency helps to tame inflation by making imported products cheap, which then compete with domestic products, whose producers are forced to keep prices low, as well. Under these circumstances, the interest rate is not the appropriate instrument to lower inflation and, thus, needs to be overused with adverse effects on CBMD. Not only companies in the domestic market suffer from the competition of cheap imports, the overvalued currency adds difficulties in the exporting sector, too, since it turns domestic products on international markets more expensive. In this way, overvaluation further undermines the currency premium. Consequently, monetary policy in emerging market and developing economies is constrained by their low currency premium and changes in the international liquidity preferences have repercussions above all on currencies with low liquidity premia, possibly causing exchange rate fluctuations that are completely independent of domestic factors (cf. Dow 1999).

While Monetary Keynesian analysis shows that the situation of emerging market and developing economies leaves not much room for hope to improvement³⁰, there exist possibilities to climb up the hierarchy, usually with the help of some sort of public finance for development scheme (Nitsch 1999). Yet, this will only be possible for individual countries (Lüken-Klaßen and Betz 1989, 263). In a way, this guarantees the stability of the international monetary hierarchical system (Nitsch 1995, 68–69), in which the lower ranked countries, “in view of their limited monetary and productive potential” (Riese 1989, 196), are unable to counter the undervaluation strategies of leading industrial countries. Nevertheless, the government should try to improve the state of confidence and lower the interest surcharge by trying to leave the debtor position and to achieve a current account surplus.

²⁸ If the central bank succeeds in creating the expectation of appreciation among wealth holders, it would be able to lower the monetary policy rate.

²⁹ The high level of the interest rate in emerging market and developing economies is an expression of their weak currencies. Therefore, these countries often need to offer prohibitively high interest, in order to maintain the demand of wealth holders for the domestic currency (Herr 1992).

³⁰ The lower currency premium makes it difficult to acquire a more appropriate funding and move towards a safer debt structure, in order to leave this kind of vicious cycle of inappropriate financial commitments undermining the currency premium, which in turn impedes a more appropriate liability structure.

The third structural factor defining the currency premium of a country is the institutional liquidity of its financial markets and can be understood as the ability to “make positions” by liquidating assets or refinancing existing debt, in a situation where current cash flows are insufficient to meet outstanding obligations (Minsky 1986; Tymoigne 2006). In the international context, the institutional market liquidity of a domestic asset is given by the ease to convert it into the main funding currency, quickly and at a low cost. As already discussed, there are various factors that determine the institutional liquidity of a market, ranging from the properties of the asset itself, to structural and institutional factors of the market. An important element consists in the agents operating in this market, including the existence of an efficient market maker. The central bank constitutes such a market maker, providing liquidity and avoiding excessive price movements in the money and foreign exchange markets. Yet, the central bank is only able to act as a lender of last resort in domestic currency, while being restricted with respect to other currencies by its stock of foreign exchange reserves as well as the existing exchange rate regime. The central bank can try to expand its policy space further by engaging in foreign exchange swap agreements with other central banks. Developing countries and emerging markets often try to harden their currency through the build-up of foreign exchange reserves by their central banks. However, public finance for development schemes might offer a more cost-effective alternative by applying financial assets abroad, that way creating a stream of future capital inflows.

The expectation formation process implies that economic agents create a notion of an exchange rate value that they perceive as being sustainable or reasonable in the medium-term, based on the determining factors of a currency premium outlined above. It is important to remember that this concept does not define a long-run equilibrium, but allows one to evaluate the stability or sustainability of an economic situation. According to Minsky, a “critical element in explaining why financial instability occurs is the development over historical time of liability structures that cannot be validated by market determined cash flows or asset values” (Minsky 1982, 13). As discussed above (see sub-sections 2.3.1.3 and 2.3.1.4), fragility increases with the dependence on portfolio operations instead of cash flows to pay for outstanding obligations. The situation would be aggravated by maturity mismatches, such as the main dependence on short-term financing (Minsky 1992). That is why corporate finance as well as public debt management should aim at reducing foreign currency liabilities and prolonging debt maturities, in order to maintain a sustainable debt structure. Furthermore, the fraction of indexed debt securities should be lowered and exchanged for fixed rate bonds.

Even though current prices might differ from perceived sustainable values, this perception only exerts an indirect impact on current prices through long-run expectations, which are an anticipation of future values in the present. Therefore, short-run positions might be influenced by perceived deviations from the sustainable values, but there is no definitive tendency to reach these values, a process impeded by the underlying uncertainty as well as individually varying perceptions of what the correct value might be. For example, it is possible that the policy maker’s idea of an appropriate level of the exchange rate varies significantly from the exchange rate values that market participants expect over

the long run. Keynes and those Post Keynesian authors, who stress the importance of economic agents' expectations formed under uncertainty, "could not recognize any role for long run positions which could be established as gravity centres. The economy does not tend to anything over calendar time" (F. J. C. de Carvalho 1984, 224). As a consequence, economic agents' expectations, together with their perception of the appropriateness regarding financial structures as well as financial commitments might vary substantially over the business cycle (Minsky 1986).

As we have seen before (e.g. in section 2.1.2), the currency premia of emerging market and developing economies are very difficult to improve because of structural hindrances, and one of the advantages of the theoretical approach presented here, is that it allows studying the associated reasons and implications. In general, emerging market and developing countries are marked by their history as debtor countries in the international context and their currencies are placed among the lower ranks of the international monetary hierarchy. There are a few exceptional cases of countries that were able to issue debt denominated in domestic currency and others that have increasingly succeeded in raising non-debt generating capital inflows, for example flows entering the domestic stock market. Yet, even those countries could usually not recover their currency premium, due to their high level of short-term net foreign debt (Kaltenbrunner 2011, 104). This characteristic is due to the fact that the low currency premium may be offset by (apart from offering higher monetary returns, i.e. an increased interest rate) raising the institutional market liquidity, i.e. by adjusting the nature of the respective flows, or in other words, by shortening their maturity. Financial flows with short maturities increase the institutional liquidity, as they are more easily reversed and, thus, converted into the international funding currency. Hence, the lower currency premia of emerging market and developing economies lead to financial flows that are predominantly of short-term nature, which in turn causes a perpetuation of the lower currency premia due to the increased risk of unexpected and large exchange rate fluctuations. The development of a domestic corporate bond market might help to improve this tendency by offering long-term assets.

The vulnerabilities lying at the root of strong exchange rate fluctuations are created by the endogenous nature of financial flows and are ultimately a consequence of the financial integration of emerging market and developing economies in international capital markets (Kaltenbrunner 2011, 104). The financial structure of an economy is endogenously changed by decisions taken by the economic agents participating in its financial markets, that way creating fragilities. Measures aiming at the reduction of exchange rate volatility might actually prove futile, because a developing or emerging market country with good macroeconomic fundamentals, such as low inflation, a balanced fiscal situation etc., might attract an increasing stream of (short-term) capital inflows, therefore raise its stock of (short-term) net external liabilities, which in turn increases the volatility of the exchange rate. Hence, these path-dependent and self-feeding processes maintain the currency premia of emerging market and developing economies structurally weakened.

Despite the adverse influence of the structural elements outlined in the past few paragraphs on economic prospects of emerging market and developing economies, including the dependence of exchange rate dynamics on the main funding currency just as the dependence of monetary configurations on the monetary policy of the core country, there is room for economic policy, once we acknowledge that these adverse elements are the result of an endogenously determined currency premium (Kaltenbrunner 2011, 105). To explain the difficulty faced by these countries to issue domestic currency debt with their position in the international currency hierarchy differs from the original sin hypothesis (e.g. Eichengreen, Hausmann, and Panizza 2003; R. McKinnon and Schnabl 2004), in allowing a somewhat deeper theoretical analysis by departing from a theoretical framework instead of departing from an empirical observation and in offering solutions to the problem of how to move up the ladder in the hierarchy.

The appropriate development strategy should include measures to improve the functionality of the domestic financial system, considering the specific conditions of countries with a low currency premium, where a purely economic division of labor between banks, entrepreneurs, workers, and a merely regulating state is not to be expected (Nitsch 1999). Therefore, governance structures of public finance for development institutions together with adequate regulatory institutions are of crucial importance. Because there is a need to establish and maintain a favorable environment for the formation of a diversified financial infrastructure, one cannot expect a spontaneous creation of financial functionality without the intervention of the state. The state can create such a favorable environment by implementing public finance for development mechanisms, which can be supported by monetary policy. Their design should take into account that small family economies need small and short-term credits, while bigger family economies benefit from operating and current account credits, as well as an efficient payment system. The subsidized interest rate spread should be kept small, in order to increase the likeliness that only those firms and entrepreneurs demand credit, which are really in need and have profitable business ideas as well as investment projects. Furthermore, public finance for development mechanisms promote better funding conditions and should therefore include measures to improve bond market development. In early stages, the focus should lay on the public bond market in order to exploit the market creation effect for the development of a well-functioning corporate bond market.

The institutional liquidity of a market is also related to political questions of international relations. The international integration of public finance institutions is important to complement the monetary and financial power with political and economic dominance, which contributes to the ability of a currency to store wealth. The cooperation of national development banks, for example, with international institutions or foreign public banks might help to establish the domestic currency in an international context. Overall, this analysis has shown that public finance for development institutions are neither drivers nor barriers *per se* with respect to CBMD, but that it depends on how their activities are designed and whether the development of a market for corporate debt securities

is a priority or not. Public banks can foster the establishment of corporate bond markets and thus contribute to a well-functioning financial system.

This sub-section described an essential factor of the liquidity premium of an asset, the currency premium, which expresses the ability of a currency to store wealth and to meet outstanding liabilities. The net external debt of a country together with its foreign exchange productivity and the institutional liquidity of its financial markets determine its currency premium. By improving the “state of confidence”, economic policy is able to strengthen the currency and, thus, foster CBMD. Especially emerging market and developing economies should aim at an undervalued currency to generate a surplus in the current account and that way reduce their net debtor status. The Monetary Keynesian approach explains how the low currency premium of these countries constrains public debt management and monetary policy. As a consequence, these countries usually don’t advance financially without the support of public finance for development schemes. The currency premium, as an influencing factor of the liquidity premium, is one of the determinants of the total yield of an asset that were described in section 2.3.3. This section presented a model of general asset choice and made clear how the influence of three main policy variables on asset choices has implications for the development of a domestic market for corporate bonds. It concludes sub-chapter 2.3 that outlined the analytical framework to examine the impact of state policies on CBMD. The following sub-chapter will briefly summarize the main points of theory chapter 2.

2.4 Determinants of corporate bond market development and the role of the state

This sub-chapter resumes the knowledge gained in the theoretical chapter, focusing on aspects that are most relevant for the subsequent main chapter analyzing the Brazilian case. In a first step, cornerstones of each section are displayed in the chronological order of the outline. Secondly, a short presentation takes up key points related to the three policy variables. At the end of sub-chapter 2.4, the research question and hypothesis will be repeated together with the methodological approach, in order to prepare the reader for the ensuing chapter 3.

Providing the theoretical background of the thesis, chapter 2 located the development of domestic bond markets in the finance and development debate. Sub-chapter 2.1 gave an overview of this debate and emphasized three literature strands, because of their relevance for this study, dedicating a separate section to each. The first section, on the finance and growth nexus, showed that CBMD contributes to economic development. Section 2.1.2 presented financial fragility literature discussing major challenges of emerging market and developing

economies that are related to external vulnerabilities and balance sheet effects. The third section identified defining features of developmentalist state policies and guaranteed a better understanding of public finance for development institutions, including their potential to foster as well as to hamper CBMD.

The current state of research on domestic bond market development was exposed in sub-chapter 2.2, which started with a section on financial structure and its impact on economic development. The main findings of section 2.2.1 were that capital markets complement the banking sector, that CBMD is particularly beneficial for (financially) more developed economies, and that a corporate bond market better serves larger companies. The most important advantages of developing domestic bond markets, listed in section 2.2.2, include the reduction of financial vulnerabilities that are related to balance sheet effects together with maturity and currency mismatches. Furthermore, domestic bond markets support the implementation of monetary policy, including exchange rate policy, as well as fiscal policy and public debt management. Section 2.2.3 examined several preconditions and determinants of bond market development. For the case of Brazil, among the most relevant are a strong macroeconomic, legal and institutional environment, which might benefit from the presence of institutional and foreign investors; a sophisticated financial system, including sound financial infrastructure; and not only a large-sized economy, but also numerous major companies that are eligible for a bond placement. The state of the art sub-chapter closes with a literature review of research that cast a spotlight on (corporate) bond market development and the Latin American region. The specific literature analysis of section 2.2.4 revealed research gaps and underlined the need to better understand the role of the state in CBMD.

The third sub-chapter laid out a Post Keynesian framework to analyze the impact of state policies on the development of a corporate bond market. Section 2.3.1 emphasized the crucial role of funding, e.g. through bonds, in the two-fold Post Keynesian capital formation process: Economic development depends on finance, implying the creation of maturity mismatches, which cannot be dissolved, if there is a lack of long-term funding. However, capital markets might not only dissolve financial instabilities, but can also create them (e.g. through speculation). The concept of financial functionality captures this notion of opposing effects that need to be balanced out. Moreover, sub-chapter 2.3 showed that a functional financial system might require the participation of public finance for development institutions, especially in emerging market and developing economies. These economies are usually marked by structural heterogeneity and the development of a domestic market for corporate bonds works in favor of the dissemination of the monetary economy.

The wealth holder as the ultimate decision maker in a monetary economy was introduced in section 2.3.2. In the analytical framework, the decisions of economic agents (and in particular the wealth holders' portfolio decisions) determine CBMD. Their decisions are taken under uncertainty and, as a consequence, expectations are fundamental for decision making. Since the formation of expectations is always context and time specific, the framework takes structures, actors and institutions such as uncertainty reducing indexation into account. Economic agents' decisions are affected by alterations in the

structure of the public debt that are prescribed by public debt management and possibly provoke three effects on CBMD, termed competitiveness effect, signaling effect, and market creation effect. The final sub-section explained why economic agents have a preference for liquidity and choose more liquid assets over less liquid assets, *ceteris paribus*.

The third section of sub-chapter 2.3 presented a general model of asset choice, which defines the total yield of an asset in terms of its pecuniary return and liquidity premium. This premium, in turn, depends on the institutional liquidity and currency premium of the asset (market). A key determinant of the currency premium is the net external debt, underlining the ambiguous role of foreign investors. The lack of secondary market liquidity could be remedied by raising its institutional liquidity through the assignment of a market maker. An important precondition for the establishment of a corporate bond market is the existence of a regular yield curve for public bonds, which not only depends on the efforts of public debt management, but also on the collaboration of monetary policy. Section 2.3.3 furthermore emphasized the implications of different types of indexations for CBMD. In short, this section made the impact of the three policy variables on the development of a corporate bond market explicit. According to the framework, the policy variables influence the expectation formation of economic agents and, in this way, determine CBMD. In the following, the impact vectors of the policy variables are described again, emphasizing features that are most significant for the upcoming chapter 3.

One of the key objectives of public debt management coincides with its main modality to promote CBMD: to improve the public debt structure to safer forms. By exchanging external for domestic debt, the treasury generates a market creation effect; by extending the maturities of sovereign bonds and by moving towards less volatile and delicate types of indexation, public debt management exerts a signaling effect and reduces the competitiveness effect. Similarly, the creation of a regular yield curve fosters the development of a corporate bond market. Furthermore, public debt management might be interested in diversifying the investor base of sovereign bonds by opening up to foreign investors and/or by incentivizing the development of institutional investors. These types of investors can provide valuable contributions, for example, by adding demand to the long-term end of the market or by pushing for institutional market liquidity improvements. However, the broad definition of net external debt chosen here implies that foreign investors, who hold bonds, even if it is on the domestic market, raise the volume of external obligations with negative consequences for the financial as well as the exchange rate stability of the country. In addition, institutional investors such as pension funds usually follow a buy-and-hold strategy, which reduces secondary market liquidity. With respect to another measure public debt management faces a dilemma, if it wants to promote both public and corporate bond market development: In an effort to establish the domestic market for sovereign bonds, investors might be granted preferential tax and regulatory treatment, which enhances the competitiveness effect. One way to resolve the dilemma might be to extend the exceptional rules to the holders of corporate bonds.

Similar to public debt management, where the main goals are in line with the promotion of CBMD, the aims of monetary policy also correspond to necessary preconditions for the establishment of a corporate bond market. Monetary policy is expected to provide for macroeconomic stability, not only in terms of the inflation rate, but also with respect to the exchange rate. Furthermore, large and abrupt swings in the monetary base rate should be avoided in order to support a smooth economic growth path. The funding mechanism hinges on economic agents' expectations of a stable monetary policy stance. If wealth holders expect the base rate to remain stable and low, their liquidity preferences are low and, consequently, the demand for long-term assets rises. Emerging market and developing countries, on the contrary, usually suffer from high and volatile monetary policy rates. That is why monetary policy fulfills an important condition of the development of a corporate bond market, if it is able to effectively control macroeconomic instabilities without the need to exaggeratedly use the base rate. At the same time, this would allow a regular yield curve to develop, which further supports CBMD.

The third policy variable, public finance for development, by contributing to enhanced economic development and a more stabilized domestic financial system, generally also encourages CBMD, resembling the other two policy variables. However, public finance for development institutions and corporate bond markets offer the same product, in a sense: long-term funding. As a consequence, they might compete (with adverse effects on CBMD), but they could also complement each other. For that reason, it is not clear from the outset, whether this policy variable hampers or fosters CBMD. A public finance for development institution handing out subsidized loans to major companies would hamper the development of a corporate bond market, if these companies abstain from issuing bonds because of this alternative source of funding supplied by the state. Yet, public finance for development institutions might also take measures that are specifically designed to support CBMD such as the placement of benchmark issues, the application of incentives for borrowers to issue bonds, or the assignment of a market maker to raise the corporate bond market liquidity. Moreover, the activities of public finance for development institutions increase their financial needs, which might be financed by the treasury through the issuance of public bonds, or the institution directly issues bonds on the capital market. In any case, this could bring the public and the private financial system closer together, possibly causing a market creation effect for CBMD. Despite these potentially positive ramifications for the financial as well as the economic development of a country, one has to remember that public finance for development as well as developmentalist state policies imply the risk of creating dependencies, clientelism, political interferences, corruption, rent-seeking behavior and the misallocation of resources. Public finance for development institutions should therefore focus on a complementary role in the domestic financial system and act counter-cyclically, that way leaving room for the corporate bond market to develop.

3 The role of the state and its impact on corporate bond market development in Brazil

At a first glance, Brazil appears to hold all qualifications for a domestic corporate bond market and one might be wondering, why the country has apparently faced difficulties to develop a market for securities, which could have served as an additional source of funding for private companies. One important reason for the lack of such a market in several countries could be ruled out in Brazil: the small size of the economy. Brazil has continuously belonged to the ten largest economies of the world for more than two decades³¹ and has been one of the major emerging market economies, the so-called BRICS³², since the term has first been used by an investment manager (O'Neill 2001), who didn't only point out the outstanding regional position and political relevance for global issues of these countries, but in particular their growing economic importance. As a consequence of this investment recommendation, high capital inflows were observed. Since Brazil has belonged to the top-10 economies, the BRICS, as well as the G-20, neither the size of the country, nor its domestic market have been lacking sufficient potential for the development of a corporate bond market.

Further important premises for the existence of a domestic market for corporate long-term debt securities have been met, such as a highly sophisticated financial system, not only regarding the banking sector, but also with respect to the capital markets, as well as the presence of large companies that would be able to issue these bonds. The Brazilian payment system has been classified as very efficient, which can be mainly traced back to the high inflation period, when it became important to be able to perform bank transfers in real time (Listfield and Montes-Negret 1999). Moreover, the Brazilian banks have proven to be very innovative by developing and implementing state-of-the-art technology such as biometric identification at ATMs (A. Schmidt 2013). Not only the banking sector, but also the capital markets have played an important role in the Brazilian financial system and have created very sophisticated financial instruments, including various types of derivatives. According to its website³³, the securities, commodities and futures exchange BM&FBovespa, which resulted from a merger of the Brazilian Mercantile & Futures Exchange (BM&F) and the São Paulo Stock Exchange (Bovespa) in 2008, "is now one of the largest exchanges in the world in terms of market capitalization, the second largest exchange in the Western hemisphere, and the leading exchange in Latin America". The third point touched upon, the existence of sufficiently large companies in appropriate number to ensure the supply of corporate bonds, has been satisfied as well, because there

³¹ Measuring annual GDP in PPP, according to World Bank data. According to IMF data, measuring annual GDP in US\$, Brazil was among the 15 largest economies during the same period.

³² The term BRICS stands for the initials of the five emerging market countries Brazil, Russia, India, China, and South Africa.

³³ See: <http://www.bmfbovespa.com.br/en-us/bmfbovespa/sustainability/about-us/management.aspx?idioma=en-us> (date accessed: 2016/03/11).

have been several hundred publicly owned companies in the country for decades. Additionally, several Brazilian companies have been listed in the Forbes 2000 publication, listing the 2,000 largest companies (measured by means of several, weighted variables): In 2008, 34 out of the 2,000 largest companies came from Brazil³⁴, and in 2011 this number increased to 36³⁵, before it started to decrease to 33 in 2012³⁶ and 24 in 2015³⁷.

Even though various preconditions for corporate bond market development (CBMD) have been met in Brazil, the domestic private bond market was relatively small compared to other countries and also in comparison to the Brazilian public bond market. According to the study of Tendulkar and Hancock (2014), analyzing domestic corporate bond markets of 91 countries (23 advanced and 68 emerging market economies), the outstanding volume of corporate bonds in the domestic market as a percentage of the respective country's GDP was on average 169% among advanced economies and 24% among emerging market countries, in 2013. In Brazil, this ratio reached only 11%, while the stock of public bonds reached 58% of GDP in the same year. The study additionally conducted an international comparison of another measure of market liquidity, i.e. primary market issuance of corporate bonds as a percentage of GDP, producing a ranking of more than 60 countries for the years of 2004, 2007, and 2013, according to which Brazil scored relatively badly, as well, landing in 37th, 46th, and 38th place, respectively. Apparently, the large public bond market only exerted a limited market-creation effect on private bond markets in Brazil.

This dissertation will argue that one reason for the strong disproportion between public and private bond markets was related to the competitiveness effect: advantageous characteristics offered by sovereign bonds in Brazil caused wealth holders to mostly prefer them to corporate long-term debt securities. Public bond management was not able to shape the public bond market in such a way that it would provide relevant benchmarks and inducements for CBMD. Another important factor in this context was the high level of the interest rates in Brazil. The country registered extremely high real interest rates relative to other countries (cf. Figure 1).

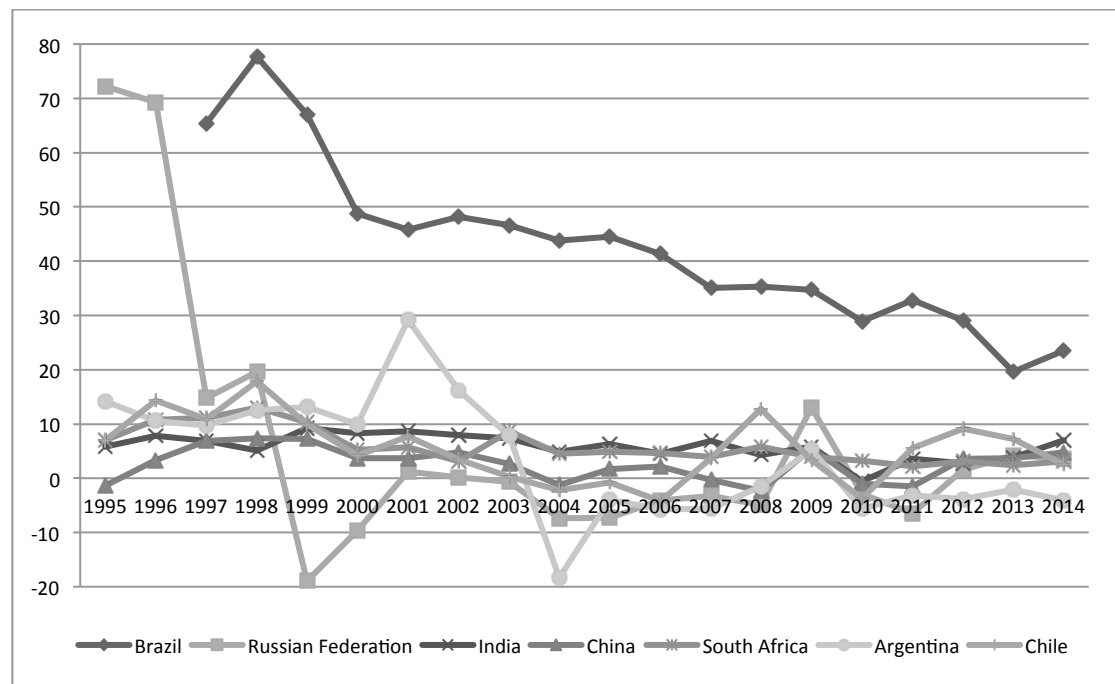
³⁴ See: http://www.forbes.com/lists/2008/18/biz_2000global08_The-Global-2000-Brazil_10Rank.html.

³⁵ See: https://en.wikipedia.org/wiki/Economy_of_Brazil#Largest_companies.

³⁶ See: https://pt.wikipedia.org/wiki/Economia_do_Brasil#Maidores_companhias.

³⁷ See: <http://www.forbes.com/global2000/list/#country:Brazil>.

Figure 1: Real interest rates³⁸, selected countries (in %), 1995-2014



Source: World Development Indicators

Similarly, the nominal monetary policy rate recorded an extraordinarily elevated average of 18.8% for the period between 1995 and 2014, although it followed a clear downward trend: The five-year averages for the periods 1995-1999, 2000-2004, 2005-2009, and 2010-2014, registered, respectively, 32.7%, 18.8%, 13.8%, and 9.8%, with the annualized monthly base rate never falling below 7.1% (Source: BACEN). On the one hand, this high interest rate level led to a situation, in which Brazilian public bonds offered high yields to wealth holders, that way increasing competition for corporate bonds. On the other hand, the increased level of the base rate deterred companies from realizing investment projects, whose rate of return was not high enough. As a consequence, the demand for funding of these companies was lower and, in turn, the (potential) supply of corporate bonds decreased.

A third aspect related to CBMD and according to which Brazil stood out as compared to international standards has been the important role that public finance for development, and especially the public development bank BNDES, have played in this country. Between January 1995 and December 2014, public banks were responsible for 44.3% of the transaction volume in the Brazilian credit market, on average per month (Source: BACEN). The BNDES has been by far larger than most national development banks of other countries and could even compete with most multinational development banks, both with respect to

³⁸ Real interest rate is (according to World Development Indicators metadata) the lending interest rate adjusted for inflation as measured by the GDP deflator. The terms and conditions attached to lending rates differ by country, however, limiting their comparability.

annual disbursements as well as in terms of total assets. For example, the BNDES disbursements in 2014 amounted to US\$ 69.9 billion compared to US\$ 7.4 billion disbursed by the Asian Development Bank (ADB), US\$ 10.0 billion by the Inter-American Development Bank (IDB), US\$ 18.8 billion by the World Bank, US\$ 78.1 billion by the European Investment Bank (EIB), and US\$ 90.1 billion by the Kreditanstalt für Wiederaufbau (KfW), while the total assets of the BNDES reached US\$ 594.5 billion compared to US\$ 106.3 billion of the IDB, US\$ 153.1 billion of the ADB, US\$ 358.9 billion of the World Bank, US\$ 594.5 billion of the KfW, US\$ 659.2 billion of the EIB, and US\$ 1.7 trillion of the China Development Bank³⁹. In short, few (if any) national development banks on a global scale were as relevant for their domestic economy as the BNDES. Furthermore, the bank has not limited its actions to the promotion of small and medium enterprises (SMEs), innovative and high technology sectors, or other structural policy measures, but pursued developmentalist state policies, served as an important instrument of industrial policy and interfered strongly in private economic activity. Yet, instead of harnessing the institutions of public finance for development to actively foster CBMD, the public system was rather a competitor of the corporate bond market, because it offered (mostly large) companies a favorable alternative for the funding of their investment projects.

After this short introduction to the empirical study of the development of a domestic corporate bond market in an emerging market country, based on the case of Brazil, the remainder of the chapter is structured as follows. Sub-chapter 3.1 gives a description of the historical development of the Brazilian financial system within its international, political, and macroeconomic context and serves as a background for the following main analytical chapter. In sub-chapter 3.2, the relevant determinants of corporate bond market development (CBMD) are examined within three sub-periods. The analysis of each sub-period, in turn, comprises a short overview of macroeconomic and regulatory developments as well as the evolution of the corporate bond market, which will then be explained in terms of the impact of public debt management, monetary policy, and public finance for development. The closing sub-chapter 3.3 resumes the main arguments.

³⁹ Sources: (ADB 2014, 13,18; BNDES 2014, 10–11; CDB 2014; EIB 2014; IDB 2015, 2; KfW 2014, 2–3; World Bank 2014, 8), values in national currencies converted to US\$ (rate of December 31st, 2014) using the website: <http://www.oanda.com/lang/de/currency/converter/>.

3.1 Development of the Brazilian financial system and the relevant context

The following presentation of the evolution of the domestic financial system together with relevant political, macroeconomic, and international events is important to contextualize the subsequent analysis of corporate bond market development (CBMD) in Brazil, because financial systems are shaped by a specific history. This sub-chapter is divided into two sections, with each one describing the development before and after the *Plano Real*, respectively. The first section gives the historic context up to the *Plano Real*, so that institutional peculiarities can be understood and factors more directly linked to CBMD can be analyzed considering how they evolved historically. The second section describes macroeconomic events in more detail, serves as a background for the analysis of CBMD in sub-chapter 3.2. and is already structured according to the respective sub-periods. Overall, economic and political events, macroeconomic developments, policy changes, institutional innovations and regulatory adjustments are presented according to their relevance for the evolution of the Brazilian financial system, and in particular with respect to factors that might influence the domestic corporate bond market.

The relevant corporate bond market in Brazil has been the market for debentures⁴⁰, not only because they have been the only long-term debt security for non-financial corporations in the domestic capital markets, but also because debentures have been the most common corporate debt securities in Brazil. That is also the reason, why there is more data and information available than about other private debt securities.

According to Brazilian legislation, a debenture is a security (see law n. 6,385/76, art. 2, I) based on a contract between the issuing company and the acquiring investors (debenture holders represented by a trustee), which gives the latter a credit right against the first, according to the terms lined out in the issue deed (law n. 6,404/76, art. 52). The company is allowed to issue more than one placement, each one divided into various series (law n. 6,404/76, art. 53). Initially, decree n. 177-A of September 15th 1893 had defined the loan as the fundamental relationship of debentures, but this concept has later been expanded by law n. 6,404/76, which has opened the possibility to issue debentures that could be exchanged for company shares (art. 172, II).

Whenever data restrictions allow it and the additional information is appropriate, this study also discusses other corporate debt instruments such as securitized debt, like the Receivables Investment Fund (FIDC⁴¹), and short-term

⁴⁰ Debentures, corporate debentures and corporate bonds will be used interchangeably throughout this study.

⁴¹ According to the Portuguese term *Fundo de Investimento em Direitos Creditórios* (FIDC).

debt securities, like commercial paper⁴². The FIDC is a receivables fund, which is often used by SMEs as it does not require the issuing company to be publicly owned, allowing it to advance its clients' payments through the issue of these papers. A commercial paper is a short-term (up to one year) debt security and its market has grown substantially during the analyzed period. Other debt securities are not treated specifically in this study, as they have been only indirectly connected to corporate funding or restricted to certain sectors, such as, for example, the mortgage-backed securities CRIs (*Certificados de Recebíveis Imobiliários*), or the different debt securities issued by financial institutions like CDBs (*Certificados de Depósito Bancário*), RDBs (*Recibos de Depósitos Bancários*)⁴³, CDIs (*Certificado de Depósito Interfinanceiro*) or Financial Bills (LFs⁴⁴).

3.1.1 Historical evolution of the domestic financial system in Brazil before the Plano Real

The focus of this study lies on the period after the implementation of the stabilization plan *Plano Real*, because the most relevant developments with respect to the corporate bond market took place during these years. Yet, in order to better understand these developments, it is important to know the historical and institutional context. Therefore, the following sub-chapters give an overview of the history of the Brazilian financial system, including a brief description of its most important institutions, with references to main economic and political events⁴⁵. The proceedings that were directly linked to the development of a corporate bond market in Brazil are given special attention, which also explains the division of the sub-chapters according to important changes in the legislation of this market.

3.1.1.1 1st phase: 1882 – 1965

With the arrival of the Portuguese Court, the first Bank of Brazil (BB⁴⁶)⁴⁷ was created in 1808, which marked the starting point in the history of the Brazilian financial system. A specific regulation of the financial system only emerged in 1920/21, when banking supervision was institutionalized by decrees n. 4,182/20 and n. 14,728/21. The first time debentures were regulated, was

⁴² In the Brazilian financial market jargon, the terms commercial paper, *nota comercial* (legal denomination), *nota promissória comercial* and *nota promissória* have been used synonymously.

⁴³ For a short description of the two securities and their main differences, see: <http://www.brasil.gov.br/economia-e-emprego/2011/09/conheca-as-diferencas-entre-cdb-e-rdb>.

⁴⁴ According to the Portuguese term *Letra Financeira* (LF).

⁴⁵ The historical overview in chapter 3.1.1. is mainly based on (ANBIMA 2014e; ANDIMA 1998; Andrezo and Lima 2007; Assaf Neto 2011; Cadier 2011; Fritz 1996).

⁴⁶ According to the Portuguese term *Banco do Brasil* (BB).

⁴⁷ The Bank of Brazil (BB) known today can be traced back to a merger between the fourth BB and the Bank of the Republic of Brazil (*Banco da República do Brasil*), in 1906.

already in imperial Brazil, in the First Corporate Law (law n. 3,150 of November 4th, 1882) and the earliest legal document to explicitly mention the term debenture, as a synonym for bearer bond, was the law n. 8,821 of December 30th, 1882. Decree n. 177-A of November 15th, 1893, known as the Law of Loans through Debentures (*Lei dos Empréstimos por Debêntures*), served as the legal basis for the issuance of debentures in Brazil until the adoption of the New Corporate Law n. 6,404/76. The proceedings in case of insolvency of an issuing company were set in decree n. 2,519 of May 22nd, 1897. British as well as US-American commercial law inspired the legal origins of debentures in Brazil.

During the transition period from the monarchy to the republic, Brazil registered rapid economic growth, but it soon turned out to be a bubble that burst and eventually developed into a financial crisis. The period became known as the *encilhamento* and as a response to this experience, a rigid legislation was passed that limited the total volume to be issued to the capital stock of the company. Afterwards, these regulations were softened again, in order to stimulate certain economic sectors.

In 1933, two important decrees were passed: The so-called Usury Law (decree n. 22,626 of April 7th, 1933) established a 12%-ceiling on interest rates, and the so-called Gold Clause Law (decree n. 23,501 of November 27th, 1933) prohibited the denomination of contracts in foreign currency as well as monetary adjustments to exchange rate fluctuations or changes in the gold price. At the time, the inflation rate was close to 2%, so these restrictions didn't have major consequences. However, due to these two decrees, an increase of the inflation rate above 12% needed to be avoided, in order for real interest rates not to turn negative. Decree n. 781 of October 12th, 1938 regulated the interests of debenture holders and became known as the Law of Common Interests of Debenture Holders (*Lei da Comunhão dos Interesses dos Debenturistas*). In the 1930s, the Brazilian economy experienced an important transition from an agricultural exporter, relying mainly on one product (coffee) and, thus, being extremely vulnerable to external crises, to an industrializing country, adhering to the strategy of import substitution industrialization (ISI).

Among the most relevant events for the financial system development in Brazil during the 1940s were the enactment of decree-law n. 2,627/40, the so-called Second Corporate Law (*Segunda lei das Sociedades por Ações*), and the creation, via decree-law n. 7,293/45, of the Superintendency of Money and Credit (Sumoc⁴⁸), which had the control over the money market and was the predecessor of the Brazilian Central Bank (BACEN⁴⁹) that was instituted two decades later. The Second Corporate Law required, among other things, the registration of a debenture issuance. Decree-law n. 7,661 of June 21st, 1945, the so-called Bankruptcy Law (*Lei das Falências*), regulated creditors' rights and proceedings of insolvent companies.

Apart from these legal innovations, Brazil continued to align its economic policy according to ISI, which required finance and funding for medium-term

⁴⁸ According to the Portuguese term *Superintendência da Moeda e do Crédito* (Sumoc).

⁴⁹ According to the Portuguese term *Banco Central do Brasil* (BACEN).

investment projects. At the time, the financial system was restricted to the banking sector, which was unable to offer adequate financing conditions. Rising inflation rates aggravated the situation. Due to the Usury Law, real interest rates became negative. The clear preference by wealth holders for tangible assets to the detriment of financial assets put pressure on the real estate market. The rising demand for credit was not attended by banks, but led to the emergence of credit and financing companies, the so-called *Financeiras*, in 1946. Initially, their intention was to finance and invest, but in practice, their activities were limited to the financing of working capital for companies and the provision of credit for the purchase of durable consumer goods. The *Financeiras* had found a way to bypass the Usury Law with the creation of so-called Participation Companies (SCP⁵⁰) whose remuneration was interpreted as profit and, hence, the Usury Law did not apply. Later, bills of exchange (*letras de câmbio*) gradually replaced the SCPs as the vehicle of the *Financeiras*. Decree-law n. 7,583/45 dealt frankly with enterprises such as the *Financeiras*, determining that the ministry of finance should regulate them. A more specific regulation was passed only in 1959 (ministerial order n. 309 of November 30th, 1959).

The mechanisms that companies used to fund the early industrialization of the country, mainly private bond and equity markets, practically disappeared since the 1930s, after the Usury Law imposed interest rate ceilings and inflation reached two digits, which was reflected in the decline of the stock of long-term loans from close to 20% of GDP in 1914 to below 2% in the 1950s (Lazzarini et al. 2015, 239). As a result, a public development bank, the National Bank for Economic and Social Development (BNDES⁵¹), was created in 1952⁵². During the first years, it mostly financed public infrastructure projects, leaving the private sector without sufficient finance and funding. It was a time of euphoria about the Brazilian developmentalist state policies, which realized large-scale projects, including the construction of the new capital Brasília, and high growth rates (between 1957 and 1961 the Brazilian GDP grew more than 8% per year).

Nowadays⁵³, the BNDES acts indirectly through certified financial institutions or directly through its two subsidiaries, the Special Industrial Financing Agency (FINAME⁵⁴), which finances the acquisition of machinery and equipment, and the BNDES Participations Joint-Stock Company (BNDESPAR⁵⁵), which subscribes securities on the capital markets. According to its official mandate, BNDESPAR focuses on companies with the prospect to enter the capital markets in the medium term, including operations of internationalization, restructuring of the company or mergers and acquisitions, as well as on companies that are already

⁵⁰ According to the Portuguese term *Sociedades em Conta de Participação* (SCP).

⁵¹ According to the Portuguese term *Banco Nacional de Desenvolvimento Econômico e Social* (BNDES).

⁵² Its original name was *Banco Nacional de Desenvolvimento Econômico* (BNDE), i.e. National Bank for Economic Development, which was changed to BNDES by decree n. 1,940 of May 25th, 1982.

⁵³ For an overview of the ideological debate about the role of the BNDES in the Brazilian economic development since the 1950s, see Torres Filho and Costa (2013).

⁵⁴ According to the Portuguese term *Agência Especial de Financiamento Industrial* (FINAME).

⁵⁵ According to the Portuguese term *BNDES Participações S.A.* (BNDESPAR).

publicly owned. Innovative small and medium-sized enterprises (SMEs) are preferably capitalized by the BNDES, as part of its mission, either through direct participation or through private equity funds. Once the investment is consolidated, BNDESPAR usually sells these securities, because its participation is supposed to be minor and transitory. Apart from the Workers' Assistance Fund (FAT⁵⁶), which is financed by mandatory contributions, the funds of the Brazilian development bank BNDES stem from budget allocations, foreign funds and the return of its own operations. The BNDES mainly works with the Long-term Interest Rate TJLP⁵⁷, which is set below the base rate by the National Monetary Council (CMN⁵⁸), on both sides of its balance sheet, implying that it uses workers' forced savings to supply companies with long-term funding at subsidized rates.

Although the BNDES is the main instrument of the Brazilian public finance for development system, there are other federal development banks with a regional focus, e.g. the *Banco do Nordeste do Brasil S.A.*, which concentrates its activities in the Northeastern part of the country, or the *Banco da Amazônia S.A.*, whose operations are concentrated in the Amazon region. Furthermore, the public finance for development system comprises of development banks on the state level as well as specific development funds. There are two more state-owned banks of the Brazilian government that play an important role in the Brazilian financial system: both the Bank of Brazil (BB) and the Federal Savings Bank (CEF⁵⁹) are universal banks and rank among the largest banks of the country, not only measured by assets but also by number of agencies, among other indicators. While the focus of BB is in retail banking, the CEF is closely related to payments of the social security system and programs of the federal government such as *Bolsa Família*.

With the beginning of the inflationary process in the 1950s, the capital markets, especially debenture loan operations, practically disappeared (ANDIMA 1998, 13). At that time, mechanisms like indexation that could protect against the loss of purchasing power of the currency, in which the bond is denominated, did not exist. Given these limitations, some short-term securities were issued with a discount on their nominal value, but legislation did not extend this possibility to debenture placements. As a consequence, there were no records of the issuance of debentures until the advent of the Capital Market Law n. 4,728 in 1965.

3.1.1.2 2nd phase: 1965 – 1976

Towards the end of the 1950s and beginning of the 1960s, with inflation and the public deficit on the rise, the ISI strategy became exhausted. Most economists analyzing the situation of Brazil at the time suggested reforms in the areas of financial market supervision; control of currency issuance, taking away the power of issuance from the Bank of Brazil (BB); and the creation of new financial

⁵⁶ According to the Portuguese term *Fundo de Amparo ao Trabalhador* (FAT).

⁵⁷ According to the Portuguese term *Taxa de Juros de Longo Prazo* (TJLP).

⁵⁸ According to the Portuguese term *Conselho Monetário Nacional* (CMN).

⁵⁹ According to the Portuguese term *Caixa Econômica Federal* (CEF).

institutions and new financing instruments, further strengthening the stock market. Additionally, it was fundamental that wealth holders returned to acquiring public debt securities, which would then serve as an important instrument to finance the public deficit and to conduct monetary policy. Despite the consensus about the necessity of institutional reforms, the democratic governments were not able to push them through. Only after the military coup and by way of authoritarian impositions, the reforms of the financial markets were realized. The implemented reforms laid the ground for the current Brazilian financial system (SFN⁶⁰), structuring it through three specific laws: law n. 4,380 of August 21st, 1964, which created the Financial System of the Housing Sector (SFH⁶¹), law n. 4,595 of December 31st, 1964, which also became known as the Law of the Banking Reform (*Lei da Reforma Bancária*), and law n. 4,728 of July 14th, 1965, the so-called Capital Market Law (*Lei do Mercado de Capitais*).

After the military coup in 1964, the SFN experienced a profound transformation process. Before, the financial markets were regulated by a number of laws and decrees without the consistency of a uniform policy. The newly structured SFN was composed of a body of institutions that were part of the financial markets, either as regulatory authorities, i.e. regulating and supervising its participants, or as financial institutions, i.e. facilitating the transfer of financial resources between savers and borrowers or, in other words, between wealth holders and entrepreneurs.

Prior to the Law of the Banking Reform, Brazil had been lacking a central bank, as various institutions had carried out its typical functions, including the National Treasury (TN⁶²), the Sumoc, and the BB. This structure was not compatible anymore with the growing obligations and responsibilities of monetary policy and financial market supervision. The law n. 4,595/64 determined the aims of the currency and credit policy, and instituted the National Monetary Council (CMN) as the organ in charge of its formulation and coordination, while the Brazilian central bank (BACEN) became the executing and supervising organ. The CMN did not only get the power to set the guidelines in the fields of monetary, credit, budgetary, fiscal, exchange rate, and internal as well as external public debt policy, but also to discipline the constitution, operation, and the activities of the participating institutions in the financial markets. The newly defined functions of the Brazilian central bank that it carries out until today included i) the currency issuance and to perform any services relating to the money supply; ii) the formulation, execution and monitoring of monetary, credit, and exchange rate policy with the aim to foster the internal as well as external stability of the Brazilian currency; iii) the formulation, execution and monitoring of the policy reigning external financial relations together with the administration and safekeeping of international reserves; iv) the supervision and monitoring of the SFN, ensuring the resilience of the financial institutions; and v) taking deposits from banks and extending credits to them, acting like a bank of the banks.

⁶⁰ According to the Portuguese term *Sistema Financeiro Nacional* (SFN).

⁶¹ According to the Portuguese term *Sistema Financeiro de Habitação* (SFH).

⁶² According to the Portuguese term *Tesouro Nacional* (TN).

Although the power of currency issuance was transferred to the newly created BACEN, it continued to attend the necessities of the Bank of Brazil (BB). The untying of BB from the currency issuance was only completed in 1986, with the extinction of the so-called Operational Account (*Conta Movimento*) of BACEN.

In 1996, BACEN circular n. 2,698 instituted the Monetary Policy Committee (COPOM⁶³) with the purpose to establish the guidelines of monetary policy and to define the base interest rate. The aim was to make the monetary policy decision process more transparent. By decree n. 3,088/99, Brazil adopted an inflation targeting (IT) regime with the CMN setting the annual inflation target, the COPOM meeting regularly to decide, according to the economic situation and inflation trends, on the required interest rate level to achieve the inflation target, and the BACEN employing the necessary monetary policy instruments in order to maintain the market interest rate on the level of the base rate target set by the COPOM. In other words, the BACEN became responsible for executing the monetary policy according to the provisions of the COPOM, which decides on the level of the base rate. The CMN sets the inflation target, which serves as a point of departure for the COPOM meetings.

Until May 2002, the BACEN had issued its own public bonds to conduct monetary policy. Afterwards, it was not allowed anymore, due to article 34 of complementary law n. 101/00, the so-called Fiscal Responsibility Law (*Lei de Responsabilidade Fiscal*), and the BACEN had to confine itself to the exclusive use of public debt securities issued by the TN. Although the BACEN stopped handing out loans to the government, it is legally not completely independent, because the President of Brazil appoints the central bank president for an open-ended mandate that can be terminated at any time by the Federal President.

The National Treasury issues public debt securities mainly to comply with fiscal policy. The vast majority of public bond issuance is realized through auctions in an electronic system of the central bank, where only licensed institutions are able to participate. In 2002, the TN created a program called “*Tesouro Direto*” with the aim to facilitate the access to public bonds for natural persons living in Brazil (Proite 2010). The secondary market is called SISBEX⁶⁴, and was created by the Stock Exchange of Rio de Janeiro (BVRJ⁶⁵). Even though the finance ministry announced the use of new names for the sovereign bonds in 2015, the former names will be used throughout this study. The new names are here displayed *in italic* with the former names (in parentheses):

Fixed rate public bonds

- *Tesouro Prefixado* (LTN): Principal and interest payment on the maturity date
- *Tesouro Prefixado com Juros Semestrais* (NTN-F): Semi-annual coupon payments

Floating rate public bonds

⁶³ According to the Portuguese term *Comitê de Política Monetária* (COPOM).

⁶⁴ According to the Portuguese term *Sistema de Negociação de Títulos Públicos* (SISBEX).

⁶⁵ According to the Portuguese term *Bolsa de Valores Rio de Janeiro* (BVRJ).

- *Tesouro SELIC (LFT)*: Principal and interest payment on the maturity date; daily return indexed to the base rate SELIC
- *Tesouro IPCA+ com Juros Semestrais (NTN-B)*: Semi-annual coupon payments; return indexed to the inflation rate (IPCA)
- *Tesouro IPCA+ (NTN-B Principal)*: Principal and interest payment on the maturity date; return indexed to the inflation rate (IPCA).

Although there already existed stock exchanges, joint-stock companies and stockbrokers in Brazil before the 1960s, the capital markets did not play an important role in the Brazilian economy and were not regulated by a specific legislation. This changed with the enactment of the Capital Market Law (law n. 4,728/65), which represented a central element of the new regulation of the SFN and aimed at the organization and development of the capital markets as a distinct segment from the banking sector. The CMN and the BACEN were put in charge of regulating and supervising the capital markets. For example, the CMN set the regulations according to which the BACEN monitored the stock exchanges, which nevertheless were granted administrative, financial and patrimonial autonomy and the principle of self-regulation was preserved. Brokerage firms needed to be a member of the stock exchange in order to intermediate trades. Companies had to be registered at the BACEN so that their securities could be traded on stock exchanges.

The Capital Market Law also established various new terms and conditions for the issuance of debentures. The new legislation allowed i) monetary adjustment clauses, removing the barrier to CBMD created by the Usury Law in a context of high inflation; ii) the endorsable form, which was advantageous compared to bearer bonds due to its lower tax burden (from the investor's perspective) and because of its registration (from the regulator's point of view) iii) the conversion into company shares, iv) transactions that were detached from subscription rights of the issuing company's capital, and v) joint obligation of the financial institutions to accept the debentures. Furthermore, the law raised the limit on the issuance volume by taking the equity capital (*patrimônio líquido*) as the reference instead of the capital stock (*capital social*) and regulated the procedure of the public issuance of debentures. CMN resolution n. 18 of February 18th, 1966 regulated investment banks and development banks, setting the parameters for the provision of their joint obligation to accept debentures. In 1968 and 1972, the CMN passed resolutions n. 88 and n. 214, respectively, which specified the registration requirements for public issues of securities, in particular of debentures. CMN resolution n. 109 of February 4th, 1969 regularized the issuance of convertible debentures.

The financing conditions of the housing sector were also restructured during this period, and the national housing bank (BNH⁶⁶) was created as a key part of the Financial System of the Housing Sector (SFH⁶⁷), according to law n. 4,380/64. In 1986, the BNH was liquidated and most of its financial resources, stemming from

⁶⁶ According to the Portuguese term *Banco Nacional da Habitação* (BNH).

⁶⁷ According to the Portuguese term *Sistema Financeiro de Habitação* (SFH).

the Employees Severance Guarantee Fund (FGTS⁶⁸), the Savings Account (*Caderneta de Poupança*) and other sources, as well as its functions and responsibilities were transferred to the Federal Savings Bank (CEF), which had been founded in 1861 by Emperor Dom Pedro II and turned into the main agent of the SFH nowadays.

One of the most important tributary alterations was the introduction of the Monetary Adjustment Law (*Lei de Correção Monetária*) n. 4,357 of July 1964, because the lack of this instrument had led to the taxation of illusory profits and had incentivized the delay of payments. Not only the tax collection was adjusted to inflation, but also newly created public debt securities, the so-called Re-adjustable Obligations of the National Treasury (ORTNs⁶⁹). The same principle of indexation, i.e. monetary adjustment, was applied to a broad system of controlled prices and gradually led to the indexation of practically all contracts in the economy. While the new regulation, allowing for monetary adjustments, i.e. positive real interest rates even in a context of high inflation rates, resolved some of the most pressing economic and financial issues of Brazil at the time, it caused new problems by creating expectations of rising prices, that way reinforcing the inflationary process. Several funds were created that served as important sources of compulsory savings, like the FGTS, the Social Integration Program (PIS⁷⁰), or the Public Servants' Investment Fund (PASEP⁷¹). While the CEF has administered the assets of the FGTS, which played a fundamental role in the consolidation and expansion of the SFH, the assets of PIS-PASEP⁷² have been administered by the BNDES since 1974 and represent the main revenue source of the FAT. New rules for institutional investors arose through the regulation of insurance, capitalization, and consortium operations.

On March 13th, 1974, law n. 6,024 was implemented and set detailed rules for the processes of intervention and extrajudicial liquidation of financial institutions. In 2005, the New Bankruptcy Law (*Nova Lei de Falências*), law n. 11,101/05 was issued and, by generally not applying to financial institutions⁷³, maintained the approach of the former legislation (decree-law n. 7,661/45) of submitting certain companies to distinctive regimes. The law n. 6,024/74 conferred far-reaching powers in these processes to the BACEN, which had a large decision-making scope and assumed the roles of judge, legislator, and executor. As both processes (intervention and extrajudicial liquidation) were extreme measures with potentially unsettling effects, the government created alternative measures with law n. 9,447/97, leaving it up to the BACEN to decide which to apply. Afterwards, the scope of measures was broadened even further with the creation

⁶⁸ According to the Portuguese term *Fundo de Garantia por Tempo de Serviço* (FGTS).

⁶⁹ According to the Portuguese term *Obrigações Reajustáveis do Tesouro Nacional* (ORTNs); with the passing of decree n. 2,283/86, ORTNs were renamed to National Treasury Obligations (OTNs, according to the Portuguese term *Obrigações do Tesouro Nacional*).

⁷⁰ According to the Portuguese term *Programa de Integração Social* (PIS).

⁷¹ According to the Portuguese term *Programa de Formação do Patrimônio do Servidor Público* (PASEP).

⁷² Complementary law n. 26/75 joined the two funds under the new name PIS-PASEP.

⁷³ Law n. 6,024/74 set out certain situations, in which financial institutions were declared bankrupt.

of RAET⁷⁴, PROER and PROES. The creation of the Credit Guarantee Fund (FGC⁷⁵) was also related to the topic of financial institutions with difficulties.

Although operations that were resembling leasing had already been carried out during the 1960s, it was only in 1974 that leasing operations were explicitly regulated according to law n. 6,099. It is important to point out that, even though leasing companies were classified as financial institutions, they were allowed to issue debentures, since they didn't receive deposits from the public.

Until the 1930s, Brazil had obtained foreign funding mainly through loans and financing, borrowed in most cases by the federal government, states, or municipalities. In 1962, the Foreign Capital Law (*Lei de Capitais Estrangeiros*) n. 4,131/62 was passed and represents until today the basic statute for foreign capital in Brazil. Later, the subject was additionally disciplined by CMN resolution n. 63/67 (allowing banks to raise external funds⁷⁶), BACEN circular letter n. 5/69 (regulating bank accounts of non-residents⁷⁷), and the Foreign Capital Department of BACEN (FIRCE⁷⁸) announcement n. 10/69 (requiring previous consent of the BACEN for foreign capital transactions). CMN resolution n. 2,770/00⁷⁹ changed and consolidated the regulation of loan operations with foreigners, as part of the National De-Bureaucratization Program (*Programa Nacional de Desburocratização*). The Foreign Capital Law also instituted the need to register any kind of international capital flow and defined the tax regulations. An additional tax on foreign capital remunerations exceeding 12% per year was introduced by law n. 4,390/64. This elevated taxation of foreign capital was only removed by law n. 8,383 in 1991.

In 1975, the decree-law n. 1,401 created foreign investors' investment trusts, which did not succeed in attracting large flows of foreign capital inflows, mostly due to several restrictions and the high taxation. At the same time, the state was able to attract large foreign capital inflows, representing a first wave of external indebtedness, which was officially justified as necessary for the internal growth. Due to the lack of long-term funding mechanisms in Brazil, the country supposedly needed to fall back on external sources, which were available, because of profound changes and high liquidity in the international financial system. The Brazilian government had not issued public bonds abroad for more than 40 years⁸⁰, when it returned to international financial markets in 1972, mostly through the issuance of bonds and notes. The first of these bond issues

⁷⁴ The Temporary Special Administration Regime (RAET, according to the Portuguese term *Regime de Administração Especial Temporária*) was established by decree-law n. 2,321/87 as a response to the difficulties of commercial banks, especially those owned by the states.

⁷⁵ According to the Portuguese term *Fundo Garantidor de Créditos* (FGC).

⁷⁶ Hence, „operation 4,131“ became a synonym for a direct foreign loan and „operation 63“ for an indirect foreign loan.

⁷⁷ For a long time, bank accounts of non-residents were called “CC5 accounts” according to the Portuguese term *Carta-Circular n° 5/69*.

⁷⁸ According to the Portuguese term *Departamento de Capitais Estrangeiros do Banco Central do Brasil* (FIRCE).

