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Bye, Bye Financial Repression, Hello Financial Deepening: The Anatomy of a Financial Boom

João Manoel P. De Mello
Márcio G. P. Garcia

DEPARTAMENTO DE ECONOMIA
www.econ.puc-rio.br

Bye, Bye Financial Repression, Hello Financial Deepening:

The Anatomy of a Financial Boom[1]

João Manoel P. De Mello and Márcio G. P. Garcia[2]

Department of Economics - PUC-Rio

Abstract:

Since the conquest of hyperinflation, with the Real Plan, in 1994, the Brazilian financial system has grown from early infancy to late adolescence. We describe the process of maturing with emphasis on the defining features of the Brazilian financial system over the last 20 years: 1) stabilization and the subsequent financial crisis; 2) universality of banks; 3) market segmentation through public lending; 4) institutional improvement. Further paraphrasing Díaz-Alejandro (1984), we raise some hypotheses on why, this time, the financial boom has not (at least yet) turned into a financial crash.

JEL Codes: G21; G28; G32

Keywords: Financial repression; financial deepening; stabilization; stability; financial crisis; stability.

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[2] E-mails: jmpm@econ.puc-rio.br and mgarcia@econ.puc-rio.br, Websites: https://sites.google.com/site/joaompdemello/ and www.econ.puc-rio.br/mgarcia.

1. Introduction

Financial intermediation has grown from infancy to late adolescence since stabilization in 1994, from tight repression to a financial boom. In 2000, bank credit amounted to 25% of GDP, and market-based lending was trifle, only 15%. Except for occasional spikes, this picture remained unchanged until 2003, when financial intermediation started to build momentum, driven by consumer credit. By the beginning of the 2010 decade, credit-to-GDP ratio reached 45%. More importantly, market-based lending drove most of the financial deepening in the years 2000 (see Chart 1).

Chart 1 –Credit (% of GDP)

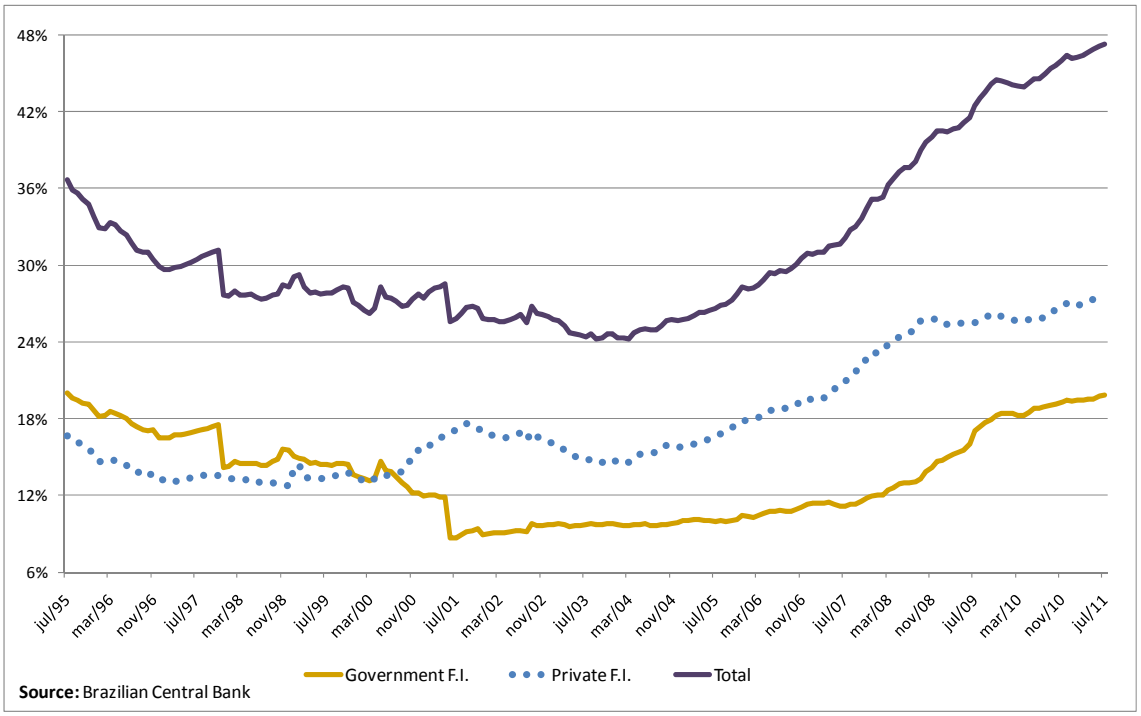
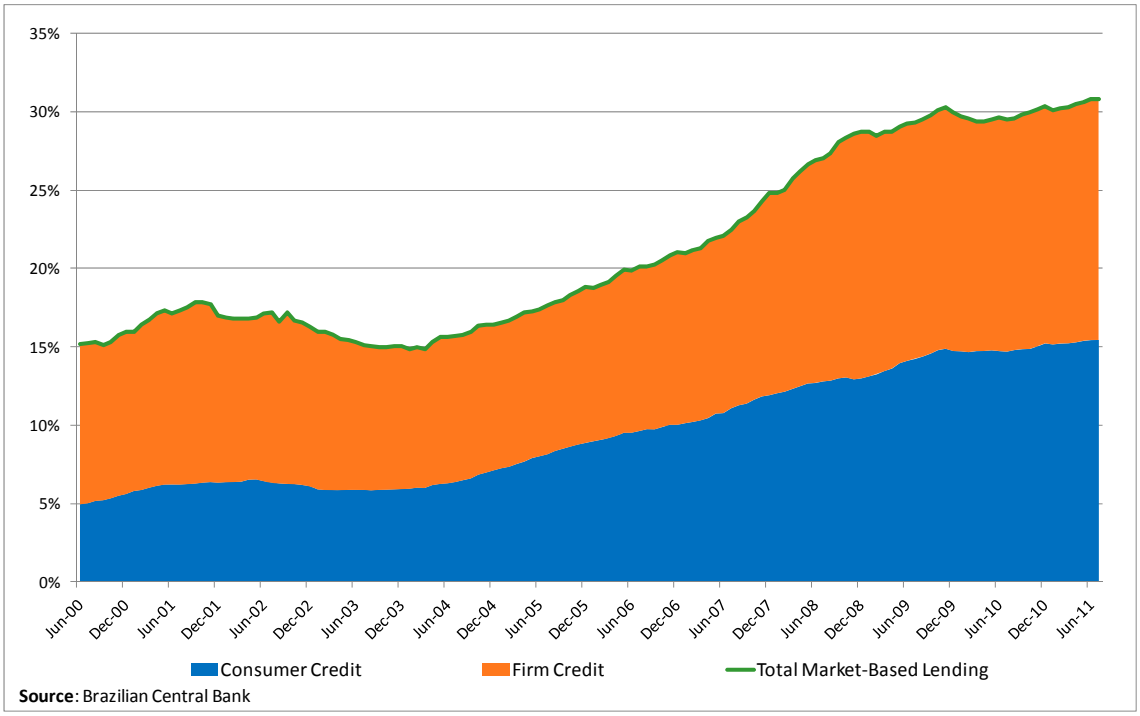


Chart 2 – Market-based Lending (% of GDP)



Source: Brazilian Central Bank

In this paper we first describe in detail the anatomy of this regime change from financial repression to financial boom. Based on the description of the anatomy, we raise hypotheses about the causes of financial repression and financial deepening, which are informative for developing countries in general. We then go one step further and explain why the Brazilian financial boom of the years 2000 has not turned into a financial crash, as in many other instances of financial liberalization in the Latin American past (Díaz-Alejandro [1984]). The solidity of the Brazilian financial intermediation so far is informative for prudential measures in both emerging and mature economies.

2. A Brief of Description of the Brazilian Banking System

The Brazilian banking industry is a universal bank system composed of different types of banks, with diverse ownership structure (having an important presence of government-owned banks), and a strong intervention of the federal government, in the form of prudential regulation (as in most banking systems), price regulation (not so common), and direct quantity

regulation (through earmarked loans). Inasmuch as banking systems are comparable,[3] the Brazilian industry is somewhat similar to Germany's in terms of structure.

2.1 The Players

Formally, the financial system is composed of:[4]

1. Deposit receiving institutions. As the name suggests, these are institutions franchised by the Central Bank (the banking regulator) to receive demand deposits from the general public, although most also receive time deposits (Certificates of Bank Deposits) and savings deposits. They can be privately-owned (both domestic and foreign), or government-owned, at both federal and state levels. They are sub-divided in:

    a. *Commercial Banks.* Depository institutions whose main source of funding are demand and time deposits (but are allowed to issue commercial paper and borrow in the interbank market). A distinctive characteristic is that they cannot perform the functions of investment banks.

    b. *Multiple Banks*. These are the equivalent of Universal Banks. Ordinarily, they are Multi-Bank Holding Companies that perform both the function of commercial and investment banks. All ten largest private banks and the largest government-owned bank are Multiple Banks.

    c. *Caixa Econômica Federal (CEF).* The first peculiarity of the Brazilian banking system. Caixa Econômica is a Federally-owned Commercial Bank whose mandate involves (in a rather ill-defined way) prioritizing lending and financing projects and programs in social assistance, health, education, and the like. It can, however, supply standard banks' loans, such as consumer credit, and working capital. It is enfranchised with several monopolies, such as lending with industrial or personal pawning collateral. More importantly, however, Caixa is a major player in recruiting savings deposits and mortgage lending. Finally, Caixa is the depository institution of the resources of Fundo de

[3] John Hicks used to compare financial systems to snowflakes or fingerprints, all are very similar but no two are exactly equal.
[4] Taxonomies are normally arbitrary. Whenever relevant we emphasize the real market-based segmentation of banks.

Garantia por Tempo de Serviço (FGTS), the mandatory unemployment insurance fund.[5]

d. *Credit Cooperatives*. Equivalents of Credit Unions in United States. Typically, credit cooperatives are formed by members of a merchant guild or labor union. They can only receive deposits from cooperative members. These institutions are not relevant market players.

e. *Investment Banks.* Private financial institutions whose purpose is to exclusively finance companies by temporary acquisition of shares and corporate bonds, and providing firms with short and long-run loans*. They are not allowed to receive time deposits.* They are also suppliers of financial services such as underwriting, financial advising, valuation for Mergers and Acquisitions, etc.

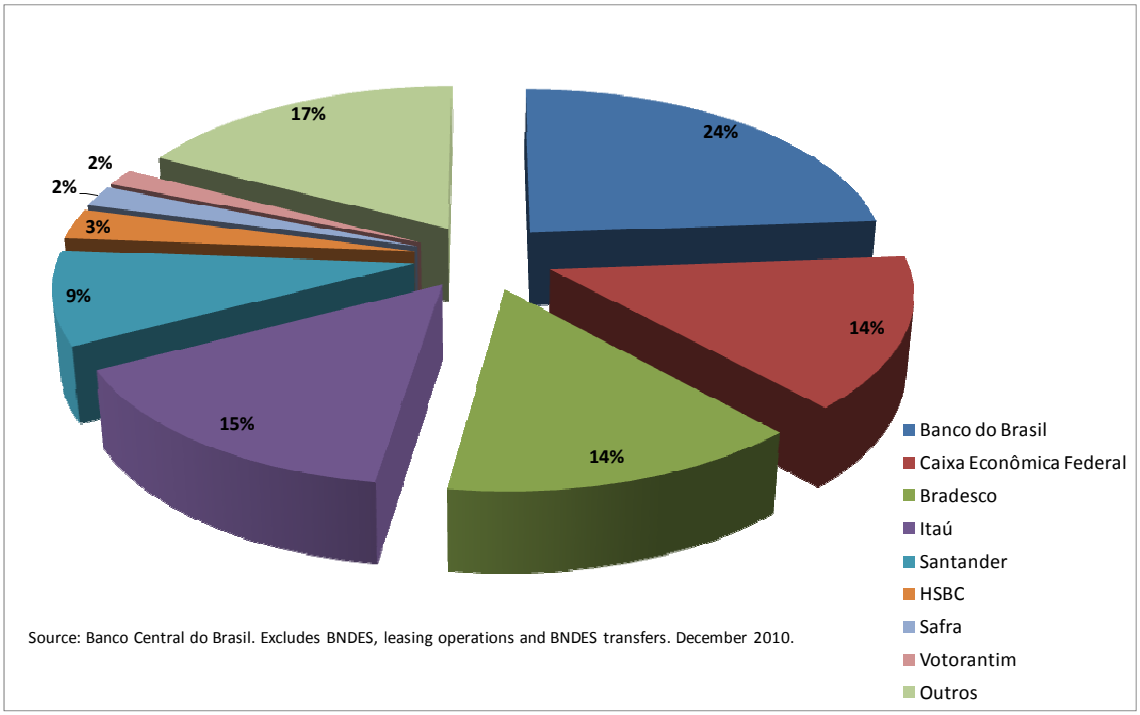
f. *Development Banks*. Development Banks are state-owned (i.e., owned by the states, not the federal government) or federally-owned banks whose main function is to make long term loans to "development targeted projects". The most important development bank is, by far, the *Banco Nacional de Desenvolvimento Econômico e Social (BNDES)*. Because of its importance in long-term financing, we dedicate a sub-Section on BNDES alone.

Chart 3 shows the market structure of the Brazilian Banking System (BBS), considering only commercial banks (public and private) and CEF. On top of what appears in Chart 3, the National Development Bank, BNDES, currently provides more than one-fifth of total credit (20.97%). Four important characteristics of the BBS emerge from chart 3. A major part of the system is composed of "universal" banks: the four main commercial banks - BRADESCO, BB, ITAU-UNIBANCO and SANTANDER – are universal banks in the sense that they all have commercial and investment banking and well as major insurance operations. Together they hold just a little under 65% of all banking assets. Brazil has a dual banking system, in which public and private commercial banks co-exist. Furthermore, BNDES alone holds almost 21% of all credit assets, as previously mentioned. As we show below the dual nature of Brazilian banking is not inconsequential for the performance of intermediation. Finally, the structure is

[5] The FGTS, created in the mid-1960s, substituted the previous employment stability scheme. It is formed by 8% of the gross (pre-tax) wage bill (formal sector, which is about 60% of total employment). Resources are deposited in personal accounts at the Caixa Econômica Federal and can be withdrawn in case of unemployment, to buy houses (the first under someone's name), and in case of terminal diseases. Annual interest rates on FGTS deposits are regulated at Taxa Referencial (TR) plus 3%. TR is an index computed as the average of 30-day CDs issues by a sample of 30 financial institutions with largest issues of CDs. A reduction (*redutor*) is then applied to this average rate.

concentrated: the 5 largest banks (including CEF) hold 78% of all assets. Concentration suggests (but not implies) that competitive conduct may be a problem.

