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Why does Brazil's banking sector need public banks? What should the BNDES do?

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1. Why does Brazil's banking sector need public banks?

Rather than justifying the existence of public banks and in particular the National Economic and Social Development Bank (BNDES) using an argument based on market failures (Garcia, 2011), an effective answer to this question requires a theory of financial instability. The 2007–2008 global financial crisis had a profound impact on the state of modern economics. It exposed the failure of mainstream economics and led to some understanding of the inherent instability of capitalism and how to prevent depressions. Moreover, the conventional approach had disastrous economic policy consequences that contributed to the Great Recession. Entering the global crisis, mainstream economists believed that "the state of macro is good" (Blanchard, 2009, p. 2). People who were believed to have a sophisticated understanding of economics did not understand what we were getting into during the bubble years, and they repeatedly dismissed ample warnings about growing financial fragility and instability in the economy. For instance, Arminio Fraga, former president of the Central Bank of Brazil from 1999–2002 and currently a hedge fund manager, proclaimed the following in 2005 during the *Jackson Hole Economic Policy Symposium*:

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> "[w]e are moving towards more complete markets. Presumably this is a good thing. I do see from my vantage point at the ground level that risk is going where it belongs. It is, in fact, a good innovation because small investors don't like banks to take a lot of risk. So, traders and banks move out to hedge funds and they are there met by more sophisticated investors. Banks in the old days were paid to grow their loan books, I can't think of a worse incentive, and that is the way they were compensated […]. Investment managers today, however risky their business may be, tend to care about their reputations and tend to have their money on the line. That is healthy and it is being delivered by the market on its own […]. As an investor, I have a pretty easy time looking at funds and figuring out what they are doing. It is nearly impossible to know what the large financial institutions we have in this planet are doing these days […]. That is, in my view, probably an argument to say we may be better off than before […]. Perhaps because of all this we see less of an impact of all these financial accidents on the real economy now than we did see in the 1980s when it took years to clear markets, for banks to start lending again, and for the economies to start moving" (Fraga, 2005, pp. 389–390).

The unfolding of the global economic crisis has called into question both the conventional approach and the reputation of mainstream economists. In a recent article about the state of macroeconomics, the then IMF's chief economist Olivier Blanchard confessed where danger really lurks, that is, in the minds and models of an orthodox economist. He acknowledged that traditional models have "a worldview in which economic fluctuations occurred but were regular, and essentially self correcting. The problem is that we came to believe that this was indeed the way the world worked" (Blanchard, 2014, p. 28). As Wray (2011) pointed out:

> "[t]he global crisis exploded reigning orthodoxy. Among those theories and claims that should no longer be taken seriously by any macroeconomist we must include: rational expectations and continuous market clearing; New Classical and Real Business Cycle approaches; neutral money; the New Monetary Consensus, the Taylor rule, and the Great Moderation; the Efficient Markets Hypothesis; Ricardian equivalents and other versions of the policy irrelevance doctrine; and claims made by advocates of deregulation and self-regulation. To be sure, we have been here before. The Great Depression also exploded the reigning orthodoxy. Keynes offered a revolution in thought. Unfortunately, that revolution was aborted, or, at least, co-opted by 'synthesizers' who borrowed only the less revolutionary

> aspects of his theory and then integrated these into the old Neoclassical approach. The important insights of Keynes were never incorporated in mainstream macroeconomics. Eventually, Neoclassical theory was restored. It is now time to throw it out, to see what should be recovered from Keynes, and to update Keynes's theory to make it relevant for the world in which we actually live" (Wray, 2011, p. 7).

Why is this discussion important? During the pre-crisis period, developed countries' regulatory systems had been considered as 'best practice' and formed the basis for recommendations to developing countries seeking to liberalize and expand their domestic financial markets. Once more, the crisis fatally discredited notions that free-market economies are inherently stable. It discredited the belief in self-regulation and supervision, as well as arguments against regulation, based on the idea that markets would undertake due diligence resulting in optimal outcomes and that market prices act as signals that agents react to in a Pareto-optimal manner. The crisis has shown the failure of private finance to efficiently allocate capital to finance real capital development.

The Great Recession called into question the 'light touch' regulatory approach practiced in the USA and the UK, and produced an ad-hoc response to the financial crisis. In spite of massive expansion of central banks' balance sheets in developed economies aimed at bailing out financial institutions and their intervention in private credit markets, it had little impact in terms of increasing credit to the private non-bank sector.

The crisis response has raised two fundamental questions. First, the regulatory and supervisory framework put in place in advanced nations before the 2007–2008 global financial crisis failed to capture and avoid the build up of financial fragility in the economy. While the mainstream view of finance and the proper regulatory approach have been called into question, Minsky's alternative approach provides a framework to investigate structural changes in the domestic financial architecture and help the appropriate design of regulatory and supervisory policies to constrain the development of financial fragility in the economy and deal with severe systemic crises (Kregel, 2014). In this approach, the destabilizing effects of stability on financial structures calls for dynamic adjustments to policy frameworks and brings about the need to redesign the regulatory structure to continually meet

its objectives of financial stability and to provide funding for development and financing for innovation.

Second, to the extent that the financial structure that emerged in the USA in the past 30 years failed to provide support for the development of the economy and to improve living standards, an alternative design of the financial structure that meets the needs of developing nations needs to be developed. For instance, the UNCTAD report noted the following:

> "[a]t present, flaws in credit allocation by deregulated private banks and difficulties in reestablishing the supply of credit for the real sector in developed economies (despite expansionary monetary policies) have led to a renewed interest in credit policies. For instance, in July 2012 the Bank of England established a temporary Funding for Lending Scheme, with the goal of incentivizing banks and building societies to boost their lending to the country's real economy […]. The Bank of Japan had launched a similar initiative in 2010 […]. However, these initiatives are frequently introduced as extraordinary measures for dealing with exceptional circumstances. There are strong arguments in favour of central bank and government intervention to influence the allocation of credit in normal times, especially in developing countries. Such credit should aim at strengthening the domestic forces of growth and reducing financial instability, since long-term loans for investment and innovation and loans to micro, small and medium-sized enterprises are extremely scarce even in good times" (UNCTAD, 2013, pp. 134-135).