⁷⁹ Revoked by CMN resolution n. 3,844/10.

⁸⁰ In 1931, the Brazilian government issued a so-called „Funding Loan“.

was denominated in European Currency Units (ECU) and the second in Deutsche Mark (DM) and both were placed on the German market, while a third issue during that year was placed in the USA, denominated in US\$. In October 1973, Brazil participated in the newly established Japanese market for foreign issuers. Shortly afterwards, the international bond market practically came to a halt due to the oil crisis, but already in June 1974, Brazil was able to make another issue, this time on the Arabian market, recycling petrodollars.

While all of these debt securities were issued by the Brazilian state, in 1976, for the first time, a Brazilian company issued a bond abroad. The example was set by *Companhia Vale do Rio Doce*⁸¹ and soon followed by other Brazilian companies, such as *Petrobras*, *Light*, *BNDES*, *CESP* and *Eletrobrás*, all of which were state-owned companies at the time. Just like it was the case with the public bond issues, the German market was chosen for the initial bond issues of these companies, because these investors readily accepted the placement of Brazilian bonds⁸². From that year onwards, Brazilian companies as well as the state started to play an increasingly important role on international bond markets. Due to high international liquidity and low interest rates, emerging market countries accumulated, less through bond issuance and more through bank loans, large external debts during the 1970s, which later caused severe problems for these countries, primarily after the second oil crisis in 1979.

In the late 1960s and early 1970s, Brazil experienced a high-growth period that became known as the Economic Miracle (*Milagre Econômico*). A successful reform process and favorable external conditions were the main reasons behind the 62.0% accumulated growth of Brazilian GDP between 1967 and 1973 with average annual growth rates of about 10.5% (Andrezo and Lima 2007, 85). Inflation rates were decreasing, from 38.0% per year in 1966 to 15.4% in 1973. In the following years, prices rose faster again (about 28.0% in 1974/75 and about 42.0% in 1976/77). Euphoria about the Economic Miracle raised profits and led several companies as well as individual and institutional investors to enter the stock exchanges. At the end of the 1960s, the government applied tax incentives to foster capital market development and succeeded in raising the number of publicly owned companies that were registered at the BACEN from 289 in 1968 to 493 in 1971. Furthermore, the trading volume of the main stock exchanges increased significantly, from CR\$ 416 million in 1968, to CR\$ 2.46 billion in 1969, and CR\$ 4.55 billion in 1970.

In 1970-71 the Brazilian stock market grew rapidly and the fixed-income market became less attractive (U06 2011). Investment funds, which were subjected to a more detailed regulation after 1970⁸³, were obliged to invest at least 60% of their assets in company shares or convertible debentures, yet not more than 40% in fixed-income securities. All of this resulted in the 1971 Brazilian stock

⁸¹ Today called *Vale S.A.*

⁸² Nowadays, Brazilian companies preferably place their bonds and notes on the Euro Multilateral Trading Facility (Euro MTF) of the Luxembourg Stock Exchange, which registers the highest trading volume of these debt securities, together with the London Stock Exchange.

⁸³ Following CMN resolution n. 145/70, which does not apply anymore, but was similar to current regulation.

market boom, which soon turned out to be a bursting bubble. As a consequence, investors fled from the stock exchanges and the confidence of investors had to be regained, while first signs of rising inflation appeared. In this environment of high uncertainty, together with the first oil crisis in 1973-74, investors were not accepting fixed rate debt securities anymore. At that time the demand of the floating rate public bond ORTN increased.

Despite a global recession in consequence of the first oil crisis, Brazil maintained its growth path due to strong state intervention according to the Second National Development Plan (II PND⁸⁴), which covered the period between 1975 and 1979. Inflation as well as deficits in the trade balance started to pose a problem. In order to regain the investors' confidence, the government tried to build a more complex institutional framework for the capital markets during the 1970s, similar to the restructuring of the banking sector in the 1960s.

3.1.1.3 3rd phase: 1976 – 1995

During the 1970s, the sophistication of the institutional framework of the Brazilian capital markets increased thanks to the creation of the Securities Commission (CVM⁸⁵) and the new Corporate Law. The financial markets developed with the implementation of the SELIC together with a more detailed legislation of the intervention and extrajudicial liquidation of financial institutions. Furthermore, laws were passed to regulate leasing companies as well as important institutional investors, such as private pension funds, investment funds, and foreign capital flows. Despite the efforts to promote the development of the financial markets, the state continued to play a major role in the Brazilian financial system and the economy, in general. The institution of monetary adjustments was created as a means to correct for the distortions caused by inflation. It was believed that inflation would soon return to lower levels and monetary adjustments could therefore be abolished shortly, as well. Instead, inflation continued to rise and ever more areas of the economy implemented indexation mechanisms, which ended up causing distortions themselves. The period was also marked by large external indebtedness and high capital inflows into the country.

At the time of the enactment of law n. 4,728/65 (the so-called Capital Market Law), no necessity was seen in creating a special agency for the incipient Brazilian capital markets, so that the BACEN was charged with the regulation and monitoring of both, the banking and the capital markets. The boom of the stock exchange in the early 1970s changed this evaluation and the government perceived that the accumulation of these functions in one institution was not appropriate anymore. A specialized regulating body for the formulation of rules that determined the issuance and trading of securities as well as the disclosure of data about the issuing company was needed. Therefore, the government created the CVM in resemblance to the US-American Securities and Exchange

⁸⁴ According to the Portuguese term *II Plano Nacional de Desenvolvimento* (II PND). The I PND for the period 1972-74 had pursued practically the same goals.

⁸⁵ According to the Portuguese term *Comissão de Valores Mobiliários* (CVM).

Commission (SEC), by law n. 6,385/76. As part of the restructured regulating body, the CMN defined the policy to guide the organization and operation of the securities market, regulated the use of credit in this market, and set general guidelines for the CVM. The BACEN continued to be responsible for the monitoring of the financial markets as a whole, but certain assignments were transferred to the CVM, which became the agency in charge of disciplining, monitoring, and developing the securities markets.

The CVM was created as an autonomous body, tied to the ministry of finance, and was assigned a wide variety of tasks in the securities market, including regulation, registration, monitoring, imposition of penalties, and promoting the market development. It was in charge of lining out the regulatory framework that derived from the new Corporate Law as well as from law n. 6,385/76. The CVM was responsible for the constant supervision of the securities market activities and services, the companies listed on the stock exchanges, and the divulgation of information about the market, its participants as well as the traded values. Additionally, it was expected to engage in mentoring activities for the agents of the securities markets or any other investor. Furthermore, the CVM had to manage the registration of publicly owned companies, the issuance of securities, audit firms, consultants, and other market participants, by lining out the specifications of the registration as well as the cases, in which the registration would be dispensed. The supervision of the stock exchanges was also transferred from the sphere of responsibility of the BACEN to that of the CVM, which neither changed their administrative, financial and patrimonial autonomy, nor the important role the stock exchanges played in assisting the regulating body by supervising its members and the operations carried out on their market places.

As a consequence of the run on the stock exchange and with the aim to regain wealth holders' confidence in equity securities, understanding that the current regulation did not offer sufficient protection to minority shareholders, the government did not only create the CVM, but also established a new Corporate Law (*Lei das Sociedades por Ações*). This law n. 6,404/76, amended by laws n. 9,457/97 and n. 12,431/11 among others, has served until today as the legal basis for the establishment and operation of joint-stock companies. An important reform of this law was the compulsory monetary adjustment of permanent assets and net equity, in order to make the inflationary impact on the assets and liabilities of a company explicit and show its actual economic and financial results⁸⁶.

The main legal innovations with respect to debentures of law n. 6,404/76 included i) the extension of possible types of debentures to be issued; ii) the setting of new limits for the issuance volume of debentures, tying it to the guaranty offered, as well as the creation of the subordinated debenture that had no issuance limit; iii) the permission to issue debentures with their nominal value denominated in foreign currency and their placement abroad; iv) the creation of the legal figure of the trustee⁸⁷ replacing the institution of the

⁸⁶ Law 9,249/95 abolished the monetary adjustment of the balance sheets.

⁸⁷ The trustee was also regulated by CVM instruction n. 28/83.

Common Interests of Debenture Holders (*Comunhão de Interesses dos Debenturistas*); v) the definition of the issue deed registration, according to the terms and conditions accepted by the CVM; vi) the provision that authorized financial institutions received permission to issue debenture bills (*cédulas de debêntures*⁸⁸); vii) the creation of subscription bonuses that could be attached to the debentures as an additional advantage; viii) the assignment of competences to the CVM empowering the commission to control and set the rules for the issuance of debentures.

The new Corporate Law gave the companies more freedom in defining the benefits that the debentures would provide for their holders. Furthermore, it allowed the annual general meeting of a company to delegate the deliberation about the possibility to issue debentures as well as the specifications of the issuance to the board of directors. The new legislation also increased the alternatives with respect to the kind of guaranties from two (real or floating) to the following four: i) real guaranty (collateralized by a specific right to a real estate or other physical property) with the issuance volume limited to 80% of the value of the collateral; ii) floating guaranty (collateralized by all the goods of the issuing company, ranking the holder of the bond above all other creditors, while not impeding the company to trade its goods) with the issuance volume limited to 70% of the accounting value of the unsecured assets; iii) unsecured (backed only by the capacity of the cash flow of the issuing company with equal rights as the remaining creditors) with the issuance volume limited to the value of the capital stock of the company; iv) subordinated (ranking only above shareholders) without limitations as to the issuance volume.

The creation of the CVM as well as the reformulation of the Corporate Law aimed at strengthening the companies in the private sector and at improving the efficiency of the securities markets. On July 15th, 1977, the government passed law n. 6,435 that regulated private pension funds with the motivation, among other things, to improve the channeling of funding resources to Brazilian companies. The financial applications of the pension funds had to follow the rules established by the CMN. Closed pension funds were disciplined by decree n. 81,240/78 and defined as not-for-profit organizations, while open pension funds were disciplined by decree n. 81,402/78 and could be incorporated either as a not-for-profit organization or as a joint-stock company.

BACEN circular n. 466/79 of October 22nd, 1979⁸⁹ created the Special System for Settlement and Custody (SELIC⁹⁰), an electronic system designed for the registration and liquidation of financial transactions with public bonds⁹¹ as well as for the custody of these securities. The SELIC was an important breakthrough in terms of reducing the costs and risks involved in such transactions. Prior to

⁸⁸ Term used in law n. 9,457/97; before, these debenture bills were called *cédulas pignoratícias de debêntures*.

⁸⁹ Currently, the SELIC is regulated by BACEN circular n. 3,857/12.

⁹⁰ According to the Portuguese term *Sistema Especial de Liquidação e Custódia* (SELIC).

⁹¹ Initially, the SELIC was called Special System for Settlement and Custody of National Treasury Bills (*Sistema Especial de Liquidação e Custódia de Letras do Tesouro Nacional*), because it was restricted to operations with public bonds, but the name was adjusted, when the system was opened to include interbank deposits.

this, public bonds were physically issued and their custody was a manual process, from the storage to the movement of one bank vault to the other. These processes implied large risks of fraud or loss, which led the National Association of Financial Market Institutions (ANDIMA⁹²) and the BACEN to sign an agreement about the development of the SELIC. In the new system, the registered participants electronically communicated their trading operations to the system, which then transferred the bond to the buyer and created a credit on the seller's account. The financial settlement of the operations was charged directly to the account of bank reserves at the end of the day according to the net result of the participant. As of April 22nd, 2002⁹³, the settlement of SELIC operations were processed on a real time gross basis, which was an important adjustment to the original design of the system, because the BACEN was not any longer exposed to the risk that an institution bought a bond, but actually lacked sufficient reserves to pay for it. The new system also increased the control over bank reserves. Nowadays, the SELIC is the central depository of public debt securities and operates modules through which the public bond auctions are realized. Furthermore, secondary market operations are registered and liquidated. Additionally, the SELIC settles the rediscount as well as open market operations related to the conduct of monetary policy. The base rate SELIC is derived from the interest rates that are charged during the daily trading operations registered in the SELIC. The SELIC rate represents an important benchmark in Brazil as it reflects the interest paid on sovereign debt securities.

In the end of the 1970s, Brazil faced an economic crisis, which brought external capital flows to a halt and caused a rapid expansion of the internal debt. Companies turned to autonomous financing options, such as stocks and debentures, where the latter instrument only started to be effectively used after the enactment of law n. 6,404/76. Yet, even with the improvements of the new Corporate Law and the institution of the CVM, full development of the Brazilian debentures market was, until 1978, hampered by broad public finance for development policies. While the primary sector (agriculture and mining) received subsidized credits or nonrefundable grants, the secondary sector (basic industry and manufacturing sector) had access either to public long-term funding programs when the company was domestically owned, or to more favorable borrowing terms abroad in case of foreign held companies. The construction industry, in turn, was linked to public investments and the SFH. Furthermore, a large fraction of the companies in the tertiary sector were state-owned companies that could rely on public resources. Due to such a wide range of public finance for development options, only few companies opted for debenture issuance as a funding source.

The domestic economic situation towards the end of the 1970s had already been complex and instable, when the second oil crisis in 1979 showed the external vulnerability of the Brazilian economy. The worst effect of the crisis was the

⁹² According to the Portuguese term *Associação Nacional das Instituições do Mercado Financeiro* (ANDIMA).

⁹³ From that day on, operations with Interbank Deposits (DI, according to the Portuguese term *Depósitos Interfinanceiros*) were not any longer processed in the SELIC, but exclusively in the CETIP.

increase of the international interest rate level at a time, when the Brazilian debt was on the rise, because the country's growth had been based on external financing. When the Brazilian government turned to the domestic bond market to finance its debt, pressures on the interest rate rose, which, in turn, hampered the economic growth process.

The 1980s became known as the lost decade, because the period was marked by low growth rates together with increasing external debt and a series of unsuccessful attempts to bring inflation under control through the implementation of stabilization plans. In the financial markets, a few changes stood out: The emergence of the futures and options market, the managerial reorganization of the public financial institutions and the creation of the Clearing House for the Custody and Financial Settlement of Securities (CETIP⁹⁴) as well as the Appeal Court of the SFN (CRSFN⁹⁵), the so-called "*Conselhinho*", and the creation of universal banks. Article 192 of the 1988 constitution regulated the domestic financial system SFN. At the end of the decade, efforts to make financial instruments more flexible showed effects, as the inflow of foreign capital into the country increased. Nevertheless, the financial system continued overly regulated. In political terms, the 1980s were marked by the transition from the military regime to the New Republic with the main goal to contain inflation and realize a gradual opening, both economically and politically.

In 1982, with external credits ceasing and capital flowing out of the country, the Brazilian government decided to seek support from the International Monetary Fund (IMF). During the following 19 years Brazil drew on the IMF another 17 times, always due to insufficient funds in foreign currency to close the external balance. Only in 2005, Brazil paid off all its debt to the IMF. While the 1982 IMF program was able to revert the deficit in the trade balance into a surplus in 1983 and 1984, two key problems were not solved: The inflation rate continued to rise and the budget deficit was not closed, since it was the public sector that needed foreign currency to pay for its external debt, but the trade balance surplus was mainly benefiting the exporting sector. The government could choose from three alternatives to solve the problem, but neither the first, to raise taxes, was a real option, because of the recession and the already high tax burden, nor the second, to issue currency, because it would counteract the inflationary control attempts. Therefore, the government decided on the third option, i.e. to pay its external debt by taking on internal debt, under increasingly bad conditions, i.e. ever higher interest rates and ever-shorter maturities.

The large supply of high-yielding public bonds had adverse effects on the Brazilian stock exchanges, because of the higher risk involved in acquiring company shares compared to sovereign bonds. In 1982, the government created a subsidiary of the BNDES, the BNDESPAR. It was supposed to temporarily acquire shares of companies with funding needs, without assuming corporate control. At the same time, BNDESPAR would stimulate the Brazilian stock

⁹⁴ According to the Portuguese term *Central de Custódia e Liquidação Financeira de Títulos* (CETIP).

⁹⁵ According to the Portuguese term *Conselho de Recursos do Sistema Financeiro Nacional* (CRSFN).

exchanges by filling the gap of the absent private investor. From 1984 onwards, the stock market was recovering strongly, mainly due to growth expectations that were related to lower interest rates and rising consumption caused by one of the economic plans, the so-called *Plano Cruzado*. However, in 1987 the bubble burst on the stock exchange, which only recovered six years later.

The second half of the 1980s was characterized by successive stabilization plans, strong macro-economic instabilities including oscillating inflation rates, worsening of the public budget, exchange rate difficulties and external debt restructuring. Within three years, the Sarney administration (1985-1990) replaced three finance ministers, each employing a different stabilization plan, so that a wide range of measures to contain inflation were implemented, including the freezing of prices and wages, exchange rate devaluations, credit restrictions, and the creation of new currencies, but little was accomplished to reduce public expenditures. On October 5th, 1988, the new constitution was enacted. Since it envisaged a social welfare state, various new social benefits were installed and, as a consequence, fiscal imbalances and government financing needs increased even further, leading to rising interest rates and inflation.

The main innovations in the financial markets during the first half of the 1980s included regulations about derivatives (CVM instructions n. 14/80 and n. 19/81) and factoring⁹⁶ (BACEN circular n. 703/82), as well as the creation of investment clubs (CVM instructions n. 40/84, n. 45/85, and n. 54/86). During the second half of the decade, the CETIP and CRSFN were created and the public banking system was restructured.

The BACEN, the ANDIMA, and a few financial institutions created the CETIP for the registration, custody and financial settlement of operations with private fixed-income securities and public bonds that were not listed at the SELIC. Established in 1984 and starting operations in 1986, it was based on a similar concept as the SELIC, i.e. the CETIP was an electronic system related to registration, trading and settlement of assets and securities, as well as a central securities depository (CSD). The market immediately benefited from the new system, because the electronic form made the physical issuance and transfer of securities obsolete, that way reducing fraud and loss, while making the processes more efficient and faster. The CRSFN, in Brazil called "*Conselhinho*", was instituted by decree n. 91,152/85 as an appeal court with the assignment to judge, in the second and ultimate administrative instance, actions against BACEN as well as CVM decisions about penalties, taking over this function from the CMN. In 1986, the government decided to reorganize public finance and the state-owned financial institutions, resulting in the liquidation of the BNH and, more importantly, a clear separation of accounts and functions of the BACEN, Bank of Brazil, and the National Treasury.

Decree-law n. 2,290/86 brought back monetary adjustment mechanisms, and in some sectors even daily adjustments, by allowing from March 1987 onwards, the financial intermediation and indexation of OTNs, based on the variations of the

⁹⁶ In Brazil, several terms have been used with the same meaning of „factoring“, including *fomento mercantil*, *fomento comercial* and *faturização*.

BACEN Bill of Exchange (LBC⁹⁷). Public bonds with floating rates were able to avoid a collapse of the financial system within a context of extremely high inflation rates, and allowed the private banks to work very profitable (U06 2011). During the high inflation period, Brazilian banks developed a lucrative business model: They received sight deposits at zero operational cost and invested these funds with monetary adjustment. The prospect of large earnings and a new regulation, CMN resolution n. 1,524/88 allowing Brazilian financial institutions to be organized as universal banks (*bancos múltiplos*), resulted in the sudden spike in the founding of banks. Between 1988 and 1989 alone, more than sixty new banks were incorporated.

Due to the strong competition between the two main Brazilian stock exchanges, several spot market rules were softened after 1984 and the stock exchanges adjusted their options market to make them more attractive, which resulted in highly leveraged operations. In 1989, several investors and brokers were not able to settle their operations and needed to file bankrupt. As a consequence, the regulation of the futures and commodity exchanges, stock exchanges, brokerage firms, and securities dealers was revised (according to CMN resolutions n. 1,645, n. 1,656, n. 1,655, and n. 1,653, respectively, which were all passed in 1989) and these companies were prohibited to offer their clients financing operations.

Until 1980, the debentures market was highly concentrated, on both sides of the market. About half of the bonds were in the portfolios of private pension funds and the extinct, so-called fiscal funds 157 (*fundos fiscais 157*)⁹⁸, while the remainder was mostly part of the technical reserves of the insurance companies and financial institutions, leaving only about 5% of the debentures in circulation to the general public. Similarly, the underwriting industry was extremely concentrated with eight financial institutions attending 70% of the public issues that represented 80% of the primary market volume.

During the first two years of the 1980s, the number of placements rose strongly, and pension funds stood out as the main acquirer. Shortly afterwards, the market stagnated again due to various modifications in taxation until, in 1987, the Brazilian Central Bank passed resolution n. 1,401, which equated the income tax incidence of debentures with other fixed-income securities. In 1988, the National Debentures System (SND⁹⁹) was developed together by ANDIMA and CETIP, in order to improve transparency as well as reliability in the debentures market. From 1988 onwards, the market for debentures recovered, partly because of further tax adjustments through CMN resolution n. 1,562/88 that leveled the tax burden on debentures with that of the main securities traded in the financial markets for financial institutions subscribing or buying debentures, and partly because the so-called *Plano Verão* introduced, in January 1989, a wider range of indices for the monetary adjustment of debentures.

⁹⁷ According to the Portuguese term *Letra de Câmbio do Banco Central* (LBC).

⁹⁸ By investing in the fiscal funds 157, which were created by decree-law n. 157/67, Brazilian taxpayers were able to deduct part of their income tax. In 1984, when the Brazilian government was in urgent need of financial resources, it abolished the fiscal funds 157 in order to receive the full amount of income tax payments.

⁹⁹ According to the Portuguese term *Sistema Nacional de Debêntures* (SND).

Different stimulating as well as limiting factors influenced the development of the debentures market during these years. Determinants that promoted CBMD included i) a gradual diminution of subsidized credits; ii) tax increases on credit operations while the tax-exemption for the purchase and sale of debentures remained; iii) monetary policy of decontrolling interest rates; iv) restrictions on the credit expansion of financial institutions; and v) the relaxation of the requirements for the registration of a publicly owned company.

On the contrary, CBMD was hampered by the following factors: i) restrictions imposed by CMN resolutions n. 756/82 and n. 794/83, which prohibited the purchase of debentures by pension funds and commercial banks, as well as an increase of the tax burden due to the incidence of taxes on the discount granted at the issuance of the bond, according to decree-law n. 2,072/83; ii) the joint effects of the moratorium on the Mexican debt, announced in August 1982, together with the Brazilian balance of payments crisis in the early 1980s, caused restrictions on the external financing options of the public sector, which increased competition for the domestic funding resources. At the same time, the economic recession in itself was already a factor working against the development of the debentures market in Brazil; iii) the compulsory de-indexation of the economy, implemented by the *Plano Cruzado* in 1986, implied that the issuance of debentures with a monetary adjustment clause was prohibited, and, as a consequence, rendered this long-term debt security practically inoperable when inflation returned.

The Brazilian Central Bank circular note n. 1,773/90 banned repo operations with debentures¹⁰⁰, which were instituted by CMN resolution 1,088/86. While this had a negative effect on the development of the debentures market in general, the authorization of debenture bill issuance by financial institutions through CMN resolution n. 1,825/91 attenuated this effect. Elevated reserve requirements and other restrictions on the asset and liability operations of financial institutions set by the BACEN ended up inducing the issuance of debenture bills, which had a positive influence on the development of the debenture market as a whole. However, BACEN circular note n. 2,457/94 imposed a 30% reserve requirement on debenture bills, lowering the attractiveness of this instrument.

With respect to international financial flows, the 1980s were also marked by important changes, because countries like Brazil, experiencing external debt crises, saw their financing options drastically reduced. While banks retreated from the international credit market, institutional investors from the advanced countries stepped in. This happened in a context of increasing globalization and rising pressure on the developing countries to adopt neo-liberal policies. Brazilian securities were particularly attractive for these foreign investors, which also opened up new possibilities for the Brazilian government to acquire external funding. As a consequence, the legislation of foreign investments was

¹⁰⁰ CMN resolution n. 2,675/99 revoked BACEN circular note n. 1,773/90 and allowed repo operations with debentures, which have afterwards been regulated by CMN resolution n. 3,339/06.

revised over the years¹⁰¹, with the most important changes implemented in CMN resolution n. 1,289/87¹⁰² and its annexes, but overall, the Brazilian economy remained relatively closed, both in terms of import restrictions and with respect to foreign investors, when compared to other countries.

A profound transformation process marked the Brazilian economy during the 1990s, which was characterized mainly by the containment of the inflationary process with the stabilization plan *Plano Real*, a reduced participation of the state in economic activities due to the intensification of the privatization process, and the liberalization process, i.e. a further opening of the Brazilian economy. In the beginning of the 1990s, the Sarney administration handed over the Brazilian economy in a precarious condition to the Collor administration: The whole economy was indexed and monetary policy, due to the high interest level and the inefficient use of reserve requirements in a context of diminishing credit operations, had only one instrument left, open market operations, but its use further nourished indexation¹⁰³. With the public deficit reaching 8% of GDP and the government losing credibility, the National Treasury faced difficulties to place public bonds in the primary market, so that the government opted for the issuance of currency to pay for the public debt, which further pushed up inflation.

The Collor administration (1990-1992) implemented a stabilization plan that was based on a new diagnosis of the inflationary process, detecting the high and rising liquidity of financial assets as the root of the problem. The proposed and implemented solution was to block access to any kind of financial assets (cash withdrawals were only allowed up to a small amount) and to freeze prices and wages, but within a few months, the situation deteriorated because the government had not created the necessary conditions for the de-indexation and the economic adjustment. Apart from attempts to bring inflation under control, the Collor administration tried to modernize the country and to reform the state. The presidency of Fernando Collor ended with his impeachment and his vice-president, Itamar Franco, took over what became a transitional government (1992-1994) with several finance ministers, among them the next president, Fernando Henrique Cardoso (FHC), who was in office between 1995 and 2003.

Part of the liberalization process was also the opening of the domestic financial markets, which substantially changed the scenario of the 1980s when capital flows into Brazil were on a low level. The financial liberalization was also driven by the external environment, which offered more funding resources at lower costs compared to the earlier period, opening up possibilities to renegotiate the external debt. The Brazilian government created not only new means to capture external resources, but also interesting investment opportunities in the course of the privatization process. With the successful stabilization of the Brazilian economy in the middle of the 1990s, the country became even more attractive.

¹⁰¹ See, for example, CMN resolutions n. 790/83 and n. 1,224/86.

¹⁰² CMN resolution n. 1,289/87 was revoked by CMN resolution n. 4,373/14, which has since regulated foreign investments in the Brazilian financial and capital markets.

¹⁰³ The BACEN created with its open market operations overnight interest rates that were based on current inflation expectations.

During the 1980s, the role of the state in the Brazilian economy had only very timidly been reduced, but that changed with the National Program of Denationalization (PND¹⁰⁴) of the Collor administration, provided for by law n. 8,031/90, which was later revoked under the Cardoso administration by law n. 9,491/97 providing for the new PND. The PND aimed at repositioning the state in the economy, reducing the public debt, and incentivizing private investments, in order to make funding for Brazilian companies available, to increase international competitiveness, and to modernize the industrial facilities. Hence, the promotion of capital market development through the additional supply of securities and the democratization of the capital ownership played a key part in the PND. The BNDES was assigned to realize the privatizations. The participation of domestic and foreign wealth holders as investors in the privatization process was facilitated by, respectively, the creation of Privatization Mutual Funds – Privatization Certificates (see CVM instruction n. 141/91) and Privatization Funds – Foreign Capital (see CMN resolution n. 1,806/91). While foreign wealth holders only contributed about 5% of the total amount invested in privatizations during the years 1990-1994, this share increased significantly in the following years. The privatization process in general was intensified after the implementation of the *Plano Real* in 1995, as a consequence of the increased economic stability, constitutional reforms (mainly those aiming at the break-up of monopolies), and a greater political support for the PND.

The Brazilian stock market remained bearish, because wealth holders preferably invested in fixed-income securities due to the widespread monetary adjustment mechanisms, and the situation on the stock market worsened even further with the drastic decrease in liquidity of the *Plano Collor*. Circumstances improved in 1992, when international investors started to show interest in the Brazilian stock exchanges due to the low share prices of Brazilian companies and the privatization process. Additionally, the BNDESPAR intensified its purchases of company shares as well as debentures, taking the role of the still absent private investor and playing an important part in the privatization process.

Several innovations in the Brazilian financial system were introduced by the promulgation of law n. 8,078/90, the Code of Consumer Protection (CDC¹⁰⁵). In 2001, the CMN passed resolution n. 2,878, which was called the Code of Banking Consumer Protection (*Código de Defesa do Consumidor Bancário*). The following modifications also contributed to the development of the Brazilian capital markets: With the passing of law n. 8,021/90, anonymity in the financial markets was prohibited, i.e. payment or redemption of any security or financial application to an anonymous beneficiary was not allowed, which also abolished bearer bonds. CMN resolution n. 1,723/90 defined a commercial paper as a marketable security, if it was issued by a publicly owned company (excluding financial institutions) and designed for a public offer. That way, an already existing credit instrument was turned into a debt security with access to funding resources from the general public. A new regulation of the real estate investment funds (*fundos de investimento imobiliário*) was passed (see law n. 8,668/93, CVM instruction n. 205/94, and CMN resolution n. 2,248/96).

¹⁰⁴ According to the Portuguese term *Programa Nacional de Desestatização* (PND).

¹⁰⁵ According to the Portuguese term *Código de Defesa do Consumidor* (CDC).

In the 1990s, rules were introduced to govern the securitization of receivables, which was a structured financial operation involving the creation of a special purpose company (SPC) that issued marketable securities, which were usually debentures. These debentures were backed by receivables of the originating company that sold the receivables to the SPC. The first rules about securitization in Brazil emerged in 1991, when CMN resolution n. 1,834 allowed securitization of export receivables. CMN resolution n. 2,026/93 established trade- and service receivables. In 1997, law n. 9,514 created real estate receivables, and in 1998, CMN resolution n. 2,493 instituted banking receivables.

CMN resolution n. 63/67 was the main vehicle to raise foreign capital until 1988, when other instruments, such as commercial paper, bonds and notes, started to be more commonly used as well. Additional options were regulated and inserted as annexes to CMN resolution n. 1,289/87, including the Securities Portfolio (*Anexo IV – Carteira de Valores Mobiliários*), the Depository Receipts (*Anexo V – Depository Receipts*), and the Foreign Capital Fixed-Income Fund (*Anexo VI – Fundo de renda fixa – capital estrangeiro*), as provided by CMN resolutions n. 1,832/91, n. 1,927/92, and n. 2,028/93, respectively.

The *Plano Real*¹⁰⁶ was implemented in 1994 and initiated a new era in Brazil. FHC's plan to use a currency unit parallel to the old currency for a certain time, before actually implementing a new currency, which was tied to the US\$, turned out to work well for Brazil: For the first time in decades inflation rates sank to sustainable levels and stayed under control ever since. Its primary goal was to cut down inflation, and in this sense one may call the *Plano Real* successful.

The *Plano Real* was less successful in creating a stable macroeconomic environment and prosperous growth rates, which lagged far behind the economic growth rates achieved during the Economic Miracle. The average growth rate between 1947 and 1980 was 7.1%, contrasting with an average growth rate of only 2.6% between 1981 and 2008 (Paula and Faria Jr. 2012, 111). Some of the reasons for the low growth rate were high inflation, high external vulnerability, and elevated real interest rates (about 11% between 1990 and 2006). Furthermore, investment rates remained below 20% of GDP since 1996, considerably lower than the average investment rate of about 25% during the 1970s. The Brazilian economy was marked by macroeconomic instability since the 1980s, expressed in stop-and-go cycles, which increased uncertainties and discouraged greater expectation horizons for investors and companies alike (Paula et al. 2009). The high degree of uncertainty was the main reason for the short-term nature of the Brazilian debt, which was to a large degree also indexed to an overnight interest rate.

On the one hand, the Brazilian financial system could be considered very efficient from a microeconomic point of view, mainly in terms of its operational efficiency

¹⁰⁶ The *Plano Real* was an economic stabilization program initiated by President Itamar Franco on February 27th 1994 through provisional measure n. 434, which was converted into law n. 8,880 on May 27th 1994. On June 29th 1994 President Franco implemented new rules through provisional measure n. 539, which exactly one year later, was converted under the new President Fernando Henrique Cardoso into the law n. 9,069/95: the *Plano Real* Law.

and the sophistication of its banking technology (Hermann and Paula 2011, 2–3). The banking sector developed one of the most advanced clearing systems of the world and the domestic financial markets created some very sophisticated financial instruments, including various types of derivatives. On the other hand, the Brazilian financial system could not be considered efficient from a macroeconomic point of view, because it was not functional to development. The main shortcoming was related to its inability to provide for sufficient long-term finance and funding. The following subchapters give an overview of the political, international and economic context of the post-*Plano Real* period, which serves as a background for the analysis of the development of the market for debentures, one of the main funding instruments in Brazil.

3.1.2 Two decades of Brazilian financial system development and macroeconomic performance

Building on the previous sub-chapter 3.1.1., which has described the historical evolution of the domestic financial system, the institutional set-up, and the regulatory framework in Brazil up to the *Plano Real*, this sub-chapter outlines the economic, political, and international context of the development of the financial system with a special focus on possible determinants of corporate bond market development in Brazil during the analyzed period between 1995 and 2014. The subsequent chapter 3.2. is based on the macroeconomic overview presented in this section and is equally divided into three parts, covering the same sub-periods (1995-2003, 2004-2008, 2009-2014) according to important changes in the debentures markets.

3.1.2.1 1995-2003: stop-and-go policies and macroeconomic instabilities

The aim of the *Plano Real* was to contain inflation and the proposal was based on three pillars, namely an exchange rate anchor, restrictive monetary policy, and fiscal discipline¹⁰⁷. With the intensification of the liberalization and privatization processes, and due to the increased macroeconomic stability, large capital inflows were registered, from 1995 onwards. While this not only helped to accumulate foreign exchange reserves, necessary for the BACEN to conduct monetary and, in particular, exchange rate policy, but also financed rising imports, which caused a trade deficit, the situation would not be sustainable in the long-run, because capital inflows required financial returns in the future, yet the imports were mostly composed of consumption goods and not used for productive investments. Further aggravating the situation, the capital inflows were mostly of short-term nature and could leave the country as soon as expectations would turn negative.

¹⁰⁷ Chapter 3.1.2.1. is mainly based on (ANBIMA 2014e; Andrezo and Lima 2007; Assaf Neto 2011; Cadier 2011).

The drastic reduction of the inflation was accompanied by moderate growth rates, rising unemployment, trade deficits and a harsh increase of the public deficit and the public debt, during the second half of the 1990s. Due to the strong dependence on foreign capital inflows, the model of the *Plano Real* was put at risk every time a new crisis broke out in the world. The reaction of the Brazilian government to the successive crises in Mexico (1994), Asia (1997), and Russia (1998) was to raise the interest rate in order to attract foreign investors and to avoid the devaluation of the Brazilian currency. Yet, this turned out to be a trap, because the increase of the interest rate deteriorated the public finances even further. This scenario persisted until January 1999, when the Brazilian real strongly devalued and the exchange rate anchor was substituted for an inflation targeting regime. The transition went smoother than most analysts had expected and international investors soon returned to show their confidence in the Brazilian economy.

Although a complete fiscal reform has not yet been implemented, some important efforts to balance the public budget have been made, including the administrative and pension reforms in 1998, the Fiscal Responsibility Law (*Lei de Responsabilidade Fiscal*) in 2000, and another pension reform in 2003. With respect to the financial markets, several measures were implemented to restructure and strengthen the Brazilian financial system, because the banking sector experienced great difficulties in adjusting to the new economic environment with a lot lower inflation rates and increased competition of foreign banks due to the financial liberalization. The adopted measures encompassed the ratification of the Basel Capital Accord in 1994¹⁰⁸, the creation of the Credit Guaranty Fund (FGC¹⁰⁹) in 1995¹¹⁰, the same year that the government installed the Program for Stimulating the Restructuring and Strengthening of the National Financial System (PROER¹¹¹)¹¹², which incentivized a higher concentration in the banking sector and facilitated mergers and acquisitions of institutions in difficulty, the Program for Encouraging a Reduction in the Participation of state-owned Banks in the Financial System (PROES¹¹³), which was introduced in 1996¹¹⁴, the realization of the Strengthening Program for Federal Financial Institutions (PROEF¹¹⁵) in 2001¹¹⁶, the creation of the Credit Risk System (*Central de Risco de Crédito*) in 1997¹¹⁷, which has later been renamed to Credit

¹⁰⁸ The CMN resolution n. 2,099/94 established the methodology of minimum reserves in Brazil.

¹⁰⁹ According to the Portuguese term *Fundo Garantidor de Crédito* (FGC).

¹¹⁰ Established by CMN resolutions n. 2,197/95 and n. 2,211/95.

¹¹¹ According to the Portuguese term *Programa de Estímulo à Reestruturação e ao Fortalecimento do Sistema Financeiro Nacional* (PROER).

¹¹² Regulated by BACEN provisional measure n. 1,179/95 and the BACEN resolution n. 2,208/95.

¹¹³ According to the Portuguese term *Programa de Incentivo à Redução do Setor Público Estadual na Atividade Bancária* (PROES).

¹¹⁴ Regulated by provisional measure n. 1,514/96, CMN resolution n. 2,365/97 and the BACEN circulars n. 2,742/97, n. 2,744/97 and n. 2,745/97.

¹¹⁵ According to the Portuguese term *Programa de Fortalecimento das Instituições Financeiras Federais* (PROEF).

¹¹⁶ Regulated by provisional measure n. 2,155/01.

¹¹⁷ Regulated by CMN resolution n. 2,390/97.

Information System (SCR¹¹⁸), the establishment of compliance requirements in 1998¹¹⁹ and the need to install the so-called Chinese Wall, segregating the asset management area, in the end of the 1990s¹²⁰. As a result, the SFN experienced a concentration in the banking sector, with a reduction of the participation of public banks, especially those owned by the federal states, and an increase of the share of foreign banks.

During this period, new regulation was also implemented that applied to institutional investors¹²¹, especially the investment funds and private pension funds. This complementary pension fund system grew strongly, because the public pensions were reduced in response to growing deficits and the stabilized economy allowed for longer-term plans of individuals, which caused rising demand for different private pension plans. The Brazilian Settlement and Custody Company (CBLC¹²²) was created in 1997 as a demerger of the Bovespa, which previously realized the settlement and custody of shares. The CBLC also offered this service for other types of securities, including debentures, and executed the trades according to the SFI-DVP standard (Simultaneous, Final and Irrevocable Delivery vs. Payment). Other legal innovations included the creation of Brazilian Depository Receipts (BDRs) by CMN resolution n. 2,318/96, the enactment of the Money Laundering Law (*Lei de "Lavagem" de Dinheiro*)¹²³ in 1998, and the reform (according to laws n. 9,447/97 and n. 9,457/97) of the Capital Market Law and the Corporate Law. Law n. 9,447/97 redefined the legal competences of the BACEN and the CVM over the financial institutions and law n. 9,457/97 strengthened the CVM in its important surveillance role and facilitated the restructuring and privatization of companies. In order to facilitate these processes, the law restricted or even eliminated a large range of minority shareholders' rights, which was highly criticized and led to the re-adjustment of several rules that had been implemented by law n. 9,457/97, when laws n. 10,194/01 and 10,303/01 became enacted in a context of higher concerns about corporate governance.

The public pension scheme accumulated rising deficits from 1995 onwards and was reformed by the constitutional amendment n. 20 in 1998. That year was an election year and president Fernando Henrique Cardoso was re-elected for his second term. In 2003, another pension reform, this time with a focus on public servants, was passed by constitutional amendment n. 41, accompanied by constitutional amendment n. 47/05. Although the pension reforms lowered payments to the beneficiaries, the financial health of the public pension system was only partially restored. The decrease in public pension payments added to the increased demand for private pension funds, which could also be attributed to tax benefits and, most importantly, to the end of the high inflation period,

¹¹⁸ According to the Portuguese term *Sistema de Informações de Crédito* (SCR).

¹¹⁹ Regulated by CMN resolution n. 2,554/98.

¹²⁰ Regulated by CMN resolution n. 2,451/97 and n. 2,486/98.

¹²¹ Since 2002, all investment funds fall under the regulation and supervision of the CVM, as determined by law n. 10,303/01 and BACEN/CVM joint decision n. 10/02.

¹²² According to the Portuguese term *Companhia Brasileira de Liquidação e Custódia* (CBLC).

¹²³ Law n. 9,613/98.

which decreased uncertainties and therefore allowed wealth holders to take longer-term investment decisions, as opposed to before, when the main concern was almost exclusively focused on avoiding the loss of value in the short term. Among the newly established private pension funds were the Individually Scheduled Pension Fund (FAPI¹²⁴), regulated by law n. 9,477/97 and CMN resolution n. 2,424/97, the Free Benefit Generator Plan (PGBL¹²⁵), created in 1997¹²⁶, and the Free Benefit Generating Life Insurance plan (VGBL¹²⁷), created in 2001¹²⁸. In 2001, complementary law n. 109 revoked law n. 6,435/77 and set new rules for private pension funds.

Although foreign investments increased, the situation of the Brazilian capital markets became critical towards the end of the 1990s and beginning of the 2000s. Both, the number of publicly owned companies and the value traded on the stock markets diminished each year. Possible explanations for these problems included the incidence of the financial transactions tax CPMF¹²⁹ on transactions in the Brazilian stock exchanges (contributing to the migration of several companies to issue their securities abroad), poor corporate governance rules (as a result of the legislation passed in 1997 to facilitate privatizations), and the high level of the interest rate. After two years of stagnation (GDP growth in 1998: 0.2% and in 1999: 0.8%), the Brazilian economy grew 4.5% in 2000 in a more favorable international environment and decreasing inflation rates, which allowed monetary policy to not only lower the base rate SELIC, but also to loosen reserve requirements. In 2001, the situation already worsened again. A combination of factors contributed to the low GDP growth rate, which only reached 1.3%. The build-up of the Argentinian crisis had negative effects on the Brazilian exports and exchange rate, which also suffered from the skyrocketing US dollar. An electric energy crisis, including energy rationing, caused a reduction of consumption and investment and an increase of prices. Although interest rates were raised again, international investors withdrew their capital in what became known as a flight to quality, also due to a slowdown of world economic growth. The proximity to the presidential elections created further uncertainties. Although the inflation rate started to increase, it remained within the target range.

The GDP growth rate stayed on a relatively low level in 2002 (1.5%) due to a decline of foreign capital inflows and the repercussions of the electoral process. The prospect of the presidential candidate of the Workers' Party (PT¹³⁰) Lula¹³¹ winning deterred investors, because they were afraid that he would implement radical changes in the economic policy of the country. With capital flowing out, the exchange rate further deteriorated, also causing an increase of the inflation

¹²⁴ According to the Portuguese term *Fundo de Aposentadoria Programada Individual* (FAPI).

¹²⁵ According to the Portuguese term *Plano Gerador de Benefício Livre* (PGBL).

¹²⁶ Regulated by CNSP resolution n. 6/97 and SUSEP circular n. 33/98.

¹²⁷ According to the Portuguese term *Vida Gerador de Benefício Livre* (VGBL).

¹²⁸ Regulated by CNSP resolution n. 49/01.

¹²⁹ According to the Portuguese term *Contribuição Provisória sobre Movimentação Financeira* (CPMF).

¹³⁰ According to the Portuguese term *Partido dos Trabalhadores* (PT).

¹³¹ Luis Inácio Lula da Silva, known as Lula.

rate. When Lula took over the presidency from FHC in 2003, the economic situation of Brazil was still marked by its elevated risk premium, less foreign capital available, a devaluating currency, and rising inflation. Against this background, monetary policy kept its focus on price stability and the orientation of economic policy was maintained, as well. As a result, inflation decreased and the economy resumed its growth path in the second semester, but nevertheless the GDP fell 0.2% in 2003. The activity level continued to depend strongly on the Brazilian exports.

The main barriers to a faster and smoother economic growth were the elevated interest rate level and the difficulty that most companies faced when trying to attain funding. In order to improve this situation, the Brazilian capital markets experienced profound changes. The government implemented measures to make the capital markets more popular. It allowed that part of the resources from the FGTS could be applied to the purchase of company shares. CMN resolution n. 2,689/00 made the access for foreign investors easier by simplifying proceedings and by giving them the same rights as resident investors with respect to the available instruments, products and securities to choose from for the investment decision. Important impulses also came from the private sector, starting with the unification of the nine Brazilian stock exchanges in 2000, resulting in the centralization of negotiations of private securities at the Bovespa and public securities at the BVRJ.

In December 2000, the Bovespa established the New Market (*Novo Mercado*) and Special Corporate Governance Levels (*Níveis de Práticas Diferenciadas de Governança Corporativa*) for those companies choosing to submit themselves under these stricter regulations than those provided by legislation with respect to transparency and shareholder protection. Since the Bovespa created these new segments without the influence of the legislator, this initiative could be seen as a good example of how self-regulation could improve corporate governance practices. The BNDES installed a special credit line for companies observing these corporate governance rules in order to incentivize adherence to the New Market. Furthermore, the Bovespa implemented various technological innovations in order to constantly improve its services, such as the establishment of the automated platforms “Home Broker” and “After Market”, in 1999. For the negotiation of private fixed-income securities, the Bovespa offered a separate section on the stock exchange, the so-called BOVESPA FIX, and an organized OTC system, the so-called SOMA FIX, which are electronic systems for the trading, settlement and custody of these securities.

Since 1997, when several rights were taken away from minority shareholders in order to facilitate the privatization and the restructuring of Brazilian companies, there was a debate about adjusting the Capital Market Law and the Corporate Law. In 2001, a reform¹³² of these laws passed with the aim to promote capital market development, so that companies would have better financing and funding conditions, and to push economic growth. In order to achieve these goals, the CVM was given more power, turning it into an independent legislative authority,

¹³² The new legislation was regulated by laws n. 10,194/01, n. 10,198/01, n. 10,303/01 and n. 10,411/02 and decree n. 3,995/01.

and more adequate corporate governance structures were implemented. As a result, transparency as well as minority shareholder rights were improved. With respect to debentures, law n. 10,303/01 shortened the period from 90 to 60 days during which the trustee had to inform the debenture holders about any sign of default. BACEN circulars n. 3,068/01 and n. 3,082/02 introduced the mark-to-market accounting for marketable securities. CVM instruction n. 356/01 and CMN resolution n. 2,907/02 created a new type of receivables securitization, the so-called Credit Receivables Investment Funds (FIDCs¹³³), which became a popular financial instrument.

An important barrier to the development of the Brazilian capital markets was removed by constitutional amendment n. 37/02, which excluded the trading of company shares on stock exchanges or OTC markets from the CPMF tax incidence. The restructuring of the SFN that started in 1995 with the PROER and PROES was continued in 2002 with the creation of the new Brazilian Payment System (SPB¹³⁴), which also aimed at reducing the risks of financial crises and their negative effects on the real economy. Again, the attempt was to strengthen the SFN, but this time the focus lied on the risks involved in the cash settlements. CVM instruction n. 384/03 created the possibility to install a market maker for a security in order to increase its liquidity premium. In an attempt to make the Brazilian rules more similar to those in the USA, the CVM adjusted the regulation of public offers of marketable securities and passed instruction n. 400/03. The public offer of marketable securities could be categorized according to the offerer (primary, secondary, or both), according to the venue, where the securities were offered (in Brazil, abroad, or both), and according to the requirement of registration with the CVM (public or private offer). Every public offer needed to be registered with the CVM and under certain circumstances, the security could be offered privately, which allowed dispense of registration. An example for a private offer would be an offer that was directed exclusively at qualified investors. In some cases, the security met the requirements for an automatic dispense of registration, and in some cases, a request needed to be formulated in order to make a private offer. The aim of CVM instruction n. 400/03 was to protect the interests of investors and the market in general by requiring broad, transparent, and adequate provision of information about the offer, the offered security, the issuing company, the offerer, and other relevant information.

An important innovation of this legislation was to allow for the so-called greenshoe option, which allowed the underwriter to sell investors more securities than originally planned by the issuer (up to a certain share of the original volume). Another innovation concerned companies that already had realized a public offer. These companies were allowed to make a shelf registration, giving them the right to realize public offers of marketable securities mentioned in the shelf registration.

¹³³ According to the Portuguese term *Fundos de Investimento em Direitos Creditórios* (FIDCs).

¹³⁴ According to the Portuguese term *Sistema de Pagamentos Brasileiro* (SPB).

According to the Brazilian Corporate Law, a company becomes a publicly owned company as soon as any of its marketable securities, including debentures or commercial paper, receive the permission to be traded on the stock exchange. Therefore, the so-called Initial Public Offering (IPO) of any type of security by a company results in its going public. Yet, in the market jargon a company only really goes public, when it realizes the IPO of its company shares.

3.1.2.2 2004-2008: half a decade of prolonged growth

The Brazilian economy continued on the growth path, it had already returned to during the second semester of 2003, for another five years, until 2008, when the ramifications of the international financial crisis caused a recession in Brazil¹³⁵. Up to that point, Brazil had experienced a remarkable episode of sustained economic growth together with social inclusion in a context of increased macroeconomic stability, which can be “considered one of the longest periods of growth and of greater dissemination since the Second World War” (BACEN 2008, 11). Annual GDP growth rates over the period 2004-2008 were consecutively above 3.0% and on average 4.8%. The favorable international environment helped the country to realize large and consecutive current account surpluses, build-up foreign-exchange reserves and improve other external solvency indicators. Brazil benefited from the high demand for commodities, especially from China, and large capital inflows caused the Brazilian currency to appreciate, which exerted downward pressures on domestic prices, especially in the tradable sector, keeping inflation under control. The domestic economy was marked by decreasing unemployment rates and rising demand for durable consumer goods, largely financed with personal credits.

In 2004, the Brazilian economy grew by 5.7% due to strong exports and the internal market recovery. Consumption was sustained by increased credit availability, and later also by growing income levels, related to the increasing employment level. Investment expanded reflecting the positive outlook since the second semester of 2003, when the BACEN started to lower the base rate. In September 2004, monetary policy started to tighten again and, despite rising oil prices, inflation closed below the 2003 level. Since the end of 2003, international market conditions had been particularly favorable to Brazil and allowed the country to issue sovereign debt securities abroad that were denominated in its national currency. Brazil's country risk dropped sharply due to expectations of strong world growth and various positive results, including a current account surplus, even with strong GDP growth, an exceptionally high trade surplus, substantially improved external and public debt indicators, and a primary surplus that was well above the agreed target with the IMF.

The index of the São Paulo stock exchange (Ibovespa) was on a downward trend until May, but from then on it started to rise. With the aim to stimulate capital market development and economic growth, the government passed measures that allowed tax reductions for investment activities. CVM instruction n. 404/04

¹³⁵ Chapter 3.1.2.2. is mainly based on (ANBIMA 2014e; BACEN 2004, 2005, 2006, 2007, 2008; Andrezo and Lima 2007; Assaf Neto 2011; Cadier 2011).

created the Standardized Debentures to increase transparency and liquidity of the market, yet no issues were registered under this regulation. BACEN communiqué n. 12,746 of December 2004 regulated the implementation of the new Basel Accord (Basel II). The rules concerning repo operations were loosened, allowing the use of any kind of fixed-income security, even in those operations that were previously restricted to public bonds. Additionally, permitting security exchanges and loans, further increased the liquidity of private debt securities, because it allowed financial institutions to engage in such operations without coverage due to the guarantees given by the clearinghouses. CVM instruction n. 409/04 established new rules for the investment funds and categorized them into seven different classes according to their portfolio composition. Additional types of investment funds also had to be registered with the CVM, but followed specific regulations, such as the private equity funds (FIP¹³⁶), which were regulated by CVM instructions n. 391/03 and n. 406/04.

In 2005, the Brazilian economy continued to grow, although at a slower pace (3.2% GDP growth), with the expansion of the domestic market driven by improved credit conditions and a gradual recovery in real income and employment. The credit market was dominated by payroll-deducted, i.e. personal and consumer credits. In 2005, the debentures market started to rapidly increase, but the surge was mostly based on issues by leasing companies to fund banking operations, while the primary market of corporate debentures showed much less activity. The government was able to present highly positive fiscal results, including a primary surplus and a reduction in net public debt. Monetary policy continued to raise the base rate during the first semester, taking a very cautious stance against risks stemming from oil prices and other factors. In September, a gradual process of easing monetary policy started and the consistently low inflation rate closed the year at 5.7%. Abundant international liquidity resulting in rising flows of external funding, especially steady foreign direct investments, as well as an excellent performance of the foreign trade sector led to successive reductions in the Brazil risk, suggesting that the positive investment climate would remain. Brazil was able to raise more funds with bond issuance abroad than planned and, thus, was able to anticipate IMF debt repayments. Furthermore, external sector risk conditions improved by the continued build-up of foreign reserves.

With respect to the Brazilian capital markets, law n. 11,196/05 was among the most important legal innovations of that year and aimed at stimulating productive investments, exports in the technological goods and services sector, as well as technological innovation and digital inclusion. In order to improve the monitoring of the liquidity situation of financial institutions, the CMN passed the resolution n. 3,272/05, which required the registration of the issuance of securities (mainly CDBs). A public-private partnership program was installed by law n. 11,079/04 and decrees n. 5,385/05 and n. 5,411/05 created, respectively, the Public-Private Partnership Management Committee (CGP¹³⁷) for the project selection and authorized quota payments of the Public-Private Partnerships

¹³⁶ According to the Portuguese term *Fundo de Investimento em Participações* (FIP).

¹³⁷ According to the Portuguese term *Comitê Gestor de Parceria Público-Privada Federal* (CGP).

Guarantor Fund (FGP¹³⁸). The legislative process of the Law on Bankruptcy and Corporate Recovery (law n. 11,101) took several years, but on February 9th 2005 the law was finally passed and replaced the previous legislation that had been in effect since 1945. The main innovation was the introduction of extrajudicial recovery, i.e. companies in difficulty were allowed to renegotiate debts with their creditors. In order to formalize the agreement, nothing more than the approval of a judge was needed, who simply had to ensure compliance with legal procedures.

Continued world economic expansion, driven by the USA and emerging market countries, and a benign macroeconomic scenario in 2006 contributed to higher growth and lower inflation in Brazil, compared to the previous year. The expanding internal demand had been mainly pushed by Gross Fixed Capital Formation (GFCF), which showed the economic agents' confidence in the ongoing process of economic growth, and household consumption, which reflected rising real income, expanding credit, and improved expectations. Responsible fiscal management resulted in successive primary surpluses and qualitative improvements in spending allocation. The SELIC interest rate was lowered throughout 2006, which had been facilitated by a downward movement of inflation expectations that even fell below the inflation target. Another factor that helped monetary policy to lower the base rate was related to the evolution of the exchange rate, which enhanced internal competition in the segment of tradables. In 2006, the government passed a law to exempt foreign investors from the income tax on capital income¹³⁹, aiming at the prolongation of the public debt structure. Furthermore, the ongoing process of international reserve accumulation and the anticipated buybacks of debt securities denominated in foreign currency, which also served as a benchmark for the construction of a more complete interest curve, generated positive impacts on external funding conditions by reducing risk premiums. Falling external public debt together with an overall improved public debt structure, and expanding exports, all added to the increasing external resilience of Brazil and gave rise to the outlook for improved country risk ratings. The acting president Lula was able to profit from this positive economic environment and emerged victorious from the 2006 presidential election.

In continuation of the vigorous development that started in 2002, the capital markets performed highly positive in 2006 with the São Paulo Stock Exchange Index (Ibovespa) setting a record of 44,500 points at the end of 2006. Large companies gained access to funding sources outside the banking sector, mainly through Initial Public Offerings (IPOs) of their company shares. Banks continued to shift the focus of resource allocation from their securities portfolio to credit operations. At the same time, the profile of the securities portfolio was also adjusted, lowering the share of public bonds and raising the participation of private securities, mostly involving debentures. CMN resolution n. 3,339/06 aimed at improving the market liquidity of private debt securities by expanding the list of securities that were accepted in repo operations and by allowing the

¹³⁸ According to the Portuguese term *Fundo Garantidor de Parcerias Público-Privadas* (FGP).