Chart 3 – Market Structure by Credit Assets



Source: Banco Central do Brasil. Excludes BNDES, leasing operations and BNDES transfers. December 2010.

3. Structural Determinants of the Brazilian Credit Market Performance

Until the early 2000s, the performance of the BBS was poor both in terms of quantities and prices. Total domestic credit was no more than 30% of GDP. Credit by government-owned banks represented more than half of the financial sector. In terms of prices, in 2000 the average interest rate on a bank loan was 57% annually in nominal terms when inflation was 6%. The average spread over the SELIC rate was 40 percentage points. For consumer lending the average spread was 55 percentage points. We document a major financial expansion from 2003 onwards, but interest rates are still quite high, suggesting that borrowers are very liquidity-constrained (especially consumers).

There were no lack of culprits for this poor performance: 1) high basic rates; 2) history of macroeconomic instability; 2) the dual nature of intermediation; 3) high and distortionary taxes on financial intermediation; 4) high reserve requirements; 5) informational frictions and the lack of an institution to deal with them; 6) market power.

3.1 The dual nature of BBS: BNDES and earmarked lending

The government intervenes directly in financial intermediation through two mechanisms. First, it owns a major fraction of banking assets through BNDES, BB and CEF. Second, it determines that a fraction of some types of deposits must be employed in financing certain sectors (earmarked lending).

3.1.1 Direct production in Commercial Banking and Earmarked Credit

The earmarked credit scheme has several implications for pricing and competition. First, it increases the marginal funding cost for the banks and thus renders the non-earmarked credit segment more expensive; this phenomenon has already been documented by analysts at the Brazilian Central Bank (e.g., Costa and Lundberg [2004], Costa and Nakane [2005]). Second, the effect on funding cost for the Banco do Brasil's non-earmarked loans is strong because 50% of its funding is allocated to the non-earmarked segment. Third, this scheme differentiates BB from private commercial banks as a result of its focus on a segment that private banks often avoid serving. Differentiation softens competition and thus leads to higher prices. Fourth, Arrigoni et al (2011) provide strong evidence that the presence of government-owned banks softens competition because they operate with higher costs.

Similar to the S&L institutions in the U.S. in the 1980s, savings accounts in Brazil pay low regulated interest rates. They carry an implicit complete guarantee from the National Treasury. In general, banks find the funding for savings accounts to be inexpensive. However, 65% of the funding is earmarked to mortgages. In net terms, private banks achieve better results when they choose not to focus on savings because they find long-term mortgages expensive even with the subsidy in savings accounts.

Costa and Nakane (2006) show that market-based lending cross-subsidize earmarked lending. They also estimate the impact of earmarked lending on spreads of non-earmarked loans. They find 7.6% of the spread is due to the mortgage and rural credit. Thus, the dual nature of the financial intermediation has an adverse impact on market-based lending through two channels.

3.1.2 BNDES

BNDES is a federally held development bank. Its stated goal is to support and fund projects that are strategic for development. In practice, it was for a long time the main source of long-term finance for Brazilian companies. The BNDES's main source of funding is the Fundo de Amparo ao Trabalhor - FAT (Workers' Aid Fund). The FAT's resources (besides the return of

previous investments) come basically from the contribution to PIS-PASEP (a federal tax) and serve two purposes: they are used to pay for short-term aid to unemployed workers, and to provide BNDES with funds to be used in its credit operations and development programs.[6] These funds are earmarked to finance BNDES's lending operations.

With total assets amounting to US$312.6 billion[7] in 2010, BNDES is one of the largest development banks in the world.[8] Financing large, long-term projects is BNDES's main task. From 1999 to 2006, roughly 36% of its loans were classified as large projects, which normally have maturities longer than 7 years. Another 30% were classified as small projects, which are usually equipment financing and working capital for medium-sized firms. The remaining 24% is export financing. Most of BNDES' disbursements are directed to large firms, which otherwise would not have full access to financial markets. Chart 4 shows how BNDES disbursements are divided between firm sizes: on average, three-fourths are destined to large firms.

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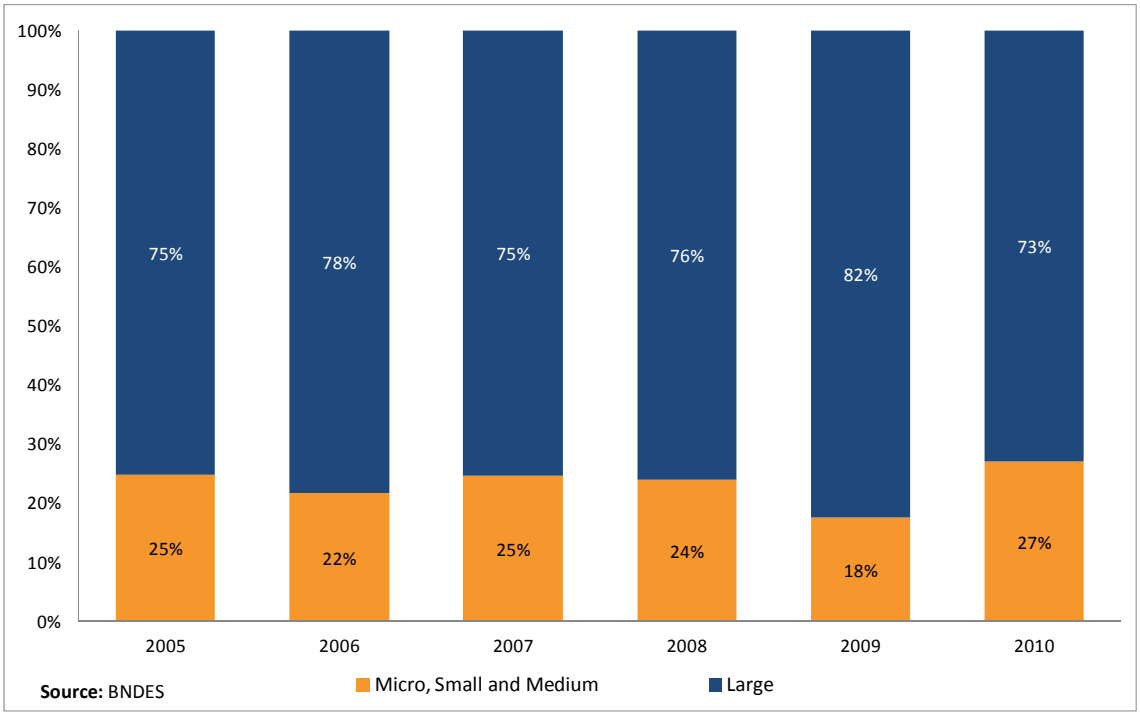
[6] Fundo de Amparo ao Trabalhador (FAT) is a fund whose resources come from PIS- PASEP. In general, the contribution to PIS-PASEP is paid by firms according to the following rule: 0.65% of the gross revenue and 1% of the total payroll of the firm. The FAT is managed by a council whose members are chosen by the federal administration. The allocation of the fund's capital is decided by this council, nonetheless, according to the law (Brazilian Constitution, art. 239, § 1), at least 40% of the FAT's annual revenues must be directed to BNDES. In 2007, the FAT's annual revenue was R$ 27.9 billion (USD 14.7 billion) and in December 31 2007, the FAT's capital reached R$ 105.66 billion (USD 55 billion).

[7] Figures obtained from the Central Bank of Brasil. R$ 520.8 billion converted by 31/12/2010 BRLUSD exchange rate of 1.6662.

[8] For a quick comparison, the Inter-American Development Bank (IDB) had US$87.2 billion, and the Korea Development Bank (KDB) had US$125.3. These figures are in 2010 dollars, and come from the Korea Development Bank (₩ 141,699 billion converted by 30/12/2010 KRWUSD exchange rate of 1130.6) and Moody's Investors Service.

Chart 4 – BNDES Disbursement per Firm Size

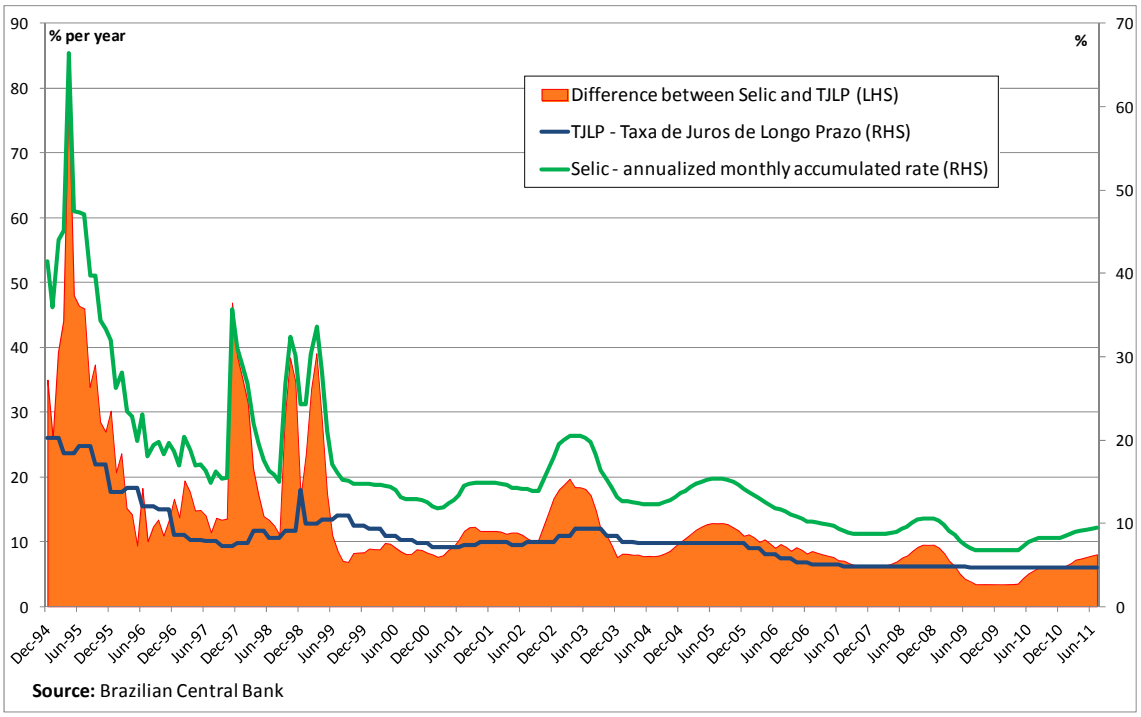


Source: BNDES

Concerning origination, BNDES has a dual system: direct and indirect. Most large long-term projects and large-firm financing originated directly. On the other hand, most small projects originate in commercial banks, and are funded with BNDES's resources. Besides its lending activities, BNDES also holds equity stakes at companies, through its subsidiary BNDESPAR. BNDESPAR holds both stocks of publicly traded companies, and private equity minority stakes. BNDES's lending rates are not determined by the normal market price system. Several special pricing schemes are used, the most important being the *Taxa de Juros de Longo Prazo* (TJLP), a subsidized long-term rate. Chart 5 shows how the TJLP evolved compared with the basic interest rate (Selic). The difference between the Selic and the TJLP gives an idea of the subsidy involved in BNDES loans. BNDES´ development goals have been contested because, instead of financing only development projects, it has recently lent to blue-chip companies, which have access to other funding sources, but prefer access to BNDES's subsidized funds. This implies that most of the low-risk, AA companies remain outside the normal banking system. Market-based financial intermediation reflects this fact in terms of high-spread.[9]

[9] As it is now, one is unable to tell the direction of causality. Does the BNDES need lend at preferential rates because the normal banking system performs poorly? Or does the normal banking system present higher than normal spreads because, among other reasons, BNDES lends at preferential rates to blue-chip companies?

Chart 5 –TJLP vs. Selic



Source: Brazilian Central Bank

Some commentators defend this strategy with the following argument. If BNDES were to fulfill its development goals by lending to projects whose private value was negative but whose net present social value project was supposedly positive, it would be wasting taxpayers' money. These commentators doubt the ability of the bank to evaluate fuzzy concepts such as social return. In this case, pressuring BNDES to truly fulfill its "role" as a development bank would only lead to poor underwriting. Worse still, lending would be even more subject to political influence because accountability is fuzzier when lending to opaque borrowers.

The BNDES's defenders emphasize its role in long-term financial intermediation for industrialization in poorly developed banking systems. Indeed the state presence, via its forced savings programs such as FAT and FGTS, has been the main source of long-term finance. Again, one is unsure about the direction of causality because we do not have the counterfactual experiment of observing what would have been market-based intermediation in the absence of state intervention. International experience provides little guidance because successful examples of both state-pushed and private based development financing exist.

In any case, the sheer size that BNDES has currently achieved poses a fiscal challenge. Having exhausted its natural sources of cheap funding, the aforementioned forced savings funds, BNDES has resorted in the last three years to subsidized finance (at the TJLP rate) from the Brazilian Treasury, who floats (very expensive) debt to grant such financing. If BNDES

keeps expanding as it did since the 2008 crisis, it will surely constitute a major threat to the solvency of the Brazilian government.

3.2.1 Banking under Hyperinflation: Deposits and Bonds, Little Credit

Until 1988, banks in Brazil were, at least formally, non-universal. According to the financial reforms of the military government in 1964 and 1965, banks were financial institutions specialized in five separate business lines. Commercial banks could only provide short term credit funded by demand deposits. *Financeiras* (Financial Companies) could provide consumer credit and personal loans. Investment Banks were supposed to provide the (always missing) private long term credit to investment. Development Banks were state-owned banks that provided subsidized long term credit to firms, BNDES being the main one at the federal level, with several others at the state or regional levels. *Sociedades de Poupança e Empréstimo* (S&Ls) would provide mortgages, supervised and guaranteed by the late National Housing Bank (BNH)[10].