In this regard, the resilience and stability of Brazil's financial system has received attention as it navigated relatively smoothly through the 2007–2008 global financial crisis and the collapse of the shadow banking system (Kregel, 2009). From this point of view, I will use Minsky's framework to examine the role played by the BNDES in financing long-term development, how to finance it, and the government's role in the direct provision of financial services. My approach builds on Minsky's instability theory and the role of his "Big Bank" in constraining instability as well as his approach to reorienting finance to promote capital development of the economy.

In his book *Stabilizing an Unstable Economy*, Hyman Minsky (1986) emphazised that the instability of financial markets is a normal outcome of capitalist economies. Contrary to the mainstream view, finance is not a scarce resource. That is, finance is created simultaneously

as banks take positions in assets by issuing liabilities, which depends on banks' willingness to accept the liabilities of the household and business sectors. One of the key components of economic development is to allow bankers to act as the *ephors* of the economy to promote its capital development. However, the purchase of assets through the issuance of debt is a major destabilizing influence in a capitalist economy, and represents the core to Minsky's financial instability theory. Even though he noted that in a capitalist system endogenous financial fragility and instability will always exist, his framework stresses the impact of "Big Government" and the Big Bank by putting ceilings and floors on economic activity. Moreover, in his framework state-owned banks and national developments banks play a dual role in the direct provision of financial services and in dampening instability. This regime of intervention 'stabilizes the unstable system'.

2. Why does Brazil's banking sector need BNDES?

There has been much discussion about how to support private long-term finance to meet Brazil's growing infrastructure and investment needs.[1] One of the essential functions of the financial system is to provide long-term funding needed for long-lived and expensive capital assets. However, one of the main challenges posed by the current private financial system is its failure to provide long-term financing. Short termism in Brazil's financial market is a major obstacle to financing long-term assets. In its current form, the BNDES is the main source of long-term funding in the country (Torres Filho and Costa, 2012). In this regard, the chapter "Mobilizing domestic financial resources for development" of the *Monterrey Consensus* noted that "[d]evelopment banks, commercial and other financial institutions, whether independently or in cooperation, can be effective instruments for facilitating access to finance, including equity financing, for such enterprises, as well as an adequate supply of medium- and long-term credit" (United Nations,

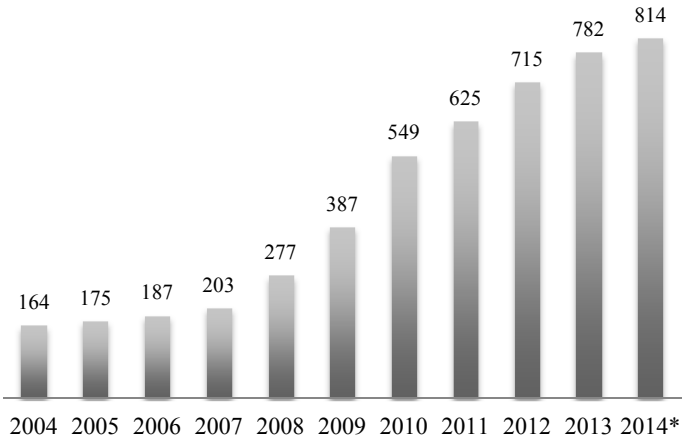
[1] See for instance Freitas (2011) and Prates and Freitas (2013).

2003). To this end, UNCTAD's 2013 *Trade and Development Report* noted that

> "[p]ublic intervention in the provision of bank credit will be especially important in developing countries that are aiming at strengthening domestic forces of growth, since long-term loans for investment and innovation, as well as loans to micro, small and medium-sized enterprises are extremely scarce even in good times. Commercial banks in developing countries often prefer to grant short-term personal loans or to buy government securities, because they consider the risks associated with maturity transformation (i.e. providing long-term credits matched by short-term deposits) to be too high […]. *National development banks may provide financial services that private financial institutions are unable or unwilling to provide to the extent desired*" (UNCTAD, 2013, p. XVII, italics added).

As the 2007–2008 global financial crisis unfolded, BNDES sharply increased its balance sheet, mainly due to massive national Treasury loans to the Brazilian development bank (figures 1 and 2). They allowed BNDES to expand its balance sheet to meet Brazil's long-term investment needs and counter financial instability.[2]

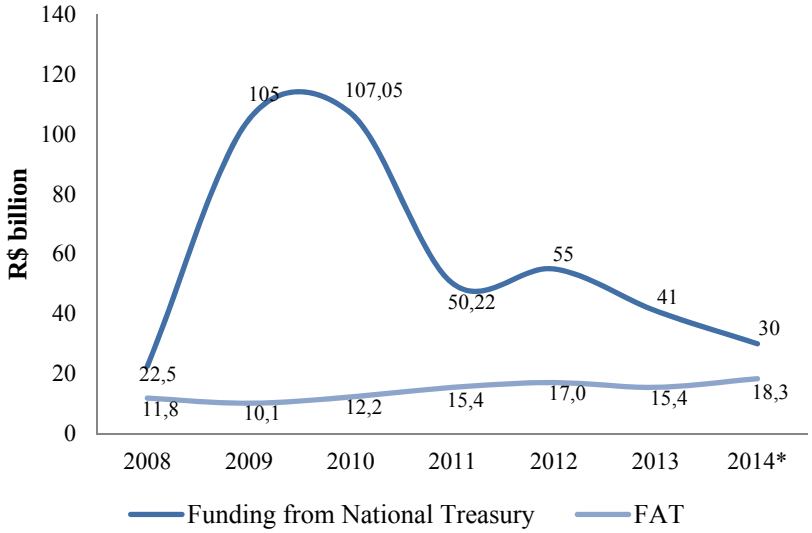
Figure 1 – *BNDES total assets* (*R$ billion*)



Source: BNDES (2014)

[2] For more details about Brazil's response to the crisis see Barbosa (2010).