¹³⁹ See provisional measure n. 281, later converted into law n. 11,312 of June 27th, 2006.

contracting of repo operations with individual persons and non-financial companies, even including private securities. CMN resolution n. 3,380/06 regulated the operational risk management of financial institutions, which were required to develop adequate structures to identify, monitor, control and mitigate their exposures until the end of 2007, according to the New Basel Accord (Basel II). CMN resolution n. 3,400/06 improved the conditions of the Credit Guarantee Fund (FGC) by raising the maximum nominal value guaranteed from R\$ 20,000 to R\$ 60,000, reducing the contributions (from 0.025% to 0.0125%) and expanding the universe of guaranteed deposits. Exchange banks, focusing on foreign currency operations, were created by CMN resolution n. 3,426/06 to stimulate competition in this market.

In 2007, several factors contributed to the annual GDP growth rate of 6.0%. Increased macroeconomic stability together with loosening monetary policy and improved labor market conditions raised optimism in consumer and business expectations, which heated up internal demand, reflected in a sharp expansion of the investment volume as well as steady increase of household consumption. The latter, more specifically the acquisition of vehicles, was responsible for a large part of the strong dynamics in credit operations. Business loans also expanded sharply, particularly for working capital and investment operations. As in previous years, the banking sector mainly attended SMEs, because large-scale corporations had access to alternative sources of funding.

Rising prices of major commodities on international markets posed a first threat to rising inflation rates in Brazil, which received additional upward pressure from the expansionary movements of employment, income, credit as well as government transfers. Additionally, the delayed effects of the 650 base point reduction in the SELIC rate during 2006 had to be taken into account, when the COPOM decided to slow down the pace of interest rate cuts. The exchange rate had a disciplining effect on the prices of tradable goods, which helped to keep inflation low. In the end of the year, monetary policy justified its decision to maintain the base rate on its current level with the accelerating growth in the domestic economy. The BACEN employed exchange rate policy to avoid increased volatility in the exchange rate market, yet without assuming any commitment as to the level of the exchange rate, constantly adjusting their activities to market conditions.

Notwithstanding signs of reduced liquidity as a consequence of rising interest rates in the advanced economies and increased global market volatility, the external scenario for the Brazilian economy remained favorable, especially with regard to its financing conditions. The growing confidence among international investors regarding the consistency of Brazil's macroeconomic fundamentals generated a continuous inflow of longer-term capital. The domestic capital markets, especially the stock market, showed strong growth and were sustained mostly by foreign institutional investors. It is worth noting that the Brazilian risk premium had reached its lowest level (at 138 points in mid-June 2007) since the series was first calculated in 1994, when the international financial crisis started to exert its effects upon Brazil and raised the country risk well above 200 points (254 points in November) towards the end of the year, again. Nevertheless,

major international rating agencies (Standard and Poor's, Fitch and Moody's) raised the sovereign risk rating of Brazil to just one level below investment grade.

The evolution of rising consumption and investment levels contributed to lower trade balance surpluses. The positive results of the external accounts made it possible to adopt a consistent policy for managing foreign liabilities, then from a creditor position, as a result of the sharp growth in foreign reserves and significant reductions in the external debt. The resilience to adverse external shocks had been increased, as could be observed, when the turbulences on international credit markets that followed upon the subprime crisis in the USA only exerted a marginal impact on the country's economy.

On January 22nd, 2007, the government announced a series of measures under the roof of the Growth Incentive Program (PAC¹⁴⁰) that aimed at improving the infrastructure of the country and increasing the pace of economic growth. Several measures were implemented to improve the investment environment, such as law n. 126/07 that opened the reinsurance market. The PAC Management Committee was instituted by decree n. 6,025/07. In 2007, the government designated R\$ 24.5 billion to PAC investments (all R\$ values in this thesis have been deflated to constant December 2014 R\$, using the inflation index IPCA, unless otherwise stated). Independently of the PAC, law n. 11,457/07 created the Federal Revenue Service (RFB¹⁴¹) through the unification of the Federal Revenue Secretariat with the Social Security Revenue Secretariat in order to enhance the efficiency of federal tax management, by simplifying collection and inspection processes while at the same time reinforcing efforts against tax evasion.

Among the most important legal innovations of 2007 in the Brazilian financial system was the CMN resolution n. 3,477/07, which created the position of an ombudsman as an organizational component of financial institutions, whose role was to ensure compliance with consumer rights and to provide a communication channel for the institution and their clients. CMN resolution n. 3,518/07 determined a standardization of fee tables of banks so that clients would be able to compare the prices charged by different institutions more easily. Related to this, CMN resolution n. 3,516/07 prohibited the charging of fees in case of early settlement of loan and lease contracts. Previously, it was difficult for borrowers to move from one financial institution to another, offering more favorable conditions. Another measure to improve the position of banking clients was CMN resolution n. 3,517/07 that required the provision of information on the total effective cost corresponding to all charges and expenses involved in credit and leasing operations contracted by or offered to individual clients.

During the first three quarters of 2008, economic activity followed the trajectory of the second half of 2007 with strong growth, although the impact of the international financial crisis could already be felt. Domestic demand sustained the growth process, pushed by improved credit conditions as well as rising employment and income. Furthermore, GFCF reached with 18.6% its highest

¹⁴⁰ According to the Portuguese term *Programa de Aceleração do Crescimento* (PAC).

¹⁴¹ According to the Portuguese term *Secretaria da Receita Federal do Brasil* (RFB).

level since 1995, reflecting the entrepreneurs' expectations of continued economic growth. This picture changed drastically during the last months of the year, when growing restrictions in the credit market and the worsening of economic agents' expectations initiated a recession in Brazil. Nevertheless, over the entire year Brazilian GDP grew 5.0% in 2008. The inflation rate closed the year at 5.9%, higher than the previous year, but still within the inflation target range. As a result of the tightening of the monetary policy, initiated in the beginning of 2008 when inflation expectation had increased, the demand for inflation indexed public bonds rose, while the stock of fixed rate public bonds decreased.

In May of 2008, the Brazilian government announced an industrial policy strategy, the so-called Productive Development Policy (PDP), with the goal to extend the recently experienced growth path. As part of the PDP, provisional measure n. 428/08, converted into law n. 11,774/08, provided for a set of measures that aimed at encouraging private investments, investments in science and technology research, productivity of the domestic industry, and the participation of Brazilian exports in the international market, all of which should help to expand the production capacity and to meet the growing demand for consumer goods as well as increase the competitiveness of the national productive sector. Within the PDP, an estimated R\$295 billion in projects for capacity expansion, modernization and innovation in industry and services were allocated to the BNDES. In October, the development bank introduced a new line of export finance and its disbursements directed to exports rose by 57.1% compared to the previous year. The Brazilian Sovereign Wealth Fund (FSB¹⁴²) was created by law n. 11,887/08 and had the objective of promoting investments in Brazil and abroad, generating public savings, mitigating the effects of economic cycles, and fostering strategic projects at home and abroad. The government supplied the FSB with R\$ 20 billion in 2008, through the issuance of sovereign debt securities.

The positive performance of Brazilian capital markets during the previous years came to a halt in 2008, as a result of the instable scenario in the international financial system. Primary market activities of company shares and debentures were concentrated in the first eight months of the year and practically ceased afterwards, being partly replaced by the issuance of commercial paper. The sudden market slump of the previously so vigorously growing market of debentures issued by leasing companies was not only caused by the external crisis, but also by a regulatory change (Loureiro 2008). BACEN circular n. 3,375, issued on January 31st, 2008, introduced reserve requirements for these debt securities, terminating the special treatment of this mechanism of bank funding. Up to that point, it was common practice for banks to use a leasing company belonging to the same financial conglomerate to issue debentures in order to fund its operations (those of the bank), taking advantage of the fact that the capital acquired through this funding mechanism was exempted from reserve requirements. After the banking sector had increasingly relied on this funding instrument, especially since 2005, Brazilian authorities decided to apply the

¹⁴² According to the Portuguese term *Fundo Soberano do Brasil* (FSB).

reserve requirement to achieve an equal treatment compared to other funding sources of banks, such as CDBs.

The continuous rise of the Brazilian stock exchange index Ibovespa through May reflected positive expectations, but the remainder of the year the Ibovespa dropped and its volatility significantly increased, as the international financial crisis intensified and commodity prices and external trade were reduced. Lower liquidity in the financial system and uncertainty about interest rate developments caused an increased risk aversion of investors, which reflected in net redemptions in nearly all classes of investment funds, with the exception of short-term funds, which even attracted new resources.

In the end of 2008, global credit and capital markets rapidly deteriorated as a consequence of the worsening and spreading of the international financial crisis. Especially North American and European major financial institutions were faced with insolvency risks as the credit shrinking and liquidity trap scenario of the first semester aggravated. Once authorities perceived the systemic crisis that resulted from the persistent obstruction of the credit channels, the USA and EU took coordinated actions to stabilize their financial systems. Liquidity and credit constraints were alleviated through the actions taken by major central banks as well as direct government interventions, which strengthened the capital structure of several financial institutions. Nevertheless, these measures proved insufficient to cause a reversal of the trend of rising risk aversion¹⁴³. As a consequence, investors started to retreat from riskier markets and the demand for sovereign bonds of advanced economies increased, causing a decline of these public bond yields, which was sustained by less restrictive monetary policies during the period. The increased risk aversion led to significant losses, even among the major stock exchanges¹⁴⁴, in 2008. In emerging market economies, the stock exchanges also registered severe losses¹⁴⁵, because they were additionally affected by the reduction in prices and exports of commodities due to recessions in advanced economies and a slowdown of world trade, on the one hand, as well as the depreciation of the local currencies against the US dollar (US\$), related to the so-called flight to quality, reflecting the increased demand for US government bonds, on the other hand. The international credit crunch tightened the financing conditions of countries running a current account deficit even further.

Against this background, the COPOM decided to discontinue the restrictive course it had adopted since early 2008 and the Brazilian government together with the BACEN carried out various counter-cyclical measures, such as foreign currency loans to finance exports and guarantee market liquidity; monetary policy easing; tax incentives with tax cutbacks and increased spending, especially

¹⁴³ The Volatility Index of the Chicago Board Options Exchange (VIX) is an important indicator of risk aversion and, on November 20 of 2008, the VIX reached its highest value since the series started in 1990.

¹⁴⁴ The annual losses of the Japanese Nikkei index, the German DAX, the US-American S&P 500, and the British FTSE 100 amounted to 42%, 40%, 38%, and 31%, respectively.

¹⁴⁵ The stock exchange of Brazil registered an annual loss of 41%, the Chinese 65%, the Hungarian 53%, the Indian and the Turkish both 52%, the Mexican 24%, and the South Korean also 41%.

investments in infrastructure; and the exemption of reserve requirements in order to increase liquidity of the domestic financial system, thus encouraging the expansion of credit operations.

After five consecutive years of positive results the Brazilian current account turned negative, mainly due to increasing imports as a result of the strong internal growth together with the increase in net remittances of services and income, especially those relating to profits and dividends. While the country registered unprecedented FDI inflows in the amount of US\$ 45.1 billion (UNCTAD 2009), it also reported outflows of foreign capital, which were concentrated in the last quarter of the year and mostly related to portfolio investments, especially in shares. Furthermore, foreign medium and long-term loans were less frequently renewed. BACEN interventions of US dollar purchases reverted to cash sales from October to December. The Brazilian foreign exchange market experienced a significant net outflow of foreign exchange as a result of the so-called flight to quality, which resulted in the first net deficit in this market since 2002.

Even in the scenario of deterioration of international financial markets, the Brazilian stock of international reserves continued to rise. Additionally, external debt indicators remained as positive as in 2007, showing the persistent improvement in macroeconomic fundamentals and the continuing soundness in the implementation of the domestic monetary and fiscal policies. Additionally, regulation was changed in order to improve data dissemination in the financial system, to comply with international standards. In April, Standard & Poor's raised its rating of Brazil to investment grade, followed by Fitch Ratings in May.

3.1.2.3 2009-2014: Brazil's reaction to the international financial crisis

The immediate effects of the international financial crisis were absorbed relatively well by the Brazilian economy, which quickly came out of the recession in 2009 and registered a very high growth rate in 2010¹⁴⁶. During the following years, the external scenario remained complex with major central banks injecting liquidity into their national financial systems, on the one hand, and resurging volatility on international financial markets due to growing uncertainties related to various events, on the other hand. Against this background, the Brazilian government implemented counter-cyclical measures, deployed the public finance for development system to fill the gap that the private credit sector left and introduced an industrial policy plan. The intensification of developmentalist state policies were accompanied by measures that were directed at the promotion of a domestic market for long-term debt securities. After the strong recovery in 2010, the pace of economic activity was more moderate, despite the strong increase of government action and the coordination of fiscal and monetary policy (in 2012, a clear adjustment of the monetary policy stance took place). In 2014, the fiscal accounts worsened and the Brazilian economy experienced signs of stagflation.

¹⁴⁶ Chapter 3.1.2.3. is mainly based on (ANBIMA 2014e; BACEN 2009, 2010, 2011, 2012, 2013, 2014, 2015; Assaf Neto 2011; Cadier 2011).

Between June of 2008 and June of 2014, the indebtedness of legal entities in Brazil tripled without significant changes in the commitment of income due to improvements in the debt profile in terms of maturity and cost (BACEN 2014, 28–31). Brazilian companies were able to contract debt with longer terms and lower interest rates, because of the increased reliance on the domestic capital markets, external capital and directed credits, to the detriment of domestic banks. The latter continued to supply the largest share of finance to Brazilian companies, but their participation dropped from 43% in June 2008 to 31% in June 2014, while the domestic capital markets, external capital, and directed credits increased their shares from 8% to 10%, 24% to 29%, and 25% to 30%, respectively.

Turning to a more detailed analysis of the events after the outbreak of the international financial crisis, one could observe that the recession of the global economy lasted up to the second quarter of 2009. In response to the international financial crisis, the governments and central banks of the USA and Europe took coordinated actions to stabilize their financial markets and to mitigate the effects of the crisis on economic activities. As emerging market countries were particularly suffering from the shortage of external finance and the drying up of international trade, their governments and central banks deployed fiscal easing as well as cuts in the monetary policy rates. The counter-cyclical measures were crucial to the recovery of the world economy during the second semester. One of the effects of the improved outlook, together with increasing Chinese imports, was the reversal of commodity prices that started to rise again. The inflation forecasts of major advanced economies remained favorable, so that their central banks maintained the expansionary nature of monetary policy and continued to inject liquidity into their financial systems.

The expected recovery of global economic growth rates contributed to the decline of risk aversion, which was reflected in the downward trend of the Volatility Index of the Chicago Board Options Exchange (VIX). The VIX is an important indicator of risk aversion and dropped 18.3 points in 2009, reaching 21.7 points at the end of the year. Although risk aversion came down, it was still relatively high: the average VIX score of 2009 (31.5 points) stood 17.3 points above the average recorded during the period of low risk aversion before the crisis, from July 2003 to June 2007. As risk aversion was descending from its elevated level, the demand for riskier assets increased and, facilitated by the environment of abundant liquidity, the downward trend of the major stock markets was reversed. Solid macroeconomic fundamentals of emerging markets attracted net capital flows into these economies and even resulted in higher gains in their stock exchanges than in those of the advanced economies. The recovery of the financial markets only suffered a small setback in the middle of December, when uncertainties about the sovereign risk of European countries arose due to their high fiscal deficits.

In Brazil, the government responded to the recessionary environment in the advanced economies by taking measures in the fields of fiscal, monetary and foreign exchange policy in order to improve domestic market liquidity and to stimulate aggregate demand. Fiscal policy measures included temporary tax reliefs and government transfer programs, which contributed to the drop in the

primary surplus from 3.3% of GDP in 2008 to 2.0% in 2009. Tax revenues were also reduced due to the lower domestic activity level. For the first time since 2002, public sector net debt (PSND) increased, mainly because of the rise in BNDES disbursements and the depreciation of the real (R\$). A government program created a mechanism that encouraged and enabled low-income households (with incomes of up to ten minimum wages) to purchase a house. The program, implemented on March 25th 2009 by provisional measure n. 459, was called *Minha Casa, Minha Vida* (My House, My Life) and aimed at the construction and purchase of one million houses. Many other policy measures also helped to maintain the employment level high, that way strengthening domestic demand.

Although the annual GDP growth rate was slightly negative (-0.2%), the recession in the Brazilian economy was very short-lived: the seasonally adjusted quarterly GDP growth only retreated during the last quarter of 2008 and the first quarter of 2009. The key factor to the fast recovery was the strong domestic demand. Higher consumer spending translated into rising retail sales and reflected regained consumer confidence. Furthermore, expectations of entrepreneurs improved and caused them to take on new investment projects, preventing GFCF to decline even more (GFCF decreased from 18.6% of GDP in 2008 to 17.6% in 2009). The lively internal demand was also stimulated by favorable credit conditions, resulting from counter-cyclical monetary and fiscal measures that aimed, on the one hand, at providing domestic market liquidity by loosening reserve requirements, such as CMN resolution n. 3,692/09 and BACEN circular n. 3,468/09. On the other hand, these policies were designed to support external trade activities with foreign currency loans. Brazilian companies had difficulties to realize international trade operations due to the shortage of foreign credit lines. External trade policy reacted by creating instruments that provided foreign currency liquidity, shifting a significant share of financial transactions related to external trade to the domestic market.

The credit sector also recovered due to the rising employment level, which provided the background for the increase of payroll-deducted loans and vehicle financing, especially during the second semester. Additionally, decreasing interest rates across different categories to unprecedented low values fostered the growth in the credit market. The expansion in bank lending was largely based on the increasing use of earmarked resources, which were mostly allocated to housing and infrastructure projects as well as the productive sector. These sectors were primarily promoted in accordance with the PAC and PDP government programs. As a result, the share of public financial institutions in the total loan portfolio of the Brazilian financial system was raised from 36.3% in 2008 to 41.5% in 2009. The role of the BNDES in financing productive investment as well as providing foreign trade and investment projects with credit guarantees was strengthened by raising the credit volume that the national treasury was allowed to grant to the development bank from R\$ 134.5 billion to R\$ 242.2 billion¹⁴⁷. BNDES disbursements increased by 44% from R\$ 127.5 billion in 2008 to R\$ 183.5 billion in 2009 and the fraction related to

¹⁴⁷ See provisional measures n. 453, issued on January 22nd, and provisional measure n.472, of December 15th, together with decrees n.7,031 and 7,032, of December 14th.

foreign trade transactions increased from a total of US\$ 6.6 billion in 2008 to US\$ 8.3 billion in 2009.

Although the average daily Brazilian external trade flow decreased by 23.4% in 2009, totaling US\$ 1.1 billion, which was the first decline after five consecutive years of expansion, the trade balance surplus registered an increase in nominal terms, closing the year at US\$ 25.3 billion, which represented the ninth consecutive positive result. The improvement in the trade balance was the main reason for the reduction in the current account deficit, which represented 1.5% of GDP compared to 1.7% in the previous year. The depreciating trend of the Brazilian currency, which had started in the second semester of 2008, reversed and the nominal exchange rate appreciated 25.5% in nominal terms throughout 2009. As Brazil was able to continuously improve macroeconomic fundamentals, the country risk indicator returned to its pre-crisis level at the end of 2009, reaching 192 points, after it had peaked at 688 points on October 23rd, 2008. Recognizing the resilience Brazil has shown to external shocks as well as the achievements with respect to the structure of its public debt, Moody's acknowledged Brazil investment grade in late September of 2009, that way following up on the assessment of the other two major rating agencies, which had already decided to upgrade the country risk rating in the previous year.

Within an environment that was characterized by exceptionally high liquidity together with growing demand for riskier assets, Brazil was very attractive for international capital flows. Against this background, the country continued its program of international reserve accumulation, became a creditor country of the IMF for the first time since the institution was established, and carried out five funding operations on the international financial markets with a total value of US\$ 4.1 billion. The index of the São Paulo stock exchange, Ibovespa, reached 68,588 points in the final closing of the year, which reflected a strong recovery from earlier losses and amounted to a rise of 82.7% in 2009. At the same time, the market value of the companies that were listed on the São Paulo stock exchange increased by 55%, from R\$ 2.0 trillion in December of 2008 to R\$ 3.1 trillion a year later.

An important factor that contributed to the resilience of the Brazilian financial system against instabilities stemming from international markets was the progress that had been made with respect to prudential regulation. For example, the limit on leverage was set below internationally recommended levels and economic and financial conglomerates were under consolidated supervision. In 2009, the national financial system was continuously adapted to the international normative framework set out by the Basel Committee, known as Basel II, according to resolution n. 3,721 issued on April 30th and resolution n. 3,786 issued on September 24th. The Brazilian Association of the Entities of the Financial and Capital Markets (ANBIMA¹⁴⁸), representing all actors in the Brazilian financial markets, was created on October 21st, 2009, resulting from the

¹⁴⁸ According to the Portuguese term *Associação Brasileira das Entidades dos Mercados Financeiro e de Capitais* (ANBIMA).

consolidation of the National Association of Investment Banks (ANBID¹⁴⁹) and the National Association of Financial Market Institutions (ANDIMA¹⁵⁰). Apart from its representative functions, ANBIMA has played an important role in the Brazilian financial markets with respect to the self-regulating process, by certifying professionals, and because of its large database.

While monetary policy decided to maintain the base rate at 13.75% during the last two meetings at the end of 2008, justifying its decision with rising uncertainties about the growth outlook in the face of the international financial crisis, it strongly reduced it during the first two meetings of 2009. The cut in those first two meetings represented half the interest decline of the whole year, which was completed in July, when the COPOM lowered the SELIC rate to 8.75%. Until the end of the year, the base rate remained at this level and even though the inflation rate markedly declined on an annual basis, from 5.9% in 2008 to 4.3% in 2009, price markups strongly accelerated towards the end of the year.

After the international financial crisis had curtailed domestic primary market activity during the first months of 2009, primary issues of shares, debentures and commercial paper resumed a strong pace in the second semester, closing the year with an annual increase of 29.5%. The sharp increase of debenture issues indicated that one of the goals of CVM instruction n. 476/09 was achieved, namely to broaden capital market access by reducing the operational costs and by enabling smaller funding rounds as well as smaller companies to access the market (ANBIMA 2014d). The measure was issued on January 16th of 2009 and introduced a new modality of placing debentures and other financial assets, allowing even privately held companies to make a public offer of their debt securities to a limited number of qualified investors. Since the circle of potential buyers was restricted to qualified investors, the issuing companies had to fulfill less demands. While the initial regulation only applied to the issuance of securities such as debentures, closed investment fund shares, CRIs and CRAs and commercial paper, CVM instruction n. 551, issued on September 25th 2014, extended the modality to other financial instruments, in particular company shares.

The global economic recovery continued in 2010, yet with a great disparity between the growth performances of different countries. Although financial market volatility was overall on a lower level than during the two previous years, it increased during the months between May and August because of rising concerns about the public debt of several European countries and the gloomy outlook with respect to the US American economic recovery as well as the sustainability of the Chinese activity level. Towards the end of the year, when more optimistic prospects about the USA and China prevailed again, the increased global liquidity fostered the upward trend in major stock exchange indices. The second semester was also marked by a price hike of agricultural commodities, as a consequence of deteriorating supplies that faced rising

¹⁴⁹ According to the Portuguese term *Associação Nacional dos Bancos de Investimento* (ANBID).

¹⁵⁰ According to the Portuguese term *Associação Nacional das Instituições do Mercado Financeiro* (ANDIMA).

demand, especially from emerging market economies. The surge in commodity prices caused inflationary pressures in advanced economies and emerging market economies alike. In Brazil, this reflected in the strong contribution of market prices, particularly in the food, apparel and service sectors, to the acceleration of the inflation rate. The consumer price index IPCA increased by 5.9% during the year. The COPOM kept inflation within the target range by holding the basic interest rate at its level of 8.75% during the first two meetings of the year, before elevating it in three consecutive meetings to 10.75%, where it remained until the end of the year.

In 2010, the second term of president Lula ended and his successor, from the same party, Dilma Rousseff won the election. The Brazilian economy took advantage of the more benign international scenario and was pushed by a sound domestic demand to the highest annual GDP growth (7.6%) since 1986. Within this environment of economic expansion, the continued enhancement of employment and income, together with growing credit operations, contributed to the strengthening of the consumer confidence levels. At the same time, improved business confidence indicators were reflected in the rise of GFCF, which reached 18.9% of GDP. The Brazilian credit market continued on its expansionist path with the stronger impulses still stemming from the use of earmarked resources, which were mostly disbursed by the BNDES, especially for infrastructure projects and the acquisition of machinery and equipment by small and medium-sized companies (SMEs). More than 90% of the total disbursements of the BNDES in 2010 were spent according to the PDP (BNDES 2010, 70). After BNDES disbursements had surged by 44% in the previous year, they further increased by 17% from R\$ 183.5 billion in 2009 to R\$ 214.0 billion in 2010. In addition, a large fraction of earmarked credit was attributed to housing. Regarding the use of non-earmarked resources, in the personal credit market payroll-deducted loans as well as vehicle financing continued to grow and in the corporate credit market domestic resources gained in importance to the detriment of external funds, while the participation of credits to SMEs stood out.

Efforts to improve the competitiveness of Brazilian exporters were intensified and the role of the BNDES in foreign trade policies was amplified by creating two institutions, namely the Foreign Trade Guarantee Fund (FGCE¹⁵¹) as well as the Brazilian Export Credit Agency (EXIM Brasil¹⁵²), and by raising BNDES disbursements related to foreign trade operations from R\$ 11.2 billion in 2009 to R\$ 14.2 billion in 2010. EXIM Brasil, a wholly owned subsidiary of BNDES, intended to centralize and amplify efforts of the government to support Brazilian exports and its operations were guaranteed by the FGCE. While being an instrument of private nature, the FGCE was administered by the BNDES. Furthermore, the BNDES financed consumer goods exports worth a financing volume of R\$ 8.9 billion at the subsidized interest rate TJLP¹⁵³. Despite accelerated efforts to promote Brazilian exports, the trade surplus retreated from US\$ 25.3 billion in 2009 to US\$ 20.1 billion in 2010, mainly because the

¹⁵¹ According to the Portuguese term *Fundo Garantidor de Comércio Exterior* (FGCE).

¹⁵² According to the Portuguese term *Agência de Crédito à Exportação do Brasil S.A* (EXIM Brasil).

¹⁵³ See resolution n. 3,851 of April 29th and resolution n. 3,910 of September 30th.

domestic economy grew faster than the rest of the world, resulting in a stronger growth of imports (42.3%) than exports (32.0%). The current account deficit markedly increased to US\$ 47.3 billion (from US\$ 24.3 billion in 2009) due to the development of the trade balance together with rising net remittances of income abroad, which resulted mainly from the recovery of the Brazilian economy and the consequential increase in the distribution of profit to foreign investors. Conversely, the improved prospects for the Brazilian economy favored net inflows of US\$ 99.9 billion in the capital and financial account.

Throughout the year, exchange rate policy aimed at keeping volatility low and avoiding imbalances in the foreign exchange market. In this context, the rate of the financial transactions tax (IOF¹⁵⁴) on foreign investors' capital flows into the Brazilian fixed-income market was doubled from 2% to 4% by decree n. 7,323 on April 10th and further raised to 6% by decree n. 7,330 on October 18th. The Brazilian currency appreciated by 4.3% against the US dollar in 2010. At the same time, BACEN maintained the policy of building up international reserves, raising them by US\$ 50.1 billion to US\$ 288.6 billion at the end of the year. Apart from the markup of the IOF tax, other contributions to the rise in government revenues of 27.1%, which totaled R\$ 1,168.5 billion, included an extra-ordinary inflow in the amount of R\$ 95.0 billion from granting the right to explore oil in the sub-salt layer off the Brazilian coast, the economic upturn causing an increase of major tax revenues, and the phasing out of measures that were introduced to mitigate the effects of the international financial crisis. While the increase of 22.4% in government spending, amounting to R\$ 889.4 billion, was lower than the increase in government revenues, it accelerated compared to the previous year.

In 2010, the public offering of Petrobras shares, reaching R\$ 152.7 billion, dominated primary issues on the Brazilian capital markets. At the time, the capital raised was equivalent to about US\$ 70 billion, representing the world's largest share sale ever. The total volume of stocks issued in the primary market during the year amounted to R\$ 190.9 billion and primary issues of debentures totaled R\$ 67.4 billion, compared to R\$ 63.4 billion and R\$ 37.2 billion in 2009, respectively. The Ibovespa closed the year at the same level as one year before, rising only 1% and reaching 69,304 points at the last closing of the year. During the first semester the index suffered from volatility, before it climbed up to its annual peak of 72,657 points on November 8th. In addition to the increase of the base rate, monetary policy was further tightened by raising reserve and capital requirements¹⁵⁵. Partly reversing measures that had been introduced during the international financial crisis, these policy instruments were applied within the macro-prudential framework that CMN and BACEN implemented in order to ensure the stability of the SFN together with a sustainable development of the credit market, in line with the Basel II framework¹⁵⁶.

¹⁵⁴ According to the Portuguese term *Imposto sobre Operações Financeiras* (IOF).

¹⁵⁵ See BACEN circulars n. 3,485, n. 3,513, and 3,514 on the elevation of reserve requirements and BACEN circular n. 3,515 on the increase of capital requirement.

¹⁵⁶ See BACEN circular n. 3,498 for the regulation of how to calculate capital requirements considering market risks.

In the face of the more restricted access to external funding sources due to the international financial crisis, the Brazilian government had answered a long-standing request of the domestic financial system for an instrument that would allow financial institutions to raise long-term funds on the domestic market, similar to debentures, by creating the Financial Bill (LF¹⁵⁷) through provisional measure n. 472 in December of 2009 that was transformed into law n. 12,249 on June 11th, 2010 and regulated by CMN resolution n. 3,836, issued on February 2nd of 2010, which was later replaced by CMN resolution n. 4,123/2012 (ANBIMA 2013b). Among the required characteristics of the LF that helped the issuing financial institutions to improve their asset liability management were a minimum maturity of two years without early redemption option and a minimum interval of six months for periodical yield payments. BACEN circular n. 3,513, issued on December 2nd, 2010, raised the appeal of LFs by exempting them from reserve requirements. Only financial institutions were allowed to issue LFs, e.g. mortgage companies as well as universal, commercial, investment, or development banks, including the BNDES, which was added later, on December 16th, 2010, to the list of admitted issuers of Financial Bills by CMN resolution n. 3,933. CMN resolution n. 4,123/2012 flexibilized some of the rules initially established, for example by opening the possibility to buy back the LF before maturity under certain conditions (maturity of more than 48 months and not indexed to the interbank market rate DI¹⁵⁸) or by reducing the minimum nominal value per unit from R\$ 300,000 to R\$ 150,000 for LFs that did not contain a subordination clause. The latest alterations to the regulation of Financial Bills became necessary, because in the beginning of 2013 none of the Brazilian debt securities met the criteria established in the Basel III framework. For that reason, the Brazilian Central Bank decided to adjust the LF, through CMN provisional measure n. 608/2013, so that it would serve as reference equity according to Basel III and extended the possibility to issue LFs to all entities it had authorized to function in the financial markets.

After the world economy had started to recover from the international financial crisis in 2010, global uncertainties worsened again in 2011 with adverse effects both on economic activity, especially in advanced economies, and international financial markets, which showed increased volatility. Several incidents added to rising insecurities, including the ongoing upward trend of commodity prices that had started in the previous year, the intensification of the fiscal crises of some countries in the Euro area, geopolitical tensions in the North African and Middle Eastern region, as well as the strong earthquake that hit Japan including its economic impact. The inflation rates of major advanced and emerging market economies were still affected by the supply shock of commodities from the previous year, so that the monetary and fiscal policies of these countries were tightened further. Against this background both entrepreneurs' and consumers' expectations deteriorated.

Within this international environment of growing uncertainties and an economic slowdown of major advanced economies, the Brazilian GDP grew at a pace of 3.9%, which was markedly lower than during the previous year, but still above

¹⁵⁷ According to the Portuguese term *Letra Financeira* (LF).

¹⁵⁸ According to the Portuguese term *Depósito Interbancário* (DI).

the average growth rate of 2.7% of GDP during the period from 2009 to 2014. Similarly, the investment rate measured in terms of the GFCF-to-GDP ratio decreased, while remaining on a relatively high level, from 18.9% in 2010 to 18.3% in 2011. The more moderate expansion of the Brazilian economy was also in line with policy measures that were implemented at the end of 2010, aiming at reduced market liquidity as well as the mismatch between aggregate supply and demand. Domestic demand, especially consumption, recording the eighth consecutive annual growth, was the main factor that contributed to economic activity in Brazil. It was sustained by robust household income that benefited from favorable conditions on the labor market together with the continuation and expansion of government social programs. For example, the program *Minha Casa, Minha Vida* was enhanced by provisional measure n. 514, issued on December 1st of 2010, which established the target of financing two million housing units for low-income households until 2014 corresponding to an estimated investment volume of R\$ 150 billion and the program *Brasil sem Miséria* (Brazil without Misery) was launched, comprising of income transfers and improved access to public services.

During the first semester of 2011, monetary policy evaluated that inflationary pressures, originating mainly from international commodity prices and internal demand, had to be contained by elevating the base rate in five consecutive COPOM meetings from 10.75% at the end of 2010 to 12.50% in July of 2011. During the remaining three meetings of the year, the COPOM decided to revert the cycle of monetary tightening and successively cut the base rate to 11.0%. It justified the loosening of monetary policy with the deteriorating international scenario and the declining domestic capacity utilization. During the year, the consumer price index IPCA rose by 6.5%, reaching, and yet not crossing, the upper limit of the inflation target band.

The more restrictive monetary policy stance early in the year together with the impact of macro-prudential measures from the previous year that aimed at a more sustainable development of the credit sector caused the Brazilian credit market to expand more moderately than in the previous year, in a context of economic slowdown. The total volume of credit operations still grew by 18.8% in 2011, compared to 20.6% in 2010 and 15.2% in 2009, while the credit-to-GDP ratio had increased from 42.6% in 2009 to 44.1% in 2010, before it reached 46.5% in 2011. There was a less than two percent shift of market share from (domestic and foreign) private financial institutions to public banks. Correspondingly, the use of earmarked funds increased, which was mostly related to the expansion of housing finance. In contrast, BNDES disbursements, totaling R\$ 165.6 billion and representing 3.17% of GDP in 2011 compared to 4.33% in 2010, decreased by 23% in 2011, reflecting lower demand for funding of investment projects in the face of dimmed growth prospects. Moreover, the reduction of BNDES disbursements partly related to the purchase of shares in connection with the Petrobras capitalization in 2010.

The Brazilian financial system (SFN) displayed adequate conditions in terms of liquidity, profitability and capital levels in order to cover its operational risks in 2011, even in the context of elevated international financial market volatility. Modern prudential regulation, reasonable leverage levels and the quality of its

assets guaranteed the stability and sustainable development of the SFN. During the first semester, BACEN started to prepare the capital and liquidity structure of the Brazilian financial institutions for the requirements of the Basel III framework. Furthermore, the external vulnerability of Brazil was reduced, as suggested by several indicators, such as the decreasing current account deficit, the increasing external trade flow of goods and services or the expanding international reserves, which were strongly raised from US\$ 288.6 billion in 2010 to US\$ 352.0 billion in 2011. Additionally, the general review of IMF quota resulted in an upward adjustment of the Brazilian quota in the IMF from SRD 3.0 billion before, to SRD 4.3 billion in March 2011. Recognizing the robustness of the SFN and the Brazilian external position together with the consistency of the macroeconomic policy setup based on the inflation targeting framework, a floating exchange rate regime and fiscal responsibility, the major rating agencies decided to upgrade their ratings of Brazilian sovereign credit, first Fitch in April, followed by Moody's in June and Standard&Poor's in November.

As a result, and despite rising volatility on international financial markets, resulting in part from uncertainties related to the sovereign debt of some European countries, Brazil attained the lowest level of sovereign financing costs on international markets in forty years, when the country realized two funding operations with a total volume of US\$ 1.7 billion. The private sector also attracted rising international capital flows, resulting in net inflows of US\$ 112.4 billion in the capital and financial account, compared to US\$ 99.9 billion in the previous year. The main contribution to this increase came from the surge in foreign direct investment (FDI). In fact, FDI net inflows to Brazil increased by 37.4% over the year, reaching a record high of US\$ 66.7 billion and turning the country into the world's fifth largest recipient of FDI net inflows, only behind the USA, UK, China and Hong Kong (UNCTAD 2012). Brazilian foreign debt rose by US\$ 41.4 billion and reached US\$ 298.2 billion, in 2011. The term structure of the foreign debt improved as its long-term component increased by US\$ 58.6 billion to US\$ 258.1 billion while its short-term component decreased by US\$ 17.2 billion to US\$ 40.1 billion. In December 2011, the long-term foreign debt was mainly composed of debt securities and loans, each with a share of 43.1% and 41.4%, respectively, and commercial credits, representing 12.5% of the total. While the major part (62.8%) of total foreign debt was accounted for by the private sector, only a small fraction worth US\$ 4.7 billion of this private external debt consisted of short-term operations and the vast majority, with a volume of US\$ 160 billion, consisted of long-term operations.

While the current account deficit rose from US\$ 47.3 billion in 2010 to US\$ 52.5 billion in 2011, the trade balance registered a higher surplus (US\$ 29.8 billion) than in the previous year (US\$ 20.1 billion), reflecting the stronger expansion of exports, growing 26.8%, compared to imports, growing 24.5%. In 2011, the Brazilian real (R\$) depreciated 12.6% against the US dollar (US\$). The harsh drop of the total volume issued in primary capital markets for shares, corporate debentures, and commercial paper, from R\$ 282.0 billion in the previous year to R\$ 104.6 billion in 2011, was mainly reflecting the extraordinarily high comparison basis in 2010, which included the public offer of Petrobras shares in the amount of R\$ 152.7 billion, and the absence of primary market activity since September 2011 as a consequence of uncertainties in the international scenario.

Accordingly, the primary market for company shares registered a strong decline from R\$ 190.9 billion in 2010 to R\$ 22.6 billion in 2011, while the decline in the primary market for corporate debentures was less severe, dropping from R\$ 67.3 billion in 2010 to R\$ 60.5 billion in 2011. The Ibovespa closed the year at 56,754 points, decreasing 18.1% over the 12-month period, after it had dropped below 50,000 points to its lowest level during the year on August 8 with 48,668 points.

In line with the Productive Development Policy (PDP) implemented in 2008, the government launched the Greater Brazil Plan (PBM¹⁵⁹) on August 2nd, 2011, the first industrial policy plan in Brazil for more than thirty years (Araujo and Martins 2012, 9). The PBM was established by decree n. 7,540/2011 and its aim was to promote technological and productive investment as well as innovation in order to improve the competitiveness of Brazilian companies at home and abroad. While emerging market economies in Southeast Asia were on the rise, Brazilian industry lost competitiveness, among other things due to the appreciation of the exchange rate during the previous years. The measures encompassed tax advantages for the exporting sector¹⁶⁰ as well as the acquisition of capital goods, funding of research and development activities in the amount of US\$ 1 billion, financing and guarantee schemes for the exporting sector, and preferential treatment, i.e. a 25% quota, of domestic products in government purchases. However, there was concern about the lack of an increase in public expenditures, particularly directed at investments, and that this spending was actually reduced relative to GDP (Araujo and Martins 2012, 20; Serrano and Summa 2011).

The envisaged export financing and guarantees were to be provided by the Export Financing Fund (FFEX¹⁶¹), which was created according to provisional measure n. 541 on August 2nd, converted into law n. 12,545 on December 14th. The FFEX was private in nature, established and administered by the Bank of Brazil (BB) and accessible for companies with revenues below R\$ 71.6 million. The law authorized the government to equip the fund with up to R\$ 1.2 billion. Furthermore, the FFEX would be equipped with earnings related to the export financing program (Proex¹⁶²) and contributions of private companies. In 2011, the BNDES continued to be engaged in foreign trade operations, and its disbursements in this area amounted to US\$ 6.7 billion.

On June 24th, 2011, the Brazilian government passed the law n. 12,431 and introduced fiscal incentives for financial instruments related to the funding of long-term investment projects and created accordingly the so-called infrastructure bonds (*debêntures de infraestrutura*) (ANBIMA 2014c, 2013a). The stated objectives of the law included the stimulation of financial assets with

¹⁵⁹ According to the Portuguese term *Plano Brasil Maior* (PBM).

¹⁶⁰ The government created the so-called Special System of Tax Refund for Exporting Companies (Reintegra), involving estimated tax reliefs in the order of R\$ 29.2 billion during the fiscal years of 2011 and 2012.

¹⁶¹ According to the Portuguese term *Fundo de Financiamento à Exportação* (FFEX).

¹⁶² The export-financing program (Proex), being exclusively realized by the Bank of Brazil (BB) and using resources of the National Treasury (TN), has provided exporters as well as importers of Brazilian goods and services with a specific financing model.

longer maturities, expansion of capital market access for Brazilian companies and the promotion of investment projects in the fields of infrastructure, high-technology production, research and development as well as innovation. The infrastructure bonds were issued by Brazilian companies by means of special purpose entities (SPEs¹⁶³) in order to realize infrastructure projects in prioritized sectors such as energy, transportation, water and sanitation facilities as well as irrigation systems. The holder of such an infrastructure or long-term bond benefitted from a reduction of the income tax on the yields of the bond. Additionally, the IOF rate on foreign investments in the Brazilian market for company shares, long-term as well as infrastructure bonds was reduced from six to zero percent, according to decree n. 7,632 of December 1st, 2011.

In accordance with the legal innovation aiming at the development of a long-term corporate bond market, BNDES and ANBIMA created the so-called New Market for Fixed-Income Securities (NMRF according to the Portuguese initials of *Novo Mercado de Renda Fixa*), in order to foster this segment of the capital markets as a source of (long-term) funding for Brazilian companies. By establishing differential rules for the registration of fixed-income securities, the NMRF incentivized characteristics that increased the transparency as well as the liquidity premium of the asset and its market. Furthermore, the NMRF was divided into a long-term and a short-term segment. The assets of the first segment additionally had to meet the same requirements, in terms of minimum maturity and repurchase conditions, which defined long-term assets according to law n. 12,431/11. In October of 2011, ANBIMA issued a code of best practices for the NMRF and in the beginning of 2012 the first issue of a debenture in the new market for fixed-income securities was registered.

The slowdown of the world economy throughout 2012 was mainly a consequence of the aggravating European fiscal, banking and political crisis, the decelerating recovery of the US economy and the growing risk aversion on the international financial markets. Even though the USA, UK and China registered a short period of economic recovery in the third quarter, the global economic activity lost dynamism towards the end of the year, again. The USA suffered from a political deadlock related to the so-called fiscal cliff. The Euro area entered a more intense recession at the end of the year, even after the European Central Bank (ECB) had loosened monetary policy even further and announced that it would defend the euro (€) unconditionally. Against this background, the declining trend of commodity prices, initiated in 2011, continued and contributed to the downward path of inflation, which in turn favored the maintenance of exceptionally low interest rates in the advanced economies and the prolongation of the expansive monetary as well as fiscal policy cycles in the emerging market economies.

In Brazil, the annual GDP growth was lower than during the previous year for the second time in a row and closed the year with a growth rate of 1.8% in 2012, after 3.9% in 2011 and 7.6% in 2010. On the bright side, seasonally adjusted quarterly GDP growth revealed a positive development of increasingly lively economic activity in the course of the year, rising from 0.1% in the first quarter

¹⁶³ According to the Portuguese term *Sociedade de Propósito Específico* (SPE).

to 0.3%, 0.4% and 0.6% in the remaining three quarters of 2012, respectively. The economy continued to depend on domestic demand as its main backing, receiving strong impulses from household consumption, which was sustained by the (moderate) expansion of credit operations and the vigor of the labor market. Gross fixed capital formation (GFCF) declined to 16.9% of GDP as a consequence of growing uncertainties in the external scenario that worsened entrepreneurs' confidence and expectations.

Since the COPOM had elevated the base rate to 12.50% in July 2011, it started to lower the base rate three consecutive times during the remainder of the year to 11.00% and maintained this downward path throughout 2012, cutting down the SELIC rate another seven successive times to 7.25% in October 2012. In the November meeting, the COPOM decided to maintain the base rate at this level. Justifying this decision, the COPOM explained that its assessment of inflationary risks, considering the recovery of the domestic economy and the complex international scenario, came to the conclusion that the appropriate strategy for the convergence of the inflation rate to its target was to stabilize monetary conditions for a sufficiently long period. In this environment, the consumer price index IPCA reached 5.8% in 2012, which was within the target range and lower than the inflation rates registered during the previous two years of 5.9% in 2010 and 6.5% in 2011, but still above the inflation target of 4.5%.

The credit market experienced a strong decrease of interest rates, reaching historical lows, which favored the reduction of constrained household income and, from mid 2012 onwards, the containment of default of payment rates. The credit-to-GDP ratio increased to 49.3% in 2012, up from 46.5% in the previous year. While the expansion of the credit sector remained on a relatively high level, it continued to slow down, converging towards a sustainable growth path. The total volume of credit operations rose by 16.4% in 2012, after it had risen by 18.8% and 20.6% in 2011 and 2010, respectively. Especially public banks contributed to the expansion of credit operations, raising their share of the Brazilian credit market from 43.6% in the previous year to 47.9% in 2012. The disbursements of the BNDES went up by 6% to R\$ 175.8 billion, partly recovering the decline of the previous year, when this figure had dropped by 23%.

At the end of 2012, the Brazilian external debt amounted to US\$ 312.9 billion, rising by US\$ 14.7 billion within twelve months. As in the previous year, the term structure improved, as the long-term component of external debt was raised by US\$ 22.2 billion to US\$ 280.3 billion, while the short-term component was reduced by US\$ 7.5 billion to US\$ 40.1 billion. In 2012, Brazil realized three sovereign bond issuance operations on international markets with a total volume of US\$ 3.9 billion.

The uncertainties about the duration and intensity of the international crisis didn't exert a negative influence on foreign capital flows to Brazil in 2012. The capital and financial account registered net inflows of US\$ 70.0 billion, with positive net contributions under the headings of loans, long-term debt securities, and company shares. FDI net inflows were almost on the same record high level of the previous year, decreasing only by 2.1% to US\$ 65.3 billion, which placed

Brazil fourth on the international ranking of FDI receiving countries, moving up one position (UNCTAD 2013). In 2012, FDI flows to advanced economies were, for the first time, lower than those to emerging market and developing economies.

The Brazilian real depreciated by 8.9% against the US dollar in 2012. In line with the government directive to simplify and modernize the foreign exchange market, the National Monetary Council (CMN) defined simplification measures. CMN resolution n. 4,051 of January 26th changed the conditions of participation in the foreign exchange market for exchange broker and dealer, seeking increased competition among agents in exchange transactions with smaller amounts and, as a result, lower transaction costs. During the first months of the year, the elevated liquidity on international markets induced renewed auctions for the purchase of international reserves, which increased from US\$ 352.0 billion in December 2011 to US\$ 373.1 billion one year later. Within this context, various measures were adopted to adjust the entrance of foreign capital into the country and to discourage short-term capital flows¹⁶⁴. As of May 2012, the risk aversion on international financial markets increased, requiring a gradual flexibilization of the measures that had been implemented in the beginning of the year¹⁶⁵.

The deficit in the current account increased from US\$ 52.5 billion, or 2.1% of GDP, in 2011 to US\$ 54.2 billion, or 2.4% of GDP, in 2012. The surplus in the trade balance markedly decreased by US\$ 10.4 billion to US\$ 19.4 billion, from US\$ 29.8 billion in the previous year. Government action in the area of external trade policy as well as industrial policy was guided by the continuity of the Greater Brazil Plan (PBM), which was enhanced by a series of measures with the goal to strengthen international market competitiveness of the domestic industry and to encourage investments in the country¹⁶⁶. The policy of fostering competitiveness of the domestic industry encompassed the increase of public resources for the provision of finance of exportable production, the removal of taxation on exports and investments, and the resumption of the agenda to lower the so-called Brazil Cost (*Custo Brasil*). Main achievements of the PBM in 2012 include the payroll tax exemption in labor-intensive sectors, a reduction in energy prices, as well as the government programs of concessions and public-private partnerships in the fields of infrastructure, transportation and logistics¹⁶⁷.

¹⁶⁴ See, for example, decree n. 7,683 of March 1st and decree 7,698 of March 9th, 2012, which were extending the minimum duration of financial investment operations eligible for preferential tax treatment from 720 days to 1,080 days, and later to 1,800 days.

¹⁶⁵ See, for example, decree n. 7,751 of June 14th and decree 7,853 of December 5th, 2012, which reversed the earlier extensions of minimum duration of financial investment operations eligible for preferential tax treatment, cutting it down from 1,800 days to 720 days, and later to 360 days.

¹⁶⁶ See, for example, provisional measure n. 564 of April 3rd, which was converted into law n. 12,712 of August 30th, or provisional measure n. 563 of April 3rd, which was converted into law n. 12,715 of September 17th.

¹⁶⁷ Concerning the infrastructure sector, provisional measures n. 579 of September 31st and n. 595 of December 6th were regulating, respectively, the concession of energy generation, transmission and distribution and the new regime for the installation and operation of ports. The adjustments in the energy sector aimed at a future reduction of energy prices for Brazilian customers as well as securing the energy supply. The new

Furthermore, activities were publicly sponsored that gave incentives to innovation and the elevation of domestic content in final products, e.g. in the automotive sector. The fiscal measures implied an estimated loss of tax revenue in the amount of R\$ 52.3 billion. The BNDES disbursements related to external trade operations amounted to US\$ 5.5 billion in 2012, i.e. US\$ 1.2 billion lower than in the previous year. The export-financing program (Proex) with a volume of US\$ 4.9 billion in 2012 accounted for 1.7% of total exports and was enhanced by law n. 12,699 of July 30th, which extended the credit of the TN by R\$ 1.6 billion.

On April 30th, 2012, law n. 12,618 was passed, which authorized the creation of three entities, one for each power of the state, of closed and complementary pension funds for the public servants. In the low interest rate environment, the capital markets experienced a surge in primary issues, mainly pushed by corporate debentures, which increased by 68% from R\$ 60.5 billion in 2011 to R\$ 101.4 billion in 2012. While primary issues of commercial paper also increased, from R\$ 21.5 billion to R\$ 25.5 billion, the primary market for company shares dropped to R\$ 16.1 billion, even below the already low level of the previous year of R\$ 22.6 billion. The Brazilian stock exchange index Ibovespa registered 60,952 points in the last closing of the year, representing a 7.4% annual growth, after experiencing high volatility during the year. The annual maximum was reached in March, at 68,394 points, and the minimum in June, at 52,481 points.

The recovery of the world economy in 2013 was mainly based on greater activity in the advanced economies, with the economic performance of the USA and UK sticking out, together with the return of the euro area to a positive growth path. In these economies, inflation remained below the levels that the respective central bank envisaged, which therefore lowered base rates to historic levels. Emerging market economies disappointed initial projections of their economic performance in 2013, a result that was partly related to financial market instabilities throughout the year. Between May and September, it was not clear, when the US American central bank (Fed) would end its policy of quantitative easing (tapering) and whether it would initiate the process of normalization of its monetary policy sooner than expected. These uncertainties translated into increased volatility of financial markets and long-term interest rates, especially in the USA. Adverse effects of these events on the capital flows to emerging market countries caused their currencies to depreciate against the US dollar. Governments and monetary authorities of emerging market countries reacted to this uncertain environment by taking measures to limit their economies' exposure to foreign currencies.

In this context of enhanced global economic activity and financial market volatility, the Brazilian economy registered an annual GDP growth of 2.7% in 2013, reversing the slowdown since the peak in 2010. The acceleration of domestic growth was mainly sustained by agricultural production with

port regime was seeking to amplify the infrastructure and modernize the management of the Brazilian ports, in order to encourage private wealth holders to invest and to raise the cargo-handling capacity combined with cost reductions and the removal of entrance barriers.

additional contributions from positive results in the industrial and service sectors. As regards the components of aggregate demand, the recovery of gross fixed capital formation stood out, which was based on increased production of capital goods for construction as well as transport equipment. The relative moderation of household consumption reflected the recent evolution of incomes, the credit market and consumer confidence indicators. The composition change in rising demand, with investments growing faster than consumption, was conducive to a more sustainable long-term growth. These developments can also be interpreted in light of the upcoming FIFA World Cup in 2014, which caused increased investment expenditures, particularly in the construction and infrastructure sectors. At the same time, the less benign evolution of the private households' economic situation might be related to the outburst of political protest in June 2013 in the host cities of the FIFA Confederations Cup.

Government action in the fields of foreign trade and industrial policy in 2013 was guided by the continued implementation of the Greater Brazil Plan (PBM) together with measures to boost not only competitiveness of domestic industry, but also investments in productive capacity, as well as innovation, and the improvement of the trade defense system. Concerning foreign trade policy, BNDES disbursements related to international business loan operations amounted to US\$ 7.1 billion (up from US\$ 5.5 billion in the previous year) and the total volume of the export-financing program (Proex) grew from US\$ 4.9 billion in 2012 to US\$ 6.3 billion in 2013. Despite increased public spending to foster Brazilian companies in the external sector, the trade balance dropped 88% from US\$ 19.4 billion in the previous year to US\$ 2.3 billion in 2013, in a context of a depreciating real (R\$). The decline in the trade balance was the main reason for the increase of the current account deficit from US\$ 54.2 billion, representing 2.4% of GDP in the previous year to US\$ 81.2 billion, representing 3.6% of GDP in 2013.

After the COPOM had left the SELIC rate on its record low level of 7.25% during the first two meetings of the year, it decided to increase the base rate by 0.25% in the third meeting, because it had come to the conclusion that the rising inflation rate required a monetary policy reaction. In the following four meetings the SELIC rate was elevated by another 0.50% each, raising it to 10.00% at the end of the year. The COPOM justified its decisions, in May with the worsening of inflation expectations, in July and August with the depreciation and volatility of the exchange rate that exerted inflationary pressures, and in the October and December meetings with the conjuncture of rising prices, indexation, and inflation expectations. The consumer price index IPCA registered an annual inflation rate of 5.9% in 2013, slightly above the previous year and within the inflation target range.

The deceleration of growth in the Brazilian credit sector continued in 2013, when the total volume of credit operations grew 14.7% throughout the year, compared to annual credit growth rates of 16.4% in 2012, 18.8% in 2011, and 20.6% in 2010. During the same period, the credit-to-GDP ratio increased to 51.0% in 2013, from 49.3%, 46.5%, and 44.1%, respectively, in the earlier years. In 2013, especially the credit segment with non-earmarked resources was slowing down, reflecting the impact of higher interest rates of consumer loans.

Credit operations with earmarked resources, rising 24.5% during the year, were pushed by the dynamic performance of rural credit and by the continued expansion of housing finance as well as financing operations with BNDES resources. The disbursements of the BNDES grew by 15% to R\$ 202.6 billion in 2013. In this context, public banks represented 51.2% of the Brazilian credit market at the end of the year, raising their share from 47.9% in the previous year. Furthermore, the credit market registered not only an increase of the interest rates, but also of the medium terms, while spreads as well as default of payment rates were reduced in the course of the year.

Gross external debt decreased by 1.4% in 2013 to US\$ 308.6 billion in December. The reduction of US\$ 4.3 billion was completely attributable to the long-term foreign debt, which closed the year at US\$ 276.0 billion. The short-term foreign debt, in turn, remained stable at US\$ 32.6 billion. The private sector accounted for 61.5% of gross external debt, and these obligations consisted of long-term operations in the amount of US\$ 162.1 billion and of short-term operations in the amount of US\$ 27.8 billion, while the remaining 38.5% fraction of the public sector consisted of long- and short-term operations in the amount of US\$ 113.9 billion and US\$ 4.8 billion, respectively. Brazil realized two operations of bond issuance on international markets with a total volume of US\$ 4.1 billion in 2013.