Notwithstanding the law's objectives, the banking system that actually developed was, in fact, much less segmented. As recognition of this fact, in 1988, the Brazilian Central Bank (BCB) introduced a unified accounting plan (COSIF) for all financial institutions, and the National Monetary Council (CMN) created the Multiple Bank (universal bank). Since then, it became legally possible to have financial conglomerates that operated under a holding company capable of offering almost all financial services. A multiple bank was defined as a financial institution that could operate no less than two and no more than four of the five former segmented financial institutions. The other major reform was to scrap the old charter system. Until then, to create a bank, one would have to purchase the charter (*carta-patente*) from another existing bank. After 1988, the CMN and the BCB could freely issue charters for new banks.

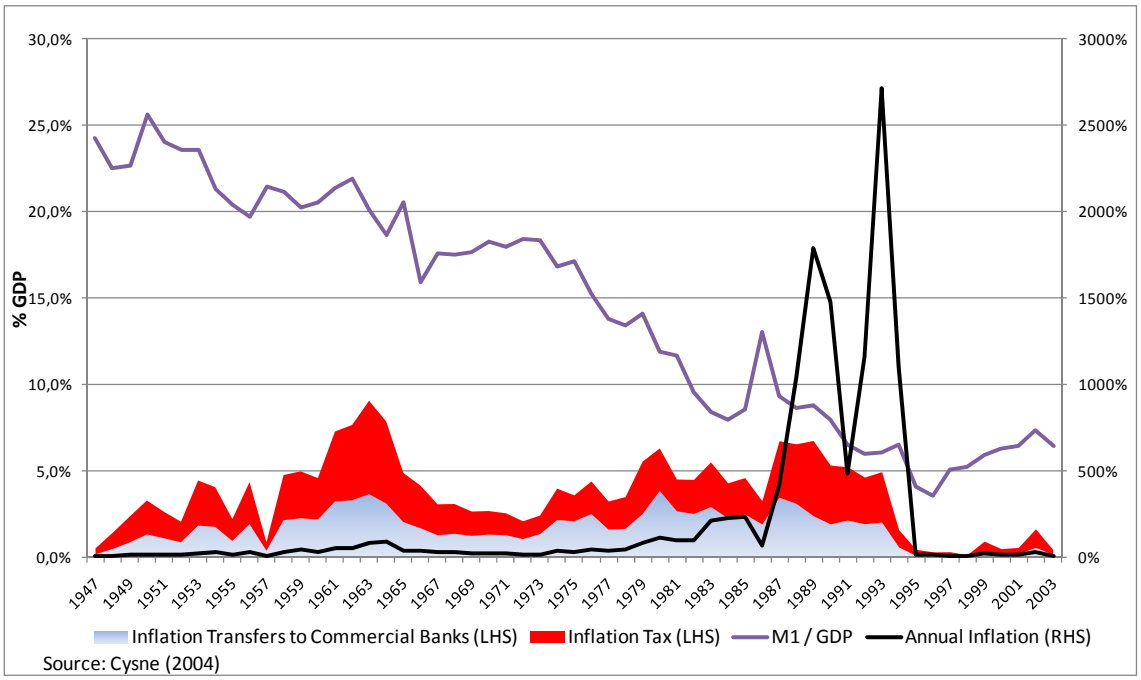
Brazil was one the last countries to conquer inflation, in 1994. Hyperinflation in Brazil was a very protracted process. During its several years, banks had to learn how to do financial intermediation in a hyperinflationary environment. They did so essentially by providing firms and individuals a close substitute for money, a domestic currency substitute[11] (DCS). Banks provided DCS investing heavily in governments securities (short-term or indexed) and paying interest in special deposit accounts, which had the similar check-writing privileges to regular non-interest-bearing checking accounts. Many times this was accomplished by computerized

[10] Carneiro, Garcia and Werneck (1993).
[11] Carneiro and Garcia (1994).

systems (not widely available in the 80s) that automatically transferred funds from interest-bearing deposit accounts to the regular checking account when a check was cleared.

As hyperinflation evolved, Brazilian banks' profitability became more and more dependent on the so-called banks' inflation float, i.e. the spread between the nominal interest rate paid by government securities and the average interest rate paid on the deposits. Under hyperinflation, the float of a non-interest bearing demand deposit is huge. Therefore, banks overinvested in branches to be able to capture more deposits, as well as in information technology, to better manage their bank reserves so that almost no excess reserves were left at the BCB. Silva (2009) shows that, under hyperinflation, banks invest much more to collect deposits than to provide credit. A typical Brazilian bank branch of the hyperinflation years was constituted of too many officers offering all kinds of different investment options and deposit accounts and no loan officer to be seen. Chart 6 shows the large transfer made to banks through the bank float, as well as how this revenue source almost but disappeared after the Real Plan.

Chart 6 – Brazil: Inflation Transfers to Commercial Banks and Inflation Tax (% of GDP)



Source: Cysne (2004)

Between 1987 and 1994, when inflation was finally stabilized with the Real Plan, the number of banks with a commercial portfolio doubled, with a corresponding increase in the number of branches. This was the result of high profitability of the bank float. In the final hyperinflation years, 1990-93[12], the float provided the banking sector with as much as 4% of

[12] Between 1989 and 1993, annual inflation was above 1,000% every year, except 1991.

GDP in revenues[13], a third of the total. This revenue source all but disappeared after the Real Plan stabilized inflation. Within four years after the Real Plan, the number of bank branches shut down exceeded 1,000. Banks merged, transformed themselves in other financial institutions or were closed by the Central Bank.

3.2.2 The Real Plan, Banking Crisis and Bail-out

We start by offering a brief description of the plan that finally conquered hyperinflation. The Real Plan was the last of a sequence of plans that tried to stabilize inflation in Brazil. It introduced a new currency, the real (BRL). The Real Plan aimed at reducing fiscal deficits, modernizing the economy and mitigating the distortions that arose from previous price freezes.

The first and most important component of the Real Plan, achieving fiscal balance, was negotiated in Congress, unlike all previous failed plans. The *Programa de Ação Imediata* (Program for Immediate Action) was designed to focus on fiscal imbalances that would arise when the *seigniorage* revenues fell. A significant adjustment came in the beginning of 1994 with the *Fundo Social de Emergência* (Emergency Social Fund), a way to suspend part (20%) of states' and municipalities' earmarked revenues. Despite its ambitious reform goals, the government ended up targeting what was available at that time to generate fiscal revenues, and it increased taxes on financial intermediaries. Regarding monetary policy, the printing press was shut down and extremely high interest rates became the norm. A initial ceiling for the exchange rate was set at R$ 1,00, but the confidence in the plan, together with the extremely high interest rates appreciated the new currency to levels significantly below the nominal parity.

The incomes policy part of the Real Plan was unlike all the previous failed plans, which had resorted to price freezings. A new unit of account URV – Unidade Real de Valor (Real Unit Value) was created months before the launching of the new currency, establishing a parallel currency to the cruzeiro real. The idea was for it to be temporary and while the cruzeiro real suffered from hyperinflation, the URV would not. Prices were quoted both in URVs and cruzeiros reais, but payments had to be made exclusively in cruzeiros reais. The URV worked like a shadow currency that had its parity to the cruzeiro real defined, since it was 1-to-1 with the American dollar. Therefore, a daily conversion of the URV/cruzeiro novo (the old currency) rate was quoted. In this manner, when the new currency was launched, replacing the URV, all economic agents were used to quote their prices in the new currency.

[13] Souza e Silva (2009), p. 12.

For the banking system, the Real Plan was a very strong shock, and, at least in the beginning, a mixed blessing. It ended a substantial revenue source for banks (the bank float), while, at the same time, opening many great new opportunities. However, before banks could profit from those, a banking crisis occurred.

Banking system stability was a major collateral damage of monetary stabilization. As the famous investor Warren Buffet put it: when the tide is low, one sees who has been swimming naked. The high tide in Brazilian banking was inflationary floating, whose revenues hid holes in banks' balance sheets. Fragility, more often than not, was produced by straight fraud and corruption, as in the case of Banco Nacional.

The stabilization disciplining effect was felt harder, but not exclusively, by state-owned public banks. In December, 1994, BANESPA, owned by the state of São Paulo, was put under receivership by the federal banking authority (the Central Bank). BANERJ, the bank owned by the state of Rio de Janeiro, and many others, also went into receivership and were later privatized.[14] Some private banks fared no better, including two large private banks, Banco Nacional and Banco Econômico.[15]

The bail-out programs of the private and provincial banks cost 8.7% of GDP, with the majority of costs due to province-level banks (more than six times larger than private banks). In addition, a ghost that had haunted the mortgage market during years finally was recognized during the Cardoso administration. It cost another 8.7% of GDP. All in all, the cleaning-up of the Brazilian financial system cost 17.4% of GDP during the Cardoso government.[16]

With the instability of the banking system, and the government incurring in big costs to save it, it is not surprising that financial intermediation did not take off before 2000. Chart 1 shows a longer picture. A brief moment of euphoria occurred after stabilization, most likely driven by a demand shift due the large income transfer to lower income classes. After that, financial intermediation stumbled continuously until 2000.

[14] To cite the two most important examples; the federal government auctioned off BANESPA to SANTANDER in 2000. BANERJ was acquired by Itaú.
[15] Banco Nacional was acquired by UNIBANCO, turning it into the 3rd largest private bank in the country. Unibanco acquired the "good" banks, purged of unrecoverable assets that remained with the federal government.
[16] Lundberg (2011).

3.2.3 Macroeconomic Turbulence: Asia, Russia and the Phantom of Lula[17]

Another reason it took so long for financial intermediation to take off is the sequence of international crises that hit Brazil. Starting with the shock waves of the Mexican crisis (1994) that hit Brazil in early 1995, there were the crises in 1997 (Asian), 1998 (Russia and LTCM), 1999 (Brazilian crisis and devaluation), 2001 (Argentina default and contagion), and 2002 (Lula´s campaign).

By May, 2002, economic policy-makers already knew a confidence crisis was under way. In the domestic bond market, a major premium was required from the Treasury to be able to sell bonds with maturity beyond the inauguration of the next President (January 1st, 2003). In time, all rollovers were being done either with bonds maturing until the end of 2002, or with repos.[18]

The crisis was diagnosed as political, i.e. investors feared the presumed market-**un**friendly candidate Lula[19]. With that in mind, economic policy-makers decided that the medicine had also to be political, for **current** interest rate hikes or fiscal policy measures would be of little use, since what scared investors were major **future** regime changes of the new administration took. Nevertheless, both the primary surplus and basic interest rate were increased, although not enough to counteract the increase in country risk.

Armínio Fraga, head of the Central Bank at the time, took action by talking to all presidential candidates, so that all would agree to keep sensible economic policies, and the crisis be averted. Simultaneously, the economic team also talked to foreign investors and the IMF. Finally, an agreement was reached between the IMF and the candidates: they were to keep sensible policies in return of large disbursements from the IMF. The IMF program was designed to provide good incentives to the candidates. Even though the loan totaled USD 30 billion, only USD 6 billion would be disbursed in 2002. The remaining USD 24 billion would be received by the next President, given that the IMF program conditions continued to be fulfilled.

[17] This subsection draws heavily from Garcia (2007).

[18] Repurchases agreements are instruments used by the Brazilian Central Bank to place public debt for shorter periods. The typical use of Repos is for liquidity management. During crises, however, given market unwillingness to roll over maturing bonds, Repos were being used to effectively roll over the debt, thereby significantly shortening the public debt average maturity.

[19] The Workers' Party (PT) had, until then, mostly embraced market-unfriendly economic policy recommendations. For example, a few years before, Lula had participated in a "referendum" to know whether or not the Brazilian people wanted the foreign debt to be repaid. Interestingly enough, for the first time in history, the Brazilian government has now become a net creditor in international financial markets.

When the crisis reached its peak in October, the monetary authority raised the Selic rate by 300 basis points. However, such measure was not nearly enough to avert a capital flight. The idea was to limit the secondary effects of the exchange rate pass-through to domestic inflation. Later, in the first two months the new BCB governor, Henrique Meirelles, would raise the Selic rate up to 26.5%.

When Lula won the election, it became clear that he would keep the three basic tenets of Brazilian macroeconomic policy—large primary fiscal surplus, inflation targeting and floating exchange rate—, and that he would not default on the debt. Markets regained confidence, and the crisis was averted without catastrophic losses (and large gains for those who purchased Brazilian assets amidst the crisis). Although GDP growth was low, Brazil grew more than 4% during the two year period (2001-02).

Given the state of affairs in 2002, it was hard to imagine then how the economic events would play out in the following years. The sensible economic policies kept by Lula´s administration, together with a extremely favorable international outlook, that almost trebled Brazilian terms of trade until 2011, kept, as much as possible, international crises at bay. Even in 2008, the effects on the Brazilian economy were small. All this opened up room for the financial boom.

4. The Financial Boom

Chart 1 shows the unequivocal increase in financial intermediation in Brazil during the years 2000. What explains such increase? Was it accompanied by an increase in risk taking by banks? Or was it driven by institutional improvements? Understanding the main driving forces behind the deepening of the Brazilian financial sector provides insights not only about Brazil, but also about other similar countries facing financial booms.

The specific mechanisms behind the 2000s boom are: 1) banks had been deprived of inflationary float from the pre-stabilization period, and had to look for other sources of revenue; 2) through the bank lending channel, decreases in basic interest rates reduced cost of funding for banks, i.e., a reduction in marginal costs (see Chart 5)[20]; 3) institutional

[20] The high equilibrium interest rate in consumer lending suggests serious liquidity constraints on borrowers. In this case, one would imagine that credit demand would be rather inelastic, shutting down the bank lending channel. However, Coelho et al (2010) document the importance of the bank lending channel in Brazil.