Figure 2 – *BNDES funding from the Treasury and funds received from the workers' assistance fund* (*Fundo de Amparo ao Trabalhador, FAT*)



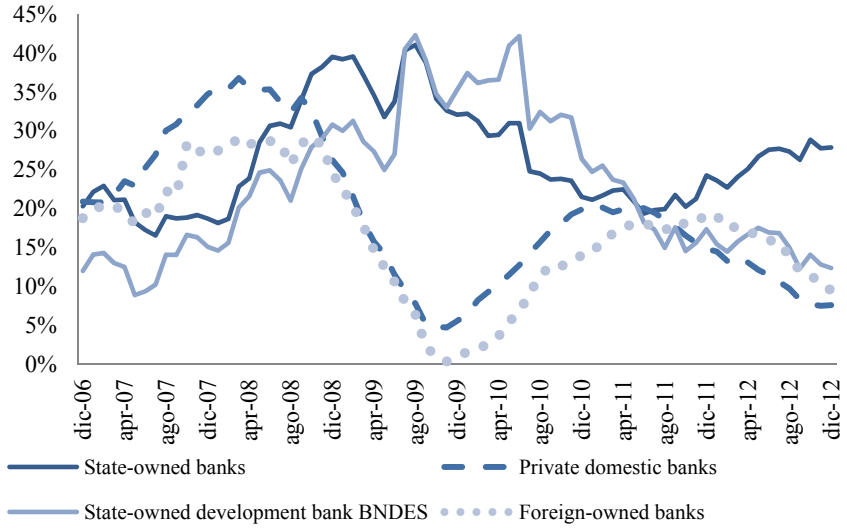
Source: BNDES (2014).

In Brazil, since the onset of the crisis, public banks play three basic roles:

- they act as a countercyclical policy tool;
- they provide financing aimed at enhancing productivity growth, and supporting socioeconomic infrastructure and knowledge-specific activities;
- they promote the development of organized liquid capital markets.

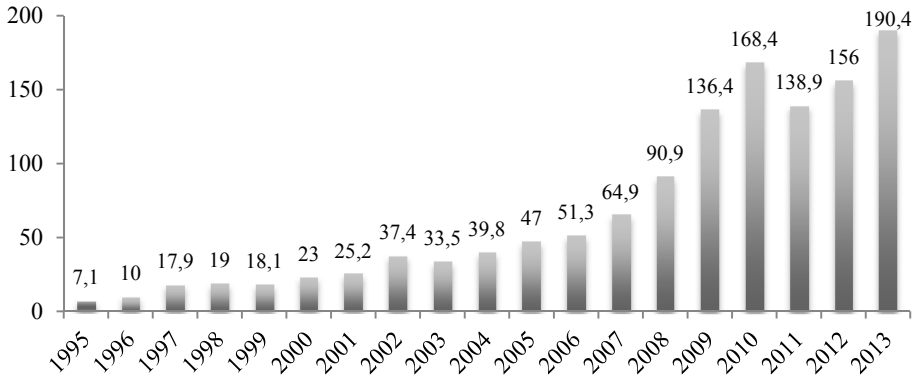
The expansion of public banks' balance sheets allowed policymakers to counter financial instability by sharply expanding credit growth when private sector (domestic and foreign) banks reduced bank lending (figures 3 and 4).

Figure 3 – *Counter-cyclical lending stabilized the system* (*year on year change*)



Source: Banco Central do Brasil (BCB).

Figure 4 – *BNDES disbursements*



Source: BNDES (2014)

However, BNDES has been subject to a range of criticisms. The bank's critics complain that:

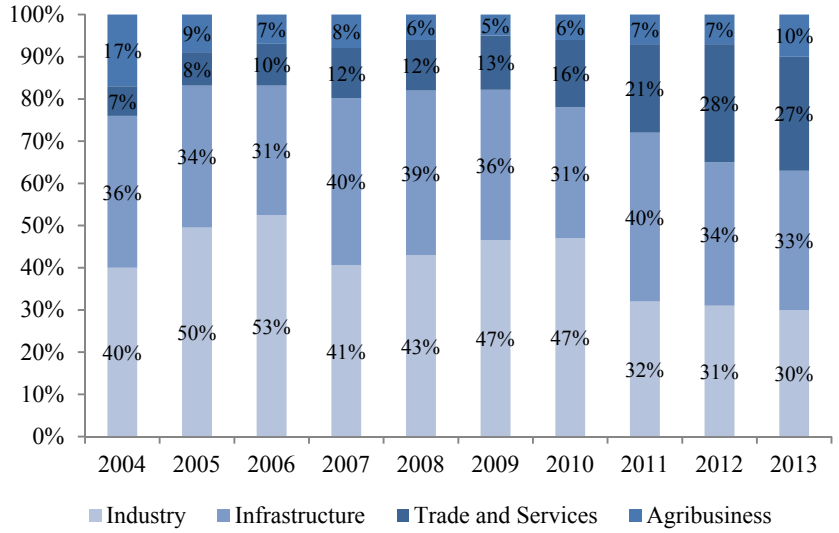
- BNDES "crowds out" corporate lending by private sector banks; BNDES loans provided at subsidized rates generate unfair competition with private banks (Wheatley, 2013);
- BNDES is curbing the development of the financial sector;
- the bank has grown too big too fast, and the emergency countercyclical policies have gone on for too long (Forero, 2013);
- loans from the Treasury increase gross domestic debt and contribute to weakening Brazil's sovereign's financial profile, deteriorating the Treasury fiscal performance, and increasing the government's debt burden.

Much of the policy discussion has been misplaced. The critics ignore the historical role national development banks play in fostering development at different stages of economic growth (UNCTAD, 2013, pp. 133–134). Even though Brazil's banking sector has roughly doubled its lending as a share of GDP, the balance sheet profile of public and private banks reinforces the role of BNDES in promoting economic development through financing long-term capital assets. It is ironic that critics say that "large companies have access to financial and capital markets, in Brazil and abroad" (Musacchio and Lazzarini, 2014) to downplay BNDES's role, when the costs of funds raised locally are substantially higher than the rate BNDES charges on its loans and funds raised abroad contribute significantly to external vulnerability.