Uncertainties related to the timing of adjustments in the monetary policy stance of the USA caused financial market volatility to rise together with expectations about decreasing liquidity conditions as well as risk aversion. As a consequence, international capital flows to major emerging market economies dried up for large parts of the year and the dollar appreciated against most of the currencies of these countries. In Brazil, the BACEN attenuated the impact of this adverse environment by further loosening capital controls¹⁶⁸ and by offering hedge against foreign exchange risks¹⁶⁹. In this context, net inflows in the capital and financial account amounted to US\$ 74.4 billion in 2013, slightly above the result in the previous year (US\$ 70.0 billion). Although net FDI flows to Brazil decreased by 2.0%, the US\$ 64.0 billion registered in 2013 represented the third-highest volume in history and placed Brazil fifth in the country ranking of the highest FDI recipients (UNCTAD 2014). Global FDI flows increased from US\$ 1.35 trillion in 2012 to US\$ 1.45 trillion in 2013 and for the second consecutive year the advanced economies received less than the developing economies, each with a share of total flows of 39% and 54%, respectively.

Net portfolio investment flows more than doubled from US\$ 16.5 billion in 2012 to US\$ 34.7 billion in 2013. Transactions in equity securities of Brazilian companies registered net inflows of US\$ 11.6 billion, rising up from US\$ 5.6 billion in the previous year. The net inflow to the Brazilian medium and long-term fixed-income market increased by 398.0% during this period, from US\$ 5.1

¹⁶⁸ The rate of the financial transaction tax (IOF) for foreigners acquiring property fund shares was reduced to zero by decree n. 7,894 of January 30th, 2013. On June 4th, 2013, decree n. 8,023 reduced the IOF rate on foreign capital inflow to the fixed-income market to zero, and on June 12th decree n. 8,027 reduced the IOF rate to zero on increases of the short position in the foreign exchange derivatives market.

¹⁶⁹ The BACEN announced a program of daily liquidity supply in the foreign exchange market through its notice n. 24,370 of August 22nd, 2013.

billion to US\$ 25.4 billion, which was, essentially, a consequence of the IOF rate reduction. Despite the strong increase of foreign capital inflows, the primary market for company shares, debentures and commercial paper decreased from R\$ 143.1 billion in 2012 to R\$ 122.5 billion in 2013. The decline reflected mainly the R\$ 26.5 billion reduction of primary debenture issues, which reached an issuance volume of R\$ 74.9 billion. The issues of debentures and company shares represented 61.1% and 20.7%, respectively, of the primary market. The Brazilian stock exchange also experienced a downward tendency throughout the year, while additionally registering high volatility. The Ibovespa fell 15.5% in 2013, reaching its maximum in January with 63,312 points and its minimum in July with 45,044 points, before closing the year at 51,507 points. Not only the Brazilian stock exchange was negatively affected by increased volatility, risk aversion, and uncertainty about the anticipation of monetary policy adjustments in the USA, causing portfolio reallocations, but also other emerging markets, which registered annual losses in their stock exchanges: The Chilean IPSA (14.0%), the Turkish BIST (13.3%) and the Chinese Shanghai Composite (6.7%). On the contrary, the Indian Sensex increased by 9.0% in 2013. Most stock exchanges of advanced economies experienced strong upward movements, with the Nikkei of Japan (56.7%), the Standard&Poor's 500 of the USA (29.6%), Deutscher Aktienindex, DAX, of Germany (25.5%), and the Financial Times Securities Exchange Index, FTSE 100, of the UK (14.4%) sticking out.

In 2014, the international scenario remained complex as the global economy was expected to continue on its growth path initiated in the previous year, with emphasis on the recoveries in the USA and UK, economic resilience in China and signs of stability in the euro area, but these high initial expectations were disappointed and only moderate and unequal growth was registered. While the USA experienced oscillating growth and moderate inflation throughout the first months of the year, its domestic economic activities accelerated during the second semester. On the contrary, the economic recovery in Japan and Europe was slower than expected and even turned into a recession in Japan. Furthermore, major emerging market countries, in particular China, caught the focus of attention, because their growth rates were slowing down. At the same time, the prices of oil and other commodities were decreasing and contributed to a deflationary scenario. After inflation rates in major advanced economies had already been low throughout most of the year, they reduced further towards the end of 2014. The euro zone even registered an annual deflation rate of 0.2% in December.

In January, currency sell-offs in Argentina, Turkey and South Africa caused turbulences on foreign exchange markets, while expectations about a strong recovery of the US economy and subsequent earlier-than-expected tapering in the USA caused increased volatility on international financial markets, but these expectations soon reversed. The improved predictability of US monetary policy together with signs of a continuation of the high liquidity environment given by the central banks of the USA, China, Japan and the euro area, and the perception of lower systemic risks, all contributed to a decreasing volatility of international financial markets, especially in the second quarter of 2014. Lower risk aversion was reflected in rising demand for riskier assets and not only drove stock

exchanges in advanced economies to record highs, but also caused a surge, from March onwards, in emerging market issues of sovereign and corporate securities.

This picture was reversed during the second semester of 2014, when international financial market volatility increased again, reflecting a combination of factors. Financial markets were reacting to lower than expected growth rates in emerging market countries and in important advanced economies, especially in Europe and Japan, and to the risk of deflation in the euro area. Yet, financial stability was not only adversely affected by the disappointing global growth itself, but also the fact that it was to a large extent supported by a high liquidity environment, which led to an underpricing of risks and to increased financial leverage. Additionally, accumulated high risks were identified in the so-called shadow banking system. Furthermore, instabilities were stemming from geopolitical factors, including conflicts in the Middle East and Eastern Europe, an embargo against Russia, and uncertainties related to the election and formation of government in Greece. Various peaks of risk aversion, raising the demand for assets with higher liquidity premium, on the one hand, and the rapid decline of the prices of oil and other commodities, on the other hand, contributed to the depreciation of most currencies against the US dollar, especially those of commodity exporting countries¹⁷⁰. The appreciation of the US dollar was also a consequence of the more benign outlook for the US economy compared to other important economic areas together with the increasingly divergent monetary policy stance of the Fed in contrast to that of the ECB and the central bank of Japan (BoJ).

In this context, the Brazilian economy stagnated in 2014, recording an annual GDP growth rate of 0.2%, after it had grown 2.7% in 2013. Seasonally adjusted quarterly GDP grew at a reasonable pace of 0.6% during the first quarter, before it collapsed in the second quarter, falling by 1.3%. During the last two quarters, the pace of economic expansion came close to a standstill with seasonally adjusted quarterly GDP growth rates of -0.1% and 0.1%, respectively. Apart from the low economic activity, Brazil faced a series of challenges that intensified during the second semester, including the worsening of fiscal results with a decreasing primary surplus from May onwards, continuously high inflation expectations, as well as uncertainties related to the presidential election, and consequently, with respect to the new economic cabinet. On October 26th, president Dilma was reelected for a second mandate. The public sector borrowing requirements doubled within a year, from 3.1% of GDP in 2013 to 6.2% in 2014, mainly because the primary surplus of 1.8% of GDP in the previous year had turned into primary deficit of 0.6% of GDP by December 2014, representing the first primary deficit since 1999.

¹⁷⁰ In the second semester of 2014, the US dollar appreciated against the Chilean peso by 9.7%, the pound sterling by 9.8%, the euro by 13.2%, the Mexican peso by 13.8%, the Australian dollar by 15.5%, the yen by 18.2%, the real by 20.0%, and the Russian ruble by 78.7%. The strong depreciation of the ruble and falling prices of Russian assets reflected liquidity restrictions in the banking system of the country as well as the increased demand for foreign currency to pay external debt. After losing US\$ 100 billion of its international reserves, the Russian central bank allowed the exchange rate to float.

In May 2014, the COPOM discontinued the cycle of interest rate hikes it had started in April 2013, and waited until October to resume it. In January, the rhythm of 0.50% base rate elevations was retained, raising the SELIC rate to 10.5%, because of a resistant inflation and uncertainties concerning the fiscal policy stance. In the February and April meetings, the COPOM slowed down the interest rate increases to 0.25%, raising the base rate to 11.0%. It remained at this level until October in a context of economic slowdown and low inflation, after it had been raised 3.75% in total since April 2013. In October, the COPOM resumed to raise the base rate by 0.25%. As inflation expectations continued to rise, the COPOM elevated the SELIC rate by another 0.50% in the December meeting, lifting it up to 11.75%. In the third quarter, the BACEN tried to improve the distribution of liquidity in the Brazilian financial system through macroprudential measures and adjustments of the reserve requirements¹⁷¹. The inflation rate stayed barely within the target range, as the consumer price index IPCA increased by 6.4%, moving even further away from the 4.5% inflation target than last year, when the inflation rate had risen from 5.8% in 2012 to 5.9% in 2013.

Under these conditions, the expansion of the credit sector (11.3%) was lower than in the previous year (14.7%) for the fourth consecutive year, registering a credit-to-GDP ratio of 53.1% in December 2014. Non-earmarked credit operations only grew by 4.6% (down from 7.9% in 2013), while the credit segment with earmarked resources rose 19.6% in 2014. The increase of earmarked credit was lower than in the previous year, when it had grown by 24.5%, but this segment continued to play the major role in the growth of the credit market. Accordingly, public banks expanded their market share from 51.2% in 2013 to 53.8% in 2014. By contrast, the BNDES disbursements were lowered by 7% from R\$ 202.6 billion to R\$ 187.8 billion. The interest rates in the domestic credit market increased on average, together with the spread and medium term of credit transactions, while the default of payment rate continued to decrease. As financial institutions in Brazil increased their net asset position, the Brazilian banking system continuously showed low liquidity risks and elevated solvency, which was confirmed by results of stress tests and a simulated adoption of Basel III requirements. Furthermore, the risks related to the shadow banking system in Brazil were low.

In 2014, the gross external debt of Brazil increased by 12.9% from US\$ 308.6 billion in December 2013 to US\$ 348.5 billion twelve months later. The US\$ 39.9 billion rise in foreign debt was composed of US\$ 25.0 billion in additional short-term and US\$ 14.8 billion in additional long-term operations. Especially the 76.8% surge in short-term external debt, from US\$ 32.6 billion to US\$ 57.6 billion, stood out, while long-term obligations with a volume of US\$ 290.8 billion, representing 83.4% of foreign debt, registered an increase of 5.4%. Throughout the year, Brazil realized three bond issues on international markets amounting to a total volume of US\$ 6.0 billion. At the end of 2014, international reserves had reached US\$ 363.6 billion, compared to US\$ 358.8 billion in the previous year.

¹⁷¹ See BACEN circulars n. 3,712 of July 24th, 2014, as well as n. 3,714 and n. 3,715 of August 20th, 2014.

The depreciation of the real (R\$) in the beginning of the year was already reversed during the first semester. The exchange rate experienced lower volatility, after the BACEN announced, in June 2014, that it would maintain its program of currency swap auctions and dollar repo transactions with the aim to offer hedge to economic agents and provide liquidity in the foreign currency market. The exchange rate remained relatively stable until September, when it started to strongly depreciate against the US dollar. In reaction to the strong devaluation of the Russian ruble and its repercussions on the currencies of emerging market economies, the BACEN announced, in December, that it would extend the program of foreign currency auctions beyond the end of 2014. The real closed the year at R\$ 2.66/US\$, reflecting an annual depreciation of 13.4%.

Brazil's current account deficit increased from US\$ 81.2 billion in 2013 to US\$ 91.3 billion in 2014 and the trade balance turned negative for the first time since 2001, as exports decreased by 7.0% and imports by 4.5%, resulting in a trade deficit of US\$ 4.0 billion, compared to a US\$ 2.3 billion surplus in the previous year. Net inflows to the capital and financial account expanded by about one third to US\$ 99.1 billion in 2014, even though FDI flows to Brazil slightly decreased by 2.3% (UNCTAD 2015b). Nevertheless, foreign direct investment contributed US\$ 62.5 billion to external capital flows into the country, which secured Brazil sixth place among FDI recipient countries, falling back one rank. In 2014, global FDI flows came down from US\$ 1,452 billion in 2013 to US\$ 1,228 billion. The major share of these flows (55%) went to developing economies, while advanced economies received 41% of these flows, compared to 54% and 39%, respectively, in the previous year.

The index of the Brazilian stock exchange (Ibovespa) continued its downward trend since October 2013 until the middle of March 2014. On March 24th, the rating agency Standard&Poor's downgraded the sovereign credit rating of Brazil, which nevertheless retained its investment level. At the end of March, the GDP growth of 2013 was released, which was higher than expected, supporting the 3.2% rise during the first semester of the Ibovespa as well as the improvement of the country risk. This upward trend did not last long, as the rating agency Moody's lowered the outlook of its Baa2 sovereign rating of Brazil from stable to negative, on September 9th. From then on, the Ibovespa reversed the earlier upward trend and closed the second semester with a 5.9% loss, strongly influenced by the 41% loss of value of the Petrobras shares. Although the presentation of the new economic cabinet reduced volatility in the domestic capital markets, it shortly flared up again in the course of the Russian currency crisis, but was soon stabilized after the announcement of reduced public spending as well as the orthodox discourse of the new finance minister.

Primary market activity reached almost the same level as in the previous year, when the total volume issued of company shares, corporate debentures, and commercial paper amounted to R\$ 122.5 billion. In 2014, primary issues totaled R\$ 120.3 billion, also because the sharp drop of nearly 40% in the primary stock market was to a large part compensated by primary issues of commercial paper. While the primary market registered company share issues in the amount of R\$ 15.4 billion in 2014, down from R\$ 25.4 billion in 2013, the respective volumes of commercial paper issues were R\$ 30.5 billion and R\$ 22.1 billion. The

primary issues of corporate debentures decreased slightly from R\$ 74.9 billion in the previous year to R\$ 74.4 billion in 2014.

Various measures were implemented in the course of 2014 that aimed at the improvement of the Brazilian financial system in terms of stability, security, transparency and efficiency¹⁷². The most important legal innovations included measures that facilitated the access of international investors to the Brazilian capital markets by simplifying procedures and clarifying the existing regulation¹⁷³. The main intention of these measures was to promote private investment projects, with a focus on infrastructure projects, and the development of the domestic capital markets, especially the segment of long-term securities. Furthermore, measures were implemented to align domestic legislation with the recommendations of the Basel III accord¹⁷⁴, including the above-mentioned regulative adjustments concerning the Financial Bill¹⁷⁵.

3.1.3 Resuming the relevant context and financial system development in Brazil

The legal roots of debentures in Brazil date back to the 19th century and served as the legal basis for their issuance until the New Corporate Law was passed in 1976. Due to the 12% interest cap of the Usury Law in combination with the prohibition of monetary adjustments outlawed by the Gold Clause Law (both decrees were passed in 1933), long-term debt contracts became unviable during the 1940s, when inflation rose and real interest rates turned negative. As a consequence, corporate bond markets in Brazil practically disappeared after they had offered an important funding source for the early Brazilian industrialization. To circumvent growing difficulties to finance and fund the Brazilian developmentalist state policies that were guided by an import substitution industrialization (ISI) strategy, the public development bank BNDES was created in 1952. Nevertheless, the ISI strategy wore out towards the end of the decade as inflation and public deficit continued to increase. Although the Brazilian democratic governments at the time recognized the need for reforms, it was only after the military coup in 1964 and through authoritarian impositions that the financial markets were restructured, laying the ground for the current Brazilian financial system (SFN).

Apart from law n. 4,380/64 creating the Financial System of the Housing Sector (SFH), the other two main pillars of the financial restructuring included the Law of the Banking Reform of 1964, which reorganized the monetary policy authorities by instituting the National Monetary Council (CMN) as the organ in charge of formulating the credit and currency policy and the Brazilian central

¹⁷² For example, CMN resolution n. 4,327 of April 25th, 2014, established the guidelines for the implementation of social and environmental responsibility policies by the institutions of the SFN.

¹⁷³ See CMN resolution n. 4,319 of March 27th, 2014, BACEN circular n. 3,702 of March 28th, 2014, and CMN resolution n. 4,373 of September 29th, 2014.

¹⁷⁴ See, for example, BACEN circular n. 3,701 of March 13th, 2014.

¹⁷⁵ See CMN resolution n. 4,330 of May 26th, 2014, and law n. 12,838 of July 9th, 2014.

bank (BACEN) as the executing and supervising organ, and the Capital Market Law in 1965, which envisaged the establishment of the capital markets as a distinct segment from the banking sector in the SFN that were regulated and supervised by the CMN and the BACEN. Among the legal adjustments of the Capital Market Law were new terms and conditions for the issuance of debentures including the permission of monetary adjustment clauses, which led to the revival of the primary market for debentures after decades without any activity. In 1964, the Monetary Adjustment Law initiated the indexation of the Brazilian economy and, as a consequence, not only corporate bonds, but also sovereign bonds (the so-called ORTNs) were indexed to the inflation rate. The admission of monetary adjustments was, on the one hand, a solution to some of the most pressing problems of the Brazilian economy at the time by enabling positive real interest rates despite elevated inflation, and, on the other hand, the cause of new problems, because the indexation provoked rising inflationary expectations, which reinforced price hikes.

Soon after the reforms were implemented, the Brazilian economy was able to take advantage of a benign international scenario and reached extraordinary high GDP growth rates of more than 10% per year on average between 1967 and 1973, a period which became known as the Economic Miracle (*Milagre Econômico*). While the fixed-income market became less attractive, the Brazilian stock market experienced a boom phase between 1970 and 1971. After a four-decade absence on international financial markets, the Brazilian government issued a sovereign bond abroad in 1972. In 1976, the first corporate bond issuance abroad by a Brazilian (state-owned) company was completed. The international context of high liquidity and low interest rates in the 1970s facilitated the accumulation of large external debts (mostly bank loans) by developing and emerging market economies, which later caused severe problems for these countries, primarily after the second oil crisis in 1979.

The boom on the Brazilian stock market in the early 1970s soon reversed and stock prices tumbled. In the resulting high uncertainty environment that was aggravated by the first oil crisis in 1973-74, wealth holders' demand for fixed rate bonds vanished and the demand for the indexed sovereign bonds (ORTNs) increased. The Brazilian government reacted to the increased uncertainties related to the oil crisis, which caused a global recession, with strong state intervention according to the Second National Development Plan (II PND) and was able to keep the Brazilian economy on its growth track. At the same time, it augmented the Brazilian capital market infrastructure with the aim to regain the confidence of investors. In 1976, the Securities Commission (CVM) was created to discipline, monitor and promote the development of the Brazilian securities markets and the so-called new Corporate Law was passed. By imposing monetary adjustment of permanent assets and net equity, it made the inflationary impact on the assets and liabilities of a company explicit and showed its actual economic and financial results. Furthermore, the new regulation extended the range of possible types of debenture issues with varying degrees of guarantees and a corresponding cap on the issuance volume.

An important step in the financial development of the country was the implementation of an electronic system that allowed the registration and

liquidation of financial transactions with and the custody of sovereign bonds, the so-called Special System for Settlement and Custody (SELIC) in 1979. The base rate SELIC is derived from the interest rates that are charged during the daily trading operations registered in the SELIC and represents an important benchmark in Brazil as it reflects the interest paid on sovereign debt securities. Despite the improvements in the institutional framework of the Brazilian financial system, the development of the domestic market for debentures continued to struggle in the 1970s, which can be attributed to the availability of a wide range of alternative funding sources provided by public finance for development. Brazil depended on external sources to finance its growth, so that the second oil crisis at the end of the decade and the resulting interest rate increase on an international level exposed the external vulnerability of the Brazilian economy. By then turning to the domestic bond market to finance its debt, the Brazilian government put pressures on the base rate, which, in turn, hampered the economic growth process.

In political terms, the transition from the military regime to the New Republic stood out in the 1980s¹⁷⁶. The so-called lost decade was furthermore marked by weak economic growth, rising external debt, a series of unsuccessful price stabilization plans, and a gradual opening of the country, both economically and politically. In 1982, Brazil sought support from the International Monetary Fund (IMF) for the first of a total 18 times in two decades, which helped the country to revert its trade deficit into a surplus in 1983 and 1984, but Brazil did neither contain its rising inflation nor its budget deficit, which it financed through the issuance of sovereign bonds. As a consequence of the large supply of high-yielding public bonds, wealth holders' demand for company shares declined. The government reacted by creating the BNDESPAR, a subsidiary of the BNDES, in 1982 to stimulate the Brazilian stock exchanges and to fill the gap of the absent private investor. Two years later, in a context of lower interest rates and expectations of an economic upswing, the stock market strongly resumed its growth path. The boom on the Brazilian stock exchanges lasted until the crash in 1987, from which it only recovered six years later.

The high concentration of the Brazilian corporate bond market was reduced when in 1981-82 the number of placements strongly increased. Yet, the market stagnated again soon after due to various modifications in taxation and rules that prohibited some institutional investors to purchase debentures. In 1984, the Clearing House for the Custody and Financial Settlement of Securities (CETIP) was created in resemblance to the SELIC and mostly aimed at private fixed-income securities. The domestic corporate bond market benefited greatly from increased speed and safety related to the electronic processing, but it only recovered towards the end of the decade, when the tax burden on debentures was leveled with that of other important financial assets. Other factors that exerted a positive influence on the market development included a gradual diminution of subsidized credits, the policy of decontrolling interest rates by monetary authorities, and the relaxation of the requirements for the registration of a publicly owned company. Moreover, corporate bond market development was fostered by the implementation of the National Debentures System (SND) in

¹⁷⁶ The new constitution of 1988 regulated the domestic financial system in article 192.

1988, which was developed by ANDIMA and CETIP to improve the transparency as well as the reliability in the debentures market.

The Brazilian economy underwent a profound transformation process in the 1990s that was characterized by a partial withdrawal of the state from the economy through more intense privatization, by the liberalization process, and by the success of the *Plano Real* in containing inflation. In 1990, the Collor administration launched the National Program of Denationalization (PND) that aimed at repositioning the state in the economy, reducing the public debt, and incentivizing private investments, in order to make funding for Brazilian companies available, to increase international competitiveness, and to modernize the industrial facilities. The BNDES was in charge of the privatization process, which called for the participation of both domestic and foreign wealth holders as investors. Additionally, the BNDESPAR intensified its purchases of company shares as well as debentures. In 1997, the Capital Market Law and the Corporate Law were reformed with the aim to facilitate the restructuring and privatization of companies, which was accomplished by restricting or even eliminating a large range of minority shareholders' rights. The strong growth of the complementary pension fund system was related both to the reduction of the public pensions as part of austerity measures and to the extension of the time horizon due to the more stable economy, which allowed individuals to make longer-term plans and, thus, raised the demand for private pension plans.

In order to make the monetary policy decision process more transparent, the Monetary Policy Committee (COPOM) was instituted in 1996 with the purpose to establish the guidelines of monetary policy and to define the base interest rate. The model of the *Plano Real* was based on an exchange rate anchor together with restrictive monetary policy and fiscal discipline. As a consequence, Brazil had a strong dependence on foreign capital inflows, which threatened to dry up whenever a crisis in a developing or emerging market economy broke out. The reaction of the Brazilian authorities to these crises in the second half of the 1990s was to raise the interest rate in order to attract foreign investors and to avoid the devaluation of the Brazilian currency, but the detrimental effect of the elevated interest rate on the public finances worsened the situation even further. This scenario persisted until January 1999, when the Brazilian real strongly devalued and the exchange rate anchor was substituted for an inflation targeting regime. Overall, the drastic reduction of the inflation was accompanied by moderate growth rates, rising unemployment, trade deficits and a harsh increase of the public deficit and the public debt.

Although the *Plano Real* was able to bring inflation under control, the Brazilian economy continued to suffer from macroeconomic instabilities, expressed in stop-and-go cycles, which increased uncertainties and discouraged greater expectation horizons for investors and companies alike. The high degree of uncertainty was the main reason for the short-term nature of the Brazilian debt, which was to a large degree also indexed to an overnight interest rate. The banking sector experienced great difficulties in adjusting to the new economic environment with a lot lower inflation rates and increased competition of foreign banks due to the financial liberalization. As a result, the SFN experienced a concentration in the banking sector, with a reduction of the participation of

public banks, especially those owned by the federal states, and an increase of the share of foreign banks. Although foreign investments increased, the situation of the Brazilian capital markets became critical towards the end of the 1990s and beginning of the 2000s. Both, the number of publicly owned companies and the value traded on the stock markets diminished each year. Possible explanations for these problems included the incidence of the financial transactions tax CPMF on transactions in the Brazilian stock exchanges (contributing to the migration of several companies to issue their securities abroad), poor corporate governance rules (as a result of the legislation passed in 1997 to facilitate privatizations), and the high level of the interest rate.

The 1997 reform of the Capital Market Law and the Corporate Law that curtailed minority shareholder rights had already been highly criticized at the time and in 2001, in a context of higher concerns about corporate governance, the debate about adjusting these laws resulted in a reform of the reform, which took back most of the restrictions of minority shareholder rights. The aim was to promote capital market development, so that companies would have better financing and funding conditions, and to push economic growth. In order to achieve these goals, the CVM was given more power, turning it into an independent legislative authority, and more adequate corporate governance structures were implemented. As a result, transparency was increased. For example, the period during which the trustee had to inform the debenture holders about any sign of default was shortened from 90 to 60 days and the mark-to-market accounting for marketable securities was introduced. In addition to the measures implemented by the government to make the capital markets more popular, the private sector also set important impulses including the unification of the nine Brazilian stock exchanges and the establishment of a market segment for companies that committed to stricter corporate governance rules, the so-called New Market (*Novo Mercado*), by the Bovespa in 2000. The BNDES installed a special credit line in order to incentivize adherence to the New Market. For the negotiation of private fixed-income securities, the Bovespa offered a separate section on the stock exchange, the so-called BOVESPA FIX, and an organized OTC system, the so-called SOMA FIX, which are electronic systems for the trading, settlement and custody of these securities.

In 2002, the new Brazilian Payment System (SPB) was installed to lower the risks involved in cash settlements and to ultimately strengthen the Brazilian financial system (SFN). Furthermore, the National Treasury (TN) created a program called "*Tesouro Direto*" with the aim to facilitate the access to public bonds for natural persons. Moreover, by exempting company shares from the CPMF tax, an important barrier to the development of the Brazilian capital markets was removed. One year later, the possibility to install a market maker for a security in order to increase its liquidity premium was introduced. In an attempt to make the Brazilian rules more similar to those in the USA, the CVM adjusted the regulation of public offers of marketable securities and passed instruction n. 400/03, which allowed the dispense of registration under certain circumstances and introduced the so-called greenshoe option and the so-called shelf registration in the Brazilian capital markets.

After FHC had been reelected in 1998, his second term ended in 2002 and the presidential election stirred up anxiety about drastic adjustments of the macroeconomic framework with Lula as FHC's successor. External capital inflows declined, putting pressure on the exchange rate and, thus, also on inflation. A tight monetary policy stance was able to maintain price stability, but to the detriment of economic growth in 2002 and 2003. In the following years, Brazil benefited from the high demand for commodities and large capital inflows caused the Brazilian currency to appreciate, which exerted downward pressures on domestic prices. This allowed monetary policy to lower the base rate, which nevertheless remained on a relatively high level. Annual GDP growth rates over the period 2004-2008 were consecutively above 3.0% and on average 4.8%. Since the end of 2003, international market conditions had been particularly favorable to Brazil and helped the country to realize large and consecutive current account surpluses, build-up foreign-exchange reserves and improve other external solvency indicators, which allowed the country to issue sovereign debt securities abroad that were denominated in its national currency.

Falling external public debt together with an overall improved public debt structure, and expanding exports, all added to the increasing external resilience of Brazil and gave rise to the outlook for improved country risk ratings. The domestic capital markets, especially the stock market, showed strong growth and were sustained mostly by foreign institutional investors. The acting president Lula was able to profit from this positive economic environment and emerged victorious from the 2006 presidential election. In June 2007 the Brazilian risk premium reached a historical low and even though it markedly increased towards the end of the year, the three major international rating agencies elevated their rating of the Brazilian sovereign risk. In 2008, even in the scenario of deterioration of international financial markets, the Brazilian stock of international reserves continued to rise and in April, Standard & Poor's raised its rating of Brazil to investment grade, followed by Fitch Ratings in May and by Moody's in September of the following year.

The attempt of the CVM to raise the transparency and liquidity of the corporate bond market by creating the so-called Standardized Debentures in 2004 failed in the sense that the instrument was never used. In 2005, the debentures market started to rapidly increase, but the surge was mostly based on issues by leasing companies to fund banking operations, while the primary market of corporate debentures showed much less activity. Large companies gained access to funding sources outside the banking sector, mainly through Initial Public Offerings (IPOs) of their company shares. The São Paulo Stock Exchange Index (Ibovespa) set a record of 44,500 points at the end of 2006. The fact that equity markets outperformed corporate bond markets could be interpreted as a sign that the interest rate level was still relatively high in Brazil. While banks generally shifted the focus of resource allocation from their securities portfolio to credit operations, they also made adjustments in their securities portfolio, lowering the share of public bonds and raising the participation of private securities, mostly involving debentures. Furthermore, the market liquidity of private debt securities was improved because the list of securities that were accepted in repo operations was expanded and because the contracting of repo operations with

individual persons and non-financial companies, even including private securities, was allowed.

In 2007, several factors contributed to the annual GDP growth rate of 6.0%. Increased macroeconomic stability together with loosening monetary policy and improved labor market conditions raised optimism in consumer and business expectations, which improved further after the government announced a series of measures under the roof of the Growth Incentive Program (PAC) that aimed at enhancing the infrastructure of the country and increasing the pace of economic growth over a four-year horizon. One year later, these measures were complemented by an industrial policy strategy, the so-called Productive Development Policy (PDP), with the goal to extend the recently experienced growth path. During the first three quarters of 2008, economic activity followed the trajectory of the second half of 2007 with strong growth, although the impact of the international financial crisis could already be felt. Domestic demand sustained the growth process, pushed by improved credit conditions as well as rising employment and income. Furthermore, GFCF reached with 18.6% its highest level since 1995, reflecting the entrepreneurs' expectations of continued economic growth. This picture changed drastically during the last months of the year, when global credit and capital markets rapidly deteriorated as a consequence of the worsening and spreading of the international financial crisis, which also reflected in Brazil where growing restrictions in the credit market and the worsening of economic agents' expectations initiated a recession.

The positive performance of Brazilian capital markets during the previous years came to a halt in 2008, as a result of the instable scenario in the international financial system. Primary market activities of company shares and debentures were concentrated in the first eight months of the year and practically ceased afterwards, being partly replaced by the issuance of commercial paper, a short-term debt security. Yet, the collapse of the primary market for debentures issued by leasing companies could be attributed primarily to a change in regulation, which introduced reserve requirements for these debt securities and, thus, terminated the special treatment of this funding mechanism for banks. The stock exchanges of emerging market economies registered particularly severe losses during the international financial crisis, because these countries were additionally affected by the reduction in prices and exports of commodities due to recessions in advanced economies and a slowdown of world trade, on the one hand, as well as the depreciation of the local currencies against the US dollar (US\$), related to the so-called flight to quality, reflecting the increased demand for US government bonds, on the other hand. Due to the actions taken by major central banks as well as direct government interventions in advanced economies to alleviate liquidity and credit constraints, investors started to retreat from riskier markets and the demand for sovereign bonds of advanced economies increased, causing a decline of these public bond yields, which was sustained by less restrictive monetary policies during the period.

Against this background, the COPOM decided to discontinue the restrictive course it had adopted since early 2008 and the Brazilian government together with the BACEN carried out various counter-cyclical measures. As a consequence, the immediate effects of the international financial crisis were absorbed

relatively well by the Brazilian economy, which quickly came out of the recession in 2009 and registered a very high growth rate in 2010. The key factor to the fast recovery was the strong domestic demand, which was also stimulated by favorable credit conditions, resulting from counter-cyclical monetary and fiscal measures that aimed, on the one hand, at providing domestic market liquidity by loosening reserve requirements and strongly lowering the SELIC rate in 2009, and on the other hand, at providing support to external trade activities by creating instruments that raised foreign currency liquidity, which shifted a significant share of financial transactions related to external trade to the domestic market. Within an environment that was characterized by exceptionally high liquidity together with growing demand for riskier assets, Brazil was very attractive for international capital flows, allowing the country to continue its program of international reserve accumulation and to become, for the first time, a creditor country of the IMF.

After the international financial crisis had curtailed domestic primary market activity during the first months of 2009, primary issues of shares, debentures and commercial paper resumed a strong pace in the second semester, closing the year with an annual increase of 29.5%. The sharp increase of debenture issues indicated that one of the goals of the limited distribution modality created by CVM instruction n. 476/09 was achieved, namely to broaden capital market access by reducing the operational costs and by enabling smaller funding rounds as well as smaller companies to access the market. The measure introduced a new modality of placing debentures and other financial assets, allowing even privately held companies to make a public offer of their debt securities to a limited number of qualified investors. In December of the same year, the government created the so-called Financial Bill (LF), which allowed financial institutions to raise long-term funds on the domestic market. Two months before, the National Association of Investment Banks (ANBID) and the National Association of Financial Market Institutions (ANDIMA) joined together to form the Brazilian Association of the Entities of the Financial and Capital Markets (ANBIMA), representing all actors in the Brazilian financial markets.

In 2010, the Brazilian economy took advantage of the more benign international scenario and was pushed by a sound domestic demand to the highest annual GDP growth (7.6%) since 1986. In this context, Dilma Rousseff won the presidential election, succeeding party colleague Lula after his second term. To the increasing commodity prices, which caused inflationary pressures, monetary policy reacted by elevating the SELIC rate to 10.75% and by raising reserve and capital requirements. Despite the tightening of monetary policy, the Brazilian credit market continued on its expansionist path, although one should note that the stronger impulses came from the use of earmarked resources, which were mostly disbursed by the BNDES, resulting from counter-cyclical measures implemented by the government, which deployed the public finance for development system to fill the gap that the private credit sector left. What is more, the financial transactions tax (IOF) on foreign investors' capital flows into the Brazilian fixed-income market was raised from 2% to 6%.

On August 2nd, 2011, the government introduced the first industrial policy plan in Brazil for more than thirty years, the so-called Greater Brazil Plan (PBM),

which was in accordance with the Productive Development Policy (PDP) implemented in 2008 and aimed at the promotion of technological and productive investment as well as innovation in order to improve the competitiveness of Brazilian companies at home and abroad. A few weeks earlier, law n. 12,431/2011 created the so-called infrastructure bonds (*debêntures de infraestrutura*) together with fiscal incentives for financial instruments related to the funding of long-term investment projects. Consistent with the PBM, the objectives of this law included the stimulation of financial assets with longer maturities, expansion of capital market access for Brazilian companies and the promotion of investment projects in the fields of infrastructure, high-technology production, research and development as well as innovation. In addition, the IOF rate on foreign investments in the Brazilian market for company shares, long-term as well as infrastructure bonds was reduced from six to zero percent. In accordance with the legal innovation aiming at the development of a long-term corporate bond market, BNDES and ANBIMA created the so-called New Market for Fixed-Income Securities (NMRF), in order to foster this segment of the capital markets as a source of (long-term) funding for Brazilian companies. By establishing differential rules for the registration of fixed-income securities, the NMRF incentivized characteristics that increased the transparency as well as the liquidity premium of the asset and its market.

Global uncertainties worsened again in 2011 and the Brazilian economy experienced a more moderate expansion that was sustained by robust household income, which benefited from favorable conditions on the labor market together with the continuation and expansion of government social programs. Monetary policy continued to raise the base rate up to 12.50% until the middle of the year and then reverted the cycle of monetary tightening and successively cut the base rate to 11.0% at the end of the year. Although the use of earmarked funds in the credit market increased, which was mostly related to the expansion of housing finance, BNDES disbursements decreased by 23% in 2011, which could be explained by dimmed growth prospects that lowered the demand by companies for funding of investment projects. Due to the uncertainties in the international scenario, the Brazilian capital markets registered no issues during the last four months of the year. As a consequence, the primary market for company shares strongly declined from R\$ 190.9 billion¹⁷⁷ in 2010 to R\$ 22.6 billion in 2011. The decline in the primary market for corporate debentures was less severe, dropping from R\$ 67.3 billion in 2010 to R\$ 60.5 billion in 2011.

In 2012, the world economy slowed down and the Brazilian GDP growth declined for the second consecutive year. A clear adjustment of the monetary policy stance took place and the base rate SELIC was lowered to unprecedented levels, reaching 7.25% in October 2012. In the low interest rate environment, the capital markets experienced a surge in primary issues, mainly pushed by corporate debentures, which increased by 68% over the year. Other interest rates in the credit market also decreased strongly and reached historical lows, which helped the credit sector to continuously expand, although it cooled down and converged towards a more sustainable growth path. Especially public banks contributed to the expansion of credit operations, including the BNDES whose

¹⁷⁷ The issue of shares by Petrobras alone accounted for almost 80% of that amount.

disbursements went up by 6%, partly recovering the 23%-decline of the previous year. Furthermore, the Greater Brazil Plan (PBM) that had been launched in the previous year continued to guide government action in the areas of external trade policy as well as industrial policy and was enhanced by a series of measures with the goal to strengthen international market competitiveness of the domestic industry and to encourage investments in the country. At the same time, Brazil raised its stock of international reserves.

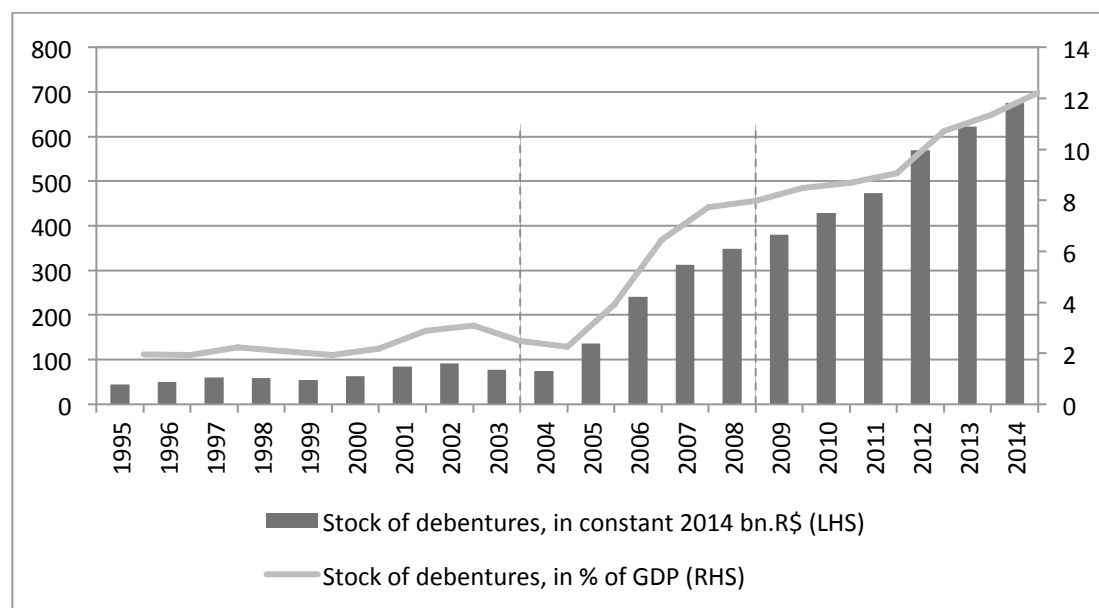
The world economy already recovered in 2013, but the global financial markets showed increased volatility, and, as a consequence, international capital flows to major emerging market economies dried up for large parts of the year and the dollar appreciated against most of the currencies of these countries. In Brazil, the BACEN attenuated the impact of this adverse environment by further loosening capital controls and by offering hedge against foreign exchange risks. The net inflow to the Brazilian medium and long- term fixed-income market increased by 398.0% during this period, from US\$ 5.1 billion to US\$ 25.4 billion, which was, essentially, a consequence of the IOF rate reduction. Despite the strong increase of foreign capital inflows, the primary market for company shares, debentures and commercial paper decreased slightly. The decline reflected mainly the 26% reduction of primary debenture issues. The Brazilian stock exchange also experienced a downward tendency throughout the year, while additionally registering high volatility. In this context, the continued implementation of the Greater Brazil Plan (PBM), together with measures to boost not only the competitiveness of domestic industry, but also investments in productive capacity, as well as innovation, and the improvement of the trade defense system, resulted in an annual GDP growth of 2.7% with the recovery of gross fixed capital formation standing out, which was based on increased production of capital goods for construction as well as transport equipment. While the COPOM decided to tighten monetary policy again, the 15%-increase of BNDES disbursements helped to raise the share of public banks in the Brazilian credit market above 50%.

In 2014, the international scenario remained complex as the global economy was expected to continue on its growth path, but these high initial expectations were disappointed and only moderate and unequal growth was registered. Moreover, the year started with currency sell-offs in several emerging market economies, which caused turbulences on foreign exchange markets. After international financial market volatility calmed down in the second quarter of 2014, it increased again during the second semester. Against this background, the trade balance turned negative for the first time since 2001 and the Brazilian economy experienced signs of stagflation as well as the first primary deficit since 1999. Within this environment, president Dilma was reelected. In May 2014, the COPOM discontinued the cycle of interest rate hikes it had started in April 2013, and waited until October to resume it, lifting it up to 11.75%. Under these conditions, the expansion of the credit sector (11.3%) was lower than in the previous year (14.7%) for the fourth consecutive year, with earmarked resources rising by 19.6%. By contrast, the BNDES disbursements were lowered by 7%. The primary issues of corporate debentures decreased slightly from R\$ 74.9 billion in the previous year to R\$ 74.4 billion in 2014.

3.2 Main determinants of corporate bond market development in Brazil after the implementation of the Plano Real

The Brazilian corporate bond market remained in a very incipient stage up to 2004. Between 1995 and 2003, the stock of debentures almost did not increase and represented only about 2-3% of GDP (see Figure 2). This first period of CBMD (or the lack of it) is analyzed in section 3.2.1. Since then, the debentures market started to grow rapidly, from 2.3% of GDP in 2004 to 12.2% in 2014, but the initial phase of market growth until 2008 was mainly based on a surge in primary issues of leasing companies (see Figure 3), which used the acquired capital to fund banking operations, while the primary market for corporate debentures showed more moderate growth between 2004 and 2008, the sub-period analyzed in section 3.2.2..

Figure 2: Stock of debentures (in bn. R\$; in % of GDP), 1995-2014

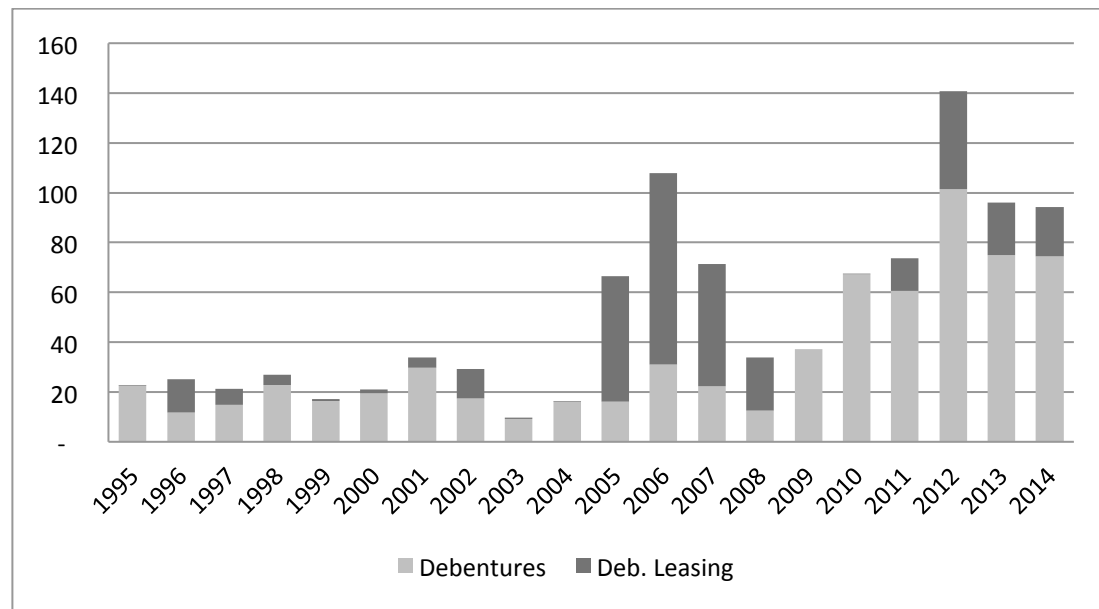


December values; R\$ deflated with IPCA

Source: CETIP; IBGE; own calculations

From 2009 onwards, corporate issuers strongly raised the volume of debentures (see Figure 3) as well as the number of placements in the primary market (see Figure 4). The period from 2009 to 2014 is analyzed in section 3.2.3.

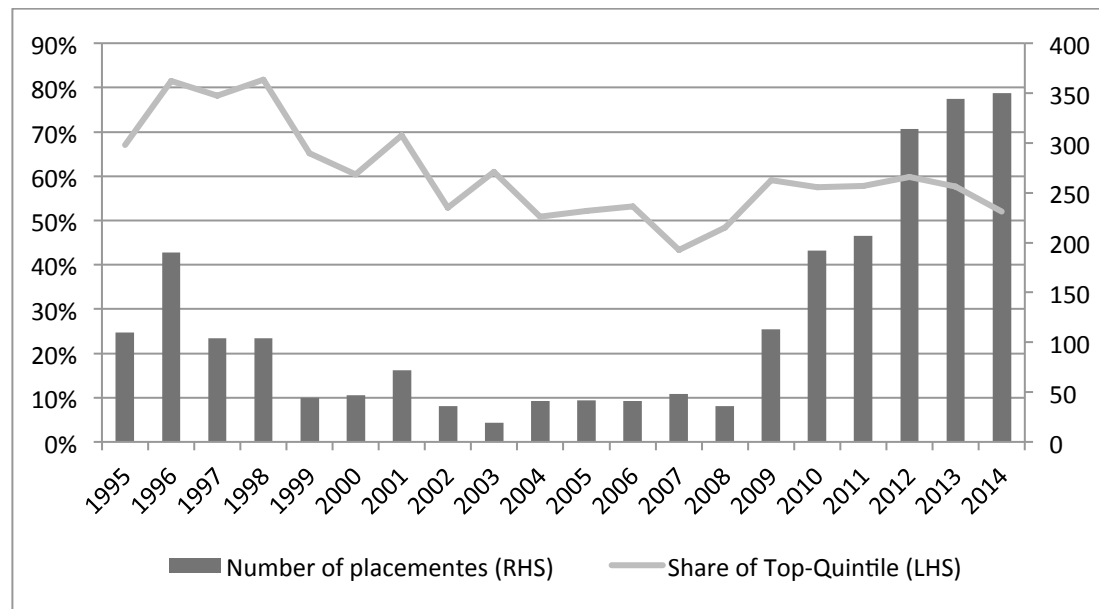
Figure 3: Primary market for debentures, corporate issuers vs. leasing companies (in bn. R\$), 1995-2014



Source: ANBIMA

Figure 4 shows that the number of placements in the debentures market by corporate issuers had already been higher between 1995 and 1998 than during the following ten years, and only started to markedly increase from 2009 onwards. Although the number of placements decreased during the first two sub-periods analyzed in this study, the high concentration of the primary market for debentures did not exacerbate further. On the contrary, between 1996 and 2007, the number of placements and the share of the top-quintile of the total volume issued appeared to correlate. In the end of the 1990s, the largest 20% of corporate bond placements in terms of volume issued made up more than 80% of the total volume issued during some of those years. While this share by tendency decreased, the top-quintile still accounted for more than half of the volume issued in 2014.

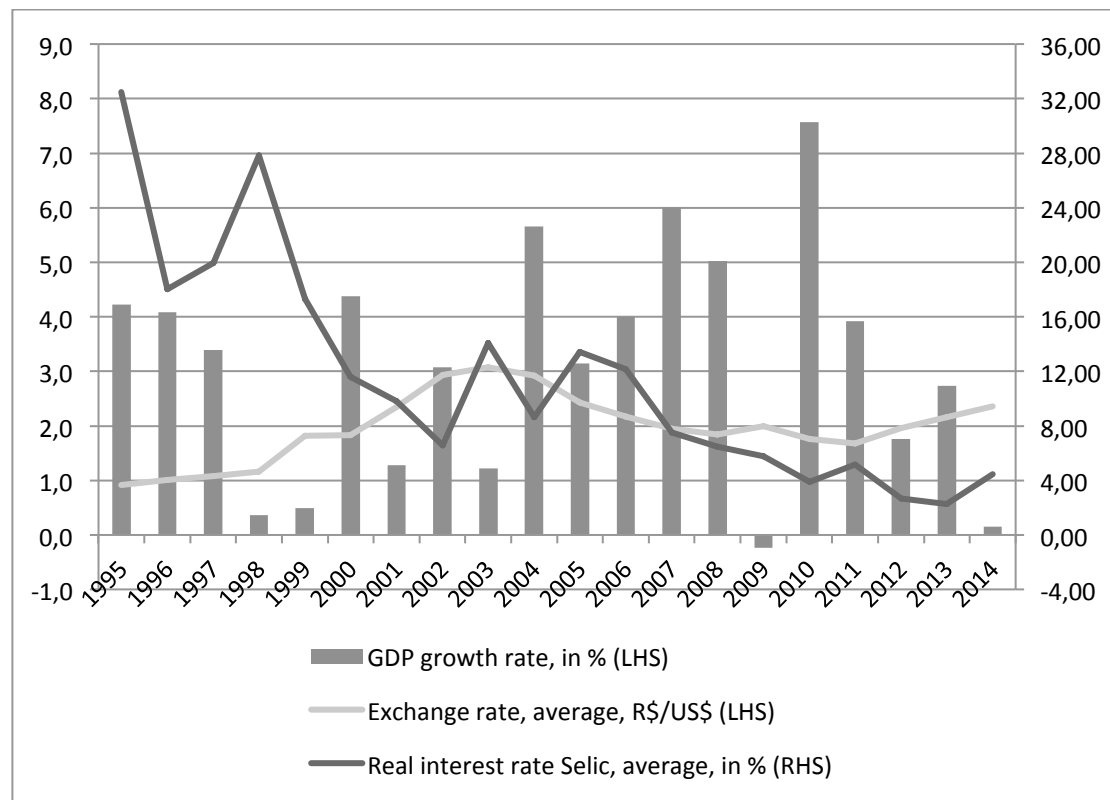
Figure 4: Primary corporate bond market, number of placements and share of top-quintile (in % of total volume issued), 1995-2014



Source: ANBIMA

Figure 5 gives a quick overview of the Brazilian economy during the period between 1995 and 2014. While both the level as well as the volatility of the real interest rate decreased, reflecting increasing macroeconomic stability, several crises of domestic or external origin have repeatedly interrupted the periods of Brazilian growth. As a consequence, the most prolonged episode of consecutive years with growth rates above three percent was during the five years between 2004 and 2008. Furthermore, Figure 5 shows the development of the exchange rate (R\$/US\$), starting with the semi-fixed exchange rate regime from 1995 to 1999. In 1999 the Brazilian real (R\$) started to float and depreciated until 2003. During the following years, the Brazilian currency appreciated, because of strong capital inflows due to the high level of the Brazilian interest rate and because of strong exports, mainly due to high commodity prices as well as demand. The appreciation of the real (R\$) helped to maintain inflation under control, while the base rate was lowered. During the last few years, the exchange rate returned to go up again, in a less benign context of slower growth, both domestic and internationally, with Brazilian inflation as well as public debt on the rise and a tightening monetary stance.

Figure 5: Macroeconomic indicators (annual data), 1995-2014



Real interest rate SELIC: SELIC-IPCA (SELIC: average of monthly values; IPCA: December values)

Source: BACEN; IBGE; own calculations

The following three sections correspond to the three distinct sub-periods of CBMD between 1995 and 2003, 2004 and 2008, as well as 2009 and 2014, which are each analyzed following the same pattern. After a short overview, concentrating on certain main points during the respective period, three policy variables that determine CBMD in Brazil are analyzed. Each of the three policy variables is discussed in a separate sub-section, highlighting the role of the state and its impact on the evolution of the debentures market. In the first sub-section, public debt management is analyzed, because of the important interconnectedness of the public and the corporate bond markets in Brazil. Due to the high relevance of the interest rate level, the influence of monetary policy on the domestic market for corporate long-term debt securities is examined in a second step. Each sub-period analysis closes with a sub-section on the role of public banks with respect to domestic CBMD, as these institutions traditionally have a significant function in the Brazilian financial system as the main source of long-term funding.

3.2.1 1995-2003: inhibitory effect of state policies

Although the *Plano Real* drastically reduced the inflation rate, macroeconomic instabilities remained. The exchange-rate anchor caused a tendency of real

overvaluation of the Brazilian real (R\$), and therefore pressures on the exchange rate, which were contained – together with resurging inflation pressures – by raising the monetary policy rate. The resulting stop-and-go policies discouraged market participants, wealth holders and entrepreneurs alike, to form long-term expectations. The conservative monetary policy stance that was mainly concerned about lowering the inflation rate kept the base rate, also in real terms, at an elevated level, which depressed not only corporate bond market development (CBMD), but also any other kind of private credit. The high interest rate level might have been the main barrier to financial development in Brazil, especially during the 1990s.

The public debt structure was focused in the short-term, reflecting high liquidity preferences of wealth holders, who demanded an interest rate indexation in return for longer terms (while the maturity remained zero due to the indexation) and lower yields. As a consequence, the public bond market did not offer a yield curve that served as a benchmark for corporate bond placements. Different forms of indexations offered a good way to hedge against various risks, which were perceived to be high, because of macroeconomic fragilities, such as a double deficit in the public and the current accounts, rising public debt, difficulties of the banking sector etc. As real overvaluation continued and exchange rate pressures increased, public debt management issued more and more exchange rate indexed bonds.

Up to the currency crisis in 1999, the overvalued Brazilian currency encouraged Brazilian companies to issue securities abroad. At the same time, the liberalization process caused large foreign capital inflows. Yet, Brazilian companies benefited only marginally from these flows, which were mostly directed towards public bonds and the stock market, mainly related to IPOs of formerly public companies as part of the privatization process. In comparison, foreign investors did not play any relevant role in the debentures market. Later, during the crises in 1999 and 2002/2003, net foreign currency flows were reversed, causing a capital market crash, which also reflected in the debentures market.

Apart from the international financial centers, Brazilian companies had another major source of long-term funding, i.e. the public development bank BNDES. The very incipient stage of the corporate bond market meant that it was only a small source of funding for a few, mainly large companies. Although there was little evidence that BNDES activities suppressed the issuance of corporate bonds, some aspects might have had a detrimental effect on CBMD, such as the procyclical behavior of the bank as well as its subsidized interest rate TJLP, which was set without reference to the current monetary policy.

During the late 1990s and early 2000s, there were a few, independent efforts to incentivize CBMD, such as the implementation of an electronic trading platform (Lopes, Antunes, and Cardoso 2007, 60). Although this electronic platform was merely used to register the trades, which were negotiated on the phone, it represented an important step towards a more transparent price formation process. The National Debentures System (SND) also underwent a reformulation, including cost reductions through the use of technologies, guidelines for the texts

and calculations of debenture deeds, repurchase agreements with debentures, provision of information, securitization of receivables, and electronic trading, in order to stimulate the issuance of debentures.

3.2.1.1 Public debt management: macroeconomic instability reflected in public debt structure

The implementation of the *Plano Real* marked the starting point for a rapid increase in government debt securities. Apparently, in the evaluation of wealth holders, the fact that the government stopped monetizing fiscal deficits, that way increased macroeconomic stability and brought inflation down, weighed heavier than the continuous increase in government debt. The strong hike in the stock of domestic public bonds was partly due to the issuance of new debt, and partly due to the switch from foreign to domestic debt, also triggered by the Mexican Tequila crisis in December 1994 (Borensztein et al. 2008b, 7). Various factors combined could be responsible for the Brazilian debt rising so fast, especially during the second half of the 1990s. Among them were the already mentioned loss of the possibility to monetize fiscal deficits, as well as the newly adopted policy of greater transparency regarding the public budget, which included the recognition and inclusion of several liabilities that were hidden before (Silva, Carvalho, and Medeiros 2010, 66). Furthermore, the tight monetary policy stance, which entailed an extremely high level of the real interest rate, and fiscal policy producing very small primary surpluses or even primary deficits added to the elevation of the public debt.