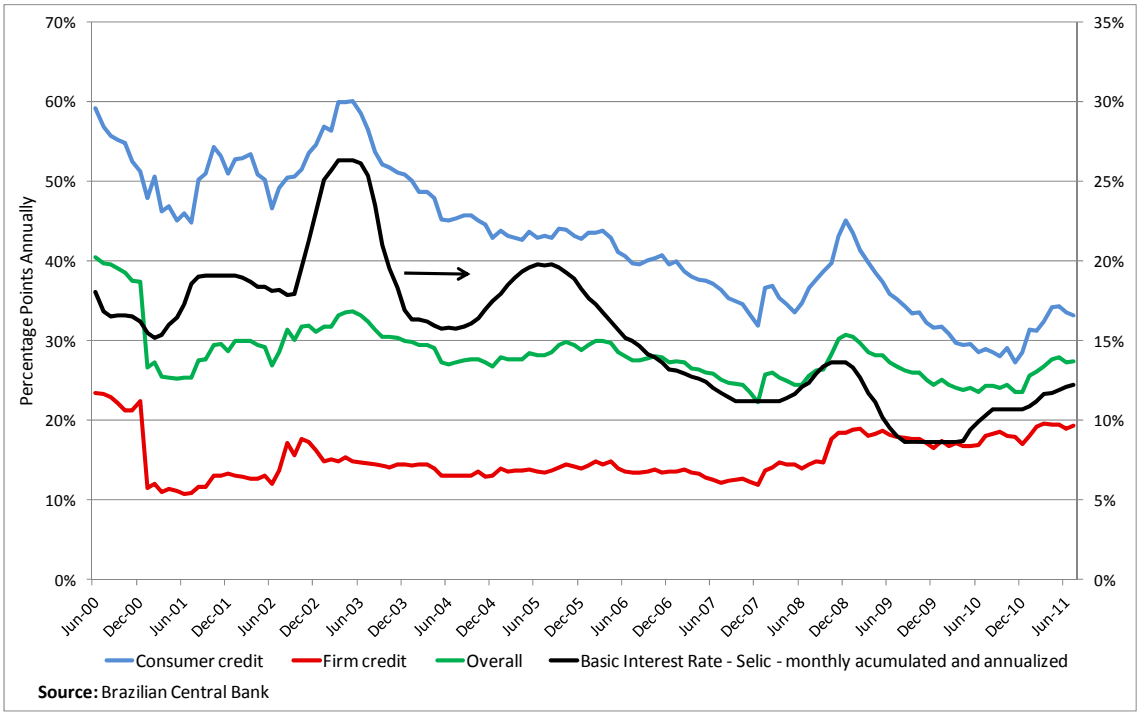
improvements that reduce both the fixed and sunk costs of banking operations, as well a marginal costs; 4) potential improvements in credit market competition, as banks moved their intermediation business away from government bonds to consumer and banks credit. 5) institutional change that led to a significant improvement in market-based capital markets. Of course, through the demand channels of monetary policy, reducing basic interest rates boost investment and consumption above and beyond the credit market supply channel, but as we will show, we have less reason to believe this had a first-order impact.

Different supply explanations have different implications for the stability of the banking sector. Does the supply shift expand the extensive or the intense margin? Expansions on the extensive margin imply the inclusion of worse marginal borrowers? Do Expansions on the intense margin produce excessive leverage? Financial inclusion due to institutional improvement tends to have little impact on stability. Improvements due to relaxation of monetary policy, as we have learned, tend to increase fragility.

Most of the above mechanisms had more of supply than a demand flavor. The dynamics of interest rates suggest a supply shift. Chart 7 depicts the evolution of bank spreads and basic rates. First, spreads, although very high in levels, have fallen almost steadily after 2003 (except for late 2008, the peak of the global financial turbulence). The cost of funds (measured by the basic interest rate set by the Central Bank) has also fallen steadily after 2003. Thus, the main marginal cost has fallen, margins have fallen, and quantities have increased, a pattern more compatible with demand than supply.

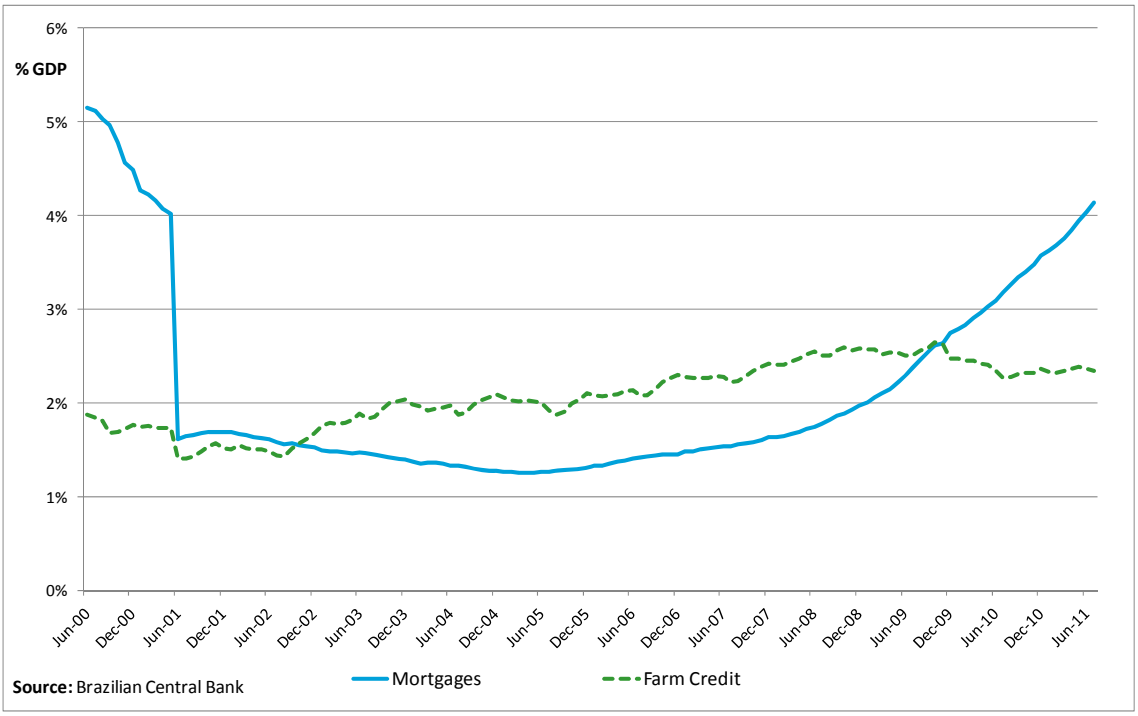
Earmarked lending is further evidence on the supply character of the 2000s boom. Chart 2 shows a marked increase in market-based lending. Charts 8 and 9 show that earmarked and BNDES lending have been somewhat flat during this period, increasing only in 2008 as a policy response to the 2008 credit crunch (see Section 5). Demand movements are likely to affect all types of credit.

Chart 7 – Bank Spreads and Basic Rate



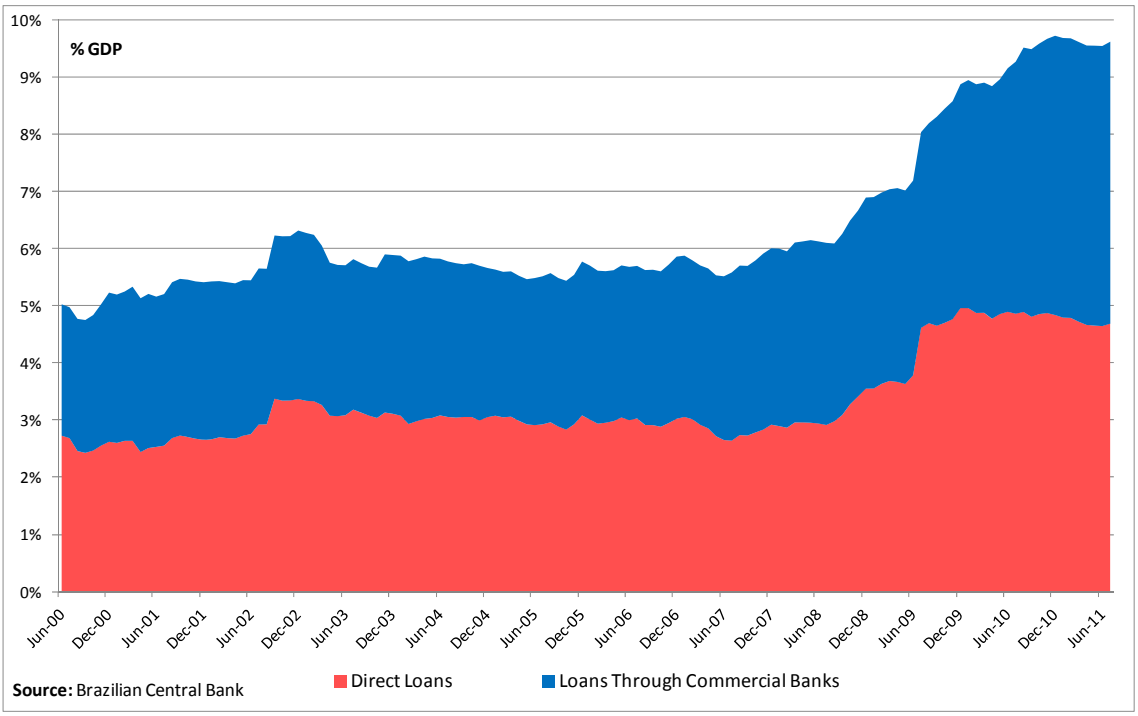
Source: Brazilian Central Bank

Chart 8– Earmarked Operations (%GDP)



Source: Brazilian Central Bank

Chart 9– BNDES Credit



Source: Brazilian Central Bank

Before we move to the specific institutional improvements, we put the financial boom in Brazil into international perspective.

4.1 Brazil vis-à-vis the World

Table 1 shows the relative position of 32 countries for which data was available for both 2003 and 2008 on the World Bank dataset (*World databank)*. In 2003, domestic credit by the banking sector was 29% of GDP in Brazil. In 2008, it was 54% of GDP, a significant improvement as already shown in Charts 1 and 2[21]. In 2003, the size of the Brazilian banking sector was way below the median size among the 32 countries in our sample. In 2008, Brazil was right at the median. Not surprisingly, Brazil improved its relative position, from 20th to 17th in the ranking. Although improving, the BBS was mid-sized in 2003 as well as in 2008. However, Table 1 is silent about the size of the BBS given the institutional development.

[21] We are not sure why the World Bank numbers differ from those produced by the Brazilian Central Bank. Nevertheless, they show similar trend.

Table 1 – Domestic Credit by the Banking Sector (% of GDP)

TABLE 1: Domestic Credit by the Banking Sector (% of GDP)					
Country	Year is 2003	Ranking	Country	Year is 2008	Ranking
United States	184	1	Denmark	218	1
Japan	181	2	United Kingdom	210	2
Canada	167	3	United States	190	3
Switzerland	157	4	Switzerland	165	4
Denmark	152	5	Japan	164	5
Hong Kong SAR, China	149	6	Hong Kong SAR, China	143	6
United Kingdom	143	7	Canada	129	7
China	127	8	Sweden	127	8
Malaysia	119	9	Australia	127	9
Sweden	101	10	Thailand	113	10
Thailand	100	11	China	104	11
Australia	99	12	Malaysia	101	12
Israel	85	13	Chile	97	13
Chile	78	14	Israel	90	14
Egypt, Arab Rep.	61	15	United Arab Emirates	81	15
Saudi Arabia	55	16	Saudi Arabia	55	16
United Arab Emirates	51	17	Brazil	54	17
Iran, Islamic Rep.	36	18	Czech Republic	53	18
Czech Republic	32	19	Poland	50	19
Brazil	**29**	**20**	Iran, Islamic Rep.	46	20
Poland	28	21	Egypt, Arab Rep.	43	21
Indonesia	23	22	Russian Federation	41	22
Colombia	22	23	Romania	38	23
Russian Federation	21	24	Colombia	34	24
Peru	21	25	Nigeria	34	25
Mexico	16	26	Turkey	33	26
Turkey	15	27	Indonesia	27	27
Nigeria	14	28	Peru	25	28
Romania	14	29	Venezuela, RB	22	29
Algeria	11	30	Mexico	21	30
Argentina	11	31	Argentina	14	31
Venezuela, RB	9	32	Algeria	13	32
Mean	72			83	
Median	53			54	
Standard Deviation	59			60	

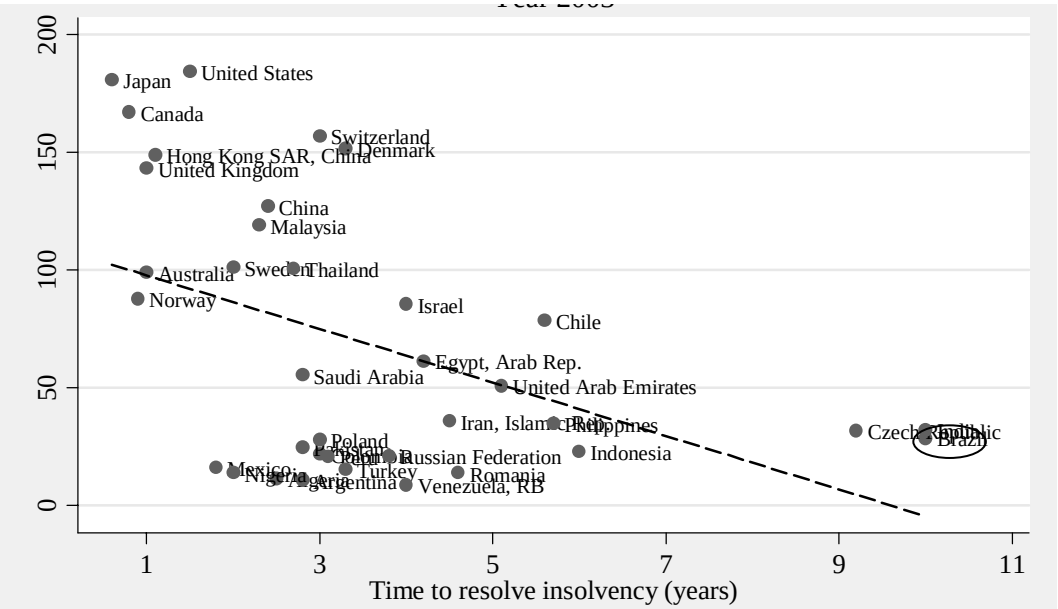
Charts 10 and 11 are informative on the size of the Brazilian banking sector given its institutions. The horizontal axis contains a measure of institutional development the number of years to resolve insolvency, a measure of the quality of bankruptcy law and courts. We interpret it as a *proxy* for the level institutional development of credit markets.