It is not surprising that economists often forget history. In the past, Brazil's increased external debt levels raised the country's vulnerability to changes in external conditions. Against this background, BNDES plays a significant role in reducing external risk and external funding shocks – one of the root causes of the debt crisis among developing countries in the 1980s, followed by the so-called "lost decade" – by reducing firms' reliance on foreign markets as firms' liabilities can be locally funded. On the contrary, the bank could be criticized for not doing enough in particular for Brazil's investment infrastructure and innovation (figures 5 and 6). Despite its growing investments in infrastructure, its effort is still

small relative to Brazil's infrastructure investment needs. In 2013, 33% of BNDES total disbursements were toward infrastructure investment.

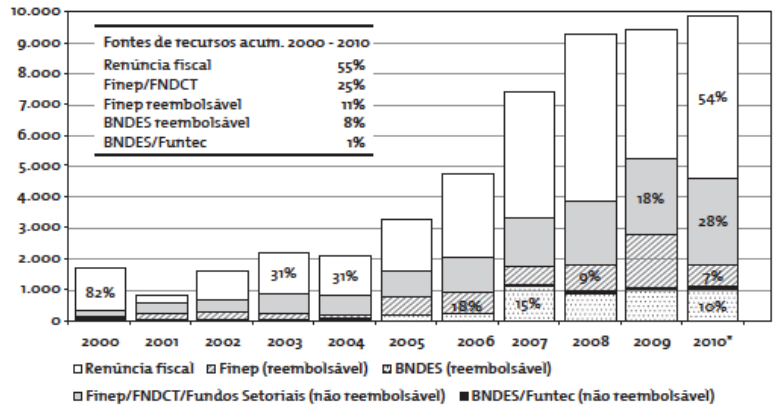
Figure 5 – *Disbursements by sector*



Source: BNDES (2014).

For instance, the background document of the Financing for Development Office of the United Nations Department of Economic and Social Affairs (UN-DESA) noted that "from the time when the China Development bank was established in 1994 to the end of 2005, nearly 90% of its lending was directed towards infrastructure in eight key industries – power, road construction, railway, petro-chemical, coal mining, telecommunications, public facilities, and agriculture" (United Nations, 2005, p. 16). President Dilma Rousseff acknowledged "Brazil is 'two centuries' behind when it comes to building its rail network" (Leahy, 2013). Brazil's transport and logistics networks face many challenges. In an attempt to boost investment, Brazil has introduced a

Figure 6 – *Federal government support of innovation* (*current R$*)



Source: Delgado (2012, p. 155).

Notes: Financiadora de Estudos e Projetos (FINEP): the Brazilian Agency for Innovation; FNDCT: National Fund for Scientific and Technological Development; BNDES-FUNTEC: university-industry cooperation fund.

series of policy initiatives such as the Growth Acceleration Programs (PAC 1 and 2), the BNDES Investment Maintenance Program (BNDES's PSI), the National Plan for Transport Logistics (PNLT), and it is offering public concessions to the private sector in three key areas: logistics, including roads, railway, ports and airports; energy; and oil and gas. According to Brazil's finance minister, expected investments equal a total USD 235 billions over the coming years (see table 1).

It is commonly believed that BNDES led to the crowding-out of debt markets from corporate financing and private banks from long-term financing loans, because the rate it charges on its loans to firms is lower than the central bank's benchmark SELIC (Special System of Clearance and Custody) overnight interest rate. However, short-termism in Brazil's financial market is primarily due to the high and volatile SELIC rate. During the new millennium, Brazilian banks enjoyed a favorable situation by holding high-quality, high-yield short-term assets. Due to Brazil's consistently high benchmark SELIC rate, the full risk-adjusted

Table 1 – *Concessions program estimated investment*

Concessions Program	Estimated Total Investment (US$ billion)
Logistics	121
Roads	21
Railways	45.5
Ports	27.3
High Speed Train	17.8
Airports	9.4
Energy	74
Hydro	39.9
Wind, Biomass, and Small Hydro	19
Thermal	1.4
Distribution	13.7
Oil & Gas	40
Total	**235**

Source: Ministry of Finance.

return on liquid assets more than offset the full return on less liquid assets, such as consumer and business loans. This shifted banks' portfolio composition towards high-quality short-term liquid government securities and other high-yield, low-duration assets. Moreover, corporate lending by private banks is expensive, such that funding capital expenditure from private banks is not an option, and its high cost deters investment in capital assets. Thus, this period was characterized by large holdings of government securities on banks' balance sheets and low exposure to traditional loan products. According to central bank data, as of August 2014 state-controlled banks are responsible for 53% of outstanding loans in Brazil while the share of local private-sector banks decreased to 32% as they sharply reduced loan origination over the past few years.[3] Even though banks increased claims on the private sector as the central bank lowered its benchmark rate to record lows, and they roughly doubled their lending as a share of GDP, the supply of long-term credit by private institutions remained low (see table 4).

[3] As of September 2014, the five largest Brazilian banks by assets value were: Banco do Brasil (BB, State-owned), Itau, Caixa Economica Federal (CEF, State-owned), Bradesco, and BNDES. These five had total assets close to USD 2 trillion, equivalent to 71% of total banking assets.

Though it has been argued that Brazil's private-sector banks cannot compete with BNDES's below-market rates for long-term investments, much of the policy discussion has been misplaced, missing the fact that Brazilian banks (and to some extent the publicly owned Banco do Brasil, BB, and Caixa Economica Federal, CEF) operate with extremely high loan spreads, low moderate leverage ratios, and generate high returns on equity (see table 3). High returns on government securities combined with abnormally high loan spreads on short-term loan products generated extremely high returns on equity for private banks as well for BB and CEF.[4] This situation resulted in a risk-adjusted spread of short-term loans that is greater than the risk-adjusted total returns of financing long-term assets. As a result, Brazil's banking sector shifted its portfolio preferences towards high-yield, short-term assets and generates high returns on equity with low leverage compared to international peers. BNDES's competitive advantage is not due to its funding structure but it primarily arises because BNDES operates with low loan spreads: for direct lending operations, the spread applied by BNDES is equal to its financial funding costs plus its return and a risk premium, as opposed to traditional private banks, which operate with extremely high loan spreads, high operational costs, low leverage, and high delinquency rates aimed at generating high ROEs (tables 3 and 4).