Analyzing the period from 1995 to 2003, one can see the effect of the elevated level of the real interest rate: the Brazilian debt was so expensive, that interest payments in the government budget never dropped below 4.5% of GDP, raising the government deficit to 5.0% on average. Even when the Brazilian government focused on achieving solid primary surpluses, after the currency crisis and the adoption of the inflation targeting regime, which effectively reduced the nominal deficit in 2000 and 2001 (from an average of 5.8% of GDP during 1995-1999 to an average of 3.3% during those two years), the continuous primary surpluses were not able to maintain the nominal deficit on a lower level, or even turn it into a surplus, because the country had to pay an increasing price to roll over its debt, also due to the so-called presidential election crisis of 2002/2003. During the presidential campaign in 2002, expectations deteriorated due to the fear of a discontinuity in economic policy, in general, and a forced renegotiation of the sovereign debt, in particular (Torres Filho and Macahyba 2012, 41).

Table 1: Government budget¹⁷⁸ (in % of GDP), 1995-2003

	Nominal result			Interest payments			Primary result
	total	internal	external	total	internal	external	
1995	6.55	8.36	-1.82	6.79	6.30	0.49	-0.24
1996	5.24	6.06	-0.82	5.16	4.74	0.41	0.09
1997	5.40	4.76	0.65	4.53	4.29	0.25	0.87
1998	6.78	4.78	2.00	6.79	6.52	0.27	-0.01
1999	5.15	3.13	2.02	8.00	7.09	0.91	-2.85
2000	3.31	3.35	-0.04	6.48	5.69	0.79	-3.17
2001	3.35	2.73	0.62	6.59	5.51	1.08	-3.24
2002	4.41	1.92	2.49	7.60	6.53	1.07	-3.19
2003	5.17	6.04	-0.87	8.41	7.35	1.05	-3.23

Source: BACEN

As a consequence of the repetitive large public deficits, the Brazilian net debt grew considerably, almost doubling between 1995 and 1999, and reaching R\$ 1.7 trillion in December of 2003. Several interview partner suggested that the high level of the public debt was an important determinant of CBMD (U01 2010a, 2010b; U02 2010; U03 2010).

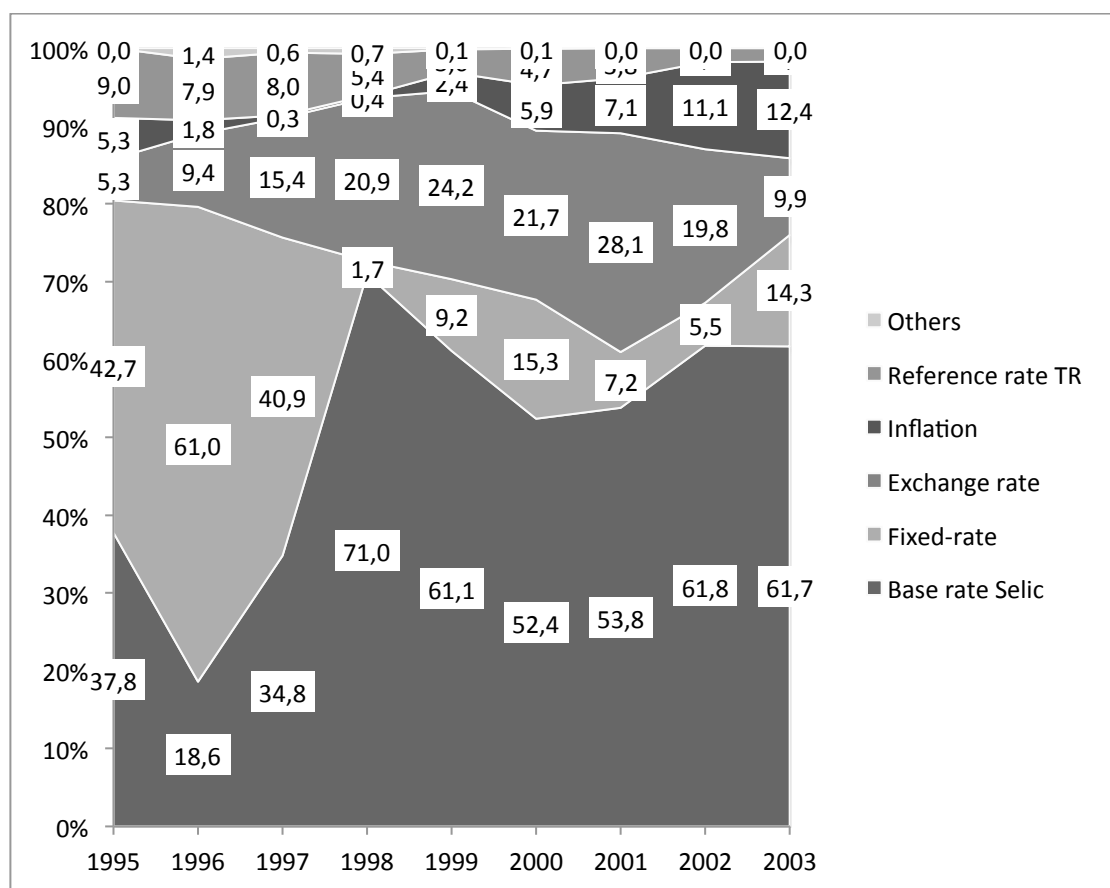
The high government borrowing needs raised the public debt, which the government funded by issuing more public bonds. The increase of public bonds might explain, at least partly, the low growth rates of corporate bonds in Brazil during the period 1995-2003. Yet, it remained an open question whether large government bond markets foster or push back corporate bonds (cf. sub-section 2.3.2.2), and there are both theoretical arguments as well as empirical findings supporting one or the other hypothesis (Borensztein et al. 2008b, 19–24). This topic repeatedly came up during the expert interviews, e.g. the public bond markets were identified as important determinants of the development of the corporate bond market (A01 2010) and the connection between the development of the public and the private bond markets was discussed (U05 2010). The theoretical discussion in chapter 2, e.g. about the signaling as well as the competitiveness effect, showed that the volume of public bond issues was less relevant for the development of the corporate bond market in Brazil than the characteristics of the issued public bonds that, together, form the structure of the public debt, which is one of the main determinants of CBMD.

The profile of the public debt in Brazil was marked by its short-term nature and a high share of bonds that were indexed to the SELIC interest rate (Paula et al. 2009, 6). Those characteristics were best explained by the Brazilian record of macroeconomic instability since the 1980s, which resulted in stop-and-go cycles.

¹⁷⁸ Consolidated public sector (until November 2001 including Petrobras and Eletrobras) borrowing requirements without exchange devaluation, flows accumulated in 12 months, December values; positive values represent deficits; nominal result = primary result + interest payments; total borrowing requirements are differentiated into internal (domestic) and external (international) borrowing requirements.

With so many uncertainties in the Brazilian economy, investors and companies were discouraged to form long-term expectations. The Brazilian economy suffered from macroeconomic instability for many years, yet the public bonds always offered a good way to hedge against these threats through its different indexations (Paula et al. 2009, 12–14). As a consequence, the public debt structure changed in response to the demand of wealth holders, i.e. the importance of different indexed bonds varied according to what appeared to be the highest risk in the wealth holders' perceptions and expectations. In order to analyze this, we need to look at the structure of the public debt and begin with a view at the composition according to the different indexed bonds.

Figure 6: Public bonds, share of indexation (in % of total), 1995-2003



Source: BACEN

During the first couple of years after the *Plano Real*, the Treasury was able to maintain almost half of all issued bonds with a fixed rate (share of fixed rate bonds on average 48.2% between 1995-1997), but this share dropped drastically to less than 9% on average between 1998 and 2003. Sovereign bonds that were indexed to the exchange rate increased and declined during this period, due to the build-up of pressures on the domestic currency, related to the balance of payment crisis of 1999 and the presidential election crisis of 2002/2003.

The bonds that were linked to the base rate SELIC, the so-called LFTs, were not issued anymore after the implementation of the *Plano Real*, so that their participation fell as low as 18.6% in 1996. The Brazilian treasury was able to issue fixed rate bonds and succeeded in prolonging their terms¹⁷⁹, starting out with one month, moving to two and three months terms in 1995 (Silva, Carvalho, and Medeiros 2010, 66). In 1996, it was possible to offer all fixed rate bonds with a 6 months term in the primary market, and in 1997 the treasury even succeeded in placing fixed rate bonds with a term of 2 years in the primary market. This implied, that there was no long-term interest rate that could serve as a reference for corporate issues, up to this point in Brazil. After the Asian crisis unraveled, a reduction of terms was necessary, so that 3-months-bonds were issued, again. Then came the Russian crisis and aggravated the situation, also for Brazil, even further. It was not an option to reduce the term even further, because in the meantime the public debt had increased very rapidly, so that a need to constantly roll over this large stock of public debt would put its sustainability in doubt. Against this background, the treasury was forced to resort to LFTs once again, which were accepted also with longer terms. Only in 2003, public debt management was able to return to its policy of lengthening public debt maturities through the issuance of fixed rate securities, which was stimulated by optimistic expectations about falling inflation rates and reductions of the base rate, that arose during the middle of that year (Ferreira, Robotton, and Dupita 2004).

The LFTs are an inheritance from the period of high inflation in Brazil and were created at the height of the Plano Cruzado in order to reduce financial system vulnerabilities towards changes in monetary policy (Paula et al. 2009, 14–18). The duration¹⁸⁰ of the LFT is zero, or one day, because the bond compensates the invested amount with the interest rate on every day. In other words, it is as if the investor would reinvest principal and earned interest at the current market interest rate, on each day, during the whole term of the bond. As a consequence, the holder of this bond is relieved from the market risk that is related to possible interest rate changes. While the LFT with duration zero is an extreme case on the one end, on the other end there are fixed rate bonds like the LTN (now called *Tesouro Prefixado*) whose duration equals the term, because the investor has to wait until the term ends to be able to adjust his investment according to changes in the interest rate. The holder of a fixed rate bond will suffer losses in case of an interest rate increase, which does not happen to a holder of a bond indexed to the SELIC rate. That way, the LFTs protect the investor from the market risk, as changes in the interest rate might happen gradually or following an unexpected external shock to the economy. Of course, this does not imply that the financial remuneration of those bonds cannot be reduced compared to other bonds, fixed rate or indexed to other variables, as it would actually happen with a reduction of the interest rate SELIC. What makes them attractive is the possibility of a daily

¹⁷⁹ The term of a bond, or the term to maturity, denotes the amount of time until the bond matures, or in other words, the amount of time between now and the maturity date.

¹⁸⁰ The duration of a bond is a measure of the sensitivity of its price to interest rate changes, i.e. a measure of interest rate risk, with higher bond duration reflecting larger bond price changes in response to interest rate moves.

repositioning towards the interest rate, allowing to hedge against unexpected shocks in the interest rate.

The burden of the market risk is shouldered completely by the issuer of the indexed bond, which is the treasury, representing the public sector, in case of the LFTs (Moura 2006, 247–48). In addition, the investor receives an immediate liquidity guaranty, because in principle he can redeem the debt any day¹⁸¹. On a daily basis, the price of the LFTs is set according to negotiations in the Special System for Settlement and Custody (SELIC), where the overnight interest rate SELIC, is determined according to the targets set by the COPOM.

The mere existence of bonds indexed to the SELIC interest rate inhibited and deformed the development of the private bond market by combining low risks and high liquidity with high profitability (Franco 2006, 277ff.; Paula et al. 2009, 15). More specifically, the LFTs influenced the conditions of private bond issuance, because they not only offered a high liquidity premium to wealth holders, as their default risk – as that of any other sovereign bond – was practically defining the lower bound in the domestic financial markets. Adding to the high liquidity premium was the type of indexation, which stripped the LFT off the market risk since its price neither appreciated nor depreciated when the market interest rates changed. As if those advantages were not enough, the LFTs offered high monetary returns, although they were lower than the returns on fixed rate bonds. This was a consequence of the high interest rate policy applied by the Brazilian central bank. Resulting from these advantageous characteristics of LFTs, a competitiveness effect contributed to the poor market development of corporate bonds.

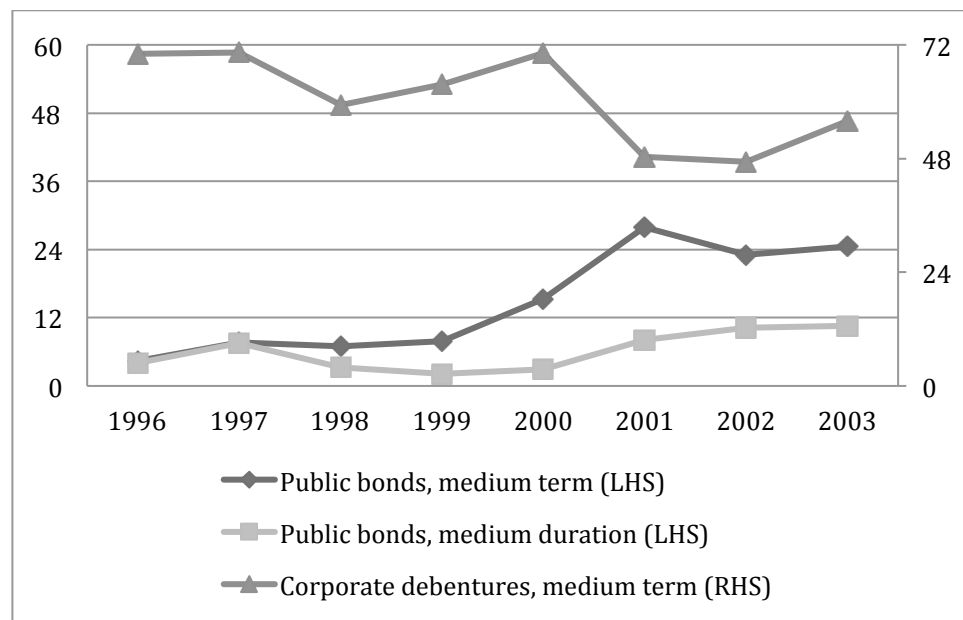
The problem that LFTs made it almost impossible for corporate issuers to compete with these debt securities, because they offered such an advantageous combination of risk and return, was also confirmed during the expert interviews (A01 2010; U02 2010; U04 2010). There was a high demand for investments that were indexed to the SELIC interest rate. As a result, a signaling effect could be observed: Investors mostly bought so-called DI funds, whose reference was the interbank rate DI, or directly invested in public bonds indexed to the SELIC, the LFTs. Public debt management in Brazil determined investors' preferences by offering a combination of risk and return that privileged investments with an indexation to the SELIC and DI interest rates or investments in short-term bonds. In the interviews, it was repeatedly emphasized that the demand for private bonds could be affected by changes in the characteristics of public bonds (U02 2010; F01 2010). As such, the structure of the public debt was an important determinant of the corporate bond market.

One implication of the increased importance of LFTs for the structure of the public debt could be seen by looking at the development of the medium term to maturity and medium duration of the public debt from 1996 to 2003 (See Figure 7). Up to 1997, the medium term and duration were coinciding at very low levels, because of the predominance of the fixed rate bonds. Starting in mid-1998, the medium term to maturity increased, but the duration continued at lower levels.

¹⁸¹ This transaction would not be costless.

Term and duration didn't coincide anymore, because the participation of indexed bonds, especially LFTs began to grow. This also had a strong impact on the issuance of private bonds. In order to compete with LFTs a private bond with longer maturity would need to pay an extremely high risk premium as a compensation for its lower liquidity, as its market and default risks were higher (Paula et al. 2009, 16–17). In the end, it would be very costly for a private company to issue such a bond. In this context, the issuer of private debt securities had two options: Either they issued fixed rate bonds with high returns and short terms, e.g. commercial paper, or they issued debentures with medium returns and medium terms, improving the liquidity premium by offering characteristics that were relatively similar to those of the LFTs, i.e. with their returns indexed to the DI interest rate and with zero duration, and still the risk premium would need to be higher than that of the LFTs. By indexing its debt security to the DI rate, the issuer was able to extend the term of the bond a bit, but needed to take over the interest rate risk.

Figure 7: Term to maturity and duration of public bonds vs. term to maturity of corporate debentures (in months), 1996-2003



Source: BACEN

When comparing the medium terms of debentures, consisting of several years, with those of public bonds, consisting of merely a few months (until 1999), one might be surprised by this relatively large discrepancy, because a public bond issuer is generally expected to be able to obtain more favorable conditions than a corporate issuer. The fact that debentures had on average much longer terms than public bonds might be explained by their high issuance costs, which needed to be compensated for by long terms (and high issuance volumes). As a consequence, only few debentures were issued, because only few companies had qualified for such a long-term commitment. On the contrary, public bond

issuance was not subjected to this logic of cost-effectiveness, but responded to the need of financing the public debt.

Looking at the data for the medium term to maturity of debentures, one could notice that it was actually worsening during the analyzed period, starting off from an average 70 months in 1996/1997, decreasing to less than 5 years in 1998 and dropping below 4 years in 2001, after it had recovered to the mark of 70 months in 2000, resulting in an average term of 61 months during the years 1996-2003. This might be related to developments in the public debt structure: As we have seen, the public bonds experienced an increase in the medium term between 1996 and 2003, while the medium duration did not accompany this movement, which could be attributed to the growing importance of LFTs in the public debt structure. The increasing share of LFTs in the public debt reflected the growing demand for short-term securities, or in other words, the high liquidity preference of wealth holders in the Brazilian market.

The lack of liquidity in secondary markets for debentures was one of the main reasons for the low demand of these debt securities, also contributing to the difficulties of companies placing longer-term bonds in primary markets. A consequence of the almost inexistent organized secondary market was that wealth holders couldn't be sure to be able to sell the debt security at a reasonable price, in the future, which discouraged the demand for debt securities, especially with longer maturities. Various problems were pointed out to explain the low development of the secondary market for debentures (Paula et al. 2009, 27). The low standardization of debentures and their underlying contracts made it difficult to compare these debt securities and, hence, complicated the price-setting process. In order to find a fair price, which was a necessary precondition for trades in the secondary market, references were needed. The relevant information from the few negotiations couldn't easily be transferred, due to low standardization, and the lack of a yield curve that could serve as a benchmark, further aggravated the situation.

Through the market creation effect, sovereign bond markets might improve market liquidity of private debt securities, e.g. providing well-functioning market infrastructure, best practices, a yield curve etc., but secondary market development might be hampered due to the high share of LFTs in the profile of the public debt (Moura 2006, 250–52). Due to their indexation, changes in the base rate couldn't affect the price of LFTs. As a result, LFTs suffered few price variations. Since the main reason to speculate on price changes was inexistent, secondary market development was affected. Apart from interfering in the market creation effect, the high share of LFTs contaminated corporate bond issues, because companies needed to compete for the funds of potential investors, who expected their demand for market-risk free bonds to be attended, so that corporate debt securities often also included an interest rate indexation. Private bonds were mostly indexed to the interbank rate DI, which closely followed the SELIC interest rate, so that this indexation would hamper secondary market liquidity in a similar way.

Liquidity depended among other things on the size of the market. Not only was the debentures market relatively small, measured as the stock of outstanding

corporate bonds, and there were only few companies that issued debentures, the market was also highly concentrated, i.e. the majority of the total volume issued stemmed from a small fraction of all corporate issuers. Furthermore, debentures were distributed among very few institutional investors, resulting in a highly concentrated allocation, as well. Less market participants made it difficult to increase liquidity, and to make matters worse, the institutional investors usually held the debentures to maturity. Since pension funds invested a significant amount of their resources in investment funds, there was a large overlapping of the financial applications of these two types of institutional investors in Brazil, further increasing the concentration of allocation. The following table shows the different types of investment funds¹⁸² and their relative market share. The absolute dominance of fixed-income funds, which in the middle of the 1990s decreased over the years, was shared with the DI benchmark funds during the macroeconomic instable period a couple of years before and after the turn of the century, and in return, stock (company shares) funds, multimarket funds, and, to a lesser degree, pension funds gained in weight. Although fixed-income funds experienced a sharp decline from 83.45% of total market share in 1995 to 33.47% in 2003, this type of bond remained the most common of the investment fund industry.

Table 2: Types of investment funds and their relative share (in %), net worth of total (in mio. R\$), 1995-2003

	Short-term	DI benchmark	Fixed-income	Multi-market	Foreign exchange	Stock	Pension	Private Equity	Off-shore	Others	Net worth
	in %										in mio. R\$
1995	-	-	83.45	13.24	0.37	2.77	-	-	-	0.17	291,135.3
1996	-	-	83.55	11.18	1.22	3.89	-	-	-	0.16	498,705.2
1997	-	-	67.22	20.50	0.79	11.23	-	-	-	0.27	515,703.9
1998	0.47	27.62	46.83	15.14	0.82	8.53	0.10	-	-	0.51	578,457.4
1999	1.56	33.61	38.67	15.55	1.14	9.01	0.36	-	-	0.09	724,810.7
2000	3.32	30.46	40.92	14.95	1.36	8.12	0.78	-	-	0.10	887,640.6
2001	-	29.34	37.42	22.46	2.12	7.14	1.44	-	-	0.08	932,163.5
2002	-	24.65	33.17	25.51	1.68	8.74	2.89	-	3.16	0.19	760,082.0
2003	2.74	18.85	33.47	27.54	1.31	7.87	4.31	-	3.56	0.34	1,025,293.7

Net worth in constant million R\$ of July 2015, deflated with general price index IGP; December values; Others = FIEX + FIDC + IMOB + FEF; values of each year always add up to 100.

Source: ANBIMA

The net worth of the industry more than tripled during this time frame: The joint equity capital of all investment funds grew from 291 billion R\$ in 1995 to more

¹⁸² For a short introduction and overview of the different types of investment funds, see: http://www.portaldoinvestidor.gov.br/menu/Menu_Investidor/valores_mobiliarios/FundodeInvestimento409.html.

than a trillion R\$ in 2003, retreating only once (in 2002)¹⁸³. The strong growth in net worth of the investment funds meant that the decrease of fixed-income funds in relative terms did not represent a decline in absolute terms. In fact, the 83.45% market share in 1995 translated into a net worth of fixed-income funds of almost R\$ 243 billion, which was more than R\$ 100 billion less than the R\$ 343 billion, representing 33.47% of the total net wealth of all investment funds in 2003.

Data about the portfolio composition of the investment funds in Brazil were only available from 2000 onwards and showed that portfolios were highly concentrated in sovereign bonds, which made up more than three quarters of the total net worth of all investment funds in the period 2000-2003. The high share of public bonds in the portfolio of investment funds also meant that these institutional investors were important players in the public bond market: In 2000, investment funds held half of the stock of public bonds issued. An improvement of the public debt structure would therefore require a reform of the investment and pension fund industry, including regulatory and tax measures (Franco 2006, 276-77).

Apart from public bonds, investment funds applied their resources mainly to stocks (about 10%) and debt securities issued by financial institutions, the so-called CDBs and RDBs (about 6% on average). The investments in commercial paper fell sharply from 2.24% in 2000 to a mere 0.07% in 2003. During the same period, the share of debentures in the portfolio of investment funds increased from 2.89% in 2000 to 3.82% in 2003.

Table 3: Portfolio composition of investment funds (in % of total net worth), 2000-2003

	Repo operations	Public bonds	CDB and RDB	Commercial Paper	Debentures	Stocks	Others
2000	-	76.14	4.52	2.24	2.89	11.11	3.11
2001	-	75.16	7.65	0.33	4.41	9.52	2.94
2002	-	73.43	5.93	0.32	4.76	10.88	4.67
2003	-	75.86	6.77	0.07	3.82	10.33	3.15

December values; repo operations with public and private debt securities; public bonds = federal debt securities; values of each year always add up to 100.

Source: ANBIMA

Comparing the investment funds' holdings of public and private bonds with the outstanding stock of the securities, and considering furthermore that pension funds carried an additional volume of bonds in their portfolios, the great importance of the funding industry for the development of the domestic bond markets in Brazil becomes obvious. While investment funds held a large fraction

¹⁸³ These R\$ values have been deflated to constant July 2015 R\$, using the general price index IGP.

of sovereign bonds (43% on average between 2000 and 2003)¹⁸⁴, the dominance in the corporate bond market was almost complete: in the period 2000-2003 investment funds held on average 94% of the stock of corporate bonds¹⁸⁵.

Table 4: Portfolio composition of funding industry (in mio. R\$), 2000-2003

	Repo operations	Public bonds	CDB and RDB	Commercial Paper	Debentures	Stocks	Others
2000	-	675,812.3	40,081.9	19,899.5	25,669.9	98,608.0	27,569.1
2001	-	700,594.9	71,292.8	3,039.9	41,119.4	88,753.5	27,362.9
2002	-	558,163.5	45,058.4	2,453.0	36,166.6	82,724.5	35,516.1
2003	-	777,799.9	69,443.1	717.4	39,124.6	105,864.8	32,344.0

December values; repo operations with public and private debt securities; public bonds = federal debt securities; in constant million R\$ of July 2015, deflated with general price index IGP

Source: ANBIMA; own calculations

Table 5: Investment fund holdings of public and corporate bonds and respective market share (in mio. R\$; in %), 2000-2003

	Public bonds	Market share	Public bond market value	Debentures	Market share	Debenture market value
2000	675,812.3	50%	1,340,573.64	25,669.9	97%	26,333.1
2001	700,594.9	46%	1,539,408.93	41,119.4	109%	37,891.9
2002	558,163.5	33%	1,669,465.13	36,166.6	78%	46,149.3
2003	777,799.9	44%	1,781,091.27	39,124.6	92%	42,743.5

December values; repo operations with public and private debt securities; public bonds = federal debt securities; in constant million R\$ of July 2015, deflated with general price index IGP

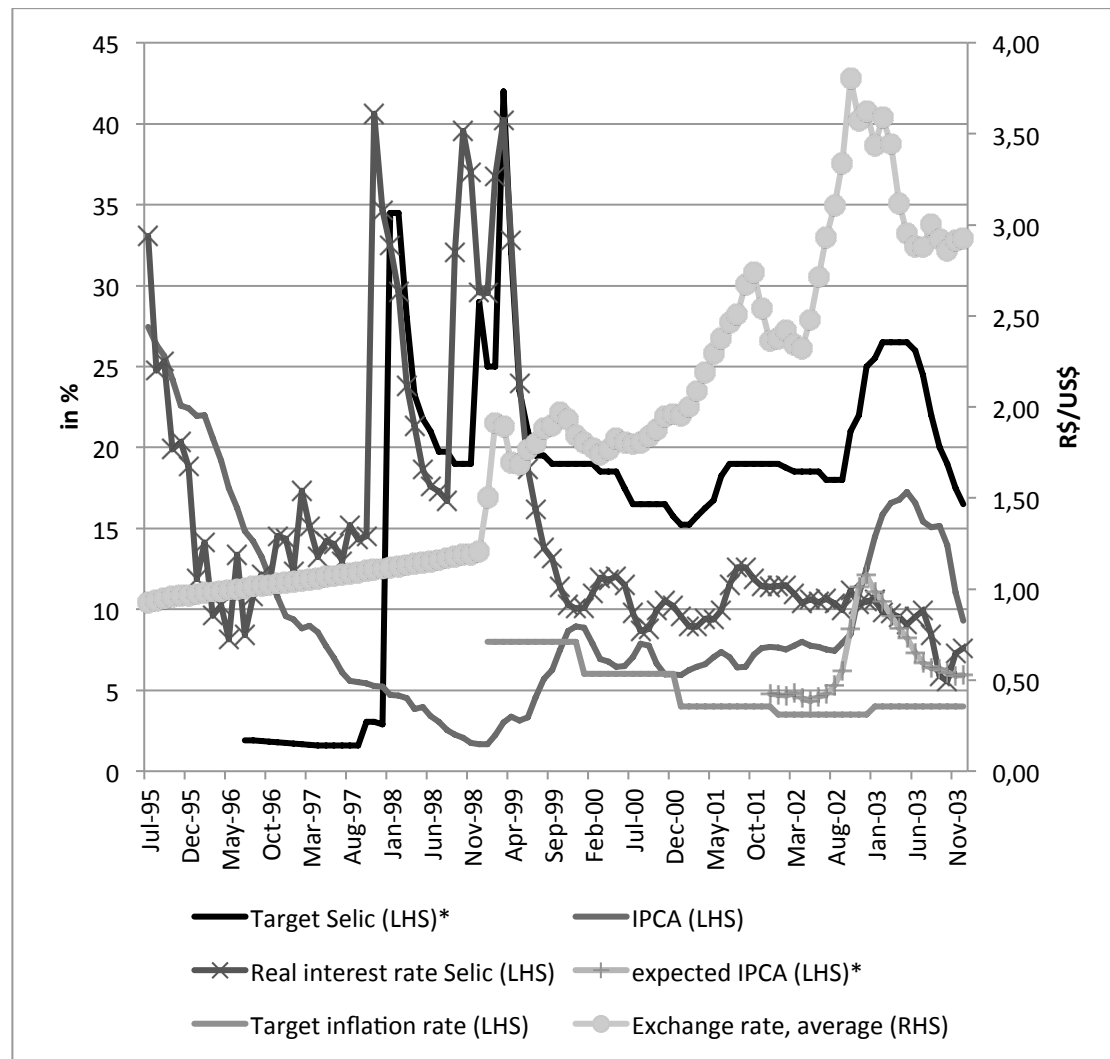
Source: ANBIMA; BACEN; CETIP; own calculations

¹⁸⁴ In an effort to broaden the investor base of the public bond market and to reach more retail investors, the online portal *Tesouro Direto* was launched by the TN in January 2002, enabling an acquisition of public bonds directly online (Proite 2010).

¹⁸⁵ Due to data limitations, the figures were drawn from different data sets, so that the ratios of the market share might not be correct (as can be seen, for example, in the illogical, yet calculated market share of 109% in 2001), but the changes of these ratios over time should well reflect actual trends in the shifting of market shares.

3.2.1.2 Monetary policy: high and volatile interest rates and the inexistence of a long-term debt market

Figure 8: Monetary policy indicators (monthly data), July 1995-December 2003



* end of month data; IPCA: variation in 12 months; real interest rate SELIC: SELIC-IPCA (SELIC: accumulated in the month, annualized); expected IPCA: 1 year forecast

Source: BACEN; IBGE; own calculations

The main focus of monetary policy after the implementation of the *Plano Real* was to bring inflation down and keep it under control. Extremely high levels of the monetary policy rate, also in real terms, were employed and suffocated any type of credit. That explains why the Brazilian corporate bond market was relatively small, when compared to the public bond market or to other countries, on the one side, but it was not small, when compared to the credit market, on the other side (Leal and Carvalho-da-Silva 2006, 5–6). The low development of corporate bond markets, up to the middle of the 2000s, was part of a general underdevelopment of the financial sector in Brazil, which could be explained, to a large part, by the prohibitively high level of the base rate.

Table 6: Stock of debentures (in mio. R\$; in % of GDP; in % of credit), 1995-2003

	Stock of debentures, in constant mio.R\$(2014)*	Stock of debentures, in % of GDP	Stock of debentures, in % of private credit sector**
1995	45,019	1.96	12.88
1996	49,529	1.94	14.72
1997	60,108	2.22	16.76
1998	58,020	2.07	16.74
1999	53,942	1.93	14.71
2000	63,502	2.19	14.40
2001	84,866	2.88	17.20
2002	91,852	3.09	19.21
2003	77,834	2.48	17.00

* in constant 2014 R\$, deflated with IPCA; ** credit operations outstanding of financial institutions under private control

Source: BACEN; CETIP; IBGE; own calculations

Several studies identified the elevated interest rate level as a central impediment to financial development in Brazil. In a World Bank study Kumar (2004, 33) stated that the largest constraint to finance for Brazilian companies was the elevated level of the interest rates. While Beck's (1999, 9) focus lied on legal deficiencies, he also admitted that the high real rates were among the most important factors pushing up financing costs in Brazil. Similarly, Rocca (2001, 74ff.) found that the main component of the elevated funding cost in Brazil was the high level of the base rate. A study conducted for the Brazilian development bank BNDES (Paula et al. 2009, 11–12), ascertained that, especially during the 1990s, the interest level was apparently too high for most companies to issue debt securities.

The argument goes along these lines: A company seeking funding had to consider that it would need to pay a risk premium on top of the already high interest rate of public bonds. Only when the profitability of the investment project was higher than the required interest rate for the issuance of the bond, the company would issue the debt security and realize the investment project. The extremely tight monetary policy stance raised the interest level to a point, where it became unviable for private issuers to dispute for the funding resources, which were consequently destined in their majority to the acquisition of public bonds. Due to the characteristics of the Brazilian public debt securities, combining low default risk with high monetary returns and various forms of indexation, corporate issuers would have to offer an even higher monetary return, which would raise the costs of funding to unsustainable levels.

The average real interest rate during the late 1990s of about 20% was well above the rate of return on asset of most Brazilian companies during this period (Rocca 2001, 46ff.). Based on information from the financial statements of the 2.500 largest Brazilian private companies in 1997, only a small fraction had a rate of return on asset above 15%, while the cost of third party capital varied between about 23% and 39% per year (Rocca and Carvalho 1999). The capital markets

did only offer a very limited source of finance for Brazilian companies, and for most Brazilian companies it did not offer an alternative source of funding at all (Rocca 2001, 53ff.).

The access to bank credit as well as to the capital markets was almost exclusively restricted to the largest companies (Rocca 2001, 60ff.). Even among the companies listed on the Brazilian stock exchange¹⁸⁶, which were expected to generally have better financing conditions due to their size and their status as publicly owned companies, third party capital accumulated between 1994 and 1998 was strongly concentrated. The quintile with the largest companies raised about 70% of the funds, leaving only about 20% to the next quintile, and 10% to the remaining majority of analyzed joint-stock companies. The concentration was even more accentuated when looking at the volume of transactions in the Brazilian stock exchange. Between 1996 and 1998, the volume of the transactions of the 5% biggest companies represented 75.7% of the total value of transactions. The highly concentrated capital markets could also be explained with the high interest rate level: Only the largest companies that were well-known and had a good reputation, were able to issue debt securities, because their risk premiums were lower and, consequently raised the funding costs less, than the risk premium of a smaller company.

The high level of the interest rate in Brazil could be explained in different ways and various factors might actually be at work jointly to inhibit a decrease to more sustainable levels of the base rate. Most authors included fiscal considerations in their list of potential causes (Arida, Bacha, and Lara-Resende 2005, 267; Arnold 2011, 13). As public debt rose, they argued, the state faced more difficulties to roll over its debt, so a higher interest rate needed to be paid in order to find investors willing to buy these bonds. Findings of Gonçalves, Holland, and Spacov (2007) confirmed this view, more specifically they found “statistically significant correlations of the short-term real interest rate with inflation and total public debt-to-GDP ratio” (Gonçalves, Holland, and Spacov 2007, 71). And while some other econometric studies also found that Brazil’s high level of the public debt was adding a risk of debt default (Bacha 2010, 3; Favero and Giavazzi 2002), the empirical evidence was not clear on this matter: Muinhos and Nakane (2006, 16), for example, couldn’t find a positive relationship between public debt levels and the real interest rates.

Fiscal dominance describes a very peculiar situation, where an increase in the interest rate, which under normal conditions would bring inflation down, will have perverse effects and actually increase inflation (Sargent and Wallace 1981; Coates and Rivera 2004). That is explained with the additional burden on the debt service this increase in the interest rate will have, in a situation where the debt is perceived to be at the edge of an unsustainable level. The higher interest rate then pushes the debt level over this edge, rendering public bonds less attractive, which is the opposite outcome of what to expect under normal conditions, where an increase in the interest rate raises demand for government bonds. The decrease in demand for public debt will push up inflation in two

¹⁸⁶ Sample of 156 to 170 publicly owned companies that were grouped into quintiles according to firm size.

ways: instead of absorbing liquidity in the government bonds, liquidity will increase; and the thread of default will cause capital flight, deteriorating the exchange rate, which in turn puts pressure on inflation. In such a situation, monetary policy would not be able to combat inflationary pressures, because an adjustment of the interest rate in either direction might cause inflation to rise, and only fiscal policy, hence the name fiscal dominance, is able to intervene and lower inflation by cutting down public expenditures and increasing taxes. Several studies detected signs of fiscal dominance in Brazil in the past: Tanner and Ramos (2002) during the 1980s and part of the 1990s, others in the pre-election crisis 2002/2003 (Blanchard 2004; Favero and Giavazzi 2004).

Especially after adopting the inflation targeting regime, and with the approval of the Fiscal Responsibility Law in 2000, there was a gradual improvement of Brazil's fiscal stance, also due to sustained high primary surpluses (Segura-Ubierno 2012, 6). And yet, not only the level of the public debt, also its structure might be determining the risk premium embedded in the interest rate. During the late 1990s and beginning of the 2000s, the exposure to the exchange rate risk weighed on the public debt structure, together with its short-term nature as well as the indexation to the interest rate (Arnold 2011, 13). Apart from the problem that any increase of the interest rate reflected completely and instantly in the public debt cost, the high share of public bonds indexed to the base rate SELIC, the LFTs, had consequences that were directly linked to the functioning of the Brazilian monetary policy (Moura 2007). Since these bonds protected their holders against unexpected interest rate hikes, monetary policy was restricted in its capacity to control aggregate demand and inflation. The so-called wealth effect, which is normally a result of an increase in the policy rate that would affect holders of public debt negatively, was neutralized in Brazil, due to the indexation and short maturity of its public debt. In other words, the SELIC interest rate had to fulfill two functions: it served as a benchmark regulating the loans in the interbank market and it served as the price at which a relevant part of the public debt was rolled-over (Oreiro and Paula 2010).

There were more explanations for the weak transmission channel of monetary policy, such as the relatively low credit-to-GDP ratio when compared to other emerging market countries (Segura-Ubierno 2012, 10). As a result, the credit channel of monetary policy was weak, which meant that the state should not try to reduce inflation by raising the price for credit, as it was a blunt instrument. Furthermore, monetary policy was weakened by the indexation of key prices that caused inflation inertia and a downward rigidity of the Brazilian inflation towards increases in the SELIC interest rate. For this reason, a large reduction in aggregate demand would be required to bring inflation down. This point also came up during one of the interviews: "The interest rate in Brazil doesn't reflect the quality of the debt, of the debtor. It reflects a conundrum of a downward-rigid inflation, which the Brazilian society has not been able to dissolve. We can't attain declining inflation rates, even in recession. Inflation only rises in Brazil" (F01 2010, 56). Martinez and Cerqueira (2011) decomposed the consumer price index IPCA to detect the most influential factors on inflation between 2000 and 2009. They found that the ability to contain inflation through aggregate demand was weak, because most prices were not sensitive to the SELIC interest rate. This generated distortions in relative prices and consequently distributional effects.

Also, it required a consistently high interest rate. The authors suggested that the state could either work towards a de-indexation of prices or target a price index that was not composed of indexed prices.

Table 7: Capital markets, volume issued (in mio. R\$), 1995-2003

	in constant million R\$ of 2014 (deflated by IPCA)					
	Stocks	Debentures	Deb. Leasing	Commercial Paper	CRI	FIDC
1995	6,313	22,453	2	3,643	-	-
1996	27,332	11,833	13,165	1,487	-	-
1997	11,221	14,876	6,398	14,565	-	-
1998	16,615	22,720	4,165	35,922	874	-
1999	11,854	16,295	767	20,556	33	-
2000	32,645	19,456	1,640	18,305	414	-
2001	13,259	29,714	4,244	11,795	499	-
2002	12,243	17,486	11,643	7,714	283	398
2003	4,959	9,237	382	3,875	524	2,804

Source: ANBIMA; IBGE; own calculations

Apart from the high level of the interest rate, its volatility together with the general macroeconomic instability of a stop-and-go economy affected the volume and the conditions of new issues of private debt securities in Brazil by increasing the market risk, i.e. the risk of a fixed rate bond losing value as a consequence of an interest rate increase, as well as the default risk, i.e. the risk that the bond issuing company would not be able to repay the bond holders (Paula and Faria Jr. 2012, 114–15). Monetary policy had frequently, i.e. at any sign of an increase in economic growth (and the aggregate demand), created expectations of raising the base rate in order to keep inflation under control. Modenesi (2008) shows that the Brazilian central bank, when reacting to observed changes in the output gap and/or deviation from the inflation target, asymmetrically adjusted the base rate, i.e. monetary authorities raised the interest rate sharper and faster than they lowered it.

As a consequence of wealth holders' high interest rate expectations, corporate bond demand went in two directions: on the one hand, expectations raised the premium claimed by demanders of securities with longer maturities, especially after the expected base rate increase was realized and sustained for a long time, on the other hand, the demand for securities that were indexed to the interbank rate DI, implying a zero interest rate risk, increased. Against this background, investors kept their liquidity preferences whetted, and even while investing in longer-term securities, they searched for ways to safeguard against the market risk, by demanding indexed securities. More concretely, this meant that there was a demand either for short-term debt securities, both from public or private issuers, with high monetary returns, e.g. commercial paper, fixed rate CDBs, LTNs, or NTN-F, or for medium-term public bonds that might offer a little lower remuneration while being indexed to the SELIC rate. Furthermore, longer-term

bonds indexed to the interbank rate DI, e.g. DI-indexed debentures, FIDCs, or DI-indexed CDBs, or to the inflation rate, e.g. inflation indexed debentures, NTN-B, and NTN-C, were demanded by investors looking for higher monetary returns. Within this context, it became almost completely unviable to issue fixed rate debt securities with longer-term maturities, even for the public sector, whose debt securities were considered practically default risk free, because the placement in the primary market would require an extremely elevated risk premium, compensating for the relatively low non-monetary returns of such a bond.

Before 1999, it was not allowed to issue debentures with an indexation to the interbank rate DI, which was closely related to the base rate SELIC. In 2000, the share of these debentures had already been more than 65% of all debentures, and from 2005 onwards was higher than 90% (Paula et al. 2009, 25). Therefore, the DI rate was important for CBMD in Brazil, because it represented the main indicator to which private debt securities were indexed since the 2000s. As the DI interest rate was also very volatile, it was difficult for companies to calculate and correctly predict funding costs.

Table 8: Inflation, SELIC and other interest rates in Brazil (in %), December values, 1995-2003

	Inflation rate IPCA	SELIC	Interbank rate DI	Discounted trade bills	Working capital	Advances on FX contracts (ACC)	Brazilian prime rate	Overdraft credit*
1995	22.41	41.22	40.34	131.78	-	-	-	242.23
1996	9.56	23.94	23.74	79.33	-	-	-	147.06
1997	5.22	39.87	38.98	96.98	-	-	-	181.76
1998	1.65	31.24	30.89	84.17	-	-	-	175.43
1999	8.94	18.99	18.77	53.81	-	-	-	138.82
2000	5.97	16.19	16.13	44.66	32.11	9.01	-	152.71
2001	7.67	19.05	19.05	50.14	34.09	5.88	-	160.18
2002	12.53	23.03	22.91	56.12	35.86	9.54	-	163.93
2003	9.30	16.91	16.81	44.15	31.06	5.01	-	144.63

*Natural person

Source: BACEN

When comparing the DI rate with the interest rate on loans to finance the working capital of companies (data only available since 2000), there was a relatively large spread of about 15% on average. There were several reasons, why banks were able to charge this spread (Paula et al. 2009, 25). First, only publicly owned companies had access to the primary market of debentures. Second, the costs of funding via debenture were not limited to the interest rate costs and included considerable issuance costs that were related to road shows, brokerage fees etc. and could only be compensated by a large funding volume and/or long duration. Third, bank credit might also have been more costly as it was more readily available and the amount could better be adjusted to the financing needs. These findings were backed by international experience: The

country studies conducted in Borensztein et al. (2008a) showed that companies issuing bonds shared certain characteristics and that issuance became more likely with larger firm size, more tangible assets, higher profitability, and greater-than-average leverage (Borensztein et al. 2008b, 15–18). Firm size seemed to matter because of large fixed issuance-costs that could be differentiated into those of becoming an issuer and those of each issuance. The former included disclosure costs and required accounting changes and the latter such expenses as underwriting fees. These findings were confirmed by the results of the firm-level survey. Companies named several factors related to fixed costs that made bonds less attractive than bank financing such as high fees, issue requirements, minimum size, information requirements, and lengthy procedures.

Between 1995 and 1998, the semi-fixed exchange rate regime with an overvalued currency (in real terms) favored the issuance of securities abroad. During this period, Brazilian companies issued on international markets US\$ 24.4 billion on average per year, with a focus on long-term notes and commercial paper. Translating these volumes at the average exchange rate of the respective year into Brazilian real (R\$) and comparing it to the domestic capital markets, one can see that about 60% of the total volume issued per year was funded abroad. The domestic primary market of debentures and commercial paper recorded an average annual volume of R\$ 31.9 billion during these years. Although the Brazilian capital markets (including the stock market) were less important for overall funding, they experienced a period of growth during the 1990s, resulting largely from the massive entrance of foreign capital (A. G. de Carvalho 2000, 596–97).

The situation changed completely, reversing net foreign currency inflows, in 1999 and 2000, after a floating exchange rate regime was adopted, the country risk increased and the domestic interest rates decreased. Although the implementation of the inflation targeting (IT) regime, together with a flexible exchange rate and continuous primary surpluses, was able to lower the interest rate level, it still remained high (Paula et al. 2009, 9ff.). The way, in which the IT regime worked, under a flexible exchange rate regime, together with an almost completely open capital account, led to great exchange rate volatility. During periods of net capital outflows, such as in 2002 and 2003, the instability of the exchange rate was even more accentuated. The macroeconomic instabilities were not only expressed in a volatile exchange rate, but could also be seen in the unstable interest rates. The interbank market rate DI (*Depósito Interbancário*) was closely related to the monetary policy rate SELIC and also showed high volatility. These great macroeconomic instabilities had an impact on both the domestic and the external bond market, which were both shrinking during the two currency crises in the beginning of 1999 and in the end of 2002.

When the capital markets crashed in the end of 1990s, this coincided with several international crises and an adverse macroeconomic scenario, and the measures taken to resolve this situation included the increase of the monetary policy rate and of the CPMF tax, which substantially raised transaction costs (A. G. de Carvalho 2000, 606ff.). While these two measures obviously negatively affected the performance of the capital markets, the decline was also rooted in structural weaknesses, such as corporate governance issues. Another important

barrier to the development of capital markets in Brazil were the high costs of going public as well as the regular costs to maintain a publicly owned company, which were connected, for example, to the structure of the underwriting industry. These factors might explain why the number of publicly owned companies declined during the 1990s, in a period of capital market growth, implying that only few companies were able to reap the benefits of increased liquidity.

Another explanation was connected to the ownership structure of Brazilian companies. The vast majority of large companies were either multinational corporations or under public control. Most of the remaining companies that had a sufficiently large size so that they could participate in the domestic capital markets were mostly family-owned with a high self-financing capacity. In other words, these companies had less need to issue corporate bonds as a source of funding. Also, it would usually run against those families' interests to lose control of their companies, which explains why preferred shares dominated the Brazilian stock exchange. The relative lack of ordinary shares brought other problems with it, like the low professionalism of the family-owned businesses or the low value of the shares, which only allowed the investors to participate in the profits, but didn't give the right to participate in the decision making process.

Apart from the reasons outlined above, there were at least two more factors, which negatively affected the development of corporate bond markets: There was a lack of standardization. Debt security contracts should be easy to understand and to execute, which would best be achieved by adhering to standard contracts. The second point was the lack of efficient mechanism to support the price formation process. In more developed markets, there were low cost electronic trading platforms installed, while in Brazil, corporate debt securities were traded almost exclusively "over the counter" (OTC), i.e. on the phone and negotiations were registered afterwards, during the period analyzed here.

3.2.1.3 Public banks: major domestic source of long-term finance and funding

Long-term funding on the domestic capital markets was restricted to a few large companies during the period between 1995 and 2003. The low development of the corporate bond market in Brazil could be explained by the existence of alternative sources of funding. The option to issue abroad, as discussed before, was a major contribution to funding streams, especially under the semi-fixed exchange rate regime between 1995 and 1999. Another important source of funding was supplied by public finance for development programs, which offered subsidized credits for specific sectors in Brazil. Public finance for development was mainly executed by one institution in Brazil, the public development bank BNDES. Access to BNDES credit was restricted to certain regions, industries or firm sizes, depending on the specifications of the respective program. In the end, it was a political decision how these programs and measures were designed and, consequently, which companies were able to apply for these resources. During the analyzed sub-period, BNDES took an active role in the process of

privatization by providing loans to acquirers and becoming a minority shareholder in formerly state-owned enterprises, apart from offering its services in planning and executing privatizations.

The volume of BNDES disbursements were almost the same size as primary issues in the Brazilian capital markets (see Table 9). Towards the end of the analyzed period, in 2002 and 2003, its share markedly increased, but this was less a result of an counter-cyclical effort, and more the result of a strong decline in the volume issued on the Brazilian capital markets.

Table 9: Capital markets, volume issued vs. BNDES disbursements (in % of total), 1995-2003

	in % of total volume						
	Stocks	Debentures	Deb. Leasing	Commercial Paper	CRI	FIDC	BNDES disbursements
1995	11.4	40.4	0.0	6.6	0.0	0.0	41.7
1996	32.8	14.2	15.8	1.8	0.0	0.0	35.5
1997	11.5	15.2	6.5	14.9	0.0	0.0	51.8
1998	12.5	17.1	3.1	27.0	0.7	0.0	39.7
1999	12.4	17.0	0.8	21.5	0.0	0.0	48.2
2000	25.5	15.2	1.3	14.3	0.3	0.0	43.4
2001	11.4	25.6	3.7	10.2	0.4	0.0	48.7
2002	9.9	14.1	9.4	6.2	0.2	0.3	59.9
2003	6.0	11.1	0.5	4.7	0.6	3.4	73.7

Source: ANBIMA; BACEN; own calculations

Table 10 below shows the deflated values of BNDES disbursements per year as well as the growth rate of these numbers from year to year. In the two crisis years, 1999 and 2002/2003, the public development bank cut back its disbursements. This pro-cyclical behavior might be explained by the diminishing demand for funds in times of crisis. Also, it could be related to a common argument that fiscal problems led to these crises and that public expenditures should therefore generally be reduced. Nevertheless, public finance for development schemes should be employed counter-cyclically, promoting growth and development in adverse contexts, in order to alleviate the impact of crises, and this apparently only happened to a limited degree during these currency crises. It would have also supported monetary policy efforts to smooth macroeconomic instabilities and to align expectations, if the BNDES would have acted counter-cyclically. BNDES disbursements more than doubled in absolute terms between 1995 and 2003, while the disbursements measured as a percentage of GDP increased from 1.01% to 1.95%.

Table 10: BNDES disbursements (in mio. R\$; in % of GDP), 1995-2003

	BNDES disbursements*, in 2014 R\$ million	Change, in %	BNDES disbursements*, in % of GDP
Dec 95	23,155		1.01%
Dec 96	29,630	28%	1.16%
Dec 97	50,637	71%	1.87%
Dec 98	52,869	4%	1.89%
Dec 99	46,131	-13%	1.65%
Dec 00	55,575	20%	1.92%
Dec 01	56,478	2%	1.92%
Dec 02	74,475	32%	2.51%
Dec 03	61,064	-18%	1.95%

* accumulated in the year

Source: BACEN

Although the BNDES was part of the institutional setting that didn't deliver satisfactory results with respect to CBMD, there was only weak evidence for negative effects due to a direct competition between public finance for development and corporate bonds as funding sources (Arnold 2011, 22–23). Although a public finance for development scheme could complement financial markets, one had to be aware of certain problems. In general, the granting of directed credits at subsidized rates will raise the probability of political interference, rent-seeking behavior and clientilism. In Brazil, the large share of maturing BNDES loans that were refinanced might be an indication for a less than perfect allocation of capital, excluding potentially more promising new applicants.

Table 11: Inflation, TJLP and other interest rates in Brazil (in %), December values, 1995-2003

	Inflation rate IPCA	BNDES rate TJLP	SELIC	Interbank rate DI	Discounted trade bills	Working capital	Advances on FX contracts (ACC)	Brazilian prime rate
1995	22.41	17.72	41.22	40.34	131.78	-	-	-
1996	9.56	11.02	23.94	23.74	79.33	-	-	-
1997	5.22	9.89	39.87	38.98	96.98	-	-	-
1998	1.65	18.06	31.24	30.89	84.17	-	-	-
1999	8.94	12.50	18.99	18.77	53.81	-	-	-
2000	5.97	9.75	16.19	16.13	44.66	32.11	9.01	-
2001	7.67	10.00	19.05	19.05	50.14	34.09	5.88	-
2002	12.53	10.00	23.03	22.91	56.12	35.86	9.54	-
2003	9.30	11.00	16.91	16.81	44.15	31.06	5.01	-

Source: BACEN

The subsidized interest rate charged by the BNDES, the Long-term Interest Rate TJLP, could be raised, so that the spread towards the market rate would decrease. Additionally, this rate could be tied closer to the movements of the SELIC interest rate, in order to raise the impact of monetary policy adjustments.

3.2.2 2004-2008: Uncoordinated and insufficient state actions in the right direction

The international context contributed to a markedly improved performance of the Brazilian economy, which was growing at relatively high growth rates. Maybe even more importantly, the economic growth was accompanied by greater macroeconomic stability, so that it was not abruptly interrupted, after a couple of years already, as had happened in the sub-period analyzed before. Against this background, public debt management was able to improve the structure of the public debt in terms of the indexation profile as well as a prolongation of terms and maturities, that way starting to construct a yield curve. Within this favorable environment, Brazilian companies wanted to realize investment projects and started to demand funding. Instead of increasingly issuing corporate bonds, most companies opted for the placement of company shares on the Brazilian stock exchange, which can be seen as a clear sign that interest rates remained on a too high level compared to the expected rate of return of most companies. In fact, although the interest rate was lowered from 2005 onwards, mainly because inflation was kept under control due to the exchange rate appreciation, the monetary policy stance continued to show signs of conservatism.

The Brazilian development bank BNDES placed, through its subsidiary BNDESPAR, a corporate bond with special characteristics. The placement aimed at setting benchmarks and to establish new standards, in order to improve market transparency and liquidity as well as broadening the investor base of the Brazilian debentures market. Even this specially designed program and the positive economic environment were apparently not enough to trigger a leap in CBMD. First signs of improvement were seen, but then came the international financial crisis in 2008 and left its mark, also on the Brazilian corporate bond market.

3.2.2.1 Public debt management: improving the structure in a more benign environment

Brazil maintained its solid primary surpluses and was even able to reverse the trend of increasing nominal deficits in 2007, partly because interest payments started to decrease in 2006. Also in 2006, Brazil was able to leave its net external debtor position for the first time. This was not achieved with a net reduction of the consolidated public sector debt, but was due to a switch from foreign to domestic debt, i.e. the reduction of net external debt coincided with an increase

of net internal debt. Only in 2008, net public debt in real terms was lower than the previous year. The total debt-to-GDP ratio¹⁸⁷ was already falling since 2003.