Caution must be exercised in interpreting these simple correlations based on cross-country variation. With this *caveat in mind*, the faster it takes for creditor to appropriate assets under bankruptcy, the larger the banking sector, as expected. In 2003, Brazil, along with Czech Republic, was a negative outlier: it took 10 years for insolvency resolution.

Correspondingly, the bank sector was small. In 2008, due to the new bankruptcy law, things improved significantly and Brazil moved to the middle of the pack. In both cases, Brazil seems to be roughly where it should be in terms of the simple linear prediction. The same pattern arises if we use a different proxy for credit market institutional development, private credit bureau coverage (% of adults).

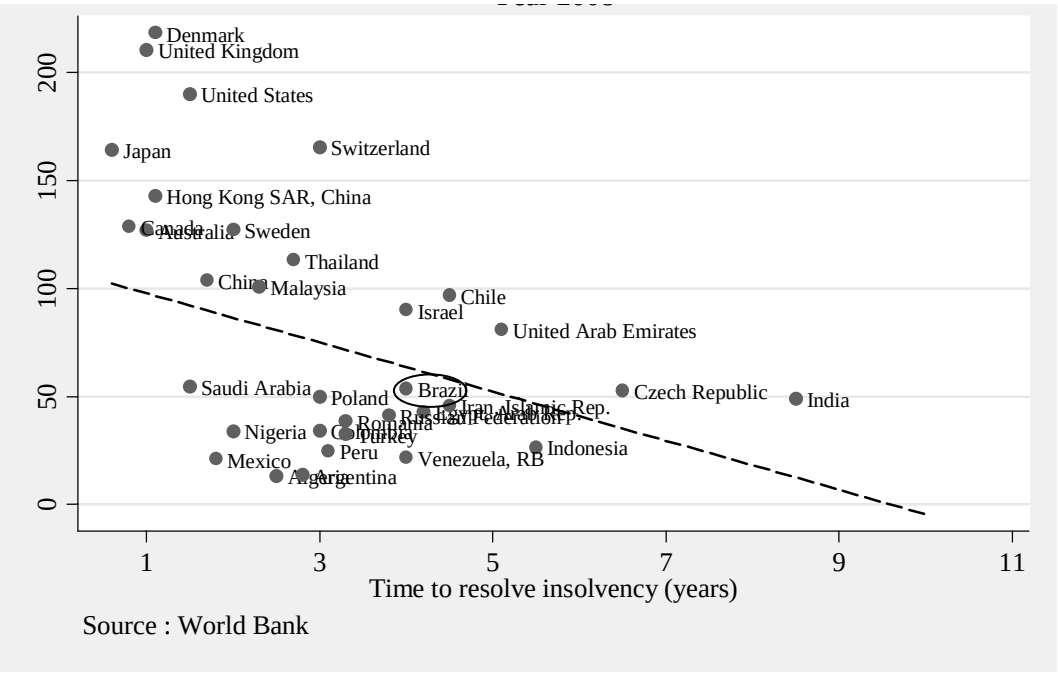
In sum, given its institutional settings, Brazil was neither over nor under financially penetrated, both in 2003 and 2008. One thing is clear though: institutions improved, and that certainly explains a major part of expansion of credit markets after 2003.

Chart 10 – Domestic Credit by the Banking Sector (% of GDP) – Year 2003



Source : World Bank

Chart 11 – Domestic Credit by the Banking Sector (% of GDP) – Year 2008



Source : World Bank

4.2 Micro-level Institutional Improvements

Several micro-level institutional improvements amounted to a major supply shift during the 2000s. Emblematic of a new preoccupation with the micro-level impediments to financial deepening, Brazil's Central Bank in 1999 began to systematically study the determinants of the very high spreads in credit operations. We provide a non-exhaustive list with only the two most important improvements: payroll lending and the new bankruptcy law.[22]

4.2.1 Payroll Lending[23]

Payroll lending to public-sector retirees and public servants has existed in Brazil since early late 1990s. Private-sector retirees and employees were excluded.[24] In December 2003, congress passed a bill that stipulated the regulations for underwriting payroll loans to private-sector retirees and employees (Law 10,820, 2003).

[22]Another important development was the introduction of *Alienação Fiduciária* for assets other than financial securities. *Alienação Fiduciária* allows for the transfer of collateral ownership to lenders until the final payment of the loan. No hard evidence is yet available, but the sharp improvements in the pricing of automobile loans suggests a significant impact of *Alienação Fiduciária*.

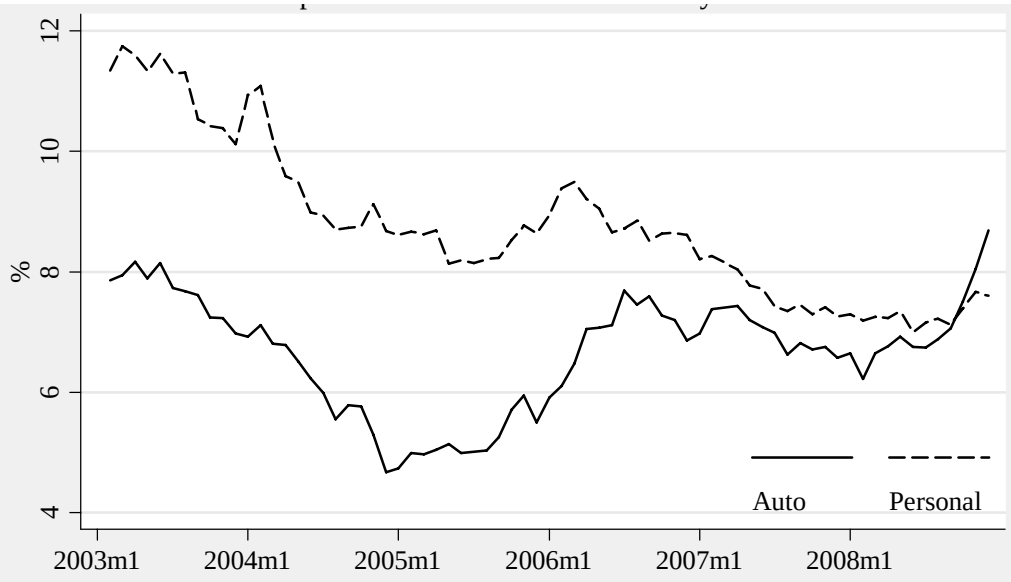
[23] This Sub-section draws heavily from Costa and De Mello (2008) and Arrigoni, De Mello and Funchal (2011).

[24] The stability of the future income stream is crucial for payroll deduction to be reliable as a guarantee. However, the law had little impact during the early 1990s because of macroeconomic instability that hindered the advance of financial intermediation in general.

The law regulates the procedures through which commercial banks underwrite payroll loans to private-sector employees and to those receiving social security benefits from the *Instituto Nacional do Seguro Social* (INSS), the federally run pay-as-go pension system. Among other regulations, the law mandates that the principal and interest amount to no more than 30% of the borrower's income. INSS beneficiaries constitute the largest market for payroll lending (roughly 50% in 2008).

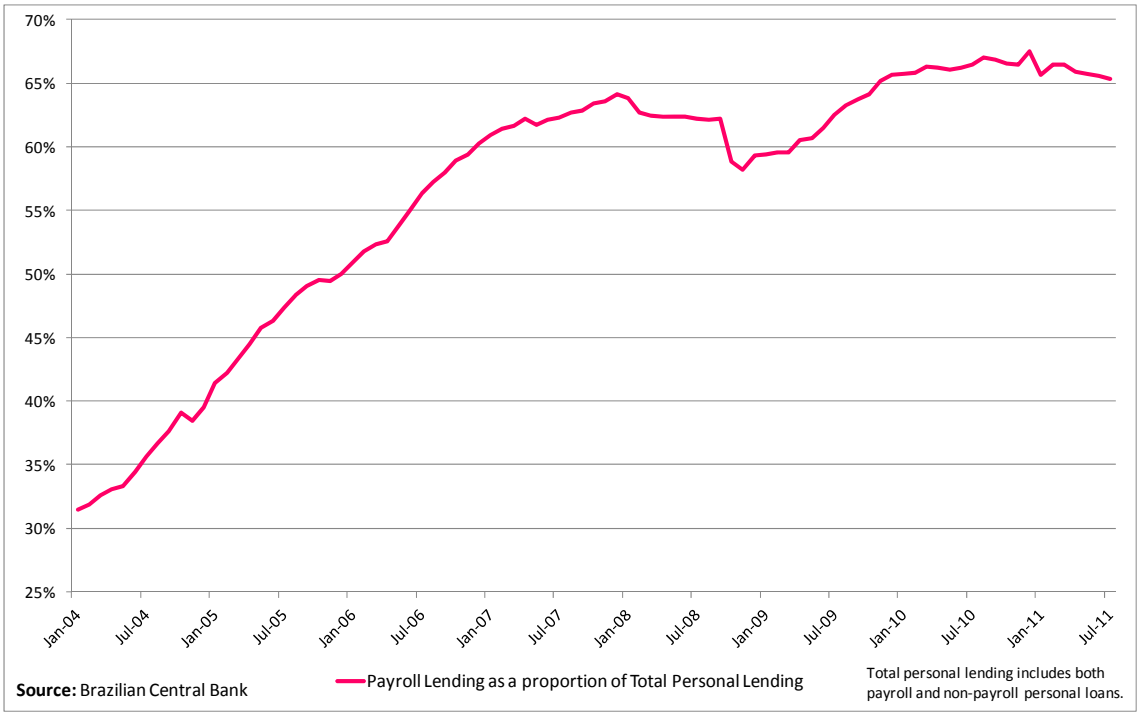
Chart 13 illustrates the impressive impact of payroll lending. Loans underwritten under this category soared, both in absolute and relative terms.

Chart 12 - Delinquency Rates: Auto versus Personal Loans (Proportion of Loans more than 30 Days Overdue)



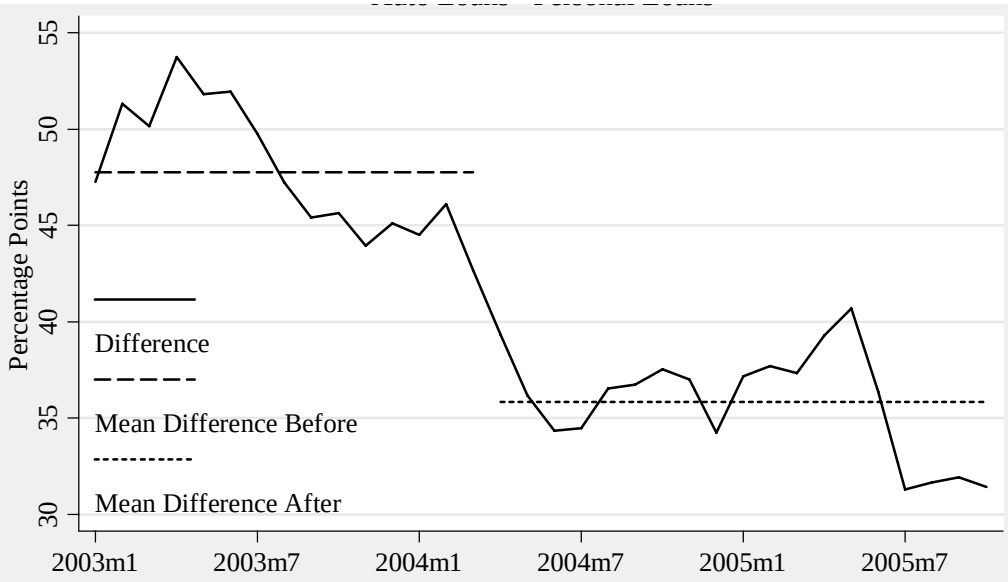
Source: Arrigoni et al (2011) using data from the Banco Central do Brasil

Chart 13 – Payroll Lending as a Proportion of Total Personal Lending



Crucial to the success of payroll lending was judicial security about the effective enforcement by courts. Costa and De Mello (2006) show the impact of an early adverse judicial decision forbidding the use of future income as collateral. Upper courts' decisions later established the secure jurisprudence on the issue, allowing the expansion of payroll lending. Excluding judicial risk, lending to INSS retirees involves sovereign risk and risk of death (in the absence of inheritance), the latter being largely diversifiable. The value of secure collateralization can be seen in Charts 12 and 14. Chart 12 shows the delinquency ratios on payroll loans and auto loans, for comparison. The chart speaks for itself: the reduction in payroll lending delinquency, both in absolute and relative terms. The counterpart in terms of prices, nor surprisingly, shows a marked decline.

Chart 14 – Difference in Yearly Interest Rates: Auto Loans – Personal Loans



Source: Arrigoni et al (2011) using data from the Banco Central do Brasil

4.2.2 The New Bankruptcy Law

In February 2005, congress approved the New Bankruptcy Law (Nova Lei de Falências).[25] For credit markets, the most important change brought by the new legislation concerns the order of debt seniority. By the old law, the federal, state and municipal governments were senior to any debtor. Seniority applied to both taxes and social security debts. Following the government came labor liabilities, and only then came ordinary creditors.

The new law changes seniority. Now, labor liabilities are senior to any other. Then come fiscal debts *and* debtors with so-called real collateral with the same status. Real collateral means a physical asset, not a third-party guarantee.