Table 2 – *BNDES and multilateral agencies*

	BNDES	**IADB**	**World Bank**	**China DB**
(US$ million)	June/2014	June/2014	June/2014	Dec/2013
Total Assets	369.745	99.454	324.367	1.352.450
Equity	33.658	24.022	39.523	92.828
Net Income	2.484	235	218	13.197
Disbursement	26.697	3.014	16,03	N/A
Capitalization (%)	9,1	24,2	12,2	6,9
ROA (%)	0,7	0,2	0,1	1
ROE (%)	8,5	1	0,6	15,1

Source: BNDES (2014).

[4] The average interest rate applied to loans is substantially higher for traditional banks compared to BNDES. They are also characterized by high net interest margins and returns on assets.

Although the conventional approach posits that Brazil's financial system lacks saving and financial instruments to foster long-term investment, the prime difficulty in fostering long-term funding by private sector banks is the unattractiveness of long-term lending relative to other short-term loan products, such as payroll deductible loans, auto loans, and loans to firms, such as working capital loans and loans to SMEs. From this perspective, high short-term loan spreads distort credit markets.

Moreover, privately owned banks have little interest in expanding their long-term business loan portfolios. In 2012, Rousseff's administration mandated that State-controlled banks should reduce consumer lending rates in an attempt to encourage private banks to follow suit. This episode illustrates the need for competition from State-owned banks to encourage private domestic banks to shift their portfolio to promote the accumulation of real capital. The Brazilian financial system does not lack funding mechanisms, but the difficulty is the high level and volatility of interest rates and the unattractiveness of low-risk adjusted returns on long-term assets relative to other high-yield, short-term loan segments.

Table 3 – *Key profitability indicators*

	BNDES	BB	CEF	ITAU	BRADESCO	WORLD BANK	IADB	KFW	China DB
Return on Equity (average) (ROE) (% p.a.)	**14,5**	**23,4**	**22,3**	**16,2**	**17**	**0,6**	**5,9**	**3,8**	**13,4**
Net income (R$ billion)	8,2	16	6,7	13,9	12	0,5	2,9	2	19,8
Average equity (R$ bi)	56,4	68,4	30,2	85,9	70,7	80,7	48,5	52	147,4
Return on Assets (average) (ROA) (% p.a.)	**1,1**	**1,4**	**0,9**	**1,4**	**1,6**	**0,1**	**1,4**	**0,1**	**0,9**
Total Assets (R$ billion)	781	1219	858	1027	777	719	227	1517	2465
Total Average Assets (R$ billion)	747	1153	781	989	766	702	207	1430	2155
Average Leverage	**13,3**	**16,8**	**25,8**	**11,5**	**10,8**	**8,7**	**4,3**	**27,5**	**14,6**
Basel Ratio (%)	**18,7**	**14,5**	**15,1**	**16,5**	**16,6**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
Gross Interest Margin (Gross income from financial intermediation / Average Fixed Income Portfolio) (% p.a.)	**2,00%**	**2,60%**	**2,60%**	**3,60%**	**3,00%**	**0,70%**	**1,90%**	**-0,20%**	**2,30%**
Gross Income from financial intermediation (R$ billion)	12,5	25	19,2	28,3	19,5	4,8	4	-2,3	49,9
Gross Income (excluding allowance for credit risk) (Gross income from financial intermediation excluding allowance for credit risk / Average Fixed Income Portfolio) (% p.a.)	**1,90%**	**4,20%**	**3,90%**	**6,00%**	**5,10%**	**0,70%**	**2,00%**	**-0,20%**	**2,30%**
Gross Income from financial intermediation (excluding allowance for credit risk) (R$ billion)	11,7	41,1	28,4	46,8	32,9	4,8	4,1	-2,3	49

Source: BNDES (2014).

Table 4 – *Loans and onlendings portfolio*

	BNDES	BB	CEF	ITAU	BRADESCO	WORLD BANK	Inter-American Development Bank	Kreditanstalt für Wiederaufbau (KFW)	China Development Bank
Net Portfolio (after allowance for credit risk) / Total Assets	**72,4**	**53,7**	**66,3**	**39,3**	**42**	**43,8**	**72,6**	**85**	**90**
Net Portfolio (R$ billion)	565	655	569	403	326	315	165	1290	2219
Average Fixed Income Portfolio (Credit and Treasury) (R$ billion)	624	980	731	778	641	730	206	1430	2205
Long Term Credit Operations / Gross Portfolio (%)	**80,8**	**61,9**	**75,5**	**43,6**	**46,2**	**96,5**	**92,8**	**N.A.**	**89,6**
Rating AA-C Credit Operations / Portfolio (%)	**99,7**	**95**	**92,8**	**91,9**	**92,2**	**N.A.**	**N.A.**	**N.A.**	**N.A.**
Non-performing balance / Gross Portfolio (%)	**0,01**	**1,13**	**1,36**	**2,71**	**2,52**	**N.A.**	**N.A.**	**N.A.**	**N.A**

Source: BNDES (2014)
Notes:
* Sources: Bacen-Top 50 Reports and Financial Demonstrations.
* Informations from the years ended on 12/31/2013, 06/30/2013 (BIRD) and 12/31/2012 (CDB).
* Long Term Credit Operations: >1 year

Short termism in Brazil's financial market is a major obstacle to financing long-term assets. In spite of rapid credit expansion for both State-run and private banks, bank lending, in particular among private banks, is still concentrated around short maturities. Specifically, loans with maturity greater than 5 years represent a small share of total outstanding loans among private bank institutions. For Brazil's large private bank Itau-Unibanco, long-term loans represent 1.59% of its total loan portfolio. This is in sharp contrast with the long-term loans holdings of public banks. For instance, at Caixa Econômica Federal long-term credit represents 15% of its total loan portfolio, for Banco do Brasil it represents 15% and for BNDES it represents 57%.