Table 12: Government budget¹⁸⁸ (in % of GDP), 2004-2008

	Nominal result			Interest payments			Primary result
	total	internal	external	total	internal	external	
2004	2.87	4.31	-1.44	6.56	5.70	0.86	-3.69
2005	3.54	6.68	-3.14	7.28	6.64	0.64	-3.74
2006	3.57	7.49	-3.92	6.72	6.38	0.34	-3.15
2007	2.74	9.81	-7.07	5.98	5.96	0.02	-3.24
2008	1.99	2.83	-0.84	5.33	5.40	-0.08	-3.33

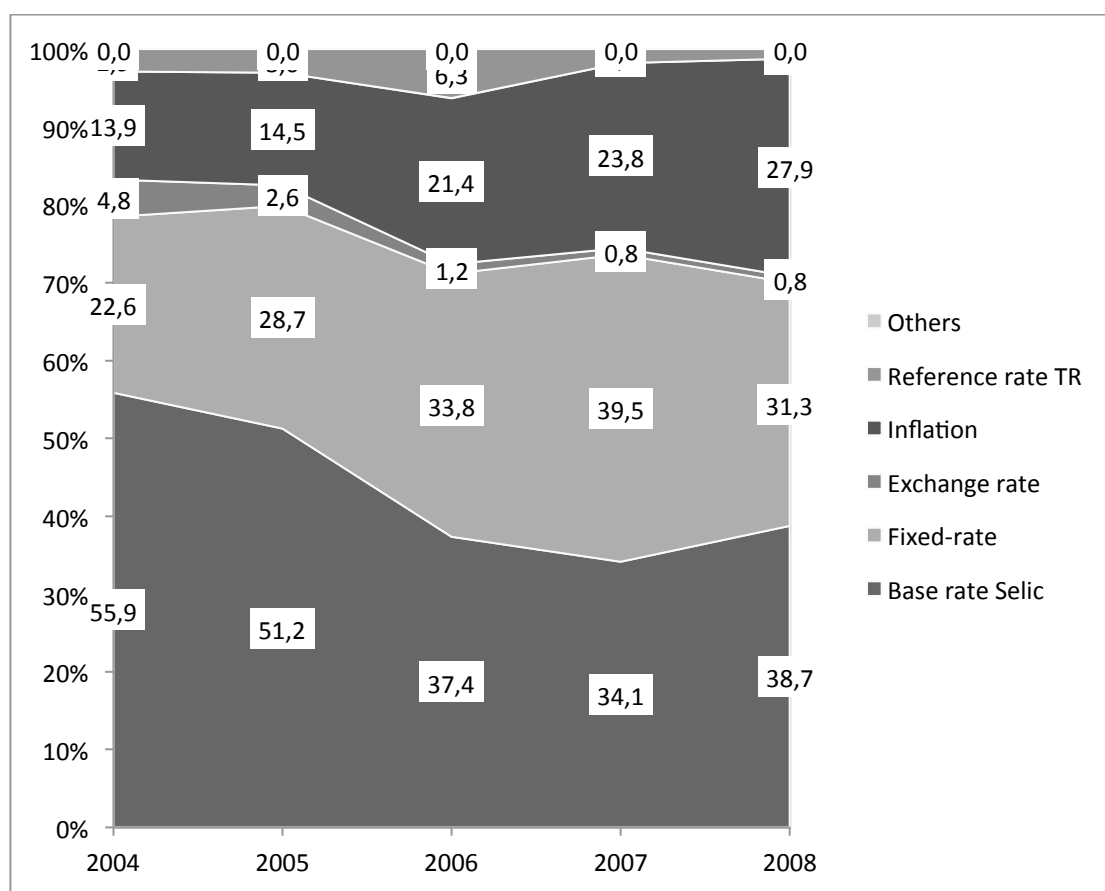
Source: BACEN

With consecutive public deficits, net debt on the rise, and the exchange of external for internal debt, the stock of public debt securities continued to rise, as well. In an environment of greater macroeconomic stability, most Latin American countries, including Brazil, were able to change the structure of their public debt towards “safer” forms with respect to maturity, currency composition, and indexation of their domestic government bonds (Borensztein et al. 2008b, 11–13). In Brazil, the decline of exchange rate indexed bonds and the increase of fixed rate bonds as well as inflation indexed bonds stood out, while the reduction of bonds indexed to the SELIC rate, the LFTs, was less strong so that in 2008, LFTs still represented almost 40% of the stock of sovereign bonds. As we saw in the theoretical chapter 2 and according to Lopreato (2008) their existence hampers the functioning of monetary policy as well as public debt management, and the development of the corporate bond market.

¹⁸⁷ Gross general government debt as a percentage of GDP.

¹⁸⁸ Consolidated public sector borrowing requirements without exchange devaluation, flows accumulated in 12 months, December values; positive values represent deficits; nominal result = primary result + interest payments; total borrowing requirements are differentiated into internal (domestic) and external (international) borrowing requirements.

Figure 9: Public bonds, share of indexation (in % of total), 2004-2008



Source: BACEN

In August 2004, the national treasury was able to issue a public bond with a 40-year term, the longest so far for Brazilian debt that was indexed to the inflation rate IPCA. The growing importance of inflation indexed bonds could be seen as a success of public debt management, especially because it partly replaced two other forms of indexation, which were considered less desirable, i.e. the SELIC interest rate and the exchange rate. Among other reasons, a price index was preferred to these two indices because of its lower volatility, on the one hand, and because it may convey commitment to the inflation targets under an IT regime, on the other hand. Especially pension funds asked for sovereign bonds with a protection against inflationary risks.

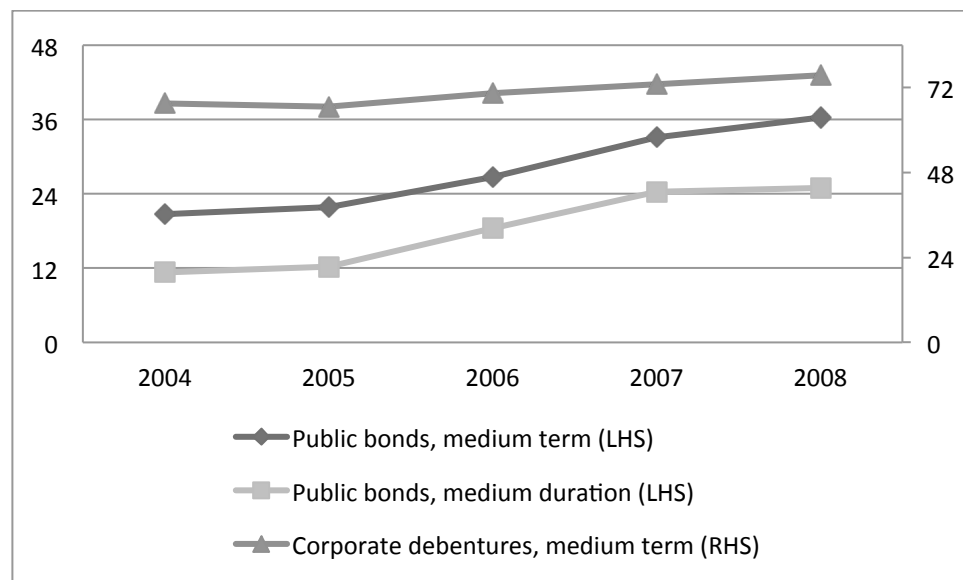
Since 2006, foreign investors benefited from the income tax exemption on revenues from public bonds, which helped public debt management to improve the debt profile, on the one hand, but aggravated the competitive disadvantage and legislative asymmetry between public and private bonds even further, on the other hand (Torres Filho and Macahyba 2012, 35). The application profile of foreign investors was directed towards fixed rate bonds with longer maturities, so that this tax exemption allowed an improvement of the internal debt structure by increasing the share of fixed rate and inflation indexed sovereign bonds with longer maturities (Pedras 2010, 68). The demand of these investors helped the

Brazilian treasury to set a mark in 2007 and realize the placement of the first fixed rate bond with a maturity of ten years. This was an important step towards building a long-term yield curve that could serve as a benchmark for private debt securities. The lack of a long-term interest rate in Brazil, the concentration of the demand for debt securities in the short term and the lack of a vision and long-term perspective were issues that were repeatedly touched upon during the interviews (F01 2010; U03 2010; U04 2010). They explain why Brazilian companies tended to invest less and instead worked at full capacities, which added to inflationary pressures that, in turn, needed to be controlled by an increasing interest rate. Furthermore, the fear of an unexpected increase in the interest rate that would cause losses for holders of fixed rate bonds and the corresponding focus on short-term and indexed debt securities explain, why Brazilian debentures usually had a built-in clause allowing investors to renegotiate (U04 2010).

Parallel to the decrease of LFTs in the stock of public bonds, there was an increase in operations of fixed rate bonds (LTNs and NTNFs) in the secondary market that were combined with transactions in the futures market for short-term interest rates, aiming at creating so-called synthetic LFTs (Moura 2007). While this showed the great aversion of the Brazilian financial market participants towards longer-term commitments, it also implied that the national treasury successfully transferred the ultimate interest rate risk to the market participants.

Although the share of LFTs in the public debt fell sharply, from 55.9% in 2004 to 34.1% in 2007, the difference between medium term to maturity and medium duration of the public debt almost didn't change, as both measures increased (See Figure 10). While the medium duration of Brazilian public bonds more than doubled from 11 to 25 months, increasing by 14 months, the medium term to maturity of sovereign bonds was extended by 15 months from 21 to 36 months. The medium term to maturity of corporate debentures increased as well, from 67 months in 2004 to 76 months in 2008.

Figure 10: Term to maturity and duration of public bonds vs. term to maturity of corporate debentures (in months), 2004-2008



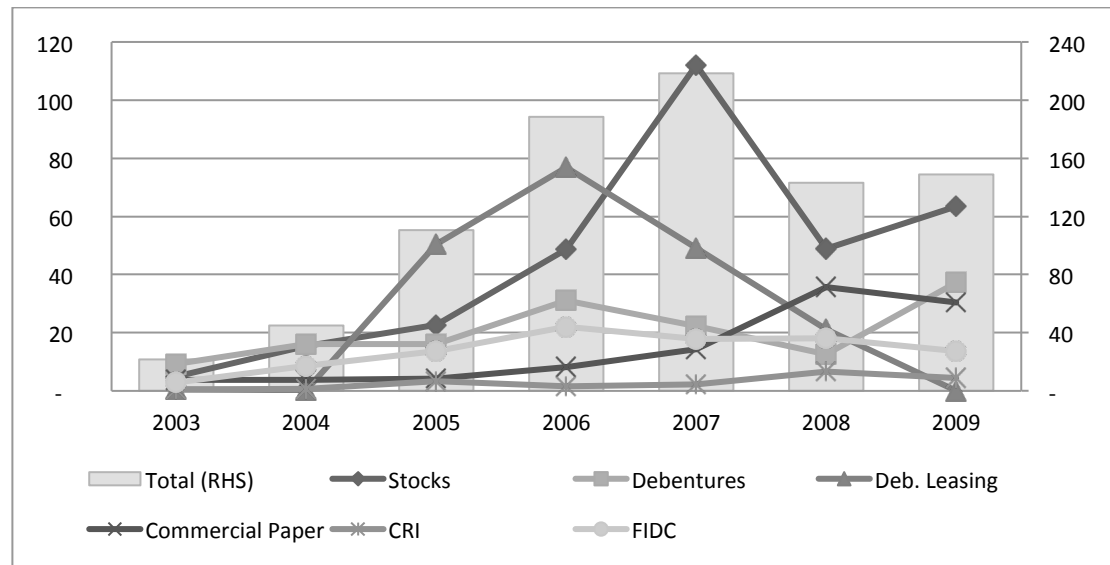
Source: BACEN

While Borensztein et al. (2008b, 23–24) were not able to detect possible spillover effects of safer public debt to private debt, in terms of composition and maturity, in the case of Brazil, Paula et al. (2009, 29) show that, already in 2004, Brazilian companies took advantage of the favorable circumstances to improve their debt structure by exchanging foreign currency debt (mostly in US\$) for debt denominated in R\$, and by extending the maturity of their debt. In part, these improvements were related to the increased demand for corporate debt securities by institutional investors, which were confronted with the perspective of a lower base rate and, hence, inclined to raise the share of debentures in their portfolios. Another instrument, the receivables funds FIDCs, also experienced a large increase within this context and issued more than R\$ 8 billion in 2004, which represented 19% of all private issues.

Debentures and the securitized debt instruments FIDCs and CRIs stood out in 2005 as instruments to capture funds (Paula et al. 2009, 29–30). In the case of the debentures, it was actually the leasing sector, which mainly pushed the volume issued in the primary capital markets, contributing R\$ 50.4 billion, which represented 46% of all issues, while corporate debt securities only issued R\$ 16.1 billion or 15% of the total volume. To issue debentures via leasing companies was a way for banks to circumvent reserve requirements (Torres Filho and Costa 2013, 38). Most of the volume issued by leasing companies was destined to the financing of vehicles (70%), while machines and equipment responded for 19%. FIDCs and CRIs were pushed by the increased demand of institutional investors. With the tendency of interest rates falling, institutional investors like pension and investment funds were looking to diversify their portfolios, mainly composed of public bonds. As private securities paid higher monetary returns than public bonds, institutional investors demanded these bonds in order to compensate for the declining return on their assets. The

volume issued of FIDCs in 2005 reached R\$ 13.7 billion, representing 12% of all private issues.

Figure 11: Capital markets, volume issued (in bn. R\$), 2003-2009



Source: ANBIMA; CVM; IBGE; own calculations

In 2006, the corporate bond market eventually took off and almost doubled the volume issued to R\$ 31.0 billion. Yet, this leap in absolute terms almost disappeared in relative terms: The market share of debentures only increased by 1%. In other words, the primary market for debentures merely participated in the general capital market boom. The issues of leasing companies as well as FIDCs peaked in 2006, reaching R\$ 76.9 billion (41% of total issues) and R\$ 22.1 billion (12%), respectively. The FIDCs had their demand pushed by pension funds, which updated their actuarial assumptions¹⁸⁹ and, as a consequence reduced their holdings of DI applications and raised the share of debentures and FIDCs in their portfolios. This year, the financing of vehicles was the main basis for the receivables of FIDCs.

The stock market also continued to grow strongly with a volume of R\$ 48.6 billion issued. While the surge in the stock market continued in 2007, more than doubling primary market issues for the second consecutive year, reaching R\$ 112.2 billion and making up more than half of the volume issued in the capital markets, the volume issued in the primary market for debentures decreased to R\$ 22.3 billion, representing merely 10% of the total volume issued. While the volume issued by leasing companies returned to the level of 2005, but still representing the second largest market share, commercial paper grew strongly, making up 7% of the total volume issued in 2007. Although the volume of FIDCs and CRIs in 2007 was considerably lower than in the previous year, these

¹⁸⁹ According to changes in the minimum requirements of actuarial table AT 83.

instruments were used, again, by small and medium sized banks to acquire fresh capital, in a year of a strong expansion of banking credits.

The boom in primary capital markets provoked increased activities in the secondary markets of debentures, as well, raising the average monthly volume of negotiations from R\$ 1.9 billion in 2006 to R\$ 3.7 billion in 2007 (ANBIMA 2007). It must be emphasized, though, that this increase of the average amount traded per month was mostly due to punctual negotiations of certain securities, and that the daily trading volume of debentures was subject to strong fluctuations. Due to the dominance of institutional investors in the primary market of debentures, these investors also accounted for the majority of negotiations in the secondary market. Therefore, the low liquidity of the debentures market was closely related to the highly concentrated investor base and the fact that these institutional investors were not circulating the debentures, which could be explained, among other things, with tax reasons and regulatory requirements. The market for debentures was also highly concentrated on the supply side, because there were only few companies that issued debentures (Paula et al. 2009, 27). Between 2004 and 2008, the largest eight issuers were responsible for more than half of the volume issued in the primary market for debentures.

During the expert interviews, several other explanations for the low liquidity in corporate bond markets were pointed out: For example, the lack of international investors in the corporate bond market (F01 2010; U04 2010) that could be explained by discriminatory tax treatments and other regulations that advantage public bonds, as well as the low attractiveness of these debt securities for retail investors (A01 2010), which might be related to low market transparency, among other things. The investor base could be broadened by installing a guarantee scheme, insuring the investor that at least part of its investment was safe (U04 2010). Another key problem, that has been touched upon before, was the fact that corporate bonds lacked standards in issuance, which made it harder to compare different securities (A01 2010). Although the problem of different issue dates, terms, risks etc. will always exist among corporate debt securities, there have been ways to make at least some characteristics more comparable. The Brazilian authorities tried to tackle this problem and offered a vehicle to improve standardization¹⁹⁰, but apparently the requirements were too high, because there were no securities issued under this regulation (Paula et al. 2009, 39; ANBIMA 2004).

Out of the six Latin American countries analyzed in the book edited by Borensztein et al. (2008b, 9–11), Brazil was the only one that has not shifted from a pay-as-you-go to a fully funded private pension system during the past 35 years¹⁹¹. The most recent data for that study shows that in 2004, a large fraction (more than 20%) of domestic public debt was in four countries directly held by private pension funds (PPFs). In a fifth country, Brazil, PPFs also had a

¹⁹⁰ According to CVM instruction n. 404/2004.

¹⁹¹ In Brazil, contributions to the public pension system were cut and regulation of private pension funds was adjusted in 1998, and in 2003, a pension reform with a focus on public servants was implemented. At the same time, the demand for private pension funds increased further, mainly due to tax incentives. (See also chapter 3.1.2.1.)

considerable amount of locally issued government debt securities in their portfolios, even though their holdings disappeared in the official data as they were only indirect, as Leal and Lustosa (2004 - unpublished paper, cited from Borensztein et al. 2008b, 9) showed. Brazilian PPFs invested more than 60% of their portfolio in fixed-income funds and hedge funds, whose assets in turn were mostly made up of public bonds. This showed the high importance of institutional investors such as PPFs for domestic bond markets and vice versa.

Although the relative dominance of fixed-income funds and DI benchmark funds decreased over the years, with multimarket funds, stock funds, and pension funds gaining weight in return, they still made up about 45% of the net worth of the fund industry in December 2008. The net worth of all investment funds together reached its top in 2007, summing up to R\$ 1.8 trillion¹⁹².

Table 13: Types of investment funds and their relative share (in %), net worth of total (in mio. R\$), 2004-2008

	Short-term	DI benchmark	Fixed-income	Multi-market	Foreign ex-change	Stock	Pension	Private Equity	Off-shore	Others	Net worth
	in %										in mio. R\$
2004	3.66	18.00	30.26	28.57	0.78	8.17	5.80	-	3.57	1.19	1,086,365.7
2005	2.75	20.24	39.66	17.24	0.29	8.32	6.85	-	2.55	2.11	1,294,552.1
2006	2.48	17.77	33.80	22.66	0.14	10.19	7.93	-	2.71	2.32	1,585,837.5
2007	2.39	14.56	29.98	23.78	0.06	15.51	7.98	-	3.17	2.58	1,814,180.3
2008	3.25	16.32	29.18	23.65	0.07	10.18	9.89	1.40	2.11	3.94	1,614,262.4

Net worth in constant million R\$ of July 2015, deflated with general price index IGP; December values; others = FIEX + FIDC + IMOB + FEF; values of each year always add up to 100.

Source: ANBIMA

Public bonds continued to dominate in the portfolio of investment funds, even though their fraction dropped from an average of 75% between 2000 and 2003 to 59% in 2004. Moreover, a large part of this decline could be explained with the replacement of definite acquisitions of public bonds with repo operations, which made up about 13% of the portfolio in 2004 and mainly included public bonds. During the years from 2004 to 2008, the share of public bonds continued to decrease, and even though the growing share of repo operations compensated most of this decline, there was a downward trend in the combined figures, as well. The lower share of public bonds in the portfolio of investment funds found its counterpart in a growing importance of CDBs and RDBs. While debentures slowly expanded their share in the portfolio, the participation of stocks experienced an abrupt decline in 2008, after two years of strong growth, and peaking at 22% of all investment fund assets in 2007.

¹⁹² This R\$ value has been deflated to constant July 2015 R\$, using the general price index IGP.

Table 14: Portfolio composition of investment funds (in % of total net worth), 2004-2008

	Repo operations	Public bonds	CDB and RDB	Commercial Paper	Debentures	Stocks	Others
2004	13.23	58.99	8.44	0.28	2.80	11.17	5.08
2005	9.43	60.53	10.66	0.04	3.93	11.16	4.26
2006	11.35	54.80	10.18	0.09	4.62	15.25	3.71
2007	13.60	47.04	8.96	0.07	4.17	21.71	4.46
2008	19.10	41.46	13.70	0.27	4.44	14.45	6.59

December values; repo operations with public and private debt securities; public bonds = federal debt securities; values of each year always add up to 100.

Source: ANBIMA

Table 15: Portfolio composition of funding industry (in mio. R\$), 2004-2008

	Repo operations	Public bonds	CDB and RDB	Commercial Paper	Debentures	Stocks	Others
2004	143,747.9	640,856.6	91,743.0	2,997.6	30,411.6	121,368.7	55,240.3
2005	122,062.8	783,530.0	137,952.6	539.8	50,852.2	144,425.9	55,188.8
2006	179,922.3	868,961.7	161,461.6	1,460.1	73,222.9	241,917.6	58,891.3
2007	246,744.3	853,346.5	162,488.4	1,194.4	75,617.8	393,866.1	80,922.8
2008	308,351.4	669,255.7	221,109.0	4,394.0	71,651.6	233,201.1	106,299.7

December values; repo operations with public and private debt securities; public bonds = federal debt securities; in constant million R\$ of July 2015, deflated with general price index IGP.

Source: ANBIMA; own calculations

While the share of debentures in the portfolio of investment funds varied less than 1% and this variation also corresponds to relatively small changes in nominal terms, the strong growth in the volume of debentures issued resulted in a rapid decline of the market share of investment funds. While the funding industry dominated the debentures market in 2004, holding 69% of all debentures issued, this figure fell to 29% in 2008. This was partly due to the rapid increase in debentures issued by leasing companies, which were bought by the respective banks. Also, BNDESPAR bought a large fraction of privately placed bonds (Leal and Carvalhal-da-Silva 2006, 39–40).

Table 16: Investment fund holdings of public and corporate bonds and respective market share (in mio. R\$; in %), 2004-2008

	Public bonds	Market share	Public bond market value	Debentures	Market share	Debenture market value
2004	640,856.6	34%	1,860,806.36	30,411.6	69%	44,109.1
2005	783,530.0	39%	2,005,586.88	50,852.2	60%	85,007.0
2006	868,961.7	40%	2,159,032.90	73,222.9	47%	155,476.6
2007	853,346.5	36%	2,353,952.26	75,617.8	36%	209,991.3
2008	669,255.7	27%	2,468,770.58	71,651.6	29%	248,232.3

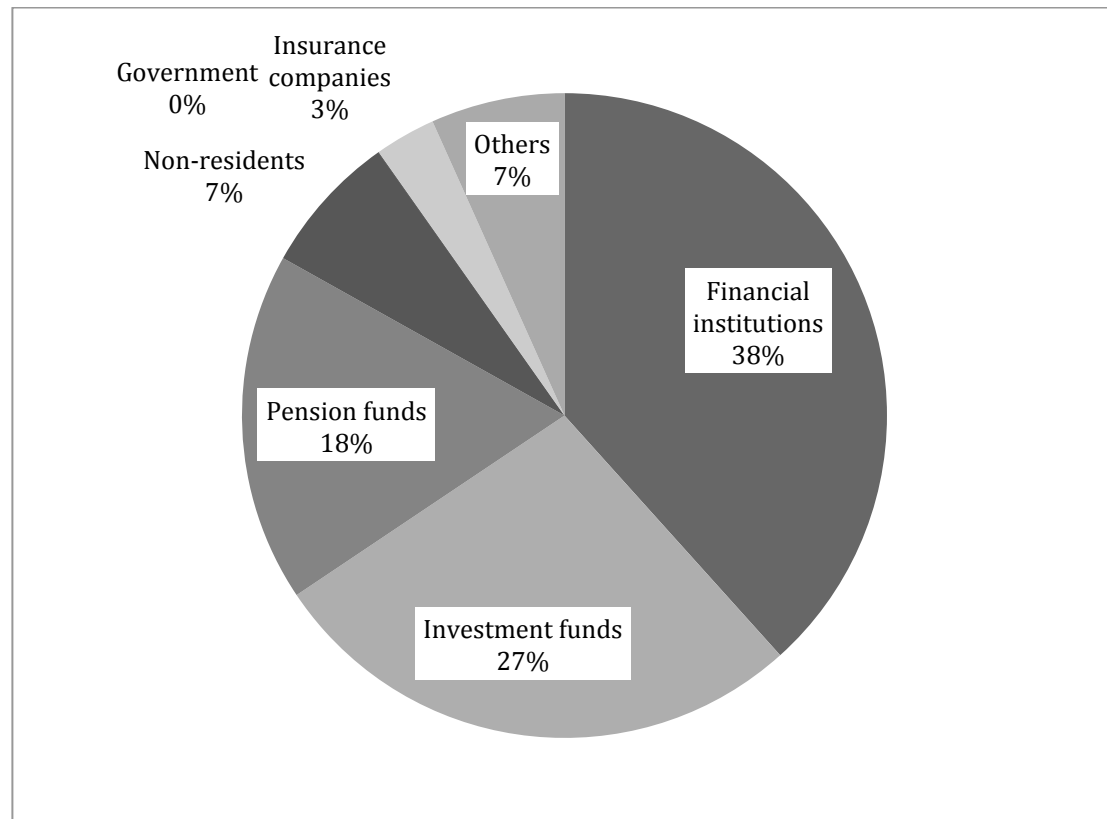
December values; repo operations with public and private debt securities; public bonds = federal debt securities; in constant million R\$ of July 2015, deflated with general price index IGP

Source: ANBIMA; BACEN; CETIP; own calculations

The national treasury started in 2011 to publish data about the holders of public bonds with data reaching back to 2007¹⁹³ (Brasil 2011). Although the database is different, the calculated market share in the table above appears to correspond with the data displayed in the pie charts below. The composition of holders of public bonds confirmed the great importance of institutional investors, such as pension funds and investment funds, representing together almost half of the investor base of public bonds. The most important holders of public bonds were financial institutions, holding 38% of public bonds in 2008. Foreign investors increased their share of holdings from 5% in 2007 to 7% in 2008.

¹⁹³ There have been six holder categories, but the share of the holder “government” was zero until 2011.

Figure 12: Holders of public bonds (share in %), 2008



Source: Tesouro Nacional

The boom in the Brazilian capital markets might be related to the expectation, which already started to form in 2006, that rating agencies would upgrade Brazil to investment grade, which also raised international investors' interest in the Brazilian capital markets. Standard & Poor's as well as Fitch Ratings raised their Brazil rating to investment grade in 2008, and one year later, Moody's followed. Even though it might not be clear, whether structural improvements in sovereign debt markets were transferred to private bond markets, the influence of the assessment of rating agencies has been clear (Borensztein, Valenzuela, and Cowan 2007; Borensztein et al. 2008b, 24,27): rating agencies usually ascribed private borrowers ratings that were lower than, and yet closely related to the respective sovereign rating.

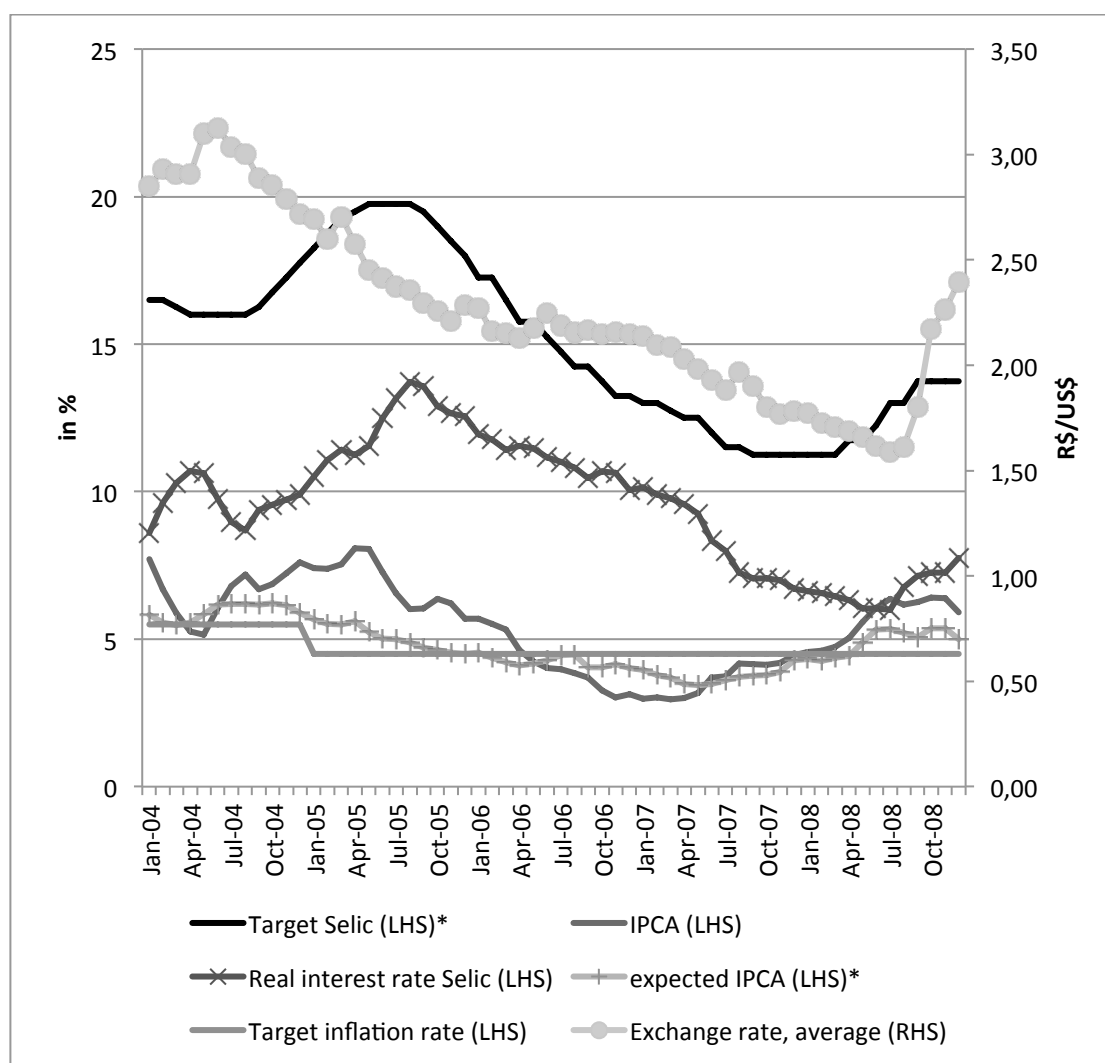
With the US sub-prime crisis turning into a full-blown international financial crisis in 2008, Brazilian public debt management took a more conservative stance with respect to the debt profile, trying not to increase market volatility (Pedras 2010, 68). For this reason, the share of fixed rate bonds decreased towards the end of the year, while the share of bonds indexed to the SELIC rate increased, once again. Despite the growing macroeconomic instabilities, public debt management was able to lower its refinancing risk, reducing the share of debt maturing within 12 months from 40% in 2004 to 25% in 2008. The repercussions of the crisis were felt in the private financial markets from the second semester on, leading to a harsh decline of the volume issued in the

corporate bond market, reaching only R\$ 12.5 billion in the whole year, which represented only 9% of the total Brazilian capital market volume issued in 2008. With the rising uncertainties surrounding the build-up and breakout of the crisis, investors started to ask for high interest rates and short terms. Therefore, part of the retreat of the debentures was compensated by the increased issuance of commercial paper, reaching a volume of R\$ 35.7 billion corresponding to a market share of 25%. The highest market share, with a contribution of 34%, came from new issues in the stock exchange, reaching a volume of R\$ 49.0 billion in 2008.

3.2.2.2 Monetary policy: decreasing interest rates still too high

Although interest rates were lowered, they remained on international record high levels (See Figure 1). That is why some authors considered the Brazilian monetary policy stance as conservative (Araujo and Martins 2012, 6). This conservatism worked in favor of financial institutions, i.e. mainly the banking sector in Brazil, institutional investors, and, broadly speaking, rentiers. Not even when the international financial crisis started to unfold, during the second semester of 2007, did the Monetary Policy Committee (COPOM) change its conservative monetary policy approach. The COPOM started to tighten monetary policy and continued to raise the base rate for one year. Five days before the Lehmann collapse, it decided on a 0.75% increase of the SELIC rate – a decision that became known in the Brazilian media as Meirelles' mistake (Henrique Meirelles was the president of the Brazilian Central Bank at the time).

Figure 13: Monetary policy indicators (monthly data), January 2004-December 2008



* end of month data; IPCA: variation in 12 months; real interest rate SELIC: SELIC-IPCA (SELIC: accumulated in the month, annualized); expected IPCA: 1 year forecast

Source: BACEN; IBGE; own calculations

During the period from 2004 to 2008, the Brazilian economy experienced a phase of economic growth with monetary stability, which – together with other factors such as an improvement of the regulatory framework – gave a strong impulse to the debentures market in Brazil (Paula et al. 2009, 28–29). In 2005, the monetary policy rate started to be reduced, which was one of the major contributions to the growth of the Brazilian corporate bond market, as most debentures (and FIDCs) were indexed to the interbank rate DI, which in turn followed closely the movements of the base rate. Furthermore, the volatility of several macroeconomic variables, which were important in aligning business expectations, was reduced; in particular the interest rate as well as the exchange rate were more stable. Adding to that, the structure of the public debt improved since 2006, which might have changed the risk-return evaluations of bond demanders, who gradually moved towards demanding higher returns and

accepting higher risks. Towards the end of the period, the context of rising uncertainties due to the unfolding of the international financial crisis did not impede the formation of expectations that rating agencies might designate investment grade to Brazil, which raised international investors' interest in the Brazilian capital markets.

Table 17: Stock of debentures (in mio. R\$; in % of GDP; in % of credit), 2004-2008

	Stock of debentures, in constant mio.R\$(2014)*	Stock of debentures, in % of GDP	Stock of debentures, in % of private credit sector**
2004	74,648	2.25	14.39
2005	136,116	3.91	22.15
2006	241,375	6.45	33.51
2007	312,089	7.73	33.60
2008	348,369	7.99	31.46

* in constant 2014 R\$, deflated with IPCA; ** credit operations outstanding of financial institutions under private control

Source: BACEN; CETIP; IBGE; own calculations

As pointed out above, a large part of the increase in the stock of debentures during the period between 2004 and 2008 was due to the activities of leasing companies in the capital markets. While leasing companies issued a total volume of R\$ 198 billion over the 5 years between 2004 and 2008, non-financial companies issued debentures worth R\$ 98 billion during the same period. The majority of debentures issued by leasing companies could be explained by the boom in the personal credit sector (Torres Filho and Costa 2013, 42).

According to Torres Filho and Costa (2013, 38), the fact that most corporate debentures were indexed to the interbank rate DI showed that these issues were actually constituting renegotiations of already existing bank loans, merely resulting in longer terms. The bank that was holding the credit before usually became the holder of the bond, later, either directly through its treasury or indirectly through investment funds managed by the bank itself.

Table 18: Inflation, SELIC and other interest rates in Brazil (in %), December values, 2004-2008

	Inflation rate IPCA	SELIC	Interbank rate DI	Discounted trade bills	Working capital	Advances on FX contracts (ACC)	Brazilian prime rate	Overdraft credit*
2004	7.60	17.50	17.46	40.46	29.77	5.54	-	143.97
2005	5.69	18.24	18.15	39.52	30.76	6.27	21.43	147.45
2006	3.14	13.19	13.14	36.58	25.37	6.87	16.09	142.04
2007	4.46	11.18	11.11	32.30	22.16	6.85	13.79	138.05
2008	5.90	13.66	13.49	44.66	29.19	9.60	21.78	174.90

*Natural person

Source: BACEN

The average real interest rate SELIC¹⁹⁴ dropped from 15.4% between June 1995 and December 2003 to 9.6% during the years 2004 to 2008. On the one hand, this was an important improvement with respect to the funding conditions in Brazil. Apart from representing a significant cut in the main financing cost factor, it raised the demand for debentures, especially by institutional investors that, confronted with the perspective of a lower base rate, were inclined to raise the share of debentures in their portfolios. The improved domestic financing conditions together with uncertainties about the US-American interest rate path during the second semester of 2004, led Brazilian companies, especially non-exporting firms, to satisfy their funding needs on the domestic market through the issue of debentures (Paula et al. 2009, 29).

On the other hand, the Brazilian interest rates remained on a prohibitively high level for the development of the corporate bond market to really get going. The fact that most companies opted for issuing equity instead of debt securities is a clear sign that the interest rate was still too high. Although economic prospects were improving and companies started to demand finance, the corporate bond market grew very little. During the period from 2004 to 2008, the total volume issued in stocks was R\$ 247.9 billion, compared to R\$ 97.9 billion in debentures, which reversed the previous dominance of debentures in capital markets from 1995 to 2003: In the earlier period (1995-2003), stocks made up 28% of the total volume issued and debentures represented 38% of the Brazilian capital markets; in the more recent period (2004-2008), the market share of stocks rose to 33% on average, while debentures diminished to 17% of all issues.

Table 19: Capital markets, volume issued (in mio. R\$), 2004-2008

	in constant million R\$ of 2014 (deflated by IPCA)					
	Stocks	Debentures	Deb. Leasing	Commercial Paper	CRI	FIDC
2004	15,489	16,101	169	3,793	682	8,690
2005	22,645	16,075	50,439	4,214	3,366	13,737
2006	48,604	30,986	76,856	8,195	1,663	22,142
2007	112,207	22,253	49,193	14,455	2,259	17,965
2008	48,954	12,488	21,262	35,700	6,749	18,073

Source: ANBIMA; IBGE; own calculations

Since the problem of an increased level of the interest rate was not resolved, the debate about its possible causes continued, as well. Rogoff (2005, 19) suggested that its “history of serial default and high inflation implies that Brazil starts paying a significant default risk premium even at relatively low levels of debt. Debt levels need to come down below 25-30% to be safe”. Some authors argued that Brazil was paying too high a risk premium, because the country was trapped

¹⁹⁴ SELIC interest rate: monthly data, accumulated in the month and annualized; deflated with consumer price index IPCA: monthly data, variation in 12 months in %; real interest rate: SELIC-IPCA; average real interest rate SELIC: arithmetic medium of monthly values during the relevant period.

in a bad equilibrium, where interest rates only needed to be kept at such high levels, because of a vicious cycle that started with the elevated level of the interest rate, which was suppressing economic growth perspectives as well as productive investments, while it also raised the public debt burden by making the debt more expensive. The lack of productive investments caused supply shortages, resulting in rising prices. Furthermore, the increasing expenditures on interest payments added to a rising aggregate demand. These inflationary tendencies needed to be controlled by raising the interest rate, which eventually further aggravated the situation. According to the bad equilibrium hypothesis, there exists another equilibrium with lower interest rates, which would alleviate the debt service, hence decrease the fiscal deficit, and ultimately ease the pressure on inflation (Arida, Bacha, and Lara-Resende 2005, 266–67; Arnold 2011, 15). Consistent with this line of reasoning was a statement made by one of my interview partners working in the financial market, suggesting that the elevated price the country was paying for its debt was not justified: “[...] the Brazilian debt is one of the lowest in the world. Brazil is one of the best credits in the world” (F01 2010, 39).

However, as Arnold (2011, 13) pointed out, the reduction in the Brazilian debt ratio was mostly achieved through a growing economy and not because of a genuine fiscal effort. The author was concerned about the increased tax burden behind the primary surpluses, suggesting that the fiscal stance should have been improved instead by cutting down expenditures, which supposedly owed their downward-rigidity especially to the lack of a shift from the pay-as-you-go to a fully funded private pension system.

The “scarcity of domestic saving as one obvious candidate explanation” (Arnold 2011, 13) was listed by many orthodox authors analyzing the level of the interest rate in Brazil (Arnold 2011; Hausmann 2008; Segura-Ubierno 2012). Their argument that the Brazilian interest rate was at such a high level, because the savings rate was too low, is – from a Keynesian point of view – based on a theoretical fallacy. In a Keynesian world the savings rate is merely a residual, because the decisions are made on the level of consumption and investment. In the orthodox chain of argument, low savings stand at the beginning and they represent the available funds for investment projects. Since there is a high demand for investment projects to be realized, but only a small amount of funds stemming from savings, their argument goes, the price for those funds (the interest rate) is very high. Those authors suggested that the state should increase the share of public savings by reducing public “consumptive” expenditure.

Although the Brazilian treasury succeeded in reducing its exposure to the exchange rate risk during the 2000s, public debt was still exposed to the interest rate risk, because it was to a large extent short-term and indexed to the base rate, which increased the risk premium embedded in the interest rate. Another factor that was often cited as raising the premium demanded by wealth holders to compensate for the lower liquidity premium of Brazilian financial assets was judicial uncertainty (Arida, Bacha, and Lara-Resende 2005). The hypothesis that a lack of a reliable and efficient jurisdiction impedes the conclusion of long-term debt contracts has been both confirmed (Salles 2007) and rejected (Gonçalves, Holland, and Spacov 2007) empirically. Apart from weaknesses in the judicial

system of Brazil, other institutional weaknesses such as the lack of full central bank independence were pointed out as possibly contributing to the elevated level of the Brazilian interest rates (Rogoff 2005, 48). These authors suggested mitigating the effects of institutional weaknesses by improving micro-regulatory rules as well as granting further independence to the Brazilian Central Bank.

The weak transmission channel of monetary policy was also being referred to by many authors as one of the main reasons why the real interest rates were so high in Brazil. Raising the base rate was a blunt instrument, because inflation was not so much driven by demand, but more pushed by cost pressures and the indexation of prices in the Brazilian economy. There have been many authors, who emphasized the central role of the exchange rate in the monetary transmission channel in Brazil, starting with Barbosa-Filho (2008). Squeff (2009) gave empirical evidence that inflation was determined by the exchange rate. Between 2004 and 2008, the inflation targets were met, mainly because the Brazilian currency appreciated during that time, keeping import and export prices low (A. Modenesi and Ferrari Filho 2011; Serrano and Summa 2011). The currency appreciated because of the high interest rate level that was causing capital inflows.

Araújo and Modenesi (2009) also showed that Brazil had a weak transmission channel of monetary policy and emphasized the central role of the exchange rate. They argued that the low sensitivity of inflation to the SELIC interest rate resulted in high costs for Brazil. These costs included a slowdown of the economy, an overvaluation of the domestic currency, and an increase in the stock of public debt. Also, this paper drew attention to a trade-off between monetary policies aiming at financial stability and price stability: Because the exchange rate played such an important role in the transmission channel of monetary policy to control inflation (in the authors view, the exchange rate appreciation was the essence of the stabilization policy), measures to control potentially destabilizing capital inflows became less desirable. The paper concluded that given the high costs of current policies against inflation, and their limited impact on the price level, the inflation targeting regime was not appropriate for the Brazilian necessities.

Presenting a model that was challenging the New Consensus approach by incorporating different theoretical assumptions, i.e. demand-led growth, a paper by Ricardo Summa (2012) showed that the monetary authority didn't control inflation via the traditional credit channel, but via the exchange rate. Another finding was that inflation targeting (IT) incurred real costs that depended on different factors and increased with the ambition of the inflation target. At last, a theoretical paper was recently published that argued in favor of an exchange rate targeting regime instead of an IT regime, in order to achieve a higher level in the long-term growth rate (Ferrari, Freitas, and Barbosa Filho 2013). All of this literature with a focus on the exchange rate in Brazil pointed to the over- and misuse of the SELIC interest rate as the main instrument of monetary policy to control inflation. Since it was actually the appreciating exchange rate that was keeping inflation low, these authors suggested a change in the monetary policy regime, which would allow a reduction in the interest rate.

The positive economic situation in Brazil together with the high interest rate level caught the attention of international investors, who directed the majority of financial flows into Brazil towards the stock exchange and the public bond market (Paula et al. 2009, 4). The low participation of foreign investors in the corporate bond markets might come as a surprise in light of the massive capital flows to Brazil. Indeed, as one of the interview partners stated: “Another point that distinguishes Brazil [...] is that the demand for domestic debt securities in Brazil is completely local. There are only domestic investors in the domestic debt market. Ten percent of the public debt is in the hands of foreigners, and of the debt denominated in domestic currency zero percent are in the hands of foreign investors; also very peculiar in this sense” (F01 2010, 20).

The bias towards sovereign relative to private bonds might have been caused by preferential tax treatments and regulations, which should have been abolished, because a wider investor base would have improved market liquidity (Leal and Carvalhal-da-Silva 2006, 60–61). The lack of liquidity in the corporate bond market, in turn, might have been the main reason, why international investors preferred to buy equity securities. Related to the increased importance of the stock market to the detriment of debentures could also have been the issue of judicial uncertainty. With minority shareholder rights improving, while debt regulation mechanisms continued to be poor, it might have become more attractive to participate in the profits of a company by owning a share of it (and incurring the risk of its stock price not reflecting the expected positive development) than to buy a debt security promising certain payments, as long as one might not be able to hold the company responsible for honoring its obligations.

The phase of economic growth in Brazil in combination with advantageous conditions on the international financial markets led Brazilian companies to seize the moment of high international liquidity, rendering the issuance of debt securities abroad the relevant channel for Brazilian companies to reach foreign investors. The volume of equity and debt securities issued abroad during the period between 2004 and 2008 represented about 37% of the total volume issued by Brazilian companies on the domestic capital markets¹⁹⁵. On the one hand, this shows that tapping international markets was an important source of funding for Brazilian companies. On the other hand, these numbers also show that the local capital markets supplied about twice as much funding as foreign investors. What is more, the domestic market gained dramatically in importance, inverting its share with the respective share of securities issued abroad, which had represented 63% of the total volume issued by Brazilian companies from 1995 to 2003. On average, there was no growth of the volume issued abroad between the two periods (US\$ 21.6 billion per year between 2004 and 2008 compared to US\$ 21.8 billion annually between 1999 and 2003), while the Brazilian capital markets experienced a boom phase. The fact that Brazilian companies didn't issue more abroad can be partly explained by the decrease in exchange rate indexed public bonds that were used to hedge (Lopes, Antunes, and Cardoso 2007, 49).

¹⁹⁵ The total volume issued abroad measured in US\$ was converted into R\$ by using the average exchange rate of the respective year.

2008 was marked by the contagion of the international financial crisis, which was felt more severely from October of that year onwards. The volume of debentures issued in the primary market reached R\$ 22.8 billion in the first quarter alone, but strongly declined from the second quarter onwards due to several factors. The decline of debenture issues was in part compensated by the issuance of company shares and commercial paper, which together represented about 59% of the total volume issued during that year. In the third quarter the whole capital markets started to nosedive.

Taking a closer look at the course of events during the crisis year and starting with the first quarter of 2008, one finds that debentures were dominating the primary market, representing 77.1% of all private securities issued (Paula et al. 2009, 32–33). As in the previous years, leasing companies issued the large majority of these debentures. Yet, these types of debenture issues sharply dropped with the introduction of reserve requirements on the resources passed on to financial institutions by the leasing companies (ANBIMA 2008). Because the reserve requirements turned this form of funding more expensive, banks started to use another instrument more frequently, the so-called CDBs. With international liquidity drying up due to the increased risk aversion after the subprime crisis broke out, banks strongly increased competition with debentures for domestic resources and paid wealth holders up to 107% of the interbank rate DI for applications in CDBs. Furthermore, the increase of the monetary policy rate in the first semester of 2008 required higher returns of debentures. From this point on, investors started to ask for high interest rates and short terms. All of this together led to a harsh decline of the volume of debentures in the primary market from the second quarter of 2008 onwards, representing merely 2.8%, 10.2% and 3.0% of total private securities issued during the remaining quarters of 2008. Because of their short-term nature, commercial paper partly compensated for the retreat of debentures from the second semester onwards, making up 26.4%, 15.9% and 53.2% of the total volume issued in the last three quarters of 2008.

3.2.2.3 Public banks: strong, yet ambiguous influence

From 2004 to 2008, the credit sector experienced its longest and most intense period of growth since the 1980s, which was pushed mainly by credits to natural persons, and from 2006 onwards additionally by short-term loans to companies (Torres Filho and Costa 2013, 27–29). Since the BNDES was not active in these more dynamic sectors of the credit market, its share in the credit market fell from 22% to 16%, even though its disbursements accompanied GDP growth.

Table 20: BNDES disbursements (in mio. R\$; in % of GDP), 2004-2008

	BNDES disbursements*, in 2014 R\$ million	Change, in %	BNDES disbursements*, in % of GDP
Dec 04	67,413	10%	2.03%
Dec 05	75,226	12%	2.16%
Dec 06	79,670	6%	2.13%
Dec 07	96,443	21%	2.39%
Dec 08	127,538	32%	2.92%

* accumulated in the year

Source: BACEN

The growth of BNDES disbursements, especially between 2004 and 2006, was not only slow in relation to the remaining credit market, but also compared to the boom in the capital markets. In 2008, the international financial crisis caused the primary capital markets to retreat and the government decided to employ counter-cyclical policies, strongly increasing BNDES disbursements. After the government announced the Growth Incentive Program (PAC) in 2007, the disbursements of the BNDES to the PAC already summed up to R\$ 32.0 billion in 2008 (BNDES 2008, 56).

Table 21: Capital markets, volume issued vs. BNDES disbursements (in % of total), 2004-2008

	in % of total volume						
	Stocks	Debentures	Deb. Leasing	Commercial Paper	CRI	FIDC	BNDES disbursements
1995	11.4	40.4	0.0	6.6	0.0	0.0	41.7
2004	13.8	14.3	0.2	3.4	0.6	7.7	60.0
2005	12.2	8.7	27.2	2.3	1.8	7.4	40.5
2006	18.1	11.6	28.7	3.1	0.6	8.3	29.7
2007	35.6	7.1	15.6	4.6	0.7	5.7	30.6
2008	18.1	4.6	7.9	13.2	2.5	6.7	47.1

Source: ANBIMA; BACEN; own calculations

Leal and Carvalhal-da-Silva (2006, 39–40) analyzed the corporate bonds issued in 2004 and found differences between the public and private placements. The majority of privately placed bonds was convertible, secured, and used the interest rate TJLP, which the authors explained with the fact that these debt securities were usually subscribed by the Brazilian development bank BNDES. Requiring convertible bonds allowed BNDES to enjoy the upside in case the funded company succeeded and to react more flexible in case the funded company should not be able to repay its debt in a timely manner. In 2004, BNDES held a corporate bond portfolio of about R\$ 15.6 billion (in constant 2014 R\$, deflated with IPCA), which was equivalent to 21% of the total stock of bonds. Based on the assumption that the non-public debt holdings of investment funds as well as pension funds were mostly made up of bank certificate deposits, and

corporate bonds only represented a small fraction of these holdings, the authors came to the conclusion that (Leal and Carvalhal-da-Silva 2006, 40): “BNDES may be by far the single largest institutional bondholder in Brazil.” Even though the development of the capital markets was one of its stated goals, BNDES might have been displacing issuing companies from the market into its own portfolio, which was mainly (with a share of 91%) composed of companies from the private sector. In general, the issuing companies were part of the industrial (74%) and the service (26%) sectors. The BNDES portfolio had a relatively long-term profile, with 66% of its holdings maturing in more than 5 years and less than ten percent (7%) maturing within 12 months. Furthermore, more than half of the portfolio was rated B or better.

Almeida (2009, 47) analyzed the capital structure of the 30 largest Brazilian companies and found that all of them were financed by the BNDES. Furthermore, BNDESPAR was directly holding shares of 11 of them. Additionally, it was indirectly a shareholder of another 11 of those companies. Taken these holdings together, they made BNDESPAR a very important player in the creation of 22 out of the 30 biggest multinationals in Brazil. The author argued that the discourse of promoting technological diversification and innovation was inconsistent with the industrial policy that aimed at building so-called “national champions”.

The strong ties between the state and major corporations in Brazil received criticism from different sides (A. E. S. Garcia 2012, 124–26). In one view, expressed by Lazzarini (2012), the companies were captured by the state through its interventions, while the other critical view, expressed by Tautz et al. (2010), took an opposing starting point and saw the state being captured by the major corporations and private players. Lazzarini (2012) characterized the Brazilian economic system as what he called “relationship capitalism” (*capitalismo de laços*), where the state, mostly represented by the BNDES, became a “connecting actor” (*ator de ligações*) through its equity holdings of various major corporations, which turned into “connecting actors”, as well. As stakeholder of most of these companies, the BNDES put the other stakeholders of different companies in contact, planned alliances, and facilitated privileged access to public authorities, that way creating public-private networks. The author argued that the privatization process during the 1990s had increased the complexity of the ownership networks, because the BNDES was a key player in transferring public enterprises into private ownership, which involved high volumes of public capital, mostly stemming from the BNDES, as well as several joint ventures of public and private investors, in which the BNDESPAR took part. According to this view, the increased role of the state in the companies caused a higher political interference in business decisions as well as inequalities in terms of access to information and political influence, fostering clientilism.

On the contrary, Tautz et al. (2010) argued that the BNDES under the Lula presidency deepened an accumulation pattern that was characteristic for the Brazilian capitalism since the privatizations of the 1990s, i.e. the formation and reinforcement of private conglomerates with the support of public funding. Therefore, the strengthening of domestic private groups led to increased state activities, as the BNDESPAR guaranteed a continuous stream of public resources, leveraging the capital of the private companies. In this sense, the state was

aligned to the dynamics and demands of the major corporations in Brazil. In the view of the authors, the increased presence of the state, mainly in form of the BNDES, thus, did not translate into greater public control of the economy.

During the Lula administration, the position of the development bank was related to the New Brazilian developmentalism, including ambitions of the country to play a greater role internationally (A. E. S. Garcia 2012, 126). Then vice-president of the BNDES, Ferraz, explained in an interview that countries with international ambitions needed powerful corporations and that the “jewels” of the Brazilian economy were the companies in the construction and the commodity sector, which most likely gave a positive return to the bank (A. E. S. Garcia 2012, 122). The BNDES fostered the capital concentration in major corporations as part of the national development strategy, which aimed at the creation of “national champions” with the ability to compete globally. Garcia (2012, 126–28) criticized the approach of the bank by pointing to the difficulties of defining the nationality of a company and to the problems related to financing projects with harmful impacts on society and the environment, actually contradicting the goals of the BNDES.

The president of the BNDES, Coutinho, defended the strong involvement of the development bank in these companies by asking the rhetorical question: “if the BNDES would not support the domestic companies, who would?” (Junior 2008; translation by the author). Indeed, the poorly developed financial system was not able to provide other sources than the BNDES for long-term funding, but the direction of causality was not clear (Mello and Garcia 2012, 138): Did the BNDES provide funding, because there were no other sources or was it the other way around? At least the Brazilian major corporations would probably have been able to get funding without the help of the BNDES. Related to this question, the expanding activity of the BNDES might have been a functional escape strategy to compensate for the challenges posed by the elevated base rate. Apparently, monetary policy faced great difficulties in lowering the base rate, so it might have been a second best solution to deploy the instrument of public banks and earmarked credits more heavily, in order to alleviate the burden on domestic economic activity. Again, the direction of causality was not clear, as many authors argued that a major barrier to a better functioning of monetary policy was related to the BNDES, the use of earmarked credits and the spread between the SELIC and the TJLP rates (Mello and Garcia 2012, 138–39).

A common criticism concerned the funding of the BNDES itself (Prochnik and Machado 2008). The bulk of its funds stemmed from workers’ forced savings, as mandatory contributions to the so-called FAT (*Fundo de Amparo ao Trabalhador*), which were remunerated at the Long-term Interest Rate TJLP, i.e. below the market rate. The reduction of the monetary policy rate SELIC was accompanied by the TJLP, although at a slower pace, so that the spread between the two interest rates was reduced, from 10% during the middle of 2005 to less than 5% around the turn of the year 2007/2008.

Table 22: Inflation, TJLP and other interest rates in Brazil (in %), December values, 2004-2008

	Inflation rate IPCA	BNDES rate TJLP	SELIC	Interbank rate DI	Discounted trade bills	Working capital	Advances on FX contracts (ACC)	Brazilian prime rate
2004	7.60	9.75	17.50	17.46	40.46	29.77	5.54	n.a.
2005	5.69	9.75	18.24	18.15	39.52	30.76	6.27	21.43
2006	3.14	6.85	13.19	13.14	36.58	25.37	6.87	16.09
2007	4.46	6.25	11.18	11.11	32.30	22.16	6.85	13.79
2008	5.90	6.25	13.66	13.49	44.66	29.19	9.60	21.78

Source: BACEN

In 2006, the BNDES established norms for the acquisition of debentures as well as their trade in secondary markets with the aim to incentivize primary market activity and to raise liquidity in the market. Another program, initiated by BNDESPAR in the same year, also aimed at stimulating the debentures market so that it might offer an alternative source of funding for more Brazilian companies. The program envisaged the issuance of debentures with special characteristics by BNDESPAR and was supposed to pave the way for private companies to follow in this direction (Lopes, Antunes, and Cardoso 2007, 62ff.). The debentures were plain, i.e. non-convertible, and indexed to the price index IPCA. At the time, the vast majority of debentures were indexed to the interbank rate DI, implying zero duration, and this was the first issue ever of an IPCA-indexed debenture. There were 600,000 debentures placed with a nominal value of R\$ 600 million and maturity term in January 2012. The placement was increased by 20% from an initial 500,000 debentures due to the high demand of 1.8 million debentures. The price was set at R\$ 898.33 corresponding to a real rate of return of 8.525% per year. Apart from the use of the IPCA for indexation, other innovative characteristics that were expected to promote CBMD, especially the development of the secondary market, included a widespread distribution among a large number of investors, the request that negotiations must not be realized outside electronic platforms, and the appointment of two market makers.