Although there is little precise measurement of the effects of the New Bankruptcy Law, it is widely believed that the law pushed credit supply upwards and, therefore, is one of the contributing microeconomic factors behind the recent boom in credit markets.[26]

4.2.3 Alienação Fiduciária for Automobile Loans

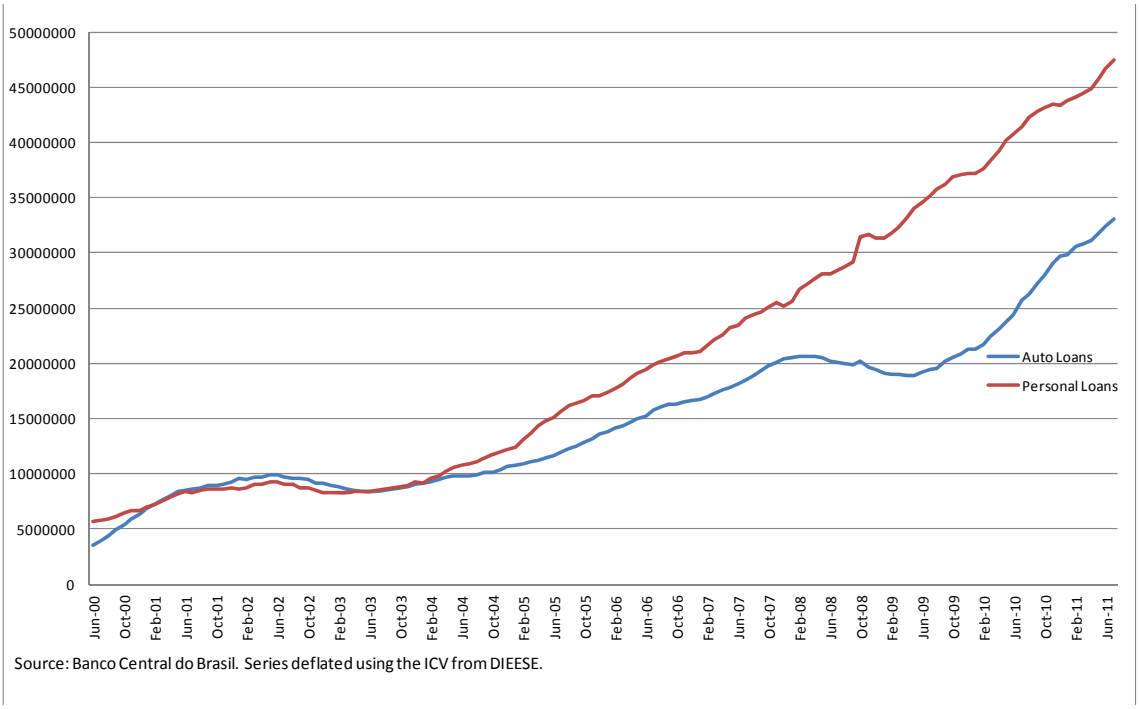
The *Medida Provisória* 2.160-25 from August 2001 regulates *Alienação fiduciária*. When an asset is under *Alienação Fiduciária,* its property lies with the creditor until the loan is paid in full (although the control of the asset lies with the borrower). It is similar to leasing.

[25] Lei 11.101 and Lei Complementar 117, both from February 17th 2005.

[26] See Araújo and Lundberg (2004) for a thorough account of the New Bankruptcy Law. Rodrigues, Takeda and Araújo (2004) provide some indirect empirical evidence on the impacts of the new bankruptcy law by studying the impact of real collateral on both credit quantities and interest rates.

Although the MP is from 2001, judicial security was instrumental to its effectiveness. In 2004, it became clear that judges could authorize the sale of the asset once the borrower becomes delinquent. Under the old system, the sale was prohibited until the borrower had exhausted all judicial resources. For automobiles loans, whose underlying asset depreciates fast, the old system all but made the guarantee worthless. Chart 17 shows an increase in the stock of auto loans starting in the beginning of 2004. Although less pronounced than the increase in personal loans (nearly tenfold between 2000 and 2011), the stock of auto loans increased more than six times throughout the years 2000s. The increase in auto loans is much more pronounced than the increase in private domestic credit in general (Chart 2).

Chart 15 – Auto versus Personal Loans (in R$ thousands of July 1994)



Source: Banco Central do Brasil. Series deflated using the ICV from DIEESE.

4.2.4 Institutional Advances in Capital Markets: the *NOVO MERCADO*

Market based long-term financing has improved over the last decade. For decades, private capital markets were as irrelevant in practice as mechanisms for long-term financing. Financial intermediation, especially long-term, was mainly led by the public sector, either through BNDES or direct investment by the government. Despite the establishment of an independent regulatory body – the CVM (Comissão de Valores Mobiliários) - in 1976, and the modernization of the legislation with regard to the duties and liabilities of the intermediaries and issuers, capital markets remained fledging throughout the 1980s and 1990s. Perhaps because, despite these institutional improvements, protection of minority shareholders

remained weak.[27] In addition, the high-inflation environment, and the existence of compulsory savings schemes, were not particularly conducive for long-term private non-mandatory savings.

After 1994, stabilization and additional institutional improvements led to a major improvement in private capital markets. Among many such improvements, the highlight was the establishment of BOVESPA NOVO MERCADO in 2000, a listing segment with rules in line with international standards for corporate governance.[28] Currently there are four listing segments: Novo Mercado, Level 2, Level 1 and Traditional, in decreasing order of degree of compliance with good practice of corporate governance. Table 2, borrowed from Garcia (2011), summarizes the differences in requirements.

Table 2: Comparison of the Listing Segments on the BM&FBovespa exchange

	BOVESPA MAIS	NOVO MERCADO	LEVEL 2	LEVEL 1	TRADITIONAL
Minimum Percentage of shares in circulation (free float)	25% free float until seventh year of listing, or minimum liquidity conditions	At least 25% of free float	At least 25% of free float	At least 25% of free float	No rule
Characteristics of shares issued	Only ON shares can be traded and issued, but the existence of PN is permitted	The existence of ON is permitted	The existence of ON and PN is permitted (with additional rights)	The existence of ON and PN is permitted	The existence of ON and PN is permitted
Board of Management	Minimum of three members (in accordance with legislation)	Minimum of five members, of which at least 20% must be independent	Minimum of five members, of which at least 20% must be independent	Minimum of three members (in accordance with legislation)	Minimum of three members (in accordance with legislation)
Annual Financial Statements to International Standards	Optional	US GAAP or IFRS	US GAAP or IFRS	Optional	Optional
Concession of Tag Along	100% for ON shares	100% for ON shares	100% for ON shares 80% for PN shares	80% for PN shares (in accordance with legislation)	80% for PN shares (in accordance with legislation)
Adoption of Market Arbitration Chamber	Obligatory	Obligatory	Obligatory	Optional	Optional

Source: Garcia (2011)

[27] Garcia (2011) writes: "In many companies, most of the shares had no voting rights, which allowed a minority to control the management and frequently generated inefficiencies. Various cases of expropriation (tunneling) of the "minority majority" by the "controlling minority" were not properly controlled." In fact, Dyck and Zingales (2003) estimate that in the 1990s private benefits of control in Brazil were the highest in the world.

[28] Among the other improvements are: 1) increased penalties for non-compliers, and the establishment of the Terms of Undertaking, in which the investigated or accused party, without admitting culpability, agrees to cease practicing the activities considered illicit by the CVM. See Garcia (2011).

After the initial period of macroeconomic instability in the early 2000s, NOVO MERCADO caught on after 2003. Charts 16 through 18 depict the consequences of stabilization and institutional improvements. Chart 16 depicts the evolution of total equity market capitalization. Total market capitalization increased more than sevenfold from 2003 through 2011.

Chart 16 – Market Capitalization

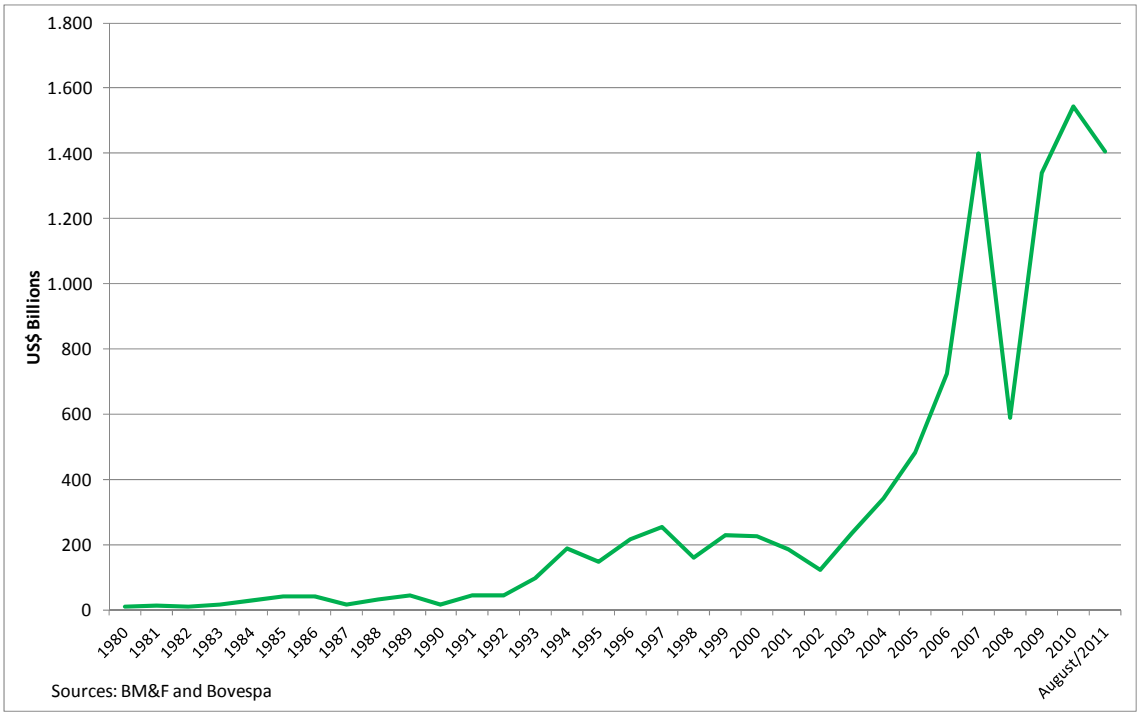


Chart 17 – Initial Public Offerings and Average Daily Trading Volume on the Bovespa Exchange

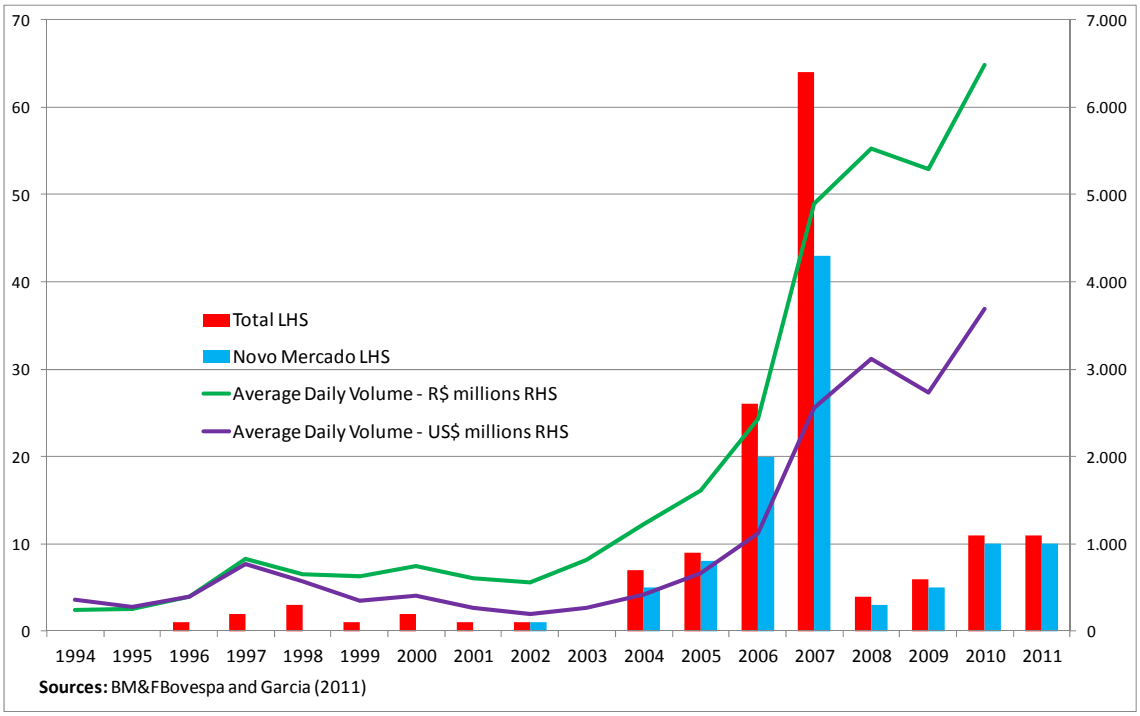
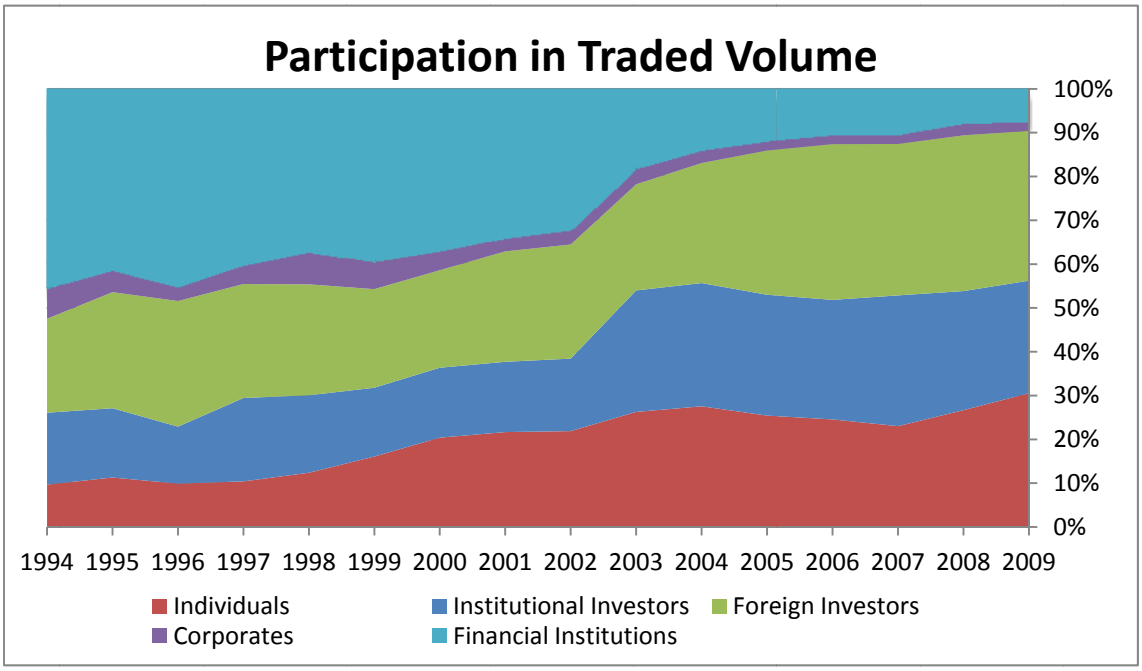


Chart 17 shows two facts. The increase in market capitalization was accompanied (possibly caused) by a sevenfold jump in Initial Public Offerings. Most of new public firms listed in NOVO MERCADO, which has stricter listing rules. Volume traded soared. Finally, Chart 18 depicts the participation by type of investor. The relative increase in participation by foreign investors and individuals suggest that institutional improvements indeed explains much of the deepening of market-based capital markets during the years 2000s.