In sum, the absence of private bank loans with longer maturities to finance long-term investment is one of the key characteristics of the Brazilian financial system. Even though private banks have the ability to create long-term loans through the issuance of deposits they have not been exposed to that segment (Rezende, 2014).

The private financial system has not moved in a direction of promoting the real capital development of the economy in spite of the implementation of a set of reform measures, including strengthening the

legal and regulatory framework to foster long-term finance. For instance, Torres Filho, Macahyba and Zeidan (2014) highlight recent developments in the corporate bond market. Their work suggests that even though Brazil's corporate bond market and issuance of corporate bonds have risen significantly over the past decade, the buy side is mainly comprised of banking institutions. The existing regulatory framework created an incentive for banks to circumvent reserve requirements using their affiliated leasing companies. Moreover, their work also suggest that institutional investors have little incentive to allocate their portfolios toward riskier corporate debt as they can create a better risk-return profile holding high-yield short term government debt.

Policy alternatives to promote long-term financing

As noted earlier, for the past six years, policy makers relied on the expansion of BNDES's balance sheet through loans from the Treasury and infusions of capital to fund private sector investment projects. In this regard, the composition of BNDES's liabilities changed significantly and the Treasury is currently its major source of funding (table 5).

Table 5 – *BNDES balance sheet*

R$ billion

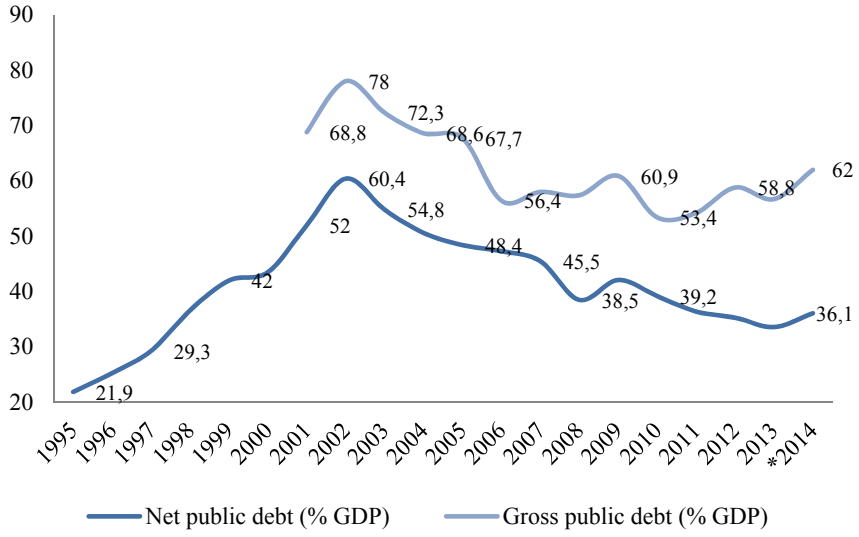
	2014	**%**	**2013**	**2012**	**2011**	**2010**
Cash	2,7	0,3%	0,5	10,3	5,4	10,1
Loans	588,3	72,2%	565,2	492,1	425,5	361,6
Equity Investments[1]	82,4	10,1%	85,8	94,4	99,6	107,5
Securities	98,3	12,1%	91	86,5	73,9	50
Others	42,6	5,2%	39,5	32,3	20,4	19,8
Total Assets	**814,3**	**100,0%**	**782**	**715,6**	**624,8**	**549**
FAT	192,4	23,6%	176,2	161,9	146,3	132,3
PIS/PASEP	33,6	4,1%	33,6	32,8	31,7	30,8
National Treasury	433,2	53,2%	413,2	376	310,8	253,1
International Borrowings	34,7	4,3%	31,2	23,3	22,4	19,8
Others	46,3	5,7%	67,1	69,4	52,6	47,2
Shareholdes Equity	74,1	9,1%	60,7	52,2	61	65,9
Total Liabilities	**814,3**	**100,0%**	**782**	**715,6**	**624,8**	**549**

[1]Equity investments in associated and non-associated companies. Since 2010, the investments in non associated companies are adjusted for fair value.

Source: BNDES (2014).

BNDES's balance sheet has expanded primarily due to Treasury loans to BNDES, which as of 2014 represent 53.2% of its liabilities. In Brazil, provisional measures subsequently transformed into law authorize domestic on-lendings to BNDES from the Treasury, in which the latter issues securities through direct placement to BNDES. This transaction involves the creation of assets for the Treasury (claims on BNDES) and the corresponding issuance of liabilities – government securities – by the Treasury. BNDES's liabilities increase by the amount of the transfer of the securities it holds as assets. This transaction is recorded as an electronic book entry and the net effect on public debt is zero, though gross debt increases by the amount of the government securities issued.

Figure 7 – *Public sector gross and net debt as a percentage of GDP*



Source: BCB

However, this policy raised several criticisms due to the increase in gross public debt caused by the direct issuance of securities to BNDES. For this reason, much of the recent discussion about BNDES's role centers

around the fiscal costs associated with Treasury loans to BNDES – which sharply increased since 2009 – focusing on whether it produces a net cost or a net gain for the federal government (Garcia, 2011b). Moreover, critics point to the negative carry operation for the Treasury as the costs associated with government securities, that is the rate the Treasury charges on its loans to BNDES. Finally, funding from the Treasury has been criticized on various grounds such as "dangerous creative accounting", "accounting gimmicks", "discredited fiscal accounting", and "sequence of assaults on our public accounts" (Garcia, 2010).

Though critics of BNDES's balance sheet expansion point to increasing fiscal risk (shown in figure 7), they fail to understand that the federal government spends by crediting bank accounts and taxes by debiting them. Government expenditures increase reserves in the banking system. The federal government is the only net supplier of reserves, so that when they spend, there is an injection of reserves in the banking system and when taxes are collected reserves are destroyed. As we argued elsewhere (Rezende, 2009), excess reserves tend to put a downward pressure on the SELIC rate, which triggers the sale of government securities to remove those excess reserves and keep the SELIC rate close to its target. Fiscal operations lead to credits to bank accounts at the Brazilian central bank. As long as the Brazilian central bank operates with a positive SELIC rate target, it must intervene in the market to maintain the SELIC rate close to target.