Especially the goal to reach the small investors, i.e. a distribution not only among institutional investors, was achieved with the distribution of 99.9 thousand debentures among 4,250 retail investors (Lopes, Antunes, and Cardoso 2007, 65ff.). The interest during the book building process was also remarkable, as 5,800 investors gave their orders with a total nominal volume of R\$ 149.5 million, corresponding to about 165,000 debentures. Although a large share of the orders was not attended due to the requested remuneration, it is also worth noting that almost half of the 4,250 investors applied a nominal amount below R\$ 5,000, and a large majority of 73% of the retail investors did not invest more than R\$ 15,000 (all of these values cited in nominal terms, i.e. not adjusted to inflation). Secondary market negotiations also topped expectations as trades at BovespaFix between the first day of negotiation, December 21st, 2006, and March 14th, 2007, corresponding to a quarter of a year, have summed up to 115 negotiations, which was more than all remaining negotiations at BovespaFix during the whole year 2006 represented.

In the first semester of 2007, BNDESPAR issued debentures with a nominal value of R\$ 1.35 billion. Similar to the earlier issue, it focused its efforts at distributing the debentures among retail investors and was able to establish an innovative remuneration in the corporate bond market. Part of the issue was, again, indexed to the inflation rate IPCA, while another part was a fixed rate bond. That made BNDESPAR the first corporate issuer to place a fixed rate debenture. According to Mr. Lagrota, head of BNDES fund raising, the successful placement of debentures with these characteristics was a sign that BNDESPAR was fulfilling its role and contributed to capital market development (ANBIMA 2007).

The immediate effect on the corporate bond market might have been limited to a greater awareness among retail investors of this type of debt security and the establishment of certain benchmarks, such as the introduction of fixed rate debentures and debentures indexed to an index other than the interbank rate DI. Therefore, it would probably take some considerable time before these benchmark issues opened the way for a corporate debenture issue with similar characteristics by a private company. Especially, due to a series of barriers that still hampered CBMD in Brazil. Nevertheless, the attempt of BNDESPAR to attract a broader public to the debenture market and reach more retail investors was an important step on the way towards a broader investor base of this market.

3.2.3 2009-2014: Government program to foster market for debentures

The consequences of the international financial crisis in 2008 and 2009 in the credit market, i.e. the slowdown of private bank activities, were attenuated by the counter-cyclical deployment of public banks, which required that the national treasury issued large volumes of public bonds (Torres Filho and Macahyba 2012, 7). Against this background of relative scarce resources, the government met with the private sector in 2010 to identify measures that might reduce the relative delay of the corporate bond market, given the great potential that was attributed to this funding mechanism, especially with respect to the industrial and infrastructure sectors. Four main characteristics of the corporate bond market were identified as posing the main barriers to corporate bond market development (CBMD) (Torres Filho and Macahyba 2012, 54): 1) a highly concentrated investor base in the primary market, 2) lack of secondary market liquidity, 3) low transparency in the price formation process, and 4) wealth holders' high preference for debt securities that were indexed to the overnight interest rate. At the end of 2010, the government announced a set of measures that basically aimed at broadening the investor base in the primary and secondary markets of long-term corporate debt securities.

The government passed the law 12,431/2011 in a clear attempt to create and develop a long-term corporate bond market (Araujo and Martins 2012, 15). The new legislation included tax incentives for foreign investors to acquire long-term debt securities, as well as tax incentives applying to all (foreign and domestic) investors of so-called infrastructure bonds (afterwards specified in decree 7,603/2011). It furthermore created a new type of investment fund aimed at

investments in research, development and innovation and provided for improvements in infrastructure investment funds as well as in the conditions of issuing debentures and financial debt securities (ANBIMA 2013a, 2011, 2014b, 2014a; Freitas 2011). Furthermore, the law removed legal and regulatory barriers, such as the problem of double taxation of recurrent revenues, which negatively affected the secondary debenture market (Torres Filho and Macahyba 2012, 55). Although the package received a positive feedback from the private sector when it was announced, several factors delayed the first issues under the new regulation (Torres Filho and Macahyba 2012, 59ff.).

The government initiative to promote CBMD was complemented by a joint initiative of BNDES and ANBIMA to create the so-called New Market for Fixed-Income Securities (NMRF¹⁹⁶), named after the new market in the Brazilian stock exchange that created a special segment for companies adhering to strict corporate governance rules (Araujo and Martins 2012, 16). Complying with the rules of the NMRF would distinguish the bond issues by establishing special conditions concerning the term of the bond, a standardization of issuance, as well as a ban of repurchases within 12 months after the issue and a prohibition of indexation to the SELIC or DI interest rate. Additionally, market liquidity was supposed to be raised by the institution of a liquidity improvement fund as well as a liquidity guarantee fund, but hitherto the plans of these liquidity funds were not yet put in practice (IMF 2012b). Two state-controlled companies, Cemig and BNDESPAR, were the first to issue corporate bonds under the rules of the NMRF, during the first semester of 2012.

Although the measures implemented to foster CBMD were comprehensive and tackled various problems, there was an important caveat to the strategy employed, i.e. its strong reliance on the participation of international investors, which proved to be problematic before, due to the volatility and pro-cyclical nature of international capital flows (Hermann and Martins 2012).

Before the NMRF was installed and the government initiative became effective, another legal innovation, CVM instruction n. 476/09, had already set a landmark in Brazilian capital market regulation and fundamentally altered dynamics in the domestic corporate bond market by significantly raising the number of debenture issues. While the debenture market had registered an annual average of 38 placements between 2003 and 2008, this number skyrocketed to 253 issues per year on average between 2009 and 2014. Similarly, the issuance volume markedly increased, starting off from a total volume of R\$ 107.1 billion issued during the earlier period and going up to R\$ 415.6 billion during the later period. Furthermore, a clear migration towards the new modality with limited distribution took place in the debenture market, concentrating about 90% of the placements and a little more than 80% of the volume issued since its coming into force.

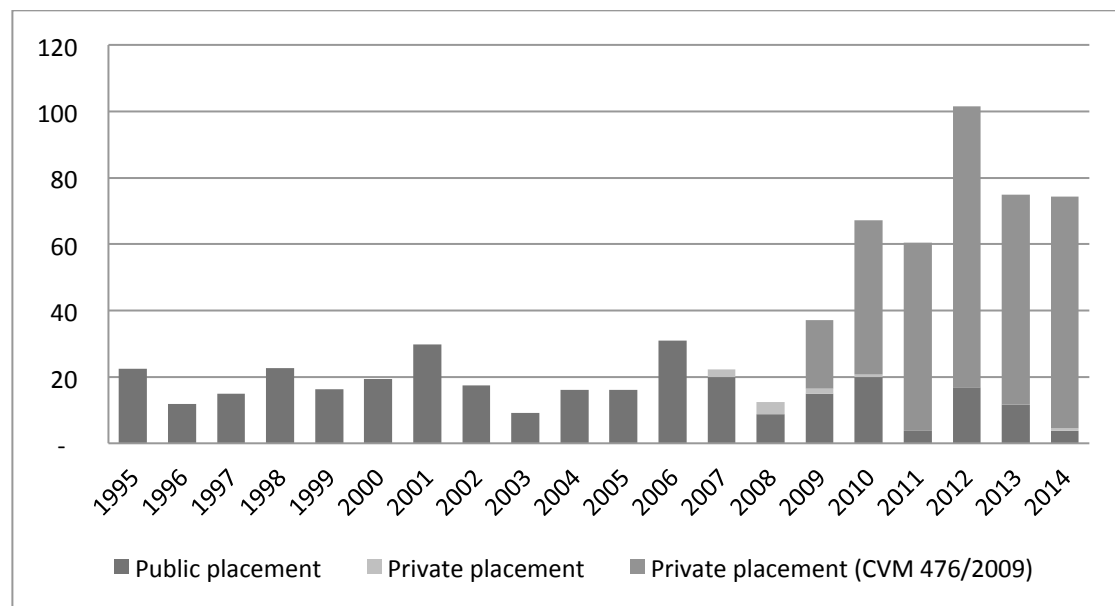
CVM instruction n. 476/09 created the possibility for companies to issue debentures and commercial paper more easily, exempting the issuing company from a number of requisitions. At the same time, the distribution of these

¹⁹⁶ According to the Portuguese term *Novo Mercado de Renda Fixa* (NMRF).

securities was restricted to a maximum of 20 qualified investors¹⁹⁷ that were expected to understand the risks involved. The measure opened the debentures market even for privately held companies, as the issuer was, unlike before, not required to register with the CVM. Furthermore, the need for credit classification as well as the obligation to publish a listing prospectus was removed. In sum, CVM instruction n. 476/09 considerably reduced bureaucracy in the process of debenture issuance.

A disadvantage of the new regulation, according to Fernandes and Nunes (2014, 129), was that it further aggravated the liquidity problem in secondary markets by restricting distribution. Yet, the problem of highly concentrated distribution already existed before. Another factor that might be responsible for low market liquidity was the small number of debentures in the market, which might effectively be increased as a consequence of this regulation. Therefore, it might be the first step in solving the liquidity problem, to raise the number and volume of debentures outstanding in the market, in order to increase liquidity and broaden the investor base in a later stage.

Figure 14: Volume of corporate bonds issued according to type of placement (in bn. R\$), 1995-2014



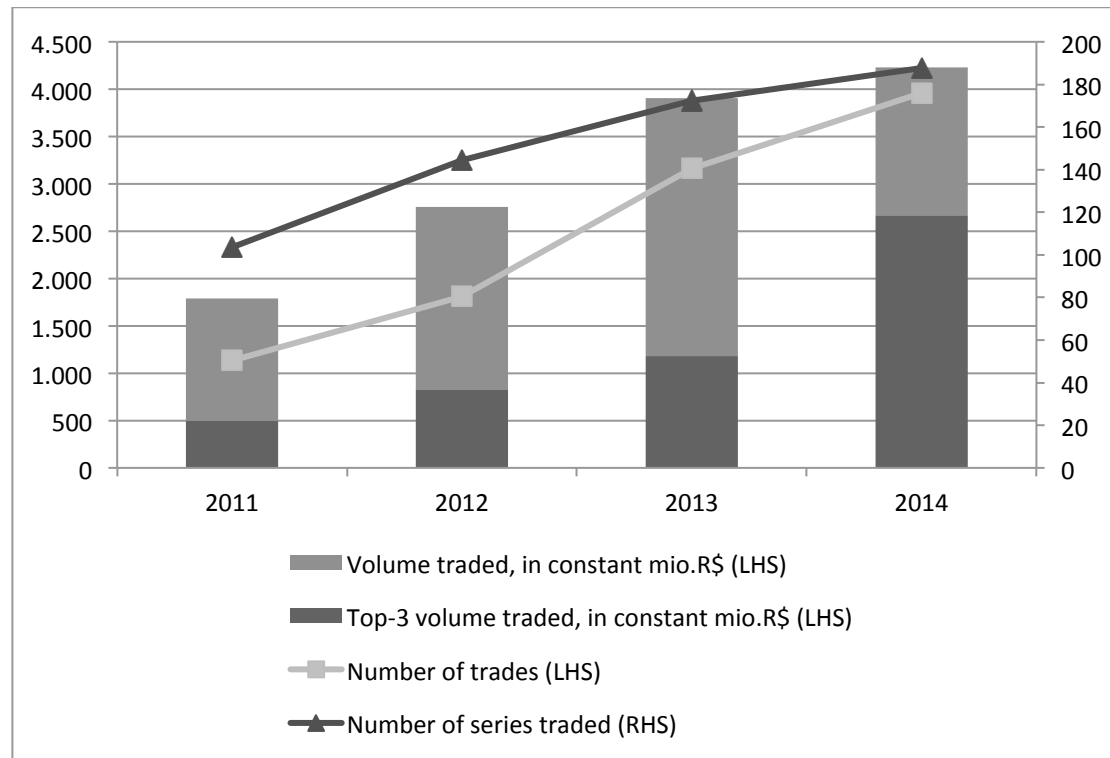
Source: ANBIMA

Secondary market activities increased markedly between 2011 and 2014, but were still highly concentrated and overall too limited in order to raise market liquidity to an internationally competitive level (cf. Figure 15 - Figure 17). Figure 15 shows how various measures increased during the period, reflecting an improvement in terms of market size, depth, and liquidity: The average number of series that were traded per month almost doubled from 104 in 2011 to 188 in 2014 and the average number of trades per month more than tripled from 1,131

¹⁹⁷ Up to 50 qualified investors could be included in the book building process.

to 3,958 during the same period. Furthermore, the average volume traded per month more than doubled from R\$ 1.8 billion in 2011 to R\$ 4.2 billion in 2014 and the average number of trading days in a month of the top-ranked series increased from 17 to 21 during these four years (see Figure 16).

Figure 15: Secondary market of corporate bonds, different measures, 2011-2014

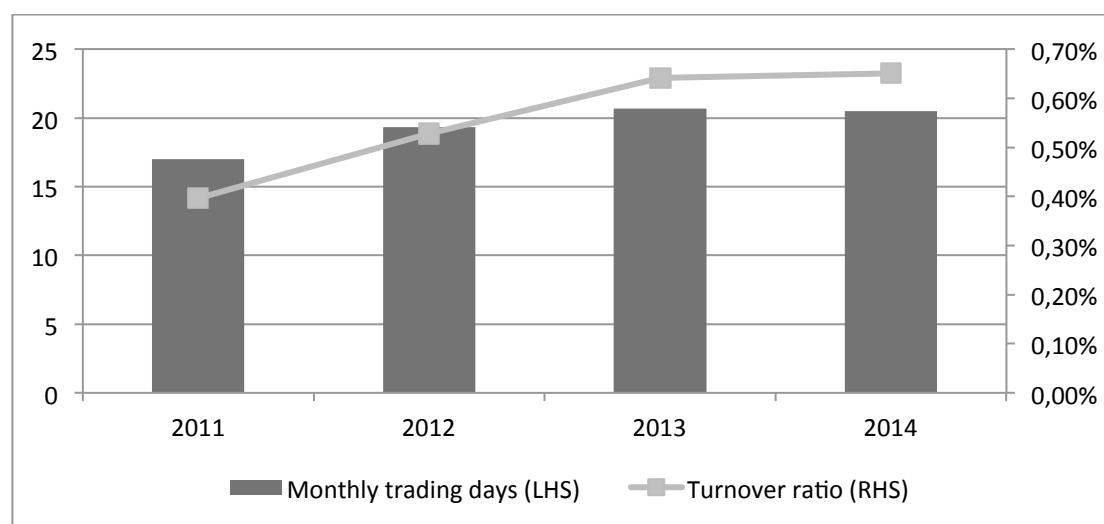


Annual average of monthly data; deflated with IPCA index (in Dec 2014 R\$)

Source: ANBIMA (Boletim de Renda Fixa, monthly issues, Feb 2011-Jan 2015)

At the same time, there was a strong concentration of secondary market activities: the top-three series, in terms of volume traded per month, represented about 30% on average of the total volume traded per month between 2011 and 2013, and this figure rose even further, to 63% in 2014 (see Figure 15).

Figure 16: Corporate bond market, trading days and turnover ratio, 2011-2014

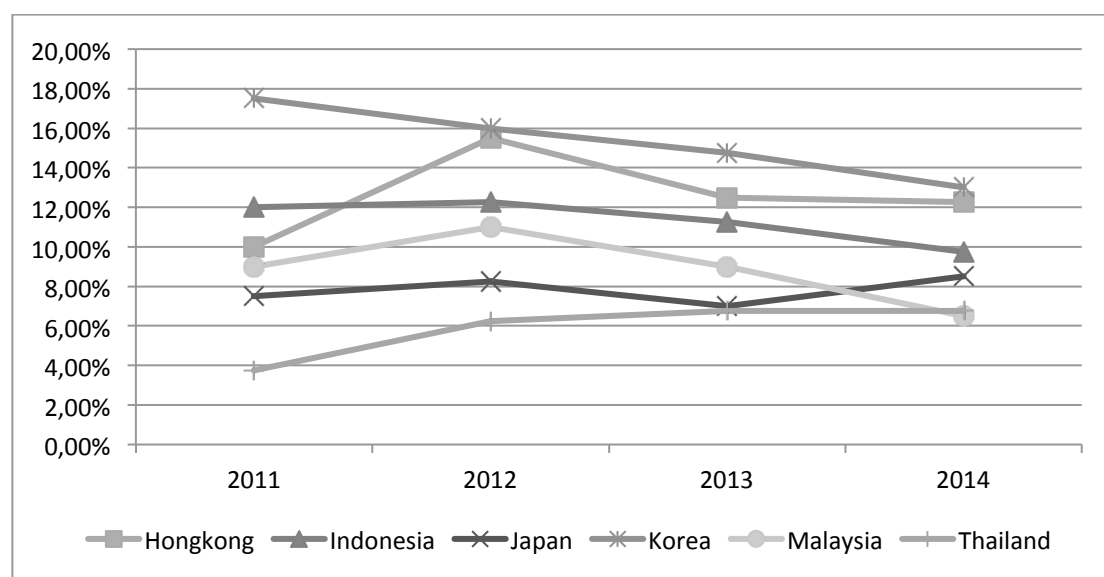


Annual average of monthly data; monthly trading days of top-ranked debenture; turnover ratio = volume of debentures (excl. deb. leasing) traded / stock of debentures

Source: ANBIMA (Boletim de Renda Fixa, monthly issues, Feb 2011-Jan 2015)

Due to the stronger rise in the secondary market volume traded relative to the increase in the stock of debentures outstanding, the turnover ratio, which is a common measure of market liquidity, increased from 0.40% in 2011 to 0.65% in 2014 (see Figure 16). While this was an indication of improved liquidity in the secondary market for Brazilian corporate bonds, the turnover ratio remained extremely low compared to other emerging markets, e.g. in Asia (see Figure 17).

Figure 17: Turnover ratio of corporate bond markets in Asian countries, 2011-2014



Annual average of quarterly data

Source: ADB (2015)

The government program to improve CBMD was mainly directed at broadening the investor base in order to raise secondary market liquidity. Although first

improvements could be noticed, the Brazilian secondary market for corporate bonds remained highly concentrated in a few series and the vast majority of debentures were only rarely traded.

3.2.3.1 Public debt management: continuous improvements and further challenges

A recent IMF working paper confirmed that Brazil had a relatively low, yet slowly rising participation of foreign investors in the domestic government debt market, even though Brazil was among the few emerging market countries that were the main target of international financial flows in recent years (Arslanalp and Tsuda 2014). Due to the increasing share of foreign investors, Brazil had a well-diversified investor base in the domestic public debt market. These investors played an important role in prolonging the term structure of public bonds, as they were usually demanding fixed rate bonds with longer terms. As long as their participation wouldn't grow much further, the exchange rate risks that their presence implied would pose a minor threat.

The investor base of the Brazilian public bond market could be improved even further by a continuous reduction of the participation of financial institutions and investment funds, while raising the participation of retail investors and pension funds.

The international financial crisis and the counter-cyclical fiscal reaction left a clear mark in the Brazilian public finance in 2009: the primary surplus was cut down from 3.33% of GDP in 2008 to 1.95% in 2009, raising the public deficit from 1.99% of GDP in 2008 to 3.19% in 2009 and increasing the net public debt from R\$ 1,640 billion in 2008 to R\$ 1,833 billion in 2009. In the following years, from 2010 to 2013, the primary surplus was on average lower than during the decade before (2000-09: 3.2% of GDP vs. 2010-13: 2.4%), but that did not result in higher nominal deficits (3.4% of GDP vs. 2.6%, respectively), because the internal interest payments decreased (6.03% of GDP vs. 4.95%, respectively). The lower interest rate level was the main reason, why the consolidated public sector had to make less interest payments.

In 2014, the public accounts deteriorated, as public spending expanded at twice the rate of revenues, resulting in the first primary deficit (0.59% of GDP) since the implementation of the inflation targeting regime in 1999. The public deficit also reached its highest level under this regime. While the nominal deficit in 2013 amounted to R\$ 168 billion, representing 3.05% of GDP, these figures more than doubled in 2014, reaching R\$ 344 billion or 6.23% of GDP. This result was due to a number of factors combined, including the double deficit (Brazil had a public deficit together with a current account deficit since 2008), a stagnating economy with high inflation rates (so-called stagflation), and a strong increase in public expenditure, which might have been related to the presidential election at the end of the year.

Table 23: Government budget¹⁹⁸ (in % of GDP), 2009-2014

	Nominal result			Interest payments			Primary result
	total	internal	external	total	internal	external	
2009	3.19	4.85	-1.66	5.14	5.14	-0.01	-1.95
2010	2.41	4.59	-2.18	5.03	5.00	0.02	-2.62
2011	2.47	4.90	-2.43	5.41	5.43	-0.02	-2.94
2012	2.31	2.79	-0.48	4.54	4.56	-0.02	-2.23
2013	3.05	3.47	-0.42	4.83	4.82	0.00	-1.77
2014	6.23	6.07	0.16	5.64	5.62	0.02	0.59

Source: BACEN

Due to the build-up of foreign exchange reserves, Brazil expanded its net external creditor position. That was also the main reason why the net public debt remained relatively stable at around R\$ 1.8 trillion (slightly decreasing between 2010 and 2013, only to reach a record high in 2014), while the net internal debt continued to increase, from R\$ 2.2 trillion in 2009 to R\$ 2.7 trillion in 2014. That means, my interview partner's expectations turned out to be correct, at least in the short to medium term: some of the experts stated that they expected public debt to fall and corporate issues to grow (F01 2010; U04 2010).

The structure of the public debt, in terms of the share of fixed rate bonds and the different forms of indexation continued to improve. Since 2007, the sovereign bond market was mainly composed of three types of bonds: an increasing share of fixed rate bonds as well as inflation indexed bonds and a decreasing share of bonds that were indexed to the SELIC interest rate. This type of bond becomes less attractive during periods of falling interest rates, which explains why the period of monetary policy rate cuts in 2012 overlapped with the particularly strong decline of its participation. Public debt management was able to reduce the share of LFTs to its lowest level since 1995 – and still, 17.2% of all public bonds in 2014 were indexed to the SELIC interest rate. Although the level of exchange rate indexed bonds continued below 1%, the national treasury did not extinct this type of indexation.

There was a debate about whether the reduction of LFTs caused an increase in repo operations with the central bank and the possible implications of such a substitution (Costa 2011, 2013). The Brazilian Central Bank used repo operations in the open market to maintain the SELIC interest rate close to its target, which was set by the Monetary Policy Committee COPOM. The stock of these repo operations started to increase drastically, when the country decided to build-up its foreign exchange reserves. When the central bank bought US dollars (US\$) it simultaneously injected real (R\$) into the Brazilian economy, which needed to be sterilized in order not to create inflationary pressures. The

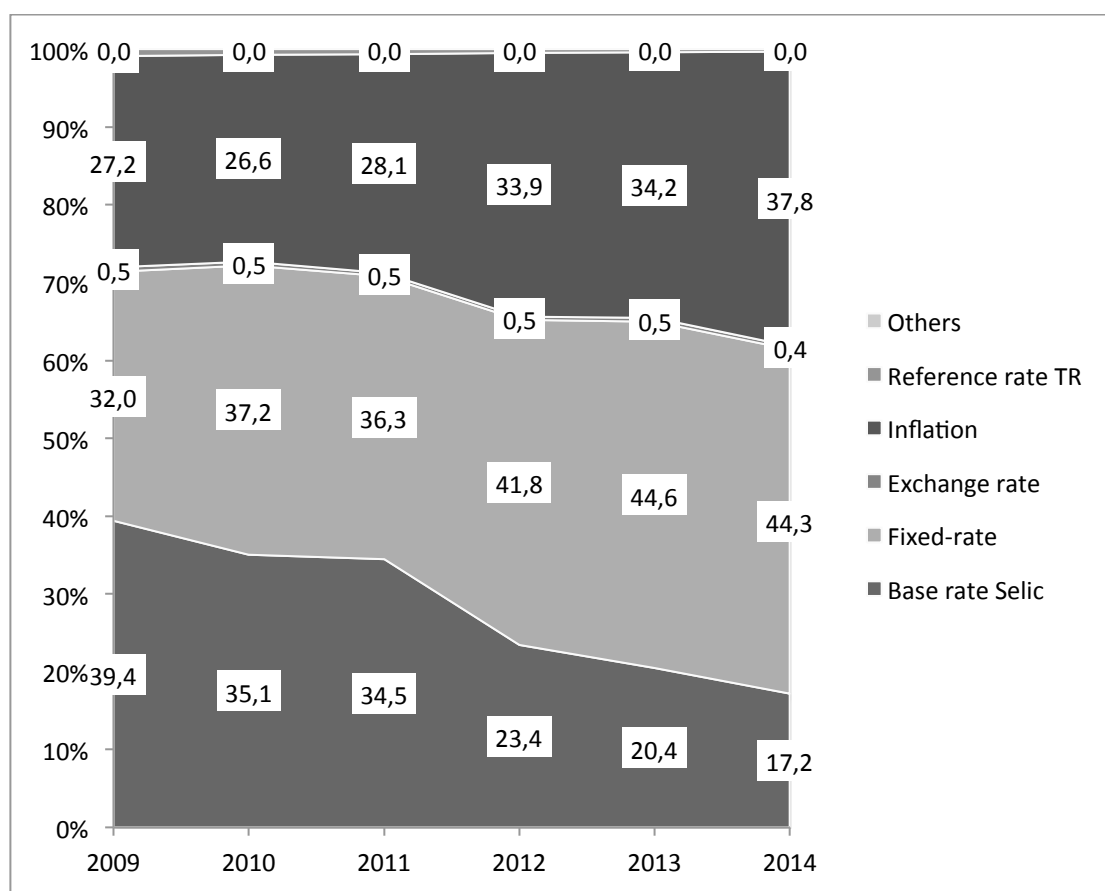
¹⁹⁸ Consolidated public sector (until November 2001 including Petrobras and Eletrobras) borrowing requirements without exchange devaluation, flows accumulated in 12 months, December values; positive values represent deficits; nominal result = primary result + interest payments; total borrowing requirements are differentiated into internal (domestic) and external (international) borrowing requirements.

same inflationary pressures emanated from net repurchases of public bonds by the national treasury. The BACEN sterilized these inflationary pressures by engaging in repo operations, i.e. it sold public bonds from its portfolio with repurchase agreements, with terms varying between 90 and 180 days. As these repo operations were backed by LFTs, the duration of the repo operations was zero. Therefore, the repo operations of the BACEN offered a good substitute for the decreasing stock of LFTs. Theoretically, the Brazilian Central Bank could use fixed rate bonds as well as definite operations in sterilization activities, as it is common practice in other countries.

One important implication was that the stock of these repo operations represented a kind of parallel public debt. Furthermore, as long as the central bank continued to engage in repo operations due to its sterilization policy, the process of terminating the indexation of the public debt could not be completed.

A reduction of the indexation to the SELIC interest rate in the public debt would be a strong driver towards less DI-indexed private bonds (Torres Filho and Macahyba 2012, 38). The strong influence of the characteristics of public bonds on corporate bond issues and the competition between these debt securities was confirmed by an investor's statement, cited in a news article about the relative difficulty of a private equity fund to capture financial resources in the market (Pinheiro 2015): "With the NTN-B [inflation indexed public bond] paying more than 6% per year in real terms, there is not much stimulus for pension funds to take risks."

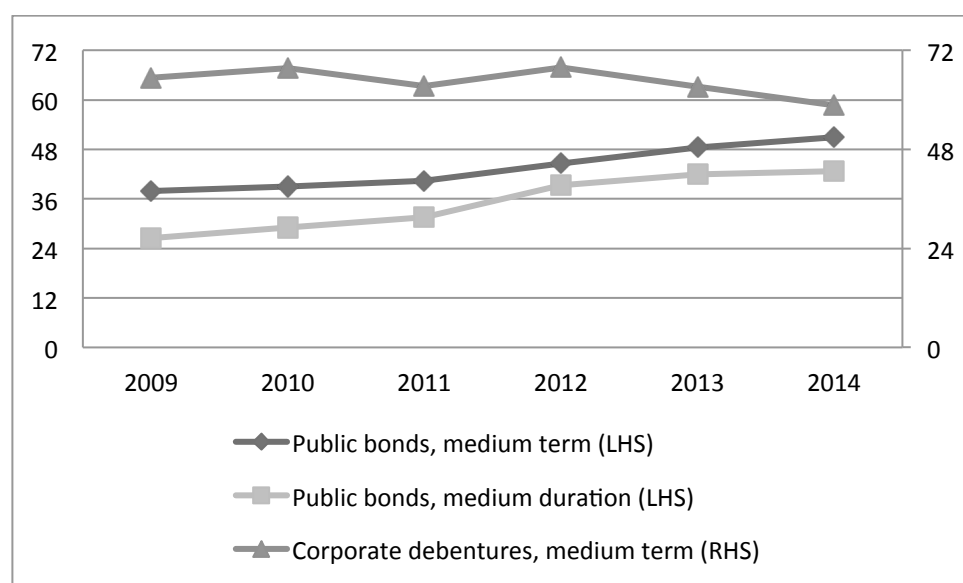
Figure 18: Public bonds, share of indexation (in % of total), 2009-2014



Source: BACEN

Both medium term to maturity and medium duration of public bonds continued to increase during the period between 2009 and 2014, raising the period average to 43 and 35 months, respectively, from 28 and 18 months on average, respectively, during the years 2004-2008 (See Figure 10 and Figure 19). Due to the reduced participation of LFTs in the public debt profile, the two measures also continued to converge, reducing the difference between medium term and medium duration from 11 months in 2009 to 8 months in 2014. The medium term to maturity of corporate debentures remained relatively stable between 63 and 68 months between 2009 and 2013, before decreasing to 59 months in 2014. Corporate debentures registered an average medium term of 64 months during the period between 2009 and 2014, compared to an average of 71 months between 2004 and 2008. The reduction in medium terms of corporate debentures was probably related to the adverse effects of the international financial crisis and the worsening domestic scenario in 2014 due to slow economic growth together with rising fiscal imbalances and inflation rates. The positive impulses stemming from improving benchmarks in the public debt structure apparently only partly offset these adverse effects.

Figure 19: Term to maturity and duration of public bonds vs. term to maturity of corporate debentures (in months), 2009-2014



Source: BACEN

The net worth of the investment fund industry continued to increase, from R\$ 2,041 billion in 2009 to R\$ 2,828 billion in 2014¹⁹⁹, with fixed-income funds still representing the largest share of this volume outstanding. While its participation surpassed 30% in 2011 and 2012, it returned below this mark afterwards. While off-shore, stock, and multimarket funds lost market shares, short-term, pension, as well as private equity funds increased their shares.

Table 24: Types of investment funds and their relative share (in %), net worth of total (in mio. R\$), 2009-2014

	Short-term	DI benchmark	Fixed-income	Multi-market	Foreign ex-change	Stock	Pension	Private Equity	Off-shore	Others	Net worth
	in %										in mio. R\$
2009	3.41	14.12	26.54	23.91	0.05	12.05	10.62	1.77	3.61	3.93	2,040,790.8
2010	3.47	12.40	27.55	24.14	0.05	11.46	11.01	2.55	3.52	3.84	2,183,875.5
2011	3.88	11.65	31.37	20.34	0.05	9.52	11.89	3.62	2.88	4.79	2,416,011.1
2012	4.00	11.11	31.14	20.73	0.04	9.12	12.85	3.88	2.84	4.30	2,613,314.3
2013	4.46	11.73	29.19	20.12	0.09	8.48	13.40	5.06	2.42	5.07	2,693,360.1
2014	4.43	13.69	28.27	19.13	0.11	6.69	14.86	5.73	2.12	4.96	2,827,500.7

Net worth in constant million R\$ of July 2015, deflated with general price index IGP; December values; others = FIEX + FIDC + IMOB + FEF; values of each year always add up to 100

Source: ANBIMA

¹⁹⁹ These R\$ values have been deflated to constant July 2015 R\$, using the general price index IGP.

The aggregate portfolio composition of all investment funds showed a strong reduction of bank debt securities and stocks, while the holdings of public bonds were only reduced slightly. Additionally, the increasing stock of repo operations more than compensated for the lower share of public bonds. The small share of commercial paper minimally increased, while the “others” category markedly expanded. The share of debentures varied between 4.18% in 2010 and 3.61% at the end of the period in 2014.

Table 25: Portfolio composition of investment funds (in % of total net worth), 2009-2014

	Repo operations	Public bonds	CDB and RDB	Commercial Paper	Debentures	Stocks	Others
2009	19.92	40.66	11.38	0.28	3.71	17.65	6.41
2010	20.50	39.91	9.93	0.06	4.18	17.99	7.44
2011	19.60	40.32	8.56	0.25	3.63	14.72	12.91
2012	21.09	40.38	5.41	0.16	3.81	14.15	15.01
2013	24.19	36.76	4.38	0.24	3.75	13.90	16.73
2014	27.72	35.24	3.19	0.33	3.61	11.73	18.18

December values; repo operations with public and private debt securities; public bonds = federal debt securities; values of each year always add up to 100

Source: ANBIMA

Comparing the relative shares with the absolute numbers, one can see that the strong decline of stocks in the portfolio of the funding industry was mainly due to the increase of its total net worth. The relatively constant share of debentures in the portfolio translated into an increase of R\$ 26 billion in the debenture holdings of the investment funds²⁰⁰.

Table 26: Portfolio composition of funding industry (in mio. R\$), 2009-2014

	Repo operations	Public bonds	CDB and RDB	Commercial Paper	Debentures	Stocks	Others
2009	406,576.5	829,724.0	232,248.0	5,677.8	75,675.5	360,113.9	130,775.2
2010	447,591.2	871,600.3	216,939.1	1,209.7	91,270.7	392,795.8	162,468.8
2011	473,637.5	974,017.9	206,801.8	6,102.4	87,743.2	355,746.2	311,962.1
2012	551,074.0	1,055,335.1	141,309.6	4,090.3	99,514.0	369,746.2	392,245.1
2013	651,398.8	990,131.8	118,076.5	6,520.5	101,080.3	374,292.0	450,484.7
2014	783,671.0	996,465.2	90,277.3	9,344.0	102,003.8	331,634.6	514,104.8

December values; repo operations with public and private debt securities; public bonds = federal debt securities; in constant million R\$ of July 2015, deflated with general price index IGP

Source: ANBIMA; own calculations

²⁰⁰ This R\$ value has been deflated to constant July 2015 R\$, using the general price index IGP.

Even though the investment fund industry decreased its public bond holdings as a share of its aggregate portfolio, it maintained its 30% share of the outstanding public bonds in the market. Due to the strong growth in the debenture market, with the market value more than doubling, the fund industry lost market shares, despite the increase in debenture holdings (in R\$).

Table 27: Investment fund holdings of public and corporate bonds (in mio. R\$) and respective market share (in %), 2009-2014

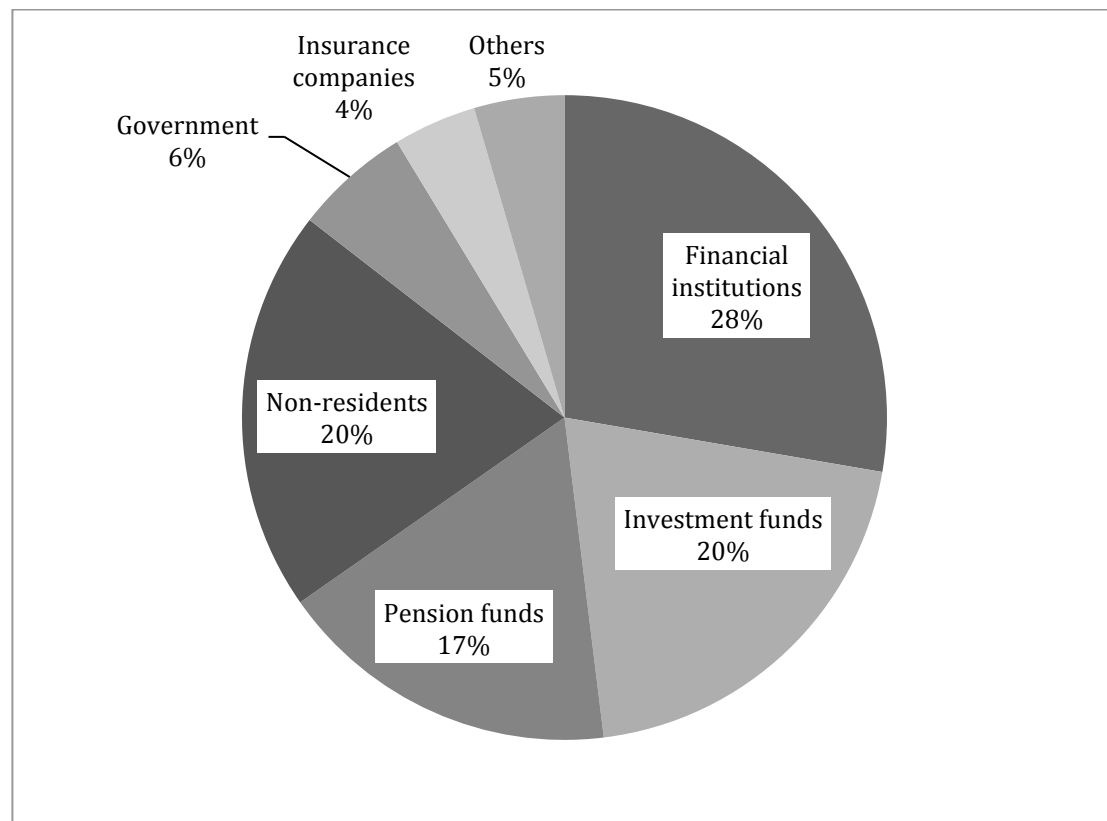
	Public bonds	Market share	Public bond market value	Debentures	Market share	Debenture market value
2009	829,724.0	30%	2,739,572.29	75,675.5	27%	282,694.2
2010	871,600.3	30%	2,930,848.46	91,270.7	27%	337,895.2
2011	974,017.9	32%	3,023,637.33	87,743.2	22%	396,646.3
2012	1,055,335.1	33%	3,181,866.98	99,514.0	20%	504,872.2
2013	990,131.8	31%	3,177,641.18	101,080.3	17%	584,536.0
2014	996,465.2	30%	3,301,051.28	102,003.8	15%	674,856.0

December values; repo operations with public and private debt securities; public bonds = federal debt securities; in constant million R\$ of July 2015, deflated with general price index IGP

Source: ANBIMA; BACEN; CETIP; own calculations

Different to the table above, data from the national treasury shows that the participation of investment funds sharply decreased between 2009 and 2014. While investment funds were holding 30% of total stock of public bonds in 2009, this share dropped to 20% in 2014. Part of this decline could be attributed to the fact that government holdings were set zero until 2011, when the national treasury started to publish these data. Comparing the relative shares in 2011 with those in 2014, the investment funds still lost the highest share, declining from 27% to 20%. The participation of financial institutions also decreased, from 35% in 2009, to 30% in 2011, and to 28% in 2014. One of the goals of public debt management was a broader diversification of its investor base. This goal was achieved by reducing the high concentration of public bonds in the portfolios of financial institutions and investment funds, which were holding 65% of the stock of public bonds in 2009. In 2014, the combined holdings were reduced to 48%. Furthermore, the increased participation of pension funds and foreign investors contributed to the improvement of the public debt structure, because these investors usually acquired fixed rate bonds with relatively long maturities.

Figure 20: Holders of public bonds (share in %), 2014

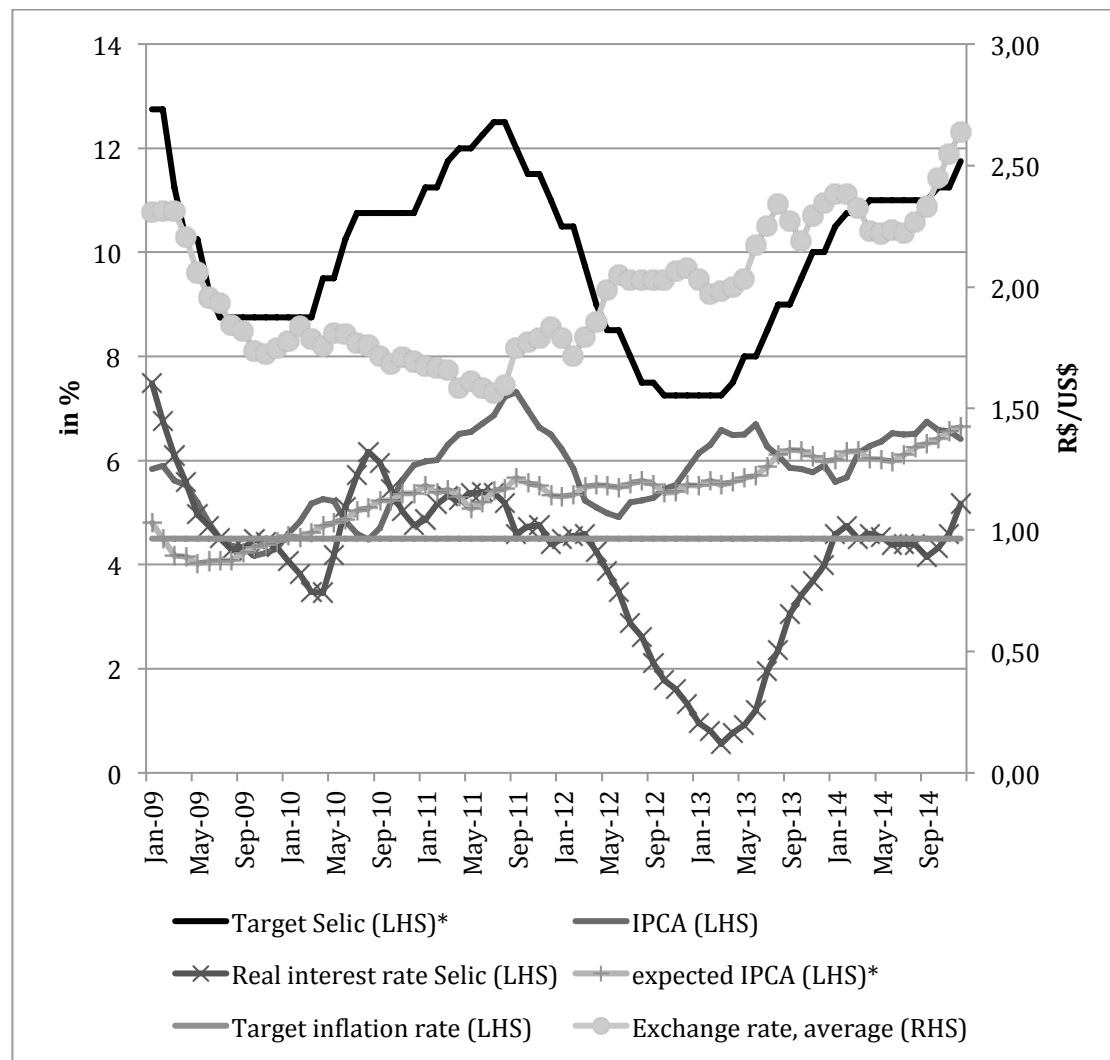


Source: Tesouro Nacional

3.2.3.2 Monetary policy: conservative stance temporarily relaxed

The Brazilian Central Bank rapidly decreased the SELIC interest rate in the beginning of 2009 in a coordinated reaction by fiscal and monetary policy to the international crisis. The base rate target was lowered from 12.75% in January 2009 in large steps of 150, 100, 100, and 50 basis points to 8.75% in July 2009, where it remained until March 2010. The COPOM decided to raise the SELIC target shortly after not only actual, but also expected inflation had risen above the inflation target of 4.5%. Although actual inflation quickly returned to the target level, inflation expectations continued to rise. In the third quarter of 2010, the IPCA inflation index started to deviate from the inflation target, once again. Yet, even though both actual and expected inflation were on the rise since September 2010, the SELIC rate would remain on its level of 10.75% for the rest of the year.

Figure 21: Monetary policy indicators (monthly data), January 2009-December 2014



* end of month data; IPCA: variation in 12 months; real interest rate SELIC: SELIC-IPCA (SELIC: accumulated in the month, annualized); expected IPCA: 1 year forecast

Source: BACEN; IBGE; own calculations

Although the BACEN had already shown first signs of a changing approach towards the execution of monetary policy during this episode, when it waited relatively long before it reacted towards increasing inflationary pressures by raising the base rate in January 2011, it was only in August of that year, under the new president of the BACEN Alexandre Tombini that the monetary policy stance in Brazil was clearly altered (Araujo and Martins 2012, 10–11). For the first time since the implementation of the inflation targeting (IT) regime, the COPOM took a decision against the market consensus. Although market agents were expecting a 0.5% increase of the base rate in a context of rising inflation as well as inflation expectations, the COPOM decided to cut the SELIC rate from 12.5% down to 12.0%. As market participants were caught wrong-footed, many upset reactions were voiced in the media. The yield curve was sharply adjusted and the surprise move caused some confusion about the future path of monetary

policy, whether IT might be abandoned or there might be an adjustment of the relevant parameter in the Taylor rule (A. de M. Modenesi, Modenesi, and Martins 2012).

Since then, the COPOM continued to cut the SELIC rate in nine consecutive meetings down to 7.25%, where it remained from October 11th, 2012 to April 17th, 2013, before the COPOM started a new cycle of interest rate hikes. In other words, it took more than three semesters before the BACEN started to tighten monetary policy again. In order to be able to lower the SELIC rate to these unprecedented levels, the regulation of one of the most popular financial instruments in Brazil, the Savings Account *Caderneta de Poupança*, needed to be adjusted, because it was – by law – remunerated at 6% plus a reference rate, and that way ended up acting as a factual ground floor to the SELIC interest rate, because investors would switch all their funds to the savings account as soon as the SELIC rate would fall below this threshold. Law 12,703 altered this institutional inheritance of the high inflation period, when the SELIC interest rate actually came close to this lower bound threshold for the first time, in 2012. The adjustment of this regulation was a difficult political process that was finally completed after several unsuccessful attempts in the past (IMF, FSB, and BIS 2012, 1; U08 2011).

Table 28: Inflation, SELIC and other interest rates in Brazil (in %), December values, 2009-2014

	Inflation rate IPCA	SELIC	Interbank rate DI	Discounted trade bills	Working capital	Advances on FX contracts (ACC)	Brazilian prime rate	Overdraft credit*
2009	4.31	8.65	8.61	35.96	20.98	5.12	13.85	159.08
2010	5.91	10.66	10.64	39.11	21.40	4.80	15.53	170.71
2011	6.50	10.90	10.87	34.12	20.20	3.98	15.60	169.88
2012	5.84	7.16	6.94	25.90	15.03	3.63	11.00	138.22
2013	5.91	9.90	9.78	27.27	19.89	2.92	14.30	148.09
2014	6.41	11.58	11.51	30.48	21.65	2.65	16.00	200.99

*Natural person

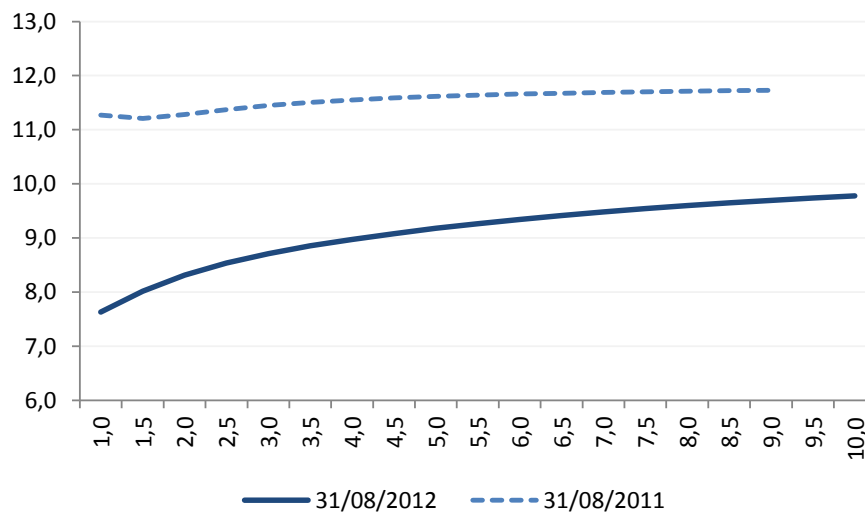
Source: BACEN

While the base rate was lowered, the national monetary council (CMN) passed resolution 4,019/2011, which formally adopted a macroprudential policy framework, following the recommendations of international institutions (FSB, IMF, and BIS 2011a, 2011c, 2011b). These macroprudential policies complemented monetary policies and enhanced the toolkit of the BACEN.

All of these measures combined led to a profound change of the Brazilian sovereign bond yield curve, which developed into a textbook shape within one year. The difference between the two yield curves is striking: While the end-of-August 2011 curve is almost completely flat and above 11% for all maturities, the end-of-August 2012 curve is concavely ascendant, resembling the non-linear negative relationship between maturity and yield. In other words, longer-term

bonds had higher yields than shorter-term bonds, which is also in line with liquidity preference theory. Furthermore, the yield curve incorporated the lower level of the base rate, because it displayed lower yields for all maturities. What is more, the yield curve was extended to 10-year maturities.

Figure 22: Brazilian yield curve, based on fixed rate sovereign bonds (maturity in years, rate in %), 2011/2012



Source: ANBIMA (from: Araujo and Martins 2012, 13)

As liquidity suddenly dried up because of the international financial crisis, the problem of the dominant role of short-term instruments, such as the CDBs, in the funding of Brazilian banks became apparent (Torres Filho and Macahyba 2012, 17–18). That was why a new instrument was created that aimed at an improved liquidity management of banks, the Financial Bills (LFs). The instrument was widely accepted, especially after the central bank exempted its use from reserve requirements. In 2009, the advantage for banks to raise funds through their leasing companies was removed, when the central bank decided to include the repo operations between bank and leasing company into the regulation of reserve requirements. Together, these regulations could explain the sudden decline in debentures issued by leasing companies since 2009 (Torres Filho and Macahyba 2012, 44). Most issues of LFs were indexed to the interbank rate DI, private placements, and merely had the minimum term of two years (Torres Filho and Macahyba 2012, 17–18).

Table 29: Capital markets, volume issued (in mio. R\$), 2009-2014

	in constant million R\$ of 2014 (deflated by IPCA)					
	Stocks	Debentures	Deb. Leasing	Commercial Paper	CRI	FIDC
2009	63,410	37,152	-	30,464	4,362	13,605
2010	190,913	67,260	127	23,802	9,644	17,429
2011	22,642	60,495	13,121	21,493	14,823	17,575
2012	16,116	101,425	39,445	25,529	11,677	6,827
2013	25,427	74,884	21,282	22,143	15,408	6,303
2014	15,410	74,368	20,000	30,514	14,497	6,154

Source: ANBIMA; IBGE; own calculations

The lowering of the interest rate to unprecedented levels opened up the opportunity for profound changes in the development of a domestic market for corporate long-term debt securities, because it created a large demand for high-yielding private bonds with long maturities and low credit risk that was not attended by a sufficient supply, during the years 2011 and 2012 (Torres Filho and Costa 2013, 43). Pension funds, for example, showed great appetite for LFs to compensate for the lower returns of sovereign bonds in their portfolios, without incurring high credit risks. At the same time, retail investors increasingly demanded receivable debt instruments, based on real estate or agricultural business, due to tax advantages of these assets. Nevertheless, the occasional issues of corporate long-term bonds have not yet turned into a well-developed corporate bond market.

Table 30: Stock of debentures (in mio. R\$; in % of GDP; in % of credit), 2009-2014

	Stock of debentures, in constant mio.R\$(2014)*	Stock of debentures, in % of GDP	Stock of debentures, in % of private credit sector**
2009	380,341	8.49	33.94
2010	429,241	8.69	33.83
2011	473,121	9.07	34.59
2012	568,985	10.71	40.91
2013	622,005	11.33	44.26
2014	674,856	12.22	48.40

* in constant 2014 R\$, deflated with IPCA; ** credit operations outstanding of financial institutions under private control

Source: BACEN; CETIP; IBGE; own calculations

As mentioned before, the high level of corporate bonds indexed to the interbank rate DI might have been a consequence of the fact that most of the debenture issues were actually debt renegotiations and directly obtained by the coordinating banks (Torres Filho and Macahyba 2012, 45–47). Apparently, the companies were not expecting that the gains they would obtain from distributing their bond to a greater public would be large enough to compensate for the

additional costs of acquiring a broader investor base. The coordinating banks were not incentivizing the issuing company to make an effort to broaden the investor base. On the contrary, it was common practice that they offered a distribution guaranty, which obliged them to buy any fraction of the issue that was not distributed among the remaining investors, and often the coordinating bank even bought the entire volume issued. That might also explain the strong increase in offerings made on a restricted efforts basis according to CVM instruction n. 476/09. Yet, even before 2009, there were almost no issues with more than a hundred investors. Furthermore, the large majority of retail investors could not be expected to present a sufficient level of financial sophistication to adequately understand all risks involved in a debenture issue, whose listing prospectus often comprised hundreds of pages.

The low liquidity in the corporate bond market was mainly connected to the high share of bonds indexed to the interbank rate DI, which inhibited price variations of the bond according to base rate alterations and, hence, eliminated the possibility to speculate with these type of debt securities on such an event (Torres Filho and Macahyba 2012, 47–48). Furthermore, the secondary market liquidity was very low due to the fact that the investors in the primary market usually disposed of specialized risk evaluation teams that thoroughly analyzed each transaction before a decision was taken. Therefore, the participation in a book building process involved considerable costs that implied the expectation of a favorable risk-to-return ratio in the long run, which meant that those investors usually held the bond to maturity. This reasoning was all the more true, the higher the interest rate, and would not be valid anymore, if for whatever reason the perception emerged that the credit risk of the companies changed. This means, in turn, that a corporate bond is a financial asset, which requires a constant monitoring and is therefore generally less suitable for natural persons.

In 2008, Brazil started to implement capital control measures (Prates and Fritz 2012, 14ff.). Due to the international financial crisis, capital inflows came to a temporary halt, but soon returned in 2010, when capital controls were intensified. At the end of 2011, the IOF tax on portfolio inflows to equity and fixed-income securities, which were linked to infrastructure projects, was removed. This tax exemption reawakened foreign investors' interest in Brazilian corporate bonds, whose potential impact on CBMD is definitely larger than that of domestic investors.

In particular from 2009 to 2011, the overvalued exchange rate made the Brazilian industry less competitive internationally, which caused the share of industrialized products in the export basket to decrease (Araujo and Martins 2012, 7). After the decision of the COPOM to reverse the interest rate path in August 2011, the exchange rate started to depreciate. While this relieved the exchange rate pressures on the Brazilian industry, this relief might have come too late for some companies. Furthermore, the depreciating exchange rate caused inflation pressures to rise. While the inflation expectations continued to rise well above the inflation target of 4.5% until the end of 2014, reaching 6.7%, the actual prices rose quickly during 2012, before they remained at a level of about 6.5% during the first semester of 2013, decreased to 5.6% in January 2014, and afterwards rose again to the 2012 level. Due to the rising prices and inflation

expectations, together with an ever-stronger devaluation of the domestic currency, the COPOM continued to raise the SELIC interest rate, which elevated the real, i.e. inflation adjusted, base rate in December 2014 to its highest level since August 2011 (5.2% per year).