Chart 18 – Share in the Volume Traded on the Bovespa Exchange



Source: Garcia (2011)

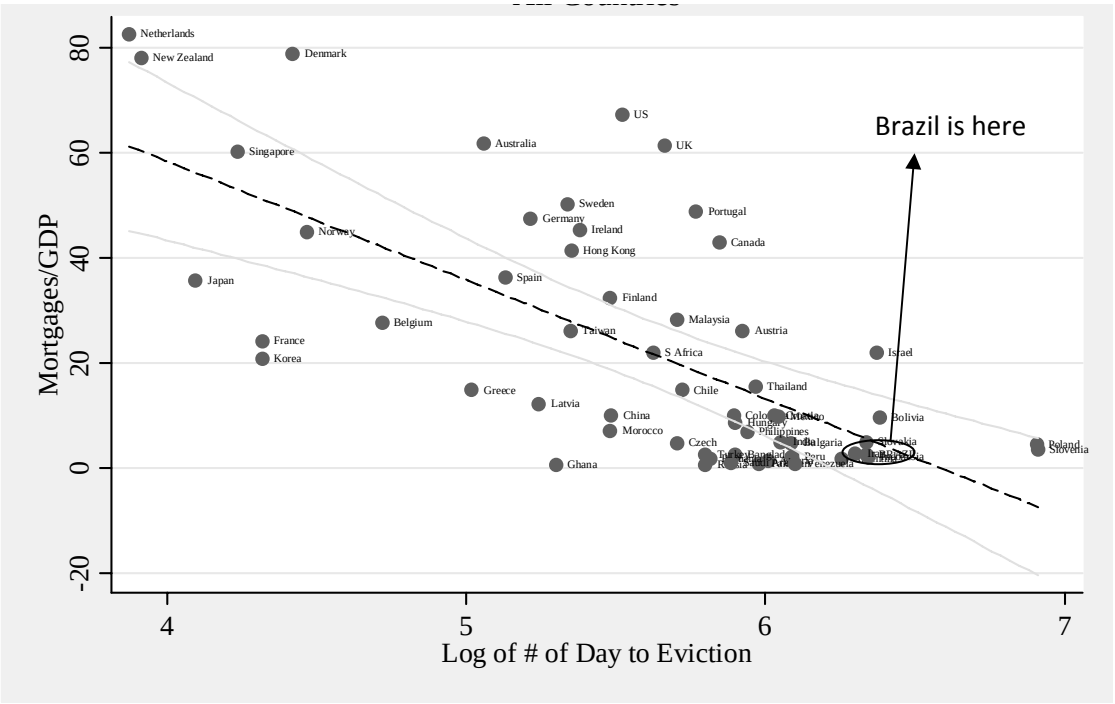
In sum, market-based long-term financing through equity markets has improved markedly over the last decade, in line with the general process of financial deepening. This suggests that state-led intermediation through BNDES may be replaced by private solutions in the medium-run.

4.3 What's left? The Mortgage Market

The ugly duckling in the Brazilian Financial System is the mortgage market. Brazil is an under-performing country relative to others. Not surprisingly, the number of days to eviction, a measure of institutional development of mortgage markets, is among the highest in the world.

The mortgage market exception to the financial boom only confirms the rule: the major restriction on further financial deepening is institutional development. Improvements in the recovery of housing assets shall provide another extensive margin for further improvements.

Chart 19 – Mortgages as a Function of Days to Eviction



4.4 Summary

The 2003-2010 period has shown a marked increase in financial penetration. The Brazilian Banking System was probably ready for a major push forward in 2000, but macroeconomic instability preceding Lula's election was in the way. Furthermore, the second wave of microeconomic reforms, including those of credit markets, started only in 1999-2000, and acquired momentum during the first Lula administration. We argued that the financial boom was mostly driven by positive supply shocks, which has consequences for the stability of the banking system.

5. Stability during the Boom and during the Crisis

Risk looms large. The Brazilian banking sector has not yet entered the business of mortgage intermediation, a tricky and hazardous business as we have learned during the 2008 crisis. With that *caveat* in mind, we show that, thus far, evidence suggests that the Brazilian banking boom has not been accompanied by excessive risk taking on the part of banks.

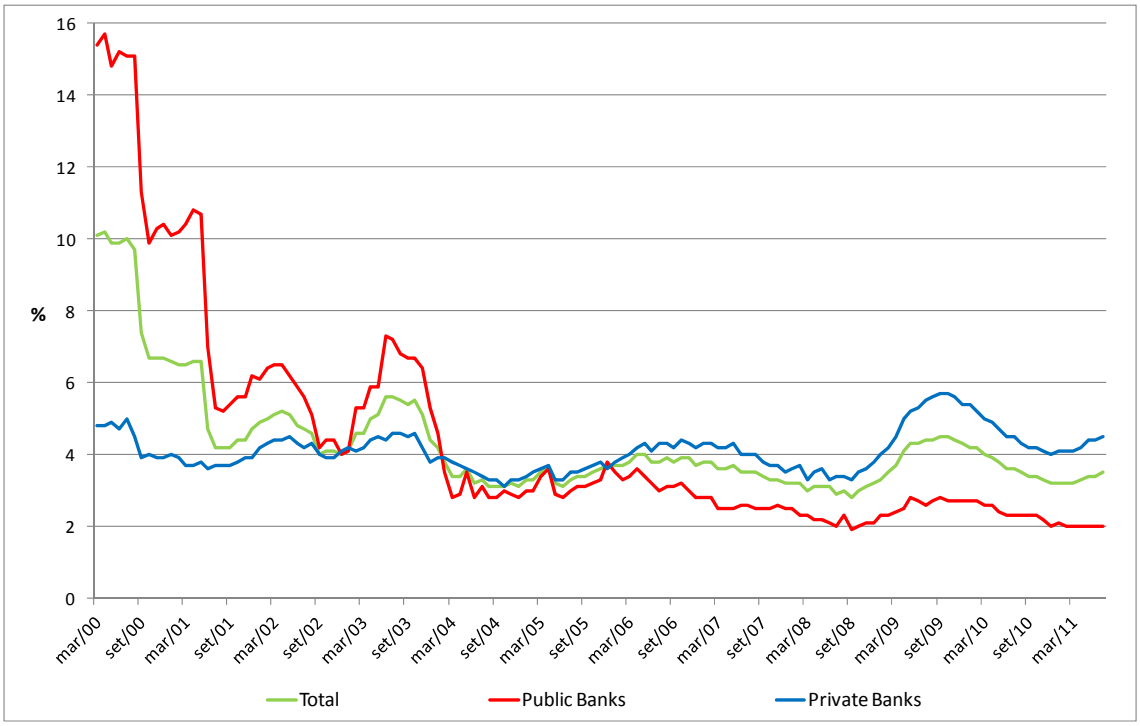
5.1 Some measure of risk taking on the asset and liabilities sides

Chart 14 on the delinquency rates of payroll and automobile loans is strikingly informative. Normally one is concerned about excessive risk taking as a consequence of credit expansion. In the Brazilian case, so far, it seems the other way around: credit expanded because lending became less risky. In more aggregate terms, Chart 20 shows the evolution of delinquency (more than 90 days late) of the private and public banking sectors.

After a period of high and volatile delinquency, rates started to come down in late 2003, and dropped steadily until the end of 2008, when the credit crunch from the global financial crisis hit the Brazilian economy.

From the liability side, Brazilian banks hold a high level of capital (tier 1). Ratios remained high during the entire boom period. Table 3 shows a snapshot of G-20 countries in 2009. Brazil has a very high Basel ratio (capital to risk-weighted assets). Also, a very high share of the capital is Tier 1. In July, 2011, Brazilian Basel ratio remained at a high 16.4%[29].

Chart 20 – Delinquent More Than 90 Days as a Proportion of Assets



[29] Tombini (2011).

Table 3 – Comparison between the Basel Ratios of Various Countries

G-20 countries	Date of latest available data	Regulatory capital on risk-weighted assets	Regulatory capital on risk-weighted assets (Tier 1)
Australia	Q 4 2009	11.3	8.4
Brazil	Q 4 2009	18.8	14.9
Canada	Q 4 2008	12.2	9.8
France	A 2008		8.3
Germany	Q 4 2009	14.8	10.8
India	A 2008	13	9.1
Indonesia	A 2008	17.5	15.4
Italy	A 2007	10.1	7.1
South Korea	Q 3 2009	14.2	10.8
Mexico	Q 4 2008	15.2	13.5
Russian Federation	SA 4 2009.1	18.5	13.1
South Africa	A 2008	13	10.2
Turkey	Q 4 2009	20.6	18.6
United Kingdom	SA 4 2009.1	13.3	10.2

Source: IMF.

5.2 Why are Brazilian Banks so Prudent? Some Conjectures

5.2.1 Ownership Structure

A typical Brazilian bank is a listed company with on large controlling shareholder whose cash rights in the company are significant. Table 4 shows the ownership breakdown of ITAU-UNIBANCO and BRADESCO, the two largest commercial private banks.

TABLE 4: Shareholder Structure: ITAU-UNIBANCO and BRADESCO

PANEL A: Banco Bradesco S.A.

Shareholder	%Ordinary Shares	%Preferential Shares	%Total
Fundação Bradesco	17,06%	0,99%	9,02%
Cidade de Deus Cia Cial Participações	48,66%	0,08%	24,35%
Capital Research And Management Company	0,00%	5,08%	2,54%
Ncf Participações S.A.	8,21%	1,47%	4,84%
Others	26,07%	92,38%	59,25%
Total	100,00%	100,00%	100,00%

PANEL B : Itaú Unibanco Holding S.A.

Shareholder	%Ordinary Shares	%Preferential Shares	%Total
Itaúsa - Investimentos Itaú S.A.	38,66%	0,00%	19,37%
Iupar - Itaú Unibanco Participações S.A.	51,00%	0,00%	25,54%
Blackrock.inc	0,00%	6,98%	3,49%
Others	10,34%	91,42%	50,81%
Bank treasury	0,00%	1,59%	0,79%
Total	100,00%	100,00%	100,00%

Source: CVM. Structure as of 08/11/2011. Ordinary shares have voting rights. Preferential shares, which are senior to ordinary shares in cash rights, have no voting rights.

Both in the case of BRADESCO and ITAU-UNIBANCO, the controlling shareholder has clear political control: BRADESCO's controlling shareholder is Cidade de Deus and Fundação Bradesco have together more than 65% of voting shares; in the case of ITAU-UNIBANCO, Itaúsa and Iupar have almost 90% of voting shares. In both cases, the controlling shareholders own a significant share of cash rights (33% and 45%, respectively).

Arguably, this structure is more conductive to cautious behavior. In contrast to dispersed ownership, a large shareholder is able to internalize the gains from monitoring. In the absence of monitoring, alignment of managers' and shareholders' interests is normally based on pay-for-performance, which could lead to excessive risk-taking, as was the case in the US during the 1990s and 2000s.

Public (in the sense of government-owned) banks also have a concentrated ownership structure. In their case, it is difficult to gauge risk-taking. Typically, risk-taking behavior in public sector is not well compensated and thus one might expected better underwriting in public banks. However, public banks have an explicit mandate to lend at preferential rates to some sector (see Section 3.1.1). Default rates in these lines tend to be quite high. Arrigoni et al (2011) document a significant difference in default rates between BB-CEF and private banks. Historically, renegotiation of mortgages from the *Sistema Financeiro da Habitação* has caused major damage in public banks' balance sheet because of public banks. Finally, state-level

government owned banks dubious underwriting procedures have also caused instability after stabilization, as we have seen.

After the general failures of state-level public banks in the late 1990s, the federal government now owns the vast majority of public banking assets. For all practical purposes, depositors and investors in general evaluate federally owned banks as having little more sovereign risk. In this context, federal ownership of banking assets may be a force favoring stability. Perhaps the taxpayer will have to foot the bill of many equivocate underlying decisions. But as far as stability is concerned, the dual character of the BBS leads to it.

5.2.2 Regulatory Apparatus

The Central Bank of Brazil is the only supervisor of all commercial banks, investment banks and bank-holding companies, a fact not inconsequential to banking stability.

First, and differently from the US and Europe, no regulatory arbitrage arises in a nationally unified regulation: states do compete to attract the headquarters of national banks by relaxing regulation. Deposit insurance is not an option.

The fact that the monetary authority is responsible for supervision is also conductive to stability. For example, the Central Bank is mainly responsible for horizontal merger analysis. It comes out as very lenient with potentially anti-competitive merger because its mandate is stability.

Rating agencies in Brazil are not nearly as important for the Brazilian financial and capital markets as are US rating agencies. Private credit bureaus also play a minor role. The Central Bank has thus invested substantially in building its own credit intelligence system: the Central Bank Credit Information System (CIS). This initiative was adopted in 1997 as the Credit Risk Center. The CIS is the largest register containing data on the debtor behavior in the financial system. The data are shared by participating institutions. This contributes to fewer defaults and improved credit risk management.

The CIS has information about the operations granted by financial institutions on a monthly basis. The CIS database stores the operations of clients with total liability greater than or equal to R$ 5,000 (US% 3,200), both due and overdue, as well as the amounts for collateral and pledges provided by financial institutions to their clients. Using this information, the banking supervisory bodies can identify with great precision financial institutions with credit problems which require special monitoring, thus achieving their main goal. The CIS is different from an ordinary Credit Bureau in a dimension very important for bank stability. Credit

bureaus contain information on borrowers. The CIS contains also readily available information at the lender level, which is quite important for performing stress tests and monitoring systemic risk.