Funding options for BNDES

By using a basic system of accounting in which for every financial asset there is a corresponding liability, we can evaluate and simulate the existing and alternative funding options for BNDES. We analyze the following alternatives: a) loans from the Treasury at TJLP (the long-term interest rate) to BNDES; b) loans from the Brazilian Central Bank; c) credit to BNDES's reserve account at the central bank, using the Treasury account with the BCB; and d) BNDES issuance of bonds.

a) *Loans from the Treasury to BNDES*

In its current form, loans from the Treasury at TJLP to BNDES are extended through direct placement of government securities to BNDES, which then sells government securities on its portfolio as needed to increase its disbursements to provide long-term credit (figure 8). As BNDES sells government securities on its portfolio, its reserve account balance with the central bank increases. As it extends new loans to the private sector, its reserve balance is reduced by the amount of the loan, and its loan portfolio increases.

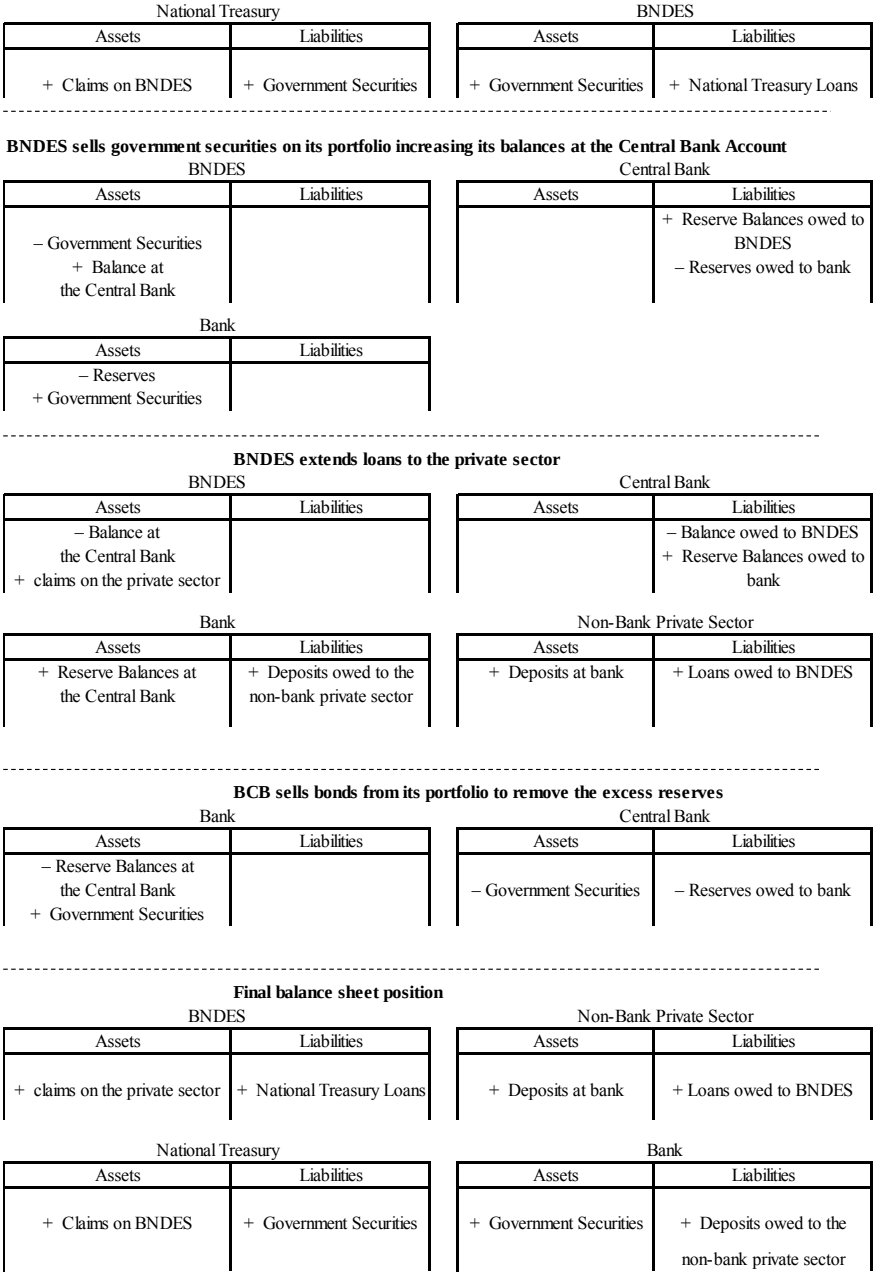
This transaction is equivalent to a swap of assets on BNDES's balance sheet. The loan beneficiary's bank account balance goes up and there is a corresponding increase in reserve balances on the borrowers' bank. Note that the increase in reserve balances will put a downward pressure on the overnight lending rate, triggering the intervention of the central bank through bond sales to remove excess reserves from the banking system and keep the SELIC rate close to its target.

Accordingly, the final position for each unit is the following: BNDES has an asset (the loan) matched by a liability (loans from the Treasury); the borrowers' bank holds government securities as assets and deposits as liabilities; the borrower has increased its liabilities by the amount of the loan from BNDES and its deposit balance has increased by the amount of the loan. On the consolidated balance sheet of the government, its assets increased by the amount of the claims of the private sector by issuing liabilities (government securities).

b) *Loans from BCB at TJLP*

Since June 2014, BNDES has direct access to Brazil's payment system (SPB) and it has a reserve account at the central bank to settle payments and transactions. This initiative creates the possibility to provide alternative sources of funding for BNDES. Thus, an alternative approach to financing for BNDES would be to allow the central bank to credit BNDES's reserve account (figure 9). This funding option is not radically new.

Figure 8: *Loans from the National Treasury at TJLP to BNDES*



> "Historically, central banks have used a wide variety of instruments to channel long-term finance in support of development objectives, including direct financing of non-financial firms […]. Central bank and government intervention in credit allocation became widespread in the immediate post-war period in developed and developing countries alike" (UNCTAD, 2013, pp. 133-134).