The rising interest rate level towards the end of the analyzed period showed that this important barrier to CBMD in Brazil was only temporarily reduced, but its causes were not removed. Therefore, it might be helpful to return to the discussion of possible reasons for the elevated base rate in Brazil. “History is one of the most widely heard explanations for the high general level of interest rates. Former BACEN president Armínio Fraga once called the high SELIC rate ‘the consequence of a long history of misbehavior’. But though history certainly plays a role, this explanation is not fully satisfactory, because other countries with turbulent economic histories manage to keep inflation in check with much lower real interest rates” (Arnold 2011, 13). On the one hand, Brazil’s previous history of high and volatile inflation certainly serves as an explanation for many institutional and other factors that were special to Brazil and might have been at the root of the problem of the high real interest rates (Bacha 2010, 2–3). On the other hand, the removal of the lower bound set by the regulation of the Savings Account has shown, that it was possible to adapt institutional inheritances from the high inflation period to the current situation.

Some authors argued that inflationary pressures, which stem from increasing amounts of BNDES credits fuelling demand, could at least partly explain the question of why the SELIC interest rate didn’t come down further (Arnold 2011, 14; Bacha 2010, 17–18; Hausmann 2008, 18–19; Segura-Ubierno 2012, 9–10). BNDES credits were granted at subsidized rates below the SELIC rate and independently of monetary authorities. Although these investments might have enhanced capacity in the long run, this would take time and until then it would drive up aggregate demand. So these authors argued, in the short run, the BACEN was forced to keep the SELIC rate at a higher level because of the expansionary credit policy of the BNDES. One suggestion to deal with this problem was to link the granting of directed credits to monetary policy. This discussion will be picked up in the following sub-section.

3.2.3.3 Public banks: specific measures complementing government efforts

The government used the BNDES as an instrument to extend liquidity and to compensate for the retreat of private credit, causing a rapid increase of its participation in total credit from 16% to 21%, in a little more than two years between 2008 and 2010 (Torres Filho and Costa 2013, 27–29; Ferraz et al. 2012). The increase in market share was not a consequence of a decreasing stock of credits from private institutions²⁰¹, but due to the strong increase of BNDES disbursements, which climbed from 2.92% of GDP in 2008 to 4.33% in 2010. As a consequence of the sudden increase of BNDES disbursements, the government

²⁰¹ In fact, private banks continued to increase their credit-to-GDP ratio, only at a slower pace.

had to provide additional funding, raising the participation of the national treasury among the funding sources of the BNDES from 6% to 50% between 2007 and 2011. The fact that the public bond market was deployed to attend the large funding needs of the BNDES might point towards a convergence between the public finance for development system and the capital markets (Torres Filho and Costa 2013, 30). The development of the latter, together with a further decrease of the interest rate to internationally compatible levels, would allow the BNDES to abstain from transfers from the treasury and to directly raise funds in the capital markets.

Steps in this direction have already been taken with CMN resolution 3,933/10 authorizing the BNDES to issue Financial Bills. Even though the maximum volume to be issued was limited to the equivalent of its level 1 capital (in 2010 equivalent to about R\$ 40 billion, in nominal terms), it made the development bank less dependent on loans from the national treasury.

Table 31: BNDES disbursements (in mio. R\$; in % of GDP), 2009-2014

	BNDES disbursements*, in 2014 R\$ million	Change, in %	BNDES disbursements*, in % of GDP
Dec 09	183,455	44%	4.10%
Dec 10	213,954	17%	4.33%
Dec 11	165,648	-23%	3.17%
Dec 12	175,801	6%	3.31%
Dec 13	202,625	15%	3.69%
Dec 14	187,837	-7%	3.40%

* accumulated in the year

Source: BACEN

Although the strong increase of BNDES disbursements in 2008 and 2009 was a reaction to the international financial crisis in a first moment, BNDES disbursements did not return to their pre-crisis level afterwards, but remained well above it. While the BNDES disbursed on average R\$ 89 billion per year between 2004 and 2008, the annual average in the period from 2009 to 2014 more than doubled to R\$ 188 billion. A large part of BNDES disbursements were related to government programs such as the PAC, whose total volume of BNDES contributions grew substantially in 2009 to R\$ 89.9 billion, up from R\$ 32.0 billion in 2008. In the following two years, BNDES disbursements to the PAC were significantly lower, not even one third of the amount in 2009, so that the total volume of BNDES contributions to the PAC reached R\$ 106.6 billion in 2010 and R\$ 125.0 billion in 2011. The vast majority of BNDES disbursements in those two years was designated to the Productive Development Policy (PDP) and the Greater Brazil Plan (BPM). In 2010, the BNDES supported the PDP with 91% of its total disbursements, and in 2011, the sectors promoted by the PBM received 86% of BNDES disbursements.

Table 32: Capital markets, volume issued vs. BNDES disbursements (in % of total), 2009-2014

	in % of total volume						
	Stocks	Debentures	Deb. Leasing	Commercial Paper	CRI	FIDC	BNDES disbursements
2009	19.1	11.2	0.0	9.2	1.3	4.1	55.2
2010	36.5	12.9	0.0	4.5	1.8	3.3	40.9
2011	7.2	19.2	4.2	6.8	4.7	5.6	52.5
2012	4.3	26.9	10.5	6.8	3.1	1.8	46.7
2013	6.9	20.3	5.8	6.0	4.2	1.7	55.1
2014	4.4	21.3	5.7	8.7	4.2	1.8	53.9

Source: ANBIMA; BACEN; own calculations

The role of the BNDES and the aim of its activities were highly debated recently, among other things, because its disbursements as well as its funding through the national treasury grew substantially in recent years and because of its practice to elect so-called national champions, which were then supported and pushed to become large multinational corporations, sometimes implying spectacular merger and acquisition transactions (M. Garcia 2011). Since the majority of these companies, due to their size and reputation, would have had access to domestic or even international capital markets, their support through the BNDES might not have been compatible with its goal to function as a complement to the private financial sector, compensating for market failures. On the contrary, by concentrating on the largest companies and the best credit risks in its portfolio, the BNDES hampered the development of the private credit system, including the corporate bond market. Furthermore, the effectiveness of monetary policy was hampered by the large fraction of loans with subsidized interest rates that didn't fluctuate with the SELIC interest rate. Also related to the subsidized rates was the critique of lacking transparency with regard to the funding costs of BNDES. The development bank received loans at the Long-term Interest Rate TJLP from the national treasury, which, in turn, issued public bonds at the SELIC interest rate, which was considerably higher than the TJLP. That was why the actual funding costs of the BNDES disappeared among the interest payments and should have been made explicit.

Lazzarini et al. (2015, 238–39) analyzed a sample of publicly owned Brazilian companies accounting for 31% of outstanding BNDES loans and 69% of equity held by the development bank in 2009, testing hypotheses built upon the industrial policy view, on the one hand, and on the political view, on the other hand. The industrial policy view suggests that companies receiving funds from public finance for development schemes would otherwise not realize the investment projects (Bruck 1998b; Yeyati, Micco, and Panizza 2004). The authors could not find the expected increase in capital investments, market valuation, or overall profitability as a consequence of subsidized funding. Yet, they also could not find evidence supporting the political view, which is skeptical about public finance for development, as it causes credit misallocation in at least two ways: First, by lending to companies that would otherwise fail (soft-budget constraint hypothesis) (Kornai 1979); and second, by channeling funds according to politicians partialities serving nepotism or their own personal

objectives (rent-seeking hypothesis) (Ades and Tella 1997; Faccio 2006; Hakenes and Hainz 2008; La Porta, Lopez-De-Silanes, and Shleifer 2002). Instead, the results suggested that the companies that received funding from the BNDES would have been able to find other sources of funding and that “development banks may be cherry picking borrowers” (Lazzarini et al. 2015, 250). While keeping the share of non-performing loans low, the selection of low-risk borrowers might have hampered the development of private markets for long-term lending (Antunes, Cavalcanti, and Villamil 2014; Cull et al. 2015).

Brazilian public banks started to adapt their activities during the crisis, because they had usually not been operating counter-cyclically (Araujo and Martins 2012, 14–15). While the BNDES attended the long-term demand for funding, Bank of Brazil (BB) and Federal Savings Bank (CEF) operated more like private institutions (Hermann 2010a). Towards the turn of the year 2011/2012, a second round of counter-cyclical public credit expansion was an effort to restore consumption and economic growth. For that reason, BB and CEF started in April 2012 to drastically cut down their interest rates on a variety of credit lines. The aim was to force private banks to follow in order to lower the extremely high spreads in the Brazilian banking sector, which was at least partly achieved.

Table 33: Inflation, TJLP and other interest rates in Brazil (in %), December values, 2009-2014

	Inflation rate IPCA	BNDES rate TJLP	SELIC	Interbank rate DI	Discounted trade bills	Working capital	Advances on FX contracts (ACC)	Brazilian prime rate
2009	4.31	6.00	8.65	8.61	35.96	20.98	5.12	13.85
2010	5.91	6.00	10.66	10.64	39.11	21.40	4.80	15.53
2011	6.50	6.00	10.90	10.87	34.12	20.20	3.98	15.60
2012	5.84	5.50	7.16	6.94	25.90	15.03	3.63	11.00
2013	5.91	5.00	9.90	9.78	27.27	19.89	2.92	14.30
2014	6.41	5.00	11.58	11.51	30.48	21.65	2.65	16.00

Source: BACEN

In order to increase secondary market liquidity in the corporate debentures market, the BNDES decided to directly participate in this market with its fixed-income department and launched a debenture acquisition program, worth R\$ 11.9 billion, in 2011 (Coutinho 2011). In order to positively influence CBMD, the bank defined a set of rules that would guide its acquisitions in public placements: BNDES disallowed itself under the program to acquire debentures that were indexed to the interbank rate DI. Furthermore it required transparency in the book building process with respect to the pricing and distribution; the presence of a market maker; a minimum maturity of two years; and to prohibit call options for debentures with terms less than six years. Additionally, it would look for efforts to distribute the debentures among retail investors; the use of the resources by the issuing company for investments in fixed assets or for corporate restructuring; fixed rate bonds or indexation to the IPCA or a biannual or quarterly floating rate; as well as maturities longer than 6

years. Finally, BNDES restricted itself to acquire only 5 to 20 percent of the volume issued, depending on the additional criteria lined out above.

Its subsidiary, BNDESPAR, continued to issue debentures, aiming at the development and standardization of the primary market (Freitas 2011, 18). In 2010, BNDESPAR issued in public placements of three series simple, i.e. non-convertible, debentures with a total value of R\$ 2.5 billion. In order to establish alternative forms of indexations that might serve as a substitute for the interbank rate DI, it issued the different series with an IPCA indexation, a forward-looking 3-month interbank interest rate created in a similar way to the 3-month LIBOR rate and adjusted every three months, and a fixed rate debenture. BNDESPAR continued its effort to play a pioneering role by introducing these innovative indexations, which were more appropriate to long-term funding than the overnight interest rate DI. Similar to the first debenture issue in 2006, BNDESPAR made an effort for a widespread distribution among retail investors of its debentures. Furthermore it hired market maker that increased market liquidity by offering daily buy and sell quotations in an electronic platform.

3.3 Summarizing the evolution of corporate bond markets in Brazil under the influence of public policies

Corporate bonds offered an important funding source for the early Brazilian industrialization and the legal roots of debentures in Brazil even date back to the 19th century. Yet, due to legislative innovations in 1933, i.e. the Usury Law in combination with the prohibition of monetary adjustments, long-term debt contracts during the 1940s became unviable, when inflation rose and real interest rates turned negative, so that corporate bond markets in Brazil practically disappeared. To circumvent growing difficulties to finance and fund the Brazilian developmentalist state policies that were guided by an import substitution industrialization (ISI) strategy, the public development bank BNDES was created in 1952. Although the Brazilian democratic governments at the time recognized the need for reforms, it was only after the military coup in 1964 and through authoritarian impositions that the financial markets were restructured, laying the ground for the current Brazilian financial system (SFN). Two main pillars of the financial restructuring were constituted by the Law of the Banking Reform of 1964, on the one hand, which reorganized the monetary policy authorities by instituting the National Monetary Council (CMN) and the Brazilian central bank (BACEN) and by the Capital Market Law in 1965, on the other hand, which envisaged the establishment of the capital markets as a distinct segment from the banking sector in the SFN. Among the legal adjustments of the Capital Market Law were new terms and conditions for the issuance of debentures including the permission of monetary adjustment clauses, which led to the revival of the primary market for debentures after decades without any activity.

In 1964, the Monetary Adjustment Law initiated the indexation of the Brazilian economy and, as a consequence, not only corporate bonds, but also sovereign bonds (the so-called ORTNs) were indexed to the inflation rate.

Soon after the reforms were implemented, the Brazilian economy entered a period that became known as the Economic Miracle (*Milagre Econômico*). Taking advantage of a benign international scenario, the Brazilian government issued a sovereign bond abroad in 1972, terminating a four-decade absence on international financial markets, and four years later, the first corporate bond issuance abroad by a Brazilian (state-owned) company was completed. In the same year, the Securities Commission (CVM) was created to discipline, monitor and promote the development of the Brazilian securities markets and the so-called new Corporate Law was passed, which extended the range of possible types of debenture issues with varying degrees of guaranties and a corresponding cap on the issuance volume. In 1979, the so-called Special System for Settlement and Custody (SELIC) was implemented to electronically process financial transactions with sovereign bonds, and five years later, its counterpart for private fixed-income securities was created, the Clearing House for the Custody and Financial Settlement of Securities (CETIP). The interest rates charged during the daily trading operations registered in the SELIC represent an important benchmark in Brazil as it reflects the interest paid on sovereign debt securities.

While the transition from the military regime to the New Republic stood out in the 1980s in political terms, the disappointing economic evolution of the country, coining the term “the lost decade”, was marked by low growth rates, rising external debt, a series of unsuccessful price stabilization plans, and a gradual opening of the country, both economically and politically. The government financed its rising budget deficits through the issuance of sovereign bonds. As a consequence of the large supply of high-yielding public bonds, wealth holders’ demand for company shares declined. The government reacted by creating the BNDESPAR, a subsidiary of the BNDES, in 1982 to stimulate the Brazilian stock exchanges and to fill the gap of the absent private investor. The high concentration of the Brazilian corporate bond market was reduced when in 1981-82 the number of placements strongly increased. Yet, the market stagnated again soon after due to various modifications in taxation and rules that prohibited some institutional investors to purchase debentures and it only recovered towards the end of the decade, when the tax burden on debentures was leveled with that of other important financial assets. Other factors that exerted a positive influence on the market development included a gradual diminution of subsidized credits, the policy of decontrolling interest rates by monetary authorities, and the relaxation of the requirements for the registration of a publicly owned company. Moreover, corporate bond market development was fostered by the implementation of the National Debentures System (SND) in 1988, which was developed by ANDIMA and CETIP to improve the transparency as well as the reliability in the debentures market.

The Brazilian economy underwent a profound transformation process in the 1990s that was characterized by a partial withdrawal of the state from the economy through more intense privatization, by the liberalization process, and

by the success of the *Plano Real* in containing inflation. In 1990, the Collor administration launched the National Program of Denationalization (PND) that aimed at repositioning the state in the economy, reducing the public debt, and incentivizing private investments, in order to make funding for Brazilian companies available, to increase international competitiveness, and to modernize the industrial facilities. The BNDES was in charge of the privatization process, which called for the participation of both domestic and foreign wealth holders as investors. Additionally, the BNDESPAR intensified its purchases of company shares as well as debentures.

Nevertheless, the corporate debentures market remained in a very incipient stage during the first period analyzed in more detail in this study, from 1995 to 2003. Despite the strong reduction of the inflation rate after the implementation of the *Plano Real*, Brazil continued to experience macroeconomic instabilities. Faced with great uncertainties, economic agents were not forming long-term expectations, which discouraged entrepreneurs to realize investment projects and raised the demand of wealth holders for short-term financial assets with high liquidity premiums. As a consequence of the conservative monetary policy stance, market participants were generally expecting rising interest rates, which further increased the demand for short-term and interest rate indexed bonds. Against this background, public debt management was less concerned about creating benchmarks for a corporate bond market, but rather about being able to issue sovereign bonds in order to roll over the public debt on the best possible terms. Only the largest companies were able to issue debentures under these conditions, resulting in a highly concentrated and relatively small market. Instead of issuing long-term debt securities on the domestic market, most Brazilian companies either opted for tapping international bond markets or sought access to public banks as a source of long-term funding.

Between 2004 and 2008 the Brazilian economy grew in a more stable macroeconomic scenario, benefitting from a benign external context. Public debt management improved the public debt structure by adjusting the indexation profile and by prolonging terms and maturities, which initiated the process of creating a yield curve. Especially the increased participation of foreign investors helped in this process. Their demand for sovereign bonds went up after the introduction of an income tax exemption, which was limited to public bonds and, thus, increased the competitive disadvantage for corporate bonds. As a consequence of the positive economic outlook, Brazilian companies started to look for sources of funding to realize investment projects. Faced with the high level of the interest rates in Brazil, most companies decided against the issue of debentures and instead chose to place their shares on the domestic capital markets. The debentures market continued highly concentrated, also on the demand side due to a strong dominance of institutional investors, which was one of the main reasons for its low liquidity. Investment funds lost market shares, mainly to financial institutions buying the debentures issued by their own leasing companies and to the BNDES, which bought most privately placed debentures. On the supply side of the market, the BNDES initiated a program of debenture placements with the aim of setting benchmarks. In 2008, when the corporate bond market showed first signs of a positive development, it was interrupted by the international financial crisis.

The Brazilian government reacted with counter-cyclical policies to the international financial crisis including increased public bank activities and was able to meet its higher financing needs on the domestic bond market without impeding further improvements of the public debt structure, also with respect to the different forms of indexation. International investors raised the demand for long-term fixed rate bonds and helped to prolong the term structure of sovereign bonds. Despite the increase in public debt, interest payments remained stable, because the interest rate level was lowered, reflecting the change in the monetary policy stance. As a consequence of the easing of monetary policy, the construction of a well-shaped yield curve for sovereign bonds with maturities up to ten years was completed. At the same time, the drop in the base rate raised the demand for higher yielding private debt securities, but the corporate bond market only attended a part of this demand, as pension funds mainly acquired Financial Bills (LFs) and retail investors mostly bought receivable debt instruments.

The BNDES implemented a program that allowed it to actively engage in the secondary debentures market, acquiring corporate bonds fitting certain criteria in order to positively influence the structure of the corporate bond market and to significantly raise its liquidity. Additionally, the debenture issue program of its subsidiary, BNDESPAR, was continued and succeeded in placing benchmark issues, establishing new indexations and developing standards. While these measures made an important contribution to the joint government and private sector efforts to promote corporate bond market development (CBMD), other activities of the BNDES had counterproductive effects. More specifically, by following a cherry-picking strategy, i.e. focusing on contracting large companies and selecting low-risk borrowers, the BNDES might have been able to perform well with respect to non-performing loans in its credit portfolio, but this conduct also exerted negative effects on CBMD.

Government action to promote the development of the corporate debenture market comprised two important legal innovations. The first, CVM instruction n. 476/09 created a limited distribution modality, which opened the market for privately held companies and significantly reduced the requirements for the issuance. This new regulation dominated the market both in terms of number of placements (90%) as well as volume issued (80%) and caused fundamental changes in the dynamics of the debentures market. While the limited distribution further aggravated the problem of restricted liquidity in a first moment, the measure contributed to a rising number and volume of debentures, which might cause market liquidity to increase, in a second moment. The law 12,431/2011 was the second important measure implemented by the government to foster CBMD. It created so-called infrastructure bonds that promised investors tax incentives. Foreign investors had the additional option to profit from tax incentives if they acquired long-term debt securities. Furthermore, the law improved the conditions of issuing debentures and removed legal and regulatory barriers, such as the problem of double taxation of recurrent revenues. A relevant objection to the focus on international investors has been the volatility and pro-cyclical nature of international capital flows.

A joint initiative of BNDES and ANBIMA complemented these measures through the creation of a special segment in the corporate bond market, the so-called New Market for Fixed-Income Securities (NMRF). Debenture issues in the NMRF were distinguished, as they had to comply with certain requirements ensuring a minimum term, standardization, and a one-year ban of repurchases. Furthermore, the issues were not allowed to include an indexation to the SELIC or DI interest rate, which was an important contribution to raising liquidity in the market, because debentures with such an indexation experienced no price variations in the event of base rate adjustments, eliminating their speculation potential.

Secondary market activities increased strongly between 2011 and 2014, but were still highly concentrated so that market liquidity remained very low compared to other countries. Nevertheless, the size, depth, and liquidity of the corporate bond market significantly improved: Considering the monthly averages of the period between 2011 and 2014, the number of series traded almost doubled, the number of trades more than tripled, and the volume traded more than doubled. At the same time, the concentration of secondary market activities increased even further, as the three series with the highest monthly trading volume raised their market share from an average of about 30% between 2011 and 2013 to more than 60% in 2014. The turnover ratio, which is a common measure of market liquidity, increased from 0.40% in 2011 to 0.65% in 2014. In sum, despite major progress in the development of the Brazilian market for corporate debentures, especially in terms of primary market activity, secondary market activity remained highly concentrated in a few series and the vast majority of debentures were traded only occasionally.

4 Conclusions

The thesis analyzed the development of the Brazilian corporate bond market and focused on the role of the state and its policy actions as fundamental determinants. The evolution of the relevant corporate bond market, i.e. the market for debentures issued by non-financial companies, was examined over a period of twenty years, between 1995 and 2014. The empirical research followed a triangulation method, combining insights gained from expert interviews not only with relevant macroeconomic and bond market data, but also with knowledge acquired from literature analysis. The interplay of surveying the literature and examining the interviews as well as the data led to the definition of three major determinants of CBMD in Brazil: (i) public debt management due to the strong impact of changes in the public bond market on the evolution of the corporate bond market, (ii) monetary policy, because a stable monetary policy stance providing for macroeconomic stability is a crucial precondition for CBMD, and (iii) public finance for development, which is one of the main sources of long-term finance and funding for Brazilian companies. These determinants are directly related to the main research questions: What was the role of the Brazilian state in the development of a domestic market for corporate bonds? How did the state influence CBMD through the three main determining factors identified above? Did the state hamper or foster CBMD in this way? Taking a Post Keynesian approach, the analytical framework allowed exploring the influence of public debt management, monetary policy, and public finance for development on CBMD by showing how these policy variables affect the processes of forming expectations and choosing assets.

The structure of the thesis can be summarized as follows: After an introductory chapter, important contributions to the finance and development debate were discussed and, inter alia, relevant theoretical, empirical and analytical concepts were presented. The literature review of conducted research on financial development and, more specifically, on bond market development in developing and emerging market economies and, in particular, Brazil showed the under-examination of the role of the state in the development of a domestic corporate bond market in Brazil. After the research gaps in the current literature as well as the aim of this study were identified, the next step consisted of laying-out the theoretical framework for the empirical analysis. First, the Post Keynesian capital formation process that comprises of two stages, namely short-term finance and long-term funding, was presented. The emphasis was laid on the second stage, showing the importance of bond markets as a source of funding. Second, the expectation formation process of economic agents in a monetary economy that is reigned by uncertainty was explained, in order to better understand their decision making and asset choices, considering furthermore that, faced with an uncertain future, economic agents have a preference for liquidity. Finally, the components of a general model of asset choice that define the net return of an asset were discussed in the light of how the identified policy variables might influence CBMD.

Building on the theoretical background that was provided in chapter 2, the empirical analysis was carried out in chapter 3. Starting off with a historical overview of Brazilian financial system development, a macroeconomic, political, and institutional contextualization of the financial development in Brazil during the period of investigation was given. The main analytical research was presented in sub-chapter 3.2, which was divided into three sections, each covering one sub-period. Low CBMD and adverse effects stemming from the policy variables marked the first sub-period between 1995 and 2003. Public debt management was mainly concerned about rolling over the public debt, compromising the public debt structure. Monetary policy reacted to macroeconomic instabilities with high and volatile interest rates and the lack of private long-term funding sources was only partly compensated by public finance for development institutions.

During the second sub-period from 2004 to 2008, Brazil experienced high and sustained economic growth, which was not accompanied by the corporate bond market. The benign economic situation opened up policy space, but the promotion of CBMD was not high on the agenda. As a result, public debt management was able to improve the public debt structure, but rather as an end in itself than a measure to foster CBMD. Similarly, the monetary policy stance was still relatively tight, even though the base rate was lowered. Isolated measures to improve CBMD by public finance for development institutions were piecemeal and could not revert the overall hampering impact of this policy variable. Only in the last sub-period, covering the years between 2009 and 2014, the development of a domestic market for corporate bonds became a more important and overarching policy goal. As a consequence of continued improvements in the public debt structure, a loosening of the monetary policy stance, and several measures aiming at CBMD, especially with the involvement of public finance for development institutions, the Brazilian corporate bond market showed first signs of a positive trend.

4.1 Brief summary of key findings

The theoretical understanding of domestic corporate bond market development in emerging market and developing economies is deepened by this research mainly in three ways. First, the study points out that these economies are usually characterized by structural heterogeneity, which means that only part of their economy functions as a monetary economy and that there are other modes of production, too. In this context, the development of a corporate bond market helps to propagate the monetary economy mode of production. Second, the thesis explains the important role of bonds as a source of funding and, thus, enriches the perspective of Monetary Keynesians. More specifically, bringing the funding step into focus broadens their view of the capital formation process.

Third, by spelling out the influences of each of the policy variables on the development of a corporate bond market, the mechanisms at work are clarified. As a result, I am able to assess the role of the state and its impact on CBMD in Brazil, which is my original contribution to knowledge.

The key findings of this research are related to the policy variables public debt management, monetary policy, and public finance for development. Thus, one of the key findings is that the first policy variable, mainly by changing the public debt structure, determines the development of the domestic market for corporate bonds through different effects, namely the market creation effect, the signaling effect, and the competitiveness effect. A broad definition of the market creation effect comprises any positive influence that the sovereign bond market might have on its corporate counterpart. As shown above, Brazilian public debt management was able to expand its investor base by building up institutional investors such as private pension funds and, later, also raising the participation of foreign investors. As a consequence, it was able to improve the public debt structure, raising the share of long-term fixed rate bonds. The corporate bond market profited from the existence of institutional investors, when they started to shift their portfolio away from the dominance of sovereign bonds and raised the share of higher yielding corporate bonds. Furthermore, the market creation effect describes the positive externalities that arise after the necessary bond market infrastructure is installed for the public bond market, but is also at corporate bond market participants' disposal. In line with this is the practical example of the electronic trading platform for sovereign bonds SELIC that served as a model for its private market equivalent CETIP. Empirical evidence provided by Laeven (2014, 17) showed that countries with deeper public bond markets tend to have more developed corporate bond markets, in accordance with the market creation effect.

The sovereign bond market served as a point of reference in the Brazilian economy and influenced economic actors' long-term expectations by setting benchmarks. As a consequence, public debt management exerted a signaling effect that hampered or fostered CBMD, depending on whether the structure of the public debt was worsened or improved. Such positive or negative changes were manifested in the characteristics of sovereign bonds, which, in turn, determined the requirements that needed to be fulfilled by corporate bonds. For example, the treasury offered the indexation of sovereign bonds and this forced corporate bond issuers to make a similar offer. The high share of base rate indexed bonds such as LFTs not only resulted in a high share of DI-indexed corporate bonds, but also had an adverse signaling effect on CBMD by representing a low state of confidence and a weak economic outlook. On the contrary, public debt management exerted a positive signaling effect on CBMD, when it was able to extend the sovereign bond yield curve, because the yield curve reflects current market sentiments and signals the interest rate path.

The third effect that was discussed in the course of this thesis is the competitiveness effect, which is a consequence of the inferior competitiveness of corporate bonds relative to sovereign bonds in their ability to win over the favor of wealth holders. It is not to confuse with the crowding-out effect that is inherently linked to the loanable funds theory by explaining a rise in interest

rates with a public debt financed increase in government spending that results in public bonds crowding-out corporate bonds. From a Post Keynesian perspective, there is no automatic crowding-out as a consequence of higher government spending, because it could always be financed through credit expansion *ex nihilo* by banks. Therefore, it is not the size of the public debt that matters, but its structure. Due to the general competition between financial assets to win over the favor of wealth holders, public and private bonds also compete with each other. Wealth holders consider the different characteristics of these bonds. As Paula et al. (2009) mentioned, Brazilian corporate bonds faced great difficulties to prevail against the competitive advantages of the sovereign bonds. Although it might not be in the primary interest of public debt management, abolishing the preferential rules for and favorable tax treatment of public bonds, also identified by Leal and Carvalhal-da-Silva (2006, 7), would help to foster CBMD. The empirical analysis in chapter 3 showed that the competitiveness effect was especially strong in the first sub-period examined. Furthermore, one could observe the opposite effect when the base rate was lowered strongly during the third sub-period and wealth holders searched for higher-yielding alternatives. Along general lines, public debt management was able to improve the structure of the public debt throughout the three phases analyzed, in terms of prolonging the term structure as well as ameliorating the index composition of the sovereign bonds.

Throughout the theoretical chapter, the important contribution of monetary policy to the development of a corporate bond market (and vice versa) was discussed and the empirical analysis of the Brazilian case confirmed the relevance of this policy variable. However, while the empirical research produced the result that a low and stable monetary policy rate is necessary for CBMD, it also showed that it is not a sufficient condition. This is the second key finding of the thesis and it was reached by comparing the three sub-periods. During the first sub-period, the monetary policy rate was very high and volatile. At the same time, there was no considerable development of the corporate bond market. In the second sub-period, one could observe that monetary policy was able to lower the base rate and keep it more stable than previously. Although the corporate bond market showed first signs of a positive development, it was still very limited. The constrained development could be explained mainly with three factors. First, most companies had access to cheaper funding sources on the Brazilian stock markets, through the public development bank BNDES, or on international financial markets. Second, sovereign bonds and other financial assets were more attractive to wealth holders (competitiveness effect). Third, there was not a coordinated government program aiming at the promotion of CBMD. Instead, the decreasing base rate was an isolated measure, just like the actions of the BNDES to make benchmark issues and to set itself rules for the acquisition of corporate bonds.

The change in the monetary policy stance identified in the third sub-period was accompanied by several improvements in CBMD, which could be attributed to coordinated government action. Monetary and fiscal policy applied counter-cyclical measures and the development of a domestic market for corporate bonds became an overarching policy goal. As a result, legislation was passed that simplified the issuance process and broadened market access (CVM instruction n.

476/09) and supported the funding of long-term and infrastructure projects through fiscal incentives (law n. 12,431/2011). Moreover, BNDES programs were installed to place benchmark issues and to improve market liquidity as well as the quality of issues on the corporate bond market through its subsidiary BNDESPAR. Furthermore, the joint initiative of the public development bank BNDES together with the private association ANBIMA created with the so-called New Market for Fixed-Income Securities (NMRF) a differentiated market segment that increased market transparency as well as liquidity. In short, without a low and stable monetary policy rate, there was no significant CBMD (first sub-period). Yet, a lower and more stable base rate alone could not achieve CBMD, either (second sub-period). Only when the desired monetary policy stance was accompanied by the fulfillment of other prerequisites, a positive development of the corporate bond market was observed.

The third key finding is related to the influence of the policy variable public finance for development on CBMD. The public development bank BNDES was less engaged in structural policies through the promotion of specific high-technology sectors and/ or SMEs, but mainly facilitated access to favorable financing and funding conditions for the so-called national champions. Even though there was little evidence during the first half of the analyzed period that the placement of corporate bonds was suppressed by public finance for development schemes and despite a few (mostly isolated) measures to foster the buildup of a corporate bond market, generally, the activities of public finance for development institutions hampered CBMD. The empirical evidence revealed several factors with detrimental effects on CBMD that were connected to the Brazilian public finance for development institutions. A major barrier to the evolution of the corporate bond market consisted in the provision of long-term funding at subsidized rates mainly to large corporations. There were strong ties between the state and the market. Not only were thirty of the largest Brazilian companies financed by the public development bank BNDES, its subsidiary BNDESPAR additionally held shares of twenty-two of those companies. What is more, BNDES was the single largest institutional bond holder in the country. Its pro-cyclical behavior, at least during the first two examined sub-periods, was another factor that did not work in favor of CBMD. Moreover, the subsidized interest rate TJLP was set independently of the base rate or, in other words, without taking the current monetary policy goals into consideration. All in all, public finance for development was not able to tap the full potential of its complementary functionality with respect to the corporate bond market and ended up restricting the progress of this market.

From the analysis, it became apparent that the hypothesis – that the state played a major role in the development of the Brazilian corporate bond market, but that it only exerted it passively and not pro-actively to foster CBMD – was true for the most part. In order to evaluate the hypothesis more accurately and verify or falsify it, we need to answer the research questions. First, to find out whether the state was a protagonist, a response is required to the question: What was the role of the Brazilian state in CBMD? This main research question was further specified by asking: How did the state influence CBMD in Brazil through the policy variables? Finally, this research analyzed whether the state hampered or fostered CBMD in this way. By responding the two additional questions, we can

test the hypothesis, because the answers will allow us to classify the more or less active attitude of the Brazilian state towards CBMD. The case study showed that the Brazilian state had a protagonist role in the evolution of the domestic market for corporate bonds throughout the entire period of investigation. I also found that the degree to which the state took on and filled that role changed over the sub-periods.

In the first sub-period, between 1995 and 2003, the analysis showed that the hypothesis was true. During the years between 2004 and 2008, the hypothesis was predominantly true, because merely one out of three policy variables implemented any measures directly aiming at the promotion of CBMD. Public debt management was able to take advantage of the benign economic environment and improved the structure of the public debt. Monetary policy continued to show signs of conservatism, but nevertheless reduced the base rate. Only the public finance for development institutions BNDES and BNDESPAR adopted programs that were purposely directed at the buildup and improvement of the domestic corporate bond market, albeit limited in their effective force. A fundamental difference to the third sub-period was the lack of coordinated policy actions to foster CBMD. In the final sub-period, between 2009 and 2014, CBMD became an important policy goal and various policy measures were adopted to advance the corporate bond market in Brazil. The coordinated actions included the creation of a regular yield curve, which was facilitated by continued improvements in the public debt structure together with a significant reduction of the monetary policy rate. Furthermore, BNDES and ANBIMA constituted the NMRF, as already mentioned above. In addition, regulatory and legal changes were introduced by CVM instruction n. 476/09 and law n. 12,431/2011. In sum, the state behaved less passively and took on a more active role in stimulating the development of a corporate bond market during the last sub-period. Therefore, we can conclude that the hypothesis did not hold anymore in this phase.

4.2 Discussion

The thesis argued that a domestic market for corporate bonds could make an important contribution to the economic development and financial stability of a country. Therefore, it would be crucial to understand how the state influenced CBMD and in what ways it might be able to promote this market development. The lack of knowledge would constrain policy makers in their ability to purposefully implement and adjust policy measures aiming at the advancement of CBMD - hence, the significance of this research.

From the analysis of the policy variables, we learned that public debt management and monetary policy, broadly speaking, act in the interest of CBMD. Public debt management aims at improving the public debt structure, which mainly fosters CBMD through the signaling effect, but also ameliorates the

competitiveness effect. In addition, various gains achieved by public debt management for the sovereign bond market also led to enhancements in the corporate bond market, because of the market creation effect. The full potential of these positive effects might be exploited, if public debt management included CBMD more explicitly in its goals. This could lead to more awareness of the adverse effects that certain types of indexations have on CBMD, possibly resulting in the extinction of LFTs, for example. Monetary policy, similarly, by aiming at macroeconomic stability, while trying to keep the base rate low, helps to advance corporate bond markets. Moreover, I showed that improvements in monetary policy and in CBMD are mutually reinforcing. Corresponding to public debt management, monetary policy should also include CBMD more explicitly in its objectives, in order to exploit the full potential. To cite one example of how monetary policy could promote the development of a corporate bond market more clearly, the central bank could accept corporate bonds (that might need to meet special requirements) as collateral in its repo operations. In short, even though both policy variables sometimes take measures that hamper CBMD, the targets of public debt management and monetary policy are generally consistent with the development of a corporate bond market.

The objectives of public finance for development, the third policy variable, stand more easily in contradiction with the promotion of CBMD. This ambiguity, related to the fact that both are sources of funding, was discussed in the theoretical chapter. In theory, public finance for development institutions and corporate bond markets could also complement each other, but the empirical research revealed that this was not the case in Brazil. Instead, developmentalist state policies aimed at the creation of “national champions”. Some authors, as well as the institution itself, justified the BNDES funding of major companies with the lack of long-term debt markets in Brazil. Yet, is the public development bank actually filling in the gap of long-term funding? Other authors claim the opposite: that Brazilian companies have few options to acquire long-term funding, because of the BNDES activities. It is not easy to answer this chicken-and-egg question, but at least the major corporations that received BNDES funding had alternative funding sources. Thus, we can conclude that the activities of the BNDES hampered the progress of long-term debt markets, such as those for corporate bonds. A related argument concerns the widespread use of subsidized interest rates of public finance for development institutions, which (supposedly) forced monetary policy to tighten its stance. Although there might be some truth to this argument, it does not give a complete answer to the puzzle of elevated interest rates in Brazil. Therefore, this thesis suggests evaluating the situation also from a different perspective, according to which the funding of national champions by the BNDES might be a functional way of alleviating the tight monetary policy stance of the Brazilian central bank.

The great importance of the state in the Brazilian economy and, in particular, the strong ties between the BNDES and major corporations were a controversial issue. In the discussion, the concept of “relationship capitalism”, which led to clientilism, was introduced. Other authors saw the state captured by major corporations, which implied corruption and lobbyism. However, a recent study (Lazzarini et al. 2015) found no empirical evidence for credit misallocation in Brazil. Nevertheless, the BNDES was criticized for its financial support of socially

and environmentally harmful projects, which contradicted its own objectives. In addition, the above cited study by Lazzarani et al. (2015) also could not find any evidence that would support the industrial policy view or, in other words, BNDES funding did not raise the investments of companies. The explanation of the authors is that the public finance for development institution followed a cherry-picking strategy and took the best credits off the market. In fact, the BNDES portfolio had a long-term profile and half of the companies in the portfolio were rated B or better. As a result, the public development bank was able to produce low default rates, but its contribution to the economic and financial development as well as to the society at large arguably remained below potential.

The Brazilian corporate bond market remained relatively underdeveloped in an international comparison, even though first signs of progress could be observed more recently. The empirical analysis provided evidence that the Brazilian state had a protagonist role in the development of a corporate bond market, but for the most part did not actively engage in the promotion of CBMD and mainly exerted its influence passively. As a consequence of the passive stance, the impact of the policy variables at times hampered, at times fostered the evolution of the domestic market for corporate bonds. Even though the general aim of both public debt management as well as monetary policy was in line with the enhancement of CBMD, these policy variables also created barriers. A major reason for these barriers was the failure of clearly defining a policy goal aiming at the promotion of the debentures market. In addition, these policy variables also hampered CBMD due to constrained policy spaces. The objectives of the third policy variable were not as clearly aligned with CBMD, because advancing the domestic market for corporate debentures was not necessarily in the natural interest of public finance for development. In fact, the developmentalist state policies would have to be adjusted in order to be consistent with CBMD.

To complete the circle, we come back to one of the key theoretical findings of this thesis, namely that the advancement of corporate bond markets contributes to the dissemination of the monetary economy. The empirical research found that the improvements in the Brazilian debentures market were relatively limited and that the state economy continued to play a major part in Brazil. From these results we can draw the conclusion that the Brazilian market economy is still characterized by structural heterogeneity. At the same time, one could observe examples of how the two modes of production might converge: the national treasury funding its financial contributions to the BNDES system through sovereign bond issues; allowing the BNDES to issue LFs; and the joint initiative of BNDES and ANBIMA to create the NMRF.

Furthermore, the theoretical chapter emphasized the relevance of funding in the capital formation process and presented corporate bond markets as a possible source of funding. However, it should be clear that the provision of funding is important, independent of its source. Therefore, it might be a functional solution for the Brazilian financial system to rely mainly on public finance for development institutions to provide long-term funding. Yet, one has to be aware of the risks involved, related to rent-seeking behavior, corruption, inefficiencies etc. In light of the recent corruption scandals that shake up the Brazilian society,

one can hope that the BNDES as the major public finance for development institution and its staff live up to their high reputations. All in all, Brazil would probably benefit from continued improvements in corporate bond market development, while its public finance for development institutions could complement the Brazilian financial system by focusing more on structural policy measures, such as supporting SMEs and innovative, high technology sectors.

One of the shortcomings of this research is that the topic of self-regulation and the role of ANBIMA, as well as its main association members, i.e. financial institutions and institutional investors, were not the main focus of the study. ANBIMA was able to secure considerable freedom in organizing and monitoring the debenture market. This leeway in self-regulation implies great responsibilities and risks with respect to the possibly unperceived buildup of financial instabilities. Financial institutions and institutional investors are key players in the Brazilian corporate bond market. It was beyond the scope of the thesis to examine further their strategies, motivations, behaviors and interrelations.

Apart from looking into the topics mentioned above that received little attention in this study, a recommendation for future research is to explore the consequences of the CVM instruction n. 476/09. I suspect that it might either lead to a type of financialization, because most issues were related to already existing loan contracts that were simply turned into tradable debt securities; or it may lead to financial development in the sense of providing capital market access for companies that are still privately held. Thus, CVM instruction n. 476/09 could help these companies to find an entrance to the capital markets, so that they will become publicly owned companies later. As a consequence, several positive effects might emerge, ranging from improvements in their financing options to greater attention towards corporate governance²⁰².

This research showed (i) the importance of a domestic corporate bond market for the economic development and financial stability of a country; (ii) that the Brazilian state strongly influenced the evolution of this market, but for the most part did not actively and purposefully deploy the relevant policy variables; and (iii) how the functionality of the Brazilian financial system could be raised by complementing it with a domestic market for corporate long-term debt securities through the alignment of public debt management, monetary policy, and public finance for development.

²⁰² However, we must not forget that financial development also implies negative effects, as was discussed before.

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Note: According to the interview partners, the interviews were grouped into four categories: university professors (U), associations (A), financial market participants (F), and state institutions (S). The category abbreviations serve, together with a number to make each interview identifiable, as source reference for citations throughout the thesis. Citing an interview partner who belongs to a state institution might be referenced with “S03”, for example.

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Appendix A List of Interviews

Number	Date	Category	Code	Length of interview
1	10/19/10	University professor	U12	2 hours
2	10/20/10	University professor	U01	¾ hour
3	10/21/10	University professor	U02	0.5 hour
4	10/22/10	University professor	U03	¾ hour
5	10/28/10	Association	A01	0.5 hour
6	10/28/10	Financial market participant	F01	1 hour
7	11/8/10	University professor	U04	¾ hour
8	11/9/10	University professor	U05	1 hour
9	11/9/10	Association	A04	1 hour
10	11/10/10	Association	A02	1 hour
11	6/21/11	Financial market participant	F03	1 hour
12	6/28/11	Association	A05	2 hours
13	6/29/11	University professor	U13	1 hour
14	7/8/11	University professor	U14	1.5 hours
15	7/8/11	University professor	U15	2 hours
16	7/11/11	University professor	U06	1 hour
17	7/11/11	University professor	U16	2 hours
18	7/11/11	University professor	U17	¾ hour
19	7/12/11	Financial market participant	F05	1 hour
20	8/17/11	University professor	U07	¾ hour
21	8/17/11	Financial market participant	F04	1 hour
22	8/17/11	State institution	S03	1 hour
23	8/18/11	Association	A03	2 hours
24	8/19/11	Financial market participant	F02	0.5 hour
25	8/19/11	University professor	U08	1.5 hours
26	8/19/11	State institution	S01	1 hour
27	8/1/12	State institution	S02	1 hour
28	8/27/12	University professor	U09	1.5 hours
29	8/27/12	University professor	U10	1 hour
30	8/30/12	University professor	U11	1.5 hours

Appendix B Main characteristics of debenture issues by BNDESPAR

Table 34: First offer in the first program, 2006

Distribution date	Principal (in mio. R\$)	Due date	Coupon	Interest rate at issuance	Dates of interest payment	Rating by Moody's
20.12.2006	600	15.01.2012	IPCA + 6%	IPCA + 8.525%	January 15 th of 2009, 2010, 2011 and 2012	Aaa.br

Source: <http://www.bndes.gov.br/wps/portal/site/home/relacoes-com-investidores/debentures-bndespar> (date accessed: 16.02.2017)

Table 35: Second offer in the first program, 2007

Series	Distribution date	Principal (in mio. R\$)	Due date	Coupon	Dates of interest payment	Rating by Moody's
Fixed rate	30.07.2007	550	01.01.2011	11.2%	January 1 st of 2011	Aaa.br
Indexed to IPCA	31.07.2007	800	15.08.2013	IPCA + 6.8%	August 15 th of 2009, 2010, 2011, 2012 and 2013	Aaa.br

Source: <http://www.bndes.gov.br/wps/portal/site/home/relacoes-com-investidores/debentures-bndespar> (date accessed: 16.02.2017)

Table 36: First offer in the second program, 2009

Series	Distribution date	Principal (in mio. R\$)	Due date	Coupon	Dates of interest payment	Rating by Moody's
Fixed rate	17.12.2009	640	01.01.2013	12.74%	January 1 st of 2013	Aaa.br
Indexed to IPCA	18.12.2009	610	15.01.2015	IPCA + 7.078%	January 15 th of 2012, 2013, 2014 and 2015	Aaa.br

Source: <http://www.bndes.gov.br/wps/portal/site/home/relacoes-com-investidores/debentures-bndespar> (date accessed: 16.02.2017)

Table 37: First offer in the third program, 2010

Series	Distribution date	Principal (in mio. R\$)	Due date	Coupon	Dates of interest payment	Rating by Moody's
Fixed rate	13.12.2010	500	01.01.2014	12.51%	January 1 st of 2014	Aaa.br
Quarterly floating rate	14.12.2010	1.000	01.01.2014	Future contracts of DI + 0.30% *	January 1 st of 2014	Aaa.br
Indexed to IPCA	15.12.2010	525	15.01.2017	IPCA + 6.2991%	January 15 th of 2013, 2014, 2015, 2016 and 2017	Aaa.br

*Quarterly floating rate series			
Capitalization period	Beginning of capitalization period	End of capitalization period	Coupon
1 st	14/12/2010	01/04/2011	11.37%
2 nd	01/04/2011	01/07/2011	12.19%
3 rd	01/07/2011	03/10/2011	12.659%
4 th	03/10/2011	02/01/2012	11.399%
5 th	02/01/2012	02/04/2012	10.709%
6 th	02/04/2012	02/07/2012	9.29%
7 th	02/07/2012	01/10/2012	8.119%
8 th	01/10/2012	02/01/2013	7.56%
9 th	02/01/2013	01/04/2013	7.359%
10 th	01/04/2013	01/07/2013	7.449%
11 th	01/07/2013	01/10/2013	8.45%
12 th	01/10/2013	02/01/2014	9.66%
1 st	13.12.2010	500	11.37%
2 nd	14.12.2010	1.000	01.01.2014
1 st	13.12.2010	500	11.37%
2 nd	14.12.2010	1.000	01.01.2014
1 st	13.12.2010	500	11.37%
2 nd	14.12.2010	1.000	01.01.2014
3 rd	15.12.2010	525	15.01.2017

Source: <http://www.bndes.gov.br/wps/portal/site/home/relacoes-com-investidores/debentures-bndespar> (date accessed: 16.02.2017)

Table 38: Second offer in the third program, 2012

Series	Distribution date	Principal (in mio. R\$)	Due date	Coupon	Dates of interest payment	Rating by Moody's
First	20.04.2012	409	01.07.2016	11.169%	July 1 st of 2016	Aaa.br
Second	24.04.2012	302	01.07.2016	TJ3 + 0.55%	July 1 st of 2016	Aaa.br
Third	25.04.2012	1,289	15.05.2019	IPCA + 5.3999%	May 15 th of 2014, 2015, 2016, 2017, 2018 and 2019	Aaa.br

*Quarterly floating rate series				
Capitalization period	Beginning of capitalization period	End of capitalization period	Base date of calculation of TJ3	Coupon
1 st	24/04/2012	30/06/2012	04/04/2012	9.40%
2 nd	01/07/2012	30/09/2012	02/07/2012	8.36%
3 rd	01/10/2012	02/10/2012	01/10/2012	7.80%
4 th	01/01/2013	31/03/2012	02/01/2013	7.60%
5 th	01/04/2013	30/06/2013	01/04/2013	7.72%
6 th	01/07/2013	30/09/2013	01/07/2013	9.01%
7 th	01/10/2013	02/10/2013	01/10/2013	9.93%
8 th	01/01/2014	02/01/2014	03/01/2014	10.68%
9 th	01/04/2014	30/06/2014	01/04/2014	11.34%
10 th	01/07/2014	30/09/2014	01/07/2014	11.34%
11 th	01/10/2014	31/12/2014	01/10/2014	11.53%
12 th	01/01/2015	31/03/2015	02/01/2015	12.82%
13 th	01/04/2015	30/06/2015	01/04/2015	13.54%
14 th	01/07/2015	30/09/2015	01/07/2015	14.60%
15 th	01/10/2015	31/12/2015	01/10/2015	15.23%
16 th	01/01/2016	31/03/2016	04/01/2016	15.30%
17 th	01/04/2016	02/04/2016	03/04/2016	14.65%

Source: <http://www.bndes.gov.br/wps/portal/site/home/relacoes-com-investidores/debentures-bndespar> (date accessed: 16.02.2017)

Appendix C Short summary (English)

The establishment of a domestic corporate bond market can help to solve common problems in developing and emerging market economies by providing a market for long-term debt securities in local currency, in order to enhance economic development and mitigate financial fragilities. This thesis answers the question of how the Brazilian state influenced the development of a domestic corporate bond market through its actions in public debt management, monetary policy, and public finance for development. The research design follows a mixed method and triangulation approach to combine the results of the conducted field research including expert interviews with those of the descriptive data analysis and the literature review. The analytical framework builds on Post Keynesian theories explaining the processes of capital formation and asset choice in a world reigned by uncertainty. The hypothesis is that the Brazilian state had a protagonist role in the development of the domestic corporate bond market, but only exerted it passively and not constructively.

The theoretical understanding of domestic corporate bond market development in emerging market and developing economies is deepened by this research mainly in three ways. First, the study points out that these economies are usually characterized by structural heterogeneity, which means that only part of their economy functions as a monetary economy and that there are other modes of production, too. In this context, the development of a corporate bond market helps to propagate the monetary economy mode of production. Second, the thesis explains the important role of bonds as a source of (long-term) funding (vs. short-term finance) and, thus, enriches the perspective of Monetary Keynesians. More specifically, bringing the funding step into focus broadens their view of the capital formation process. Third, by spelling out the influences of each of the policy variables on the development of a corporate bond market, the mechanisms at work are clarified. As a result, we are able to assess the role of the state and its impact on corporate bond market development in Brazil, which is my original contribution to knowledge.

The key findings of this research are related to the policy variables public debt management, monetary policy, and public finance for development. Thus, one of the key findings is that the first policy variable, mainly by changing the public debt structure, determines the development of the domestic market for corporate bonds through different effects, namely the market creation effect, the signaling effect, and the competitiveness effect. The second key finding of the thesis is reached by comparing three sub-periods in the empirical research: a low and stable monetary policy rate is necessary for corporate bond market development, but it is not a sufficient condition. The third key finding is related to the influence of the policy variable public finance for development on the development of a corporate bond market. The public development bank BNDES was less engaged in structural policies through the promotion of specific high-technology sectors and/ or SMEs, but mainly facilitated access to favorable financing and funding conditions for the so-called national champions.

Appendix D Kurze Zusammenfassung (Deutsch)

Die Entwicklung eines heimischen Unternehmensanleihenmarktes kann dabei helfen, übliche Probleme in sich entwickelnden und aufstrebenden Volkswirtschaften zu lösen, indem ein Markt für langfristige Schuldtitel in lokaler Währung zur Verfügung gestellt wird, um so die wirtschaftliche Entwicklung zu stärken und finanzielle Instabilitäten abzumildern. Diese Dissertation beantwortet die Frage danach, wie der brasilianische Staat auf die Entwicklung eines heimischen Marktes für Unternehmensanleihen durch sein Vorgehen im öffentlichen Schuldenmanagement, in der Geldpolitik und in der staatlichen Entwicklungsfinanzierung Einfluss nimmt. Das Forschungsdesign folgt einem Ansatz des Methoden-Mix und der Triangulation, um die Ergebnisse der Feldforschung, einschließlich Experteninterviews, mit denen der deskriptiven Datenanalyse und der Aufarbeitung der Fachliteratur zusammenzuführen. Der Analyserahmen baut auf postkeynesianischen Theorien auf, welche die Prozesse der Kapitalbildung und Anlageentscheidung in einer von Unsicherheit beherrschten Welt erklären. Die Hypothese besagt, dass dem brasilianischen Staat eine entscheidende Rolle in der Entwicklung eines heimischen Marktes für Unternehmensanleihen zukam, dass er diese Rolle aber nur passiv und nicht konstruktiv ausfüllte.

Das theoretische Verständnis von der Entwicklung eines heimischen Unternehmensanleihenmarktes in sich entwickelnden und aufstrebenden Volkswirtschaften wird durch diese Forschungsarbeit vor allem in dreierlei Hinsicht vertieft. Erstens hebt die Studie hervor, dass diese Volkswirtschaften normalerweise von struktureller Heterogenität geprägt sind. Das bedeutet, dass nur ein Teil ihrer Marktwirtschaft geldwirtschaftlichen Prinzipien folgt und es darüber hinaus weitere Produktionsweisen gibt. In diesem Zusammenhang trägt die Entwicklung von Unternehmensanleihenmärkten zur Verbreitung der geldwirtschaftlichen Produktionsweise bei. Zweitens erklärt diese Arbeit die wichtige Rolle der Unternehmensanleihenmärkte als Finanzierungsquelle und erweitert damit die monetärkeynesianische Perspektive, weil der Fokus auf die langfristige Finanzierung („Funding“ im Gegensatz zum kurzfristigen „Finance“) im Kapitalbildungsprozess gelenkt wird. Drittens werden die Wirkmechanismen aufgedeckt, indem die Einflüsse der verschiedenen Politikvariablen auf die Unternehmensanleihenmarktentwicklung genau durchdekliniert werden. Im Ergebnis sind wir in der Lage, die Rolle des Staates sowie seinen Einfluss auf die Entwicklung eines heimischen Unternehmensanleihenmarktes zu evaluieren.

Die zentralen Forschungsergebnisse stehen in Verbindung mit den Politikvariablen öffentliches Schuldenmanagement, Geldpolitik sowie staatliche Entwicklungsfinanzierung. Dementsprechend ist eine zentrale Erkenntnis, dass die erste Politikvariable vor allem durch ihre Anpassungen der Schuldenstruktur die Entwicklung eines heimischen Marktes für Unternehmensanleihen bestimmt, indem sie unterschiedliche Effekte ausübt, die als Marktbildungseffekt, Signalwirkung und Wettbewerbseffekt bezeichnet werden. Zu einer zweiten wichtigen Erkenntnis dieser Dissertation führt der Vergleich von drei Teilzeitabschnitten im Rahmen der empirischen Analyse: ein niedriger und

stabiler geldpolitischer Leitzins ist eine notwendige, aber keine ausreichende Bedingung für die Entwicklung eines heimischen Marktes für Unternehmensanleihen. Das dritte zentrale Forschungsergebnis ist mit dem Einfluss der staatlichen Entwicklungsfinanzierung auf die Unternehmensanleihenmarktentwicklung verbunden. Die staatliche Entwicklungsbank BNDES legte den Schwerpunkt ihrer Aktivitäten weniger auf strukturpolitische Maßnahmen wie die Förderung von bestimmten Hochtechnologiesektoren und/ oder von kleinen und mittelständischen Unternehmen, sondern ermöglichte hauptsächlich den so genannten nationalen Champions Zugang zu günstigen Finanzierungsbedingungen.