In sum, relatively to the US, Brazil has a fairly concentrated banking system with large and national banks. While a *too big to fail* effect could be more important in Brazil, the largest banks have clear owners (sometimes the government itself). Supervision is also concentrated. The Central Bank plays an important role as the main informational broker. The main credit bureau in the country is publicly run. Thus, differently from credit agencies, one may believe that conflict of interest is less of an issue.[30] The regulatory market is much less *laissez-faire*, which is perhaps good for systemic stability.

Finally, one may argue that the stability during of the BBS during the years 2000s is accidental. A pessimist may argue that financial crisis, in general and in Latin America in particular, are, at best, cyclical. Brazil had the "good fortune" of having had a banking crisis in the second-half of the 1990s. After stabilization, the weakest links in the BBS were exposed, having swam naked for many long years. Most bad banking assets were retired from the BBS balance sheet. In short, Brazil had a fresh start in the 2000s.

6. The International Financial Crisis and Its Aftermath[31]

After Lehman Brothers' demise, in September 2008, the international crisis spread to Brazil and many other emerging markets that, until that point, had not actually felt its deleterious effects

Brazil had hardly felt any effects of the subprime crisis until the Lehman Brothers crash in September 2008. The IBOVESPA share index rose 20% in national currency terms (44% in US dollar terms) between June 2007 and June 2008. In the same period, the capital markets recorded issues of R$ 165 billion, or 5.6% of GDP, which set a record, and made this market an important source of financing for companies. Total credit in the economy rose from 32% to

[30] The absence of credit bureaus in the normal sense of the word is not costless, of course. After the Lehman debacle, when the Brazilian Real depreciated significantly, many companies faced bankruptcy because of proprietary trading position in the exchange rate derivatives (see next section). Many such companies were listed or at least had debentures issued. Credit agencies may have prevented this "surprise". The American example suggest otherwise, however.

[31] This Section draws heavily from Garcia (2011).

36% of GDP. GDP accelerated, reaching 6.8% growth rate accumulated over twelve months in the third quarter of 2008, with domestic demand expanding 9.5%. As demand was heating up, the current account balance deteriorated, falling from a surplus of 1.1% of GDP in June 2007, to a deficit of 1.4% in June of 2008. With excessive internal demand and the rise in prices of international commodities (with exchange rate appreciation factored in), inflation rose significantly from 3.7% to 6.1%, as well as the deterioration of expectations for inflation for the coming twelve months, going from 3.5%, in June 2007, to 5.3% in June 2008, exceeding the inflation target (4.5%).[32]

Given this outlook of an overheating economy and the rise in inflation, the Central Bank raised the base interest rate, the Selic. Reserve requirements were also imposed on leasing companies, which had been taking advantage of a breach in the regulations to win markets. In addition, the foreign currency positions of financial institutions were limited, which was shown to be very useful in the crisis that unfolded.[33]

The bankruptcy of Lehman led to an abrupt halt in the flow of capital into Brazil and to other countries. Commodity prices fell and the Brazilian Real depreciated significantly (62% between August and December 2008). With this depreciation, various Brazilian companies, including big exporters, suffered heavy financial losses. These companies had contracted complex derivatives contracts which provided gains if the exchange rate did not depreciate, at the cost of imposing big losses if the exchange rate did depreciate. The contracts worked like a dollar-leveraged put option given by the companies to the banks. The joint attempt by several of these companies to restrict their losses by buying currency accentuated the depreciation of the Real. With this significant depreciation, the losses reached US$ 37 billion by the end of September 2008, leading to the path that the Central Bank took as reaction to the crisis. To make their decisions, the BCB used the real-time information provided by the BPS (Brazilian Payment System), by the clearinghouses of the BM&FBovespa exchange, as well as the positions of financial and non-financial institutions informed by CETIP.[34] In comparative terms, the Brazilian Central Bank had much more information on the financial health of banks and companies involved with currency derivatives than did the FED, as is shown by the case of the insurance company AIG.

There was no capital flight, as in previous crises, but rather a reallocation of deposits, which migrated from smaller institutions, judged to be weaker, to larger institutions (or public banks, judged to be less of a risk). In this way, the BCB sought to alleviate the lack of liquidity

[32] Mesquita and Torós (2010).
[33] Mesquita and Torós (2010).
[34] Mesquita and Torós (2010).

that was affecting the smaller institutions. During liquidity crises, as happened in the latter months of 2008, the BCB was able to inject liquidity into the system by releasing substantial amounts of banks' reserve requirements.

There was around R$ 250 billion held in reserve requirements by the Central Bank before the crisis broke in September 2008. The directors of the BCB at the time[35] stated they had released about R$ 116 billion, or 4% of GDP, to reduce the effects of the liquidity crisis that hit the national financial system in 2008. The "pooling" of liquidity affected most of the small and medium-sized banks, while the reserve requirements were mainly deposited by the large banks because of their large deposit base. To channel liquidity from the large to the smaller banks, the BCB set up incentive mechanisms. Larger banks were given incentives to use the release of the reserve requirements to buy up the credit portfolios of the smaller institutions, which were finding it hard to obtain financing. In addition, the BCB improved the rediscount and lengthened the maturity to up to 359 days[36].

The effort to provide resources for the smaller banks consisted not only of the use of the funds already available for this purpose, but also in the establishment of an additional deposit guarantee mechanism. The Credit Guarantee Fund (CGF), an institution that guarantees the deposits of banks that go bankrupt,[37] was used extensively. Besides the purchase by the CGF of assets from institutions with financing problems, in March 2009, the Term Deposit with Special Guarantee (TDSG) was set up by the CGF. This deposit was guaranteed by the CGF for up to R$ 20 million, which allowed investors to buy bonds from small and medium-sized banks without running the counterparty risk, which was paralyzing the interbank market. In the assessment of two ex-directors of the Brazilian Central Bank who were in the trenches during the crisis, the set of measures "... *adopted sequentially was able to remove the constriction of liquidity and to favor the resumption of credit provision, initially to individuals and later to companies*".[38]

[35] Mesquita and Torós (2010).
[36] Mesquita and Torós (2010).
[37] "*The CGF is to provide the guarantee of credits against institutions associated with them in the event of going into receivership, extrajudicial liquidation or bankruptcy of the associate; or recognition by the Brazilian Central Bank of the insolvency of the associate*
(http://www.fgc.org.br/?conteudo=1&ci_menu=12)."
[38] Mesquita and Torós (2010), p. 198. More formally, Leão (2011) shows that small banks suffered a run on their deposits. He uses bank-level deposit and credit data to shows that the run was driven by institutional investor, and was especially strong on small banks that relied on market liquidity for funding. His results suggest that the TDSG instrument was indeed crucial to provide funding liquidity when market liquidity dried-up, restoring confidence in the banking system.

Measures were also taken to facilitate the use of the rediscount window, although this was not used, as the CGF played this role. Moreover, the Credit Guarantee Fund (CGF) was given permission to guarantee issues by small-sized institutions, and this measure was very successful. Such measures prevented many banks from failing at the height of the crisis.[39]

The state-owned banks also served as a direct instrument of governmental intervention in the credit and banking market. Throughout 2008, the credit operations of the public banks grew by 40%, whilst the credit provided by private banks rose by 27%. The role of the public banks was more decisive in the last quarter of 2008. The total credit granted by public banks rose by 12.9%, while the rise in the private sector was of 3.2%. In turn, public banks acquired holdings in some smaller private banks, giving them a cushion of capital in the midst of the crisis.

Given the enormous rise in volatility, the BM&FBovespa raised the margins required for derivatives trading. Although this increased the need for liquidity, they were deemed necessary to reduce the systemic risk involved in derivatives trading on the stock exchange.

The BCB also guaranteed the smooth working of the credit market in foreign currency. Although it was heavily criticized at the time, the floating exchange rate system was left to work freely, offering its reserves in quite a focused form, so that flows of international trade were not interrupted. As of the last quarter of 2008, it was not clear that the international anti-crisis measures would be successful, so the BCB decided to save its reserves for a possible prolonged period of scarcity of credit from abroad. The option to leave the exchange rate floating freely was also taken so as not to bail out companies speculating with foreign currency derivatives[40], relying on a possible foreign currency put option offered by the Central Bank. In fact, there was a belief suggesting the existence of a hypothetical fear of floating, that the Central Bank would not let the Real depreciate much for fear of the impacts on the companies with unmatched foreign currency transactions. The action of the Central Bank played, therefore, a pedagogical role, trying to eliminate this source of moral hazard.

During the crisis, the Central Bank sold US$ 14.5 billion, just 7% of the reserves held at the outbreak of the crisis. Repos (foreign currency sales with future repurchase agreements) were sold for a total of US$ 11.8 billion and loans were granted in US dollars for US$ 12.6 billion, out of which US$ 9 billion were directed at foreign trade. The FED extended individual credit lines that totaled US$ 30 billion to the central banks of the more solid emerging

[39] Mesquita and Torós (2010).
[40] Mesquita (2010).

countries, such as Brazil, in the form of currency swaps. This facility was not used, but its existence contributed to restoring normality to the financial markets. Another action taken by the Central Bank in the currency markets was the sale of dollar futures (reverse currency swaps) to the amount of US$ 35 billion.[41]

The action taken by the Brazilian economic authorities was a considerable success, of which the IMF said "… *the foreign exchange easing measures undertaken by the BCB during 2008-09 seemed to have alleviated the various market stresses arising from local dollar liquidity shortage, at least on impact. The announcements and to a lesser extent the interventions themselves reduced the relative cost of onshore dollar financing. The varied foreign exchange operations also appeared to have stabilized market expectations of exchange rate volatility. The positive effects of the announcements of the currency swap facility between the FED and the BCB across the three regressions* [mentioned in the IMF article] *strongly suggest that this arrangement helped boost confidence*." (IMF 2009)

7. Concluding Remarks

Brazil is a remarkable recent example of a major financial repression followed by financial expansion. Several lessons can be draw from the Brazilian example.

Macroeconomic stability was a necessary condition for the expansion. By some metrics, the BBS was quite deep during the early 1990s. However, the system was not deep but hypertrophied by inflation. Banks were not in the business of extending credit but of recruiting deposits to lend short-term to the government, making a quick buck many times over in the overnight market and through inflationary float. The extent of the hypertrophy can be gauged by the banking crisis that followed stabilization and the consequent shrinkage of the BBS after 1994. After price stability, the balance sheet of the system was over-burdened by bad decisions made during inflationary times. It took a few years, and two programs that cost almost 18% of the GDP, to clean-up banks balance sheets. When the BBS was finally ready to take off, the perspective of LULA taking office postponed the boom for another couple of years.

Suddenly, the system was ripe for boom in 2003, and boomed it did. Just as the macroeconomy set the stage, but micro-level institutional advances most likely played an

[41] Mesquita (2010).

important role. Most financial deepening occurred in consumer lending, where institutional advances were deeper.

Another view is that consumers were the most liquidity constrained before 2003. Thus, any macro improvement would lead to expansion in consumer lending for demand reasons. Financial constraints arrive for a reason, though. Normally informational frictions are to blame (Adams et al (2009)). In this case, institutional improvements alleviated informational frictions and led to the boom.

A cynic will point to history: in the financial history of Latin America, repression followed by a boom always ended up in crash (Diaz-Alejandro (1985)). But this time there may be grounds for guarded optimism.

Differently from the typical financial repression – financial crash movement described by Diaz-Alejandro (2009), the Brazilian 2000s boom was not a product of liberalization gone wrong. Neither consumers nor banks seem, so far, over-levered. Whether the BBS will over-extend remains to be seen but both data and concrete conditions suggests otherwise. Maybe, just maybe, we escaped history this time.

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9. Glossary of Abbreviations

BANESPA – *Banco do Estado de São Paulo* (bank owned by the state of São Paulo)

BANERJ – *Banco do Estado do Rio de Janeiro* (bank owned by the state of Rio de Janeiro)

BB – *Banco do Brasil*

BBS – Brazilian Banking System

BCB – Brazilian Central Bank

BFS – Brazilian Financial Sector

BNDES – *Banco Nacional de Desenvolvimento Econômico e Social* (National Development Bank)

BNH – National Housing Bank

BPS – Brazilian Payment System

CEF – *Caixa Econômica Federal* (Federally-owned Commercial Bank)

CETIP – Organized Over-the-counter Assets and Derivatives

CGF – Credit Guarantee Fund

CIS – Central Bank Credit Information System

CMN – *Conselho Monetário Nacional* (National Monetary Council)

COPOM – *Comitê de Política Monetária* (Monetary Policy Committee)

COSIF – *Plano Contábil das Instituições do Sistema Financeiro Nacional* (unified accounting plan for the institutions of the national financial system)

CVM – *Comissão de Valores Mobiliários* (Securities and Exchange Commission)

DCS – Domestic Currency Substitute

FAT – *Fundo de Amparo ao Trabalhor* (Workers' Aid Fund)

FGTS – *Fundo de Garantia por Tempo de Serviço* (mandatory unemployment insurance fund)

IDB – Inter-American Development Bank

IMF – International Monetary Fund

INSS – *Instituto Nacional do Seguro Social* (federally run pay-as-go pension system)

KDB – Korea Development Bank

MP – *Medida Provisória* (Temporary Measure)

PIS-PASEP – *Programa de Integração Social / Programa de Formação do Patrimônio do Servidor Público* (a federal tax)

PT – *Partido dos Trabalhadores* (Workers' Party)

S&Ls – *Sociedades de Poupança e Empréstimo* (Savings and Loans Societies)

SELIC – *Sistema Especial de Liquidação e de Custódia* (Special Settlement and Custody System)

TDSG – Term Deposit with Special Guarantee

TJLP – *Taxa de Juros de Longo Prazo* (Long Term Interest Rate)

URV – *Unidade Real de Valor* (Real Unit Value)

Departamento de Economia PUC-Rio
Pontifícia Universidade Católica do Rio de Janeiro
Rua Marques de Sâo Vicente 225 - Rio de Janeiro 22453-900, RJ
Tel.(21) 35271078 Fax (21) 35271084
www.econ.puc-rio.br
flavia@econ.puc-rio.br