In this way, BNDES's assets would increase by the same amount and its liabilities (borrowings from the central bank) would increase by the amount of the loan. This transaction would allow BNDES to engage in direct lending and would also allow for maturity transformation within the banking system.

By extending loans, BNDES would increase its credit portfolio and its reserve balance with the central bank would decrease. On the other hand, the recipient bank's account balance with the central bank would increase, matched by an increase in their deposit liabilities. The loan recipient's account balance at its bank would go up, matched by an increase in its liabilities (loans from BNDES). This increase in reserve balances at depository institutions puts a downward pressure on the SELIC rate and triggers the sale by the central bank of government securities to drain reserve balances from the banking system to keep the SELIC rate close to its target. This transaction is an asset swap of central bank liabilities for government securities.

Note that on the consolidated balance sheet of the government there is new asset – claims on the private sector – matched by an increase in its liabilities (borrowed reserves).

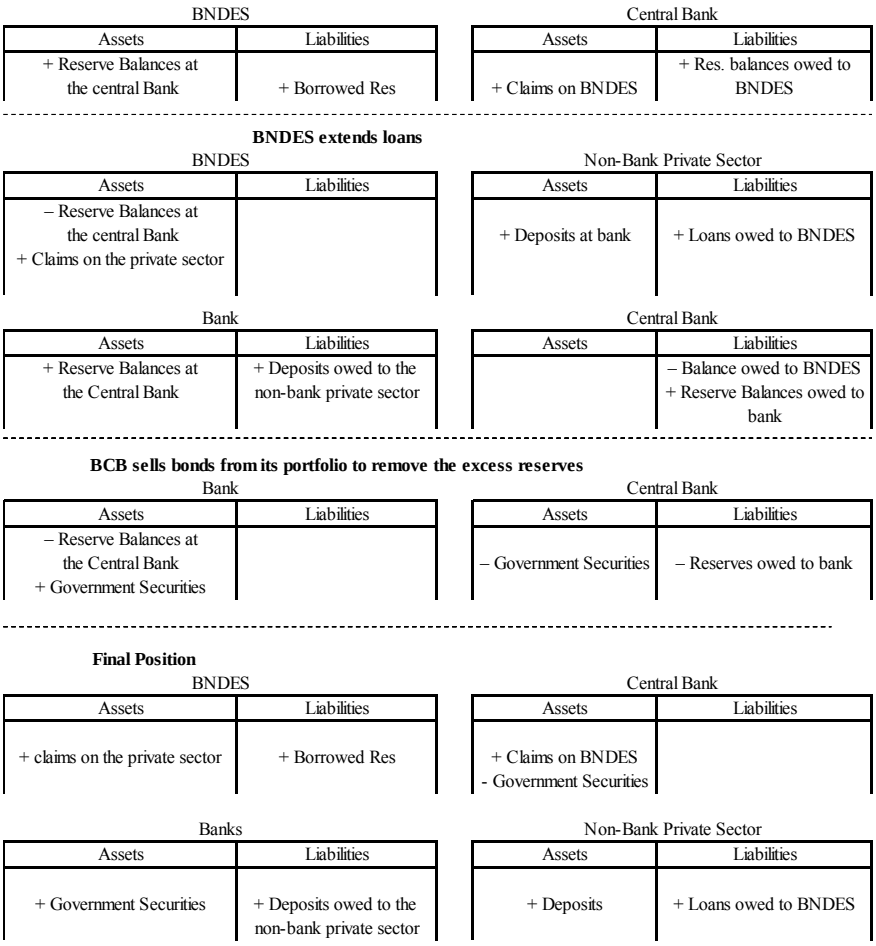
c) *Credit BNDES's reserve account at the central bank using the Treasury account with the BCB*

In this case, the Treasury's reserve balances with the central bank decreases by the amount of the loan and BNDES's balance at the central bank increases by the same amount, matched by a corresponding increase in its liabilities (figure 10). BNDES can then extend new loans, so its reserve balances decrease and its loan portfolio increases. The borrower's account has an increase parallel to its bank reserve balances, adding

reserves to the banking system, which will put downward pressure on the SELIC rate, triggering securities sales by the central bank.

The final position for BNDES, the borrower, and its bank is the same as in the case in which the Treasury transfers government securities to BNDES.

Figure 9 – *Loans from BCB to BNDES*



c) *Credit BNDES's reserve account at the central bank using the Treasury account with the BCB*

In this case, the Treasury's reserve balances with the central bank decreases by the amount of the loan and BNDES's balance at the central bank increases by the same amount, matched by a corresponding increase in its liabilities (figure 10). BNDES can then extend new loans, so its reserve balances decrease and its loan portfolio increases. The borrower's account has an increase parallel to its bank reserve balances, adding reserves to the banking system, which will put downward pressure on the SELIC rate, triggering securities sales by the central bank.

The final position for BNDES, the borrower, and its bank is the same as in the case in which the Treasury transfers government securities to BNDES.

d) *BNDES issues bonds before it can extend new loans*

In this case, BNDES issues bonds to raise funds to extend new loans (as shown in figure 11). Its reserve balance at the central bank increases by the amount of the bond sale.

Note that regardless of the funding alternative, the increase in reserve balances tends to put downward pressure on the SELIC rate, which will trigger the sale of securities to remove excess reserve balances in the system. Moreover, the final balance sheet position is the same in all these funding options: BNDES has a claim on the private sector, the Treasury (or the central bank) has a claim on BNDES, the firm has a loan, and the bank holds government securities. Note that in the fourth case, the recipient bank has a claim on BNDES, that is, it holds a government liability. These transactions reflect the basic principle that economic units buy assets by issuing liabilities. It reflects the endogenous money approach in which "banks 'create credit,' that is, that they create deposits in their act of lending" (Schumpeter, 1954, p. 1080). Just like Minsky observed, economic units buy assets by issuing liabilities ("IOUs"). For Minsky, "[b]anking is not money lending; to lend, a money lender must have money. The fundamental banking activity is accepting, that is, guaranteeing that some party is creditworthy" (Minsky, 1986, pp. 256).

Figure 10 – *Credit BNDES's reserve account at the central bank using the Treasury account*

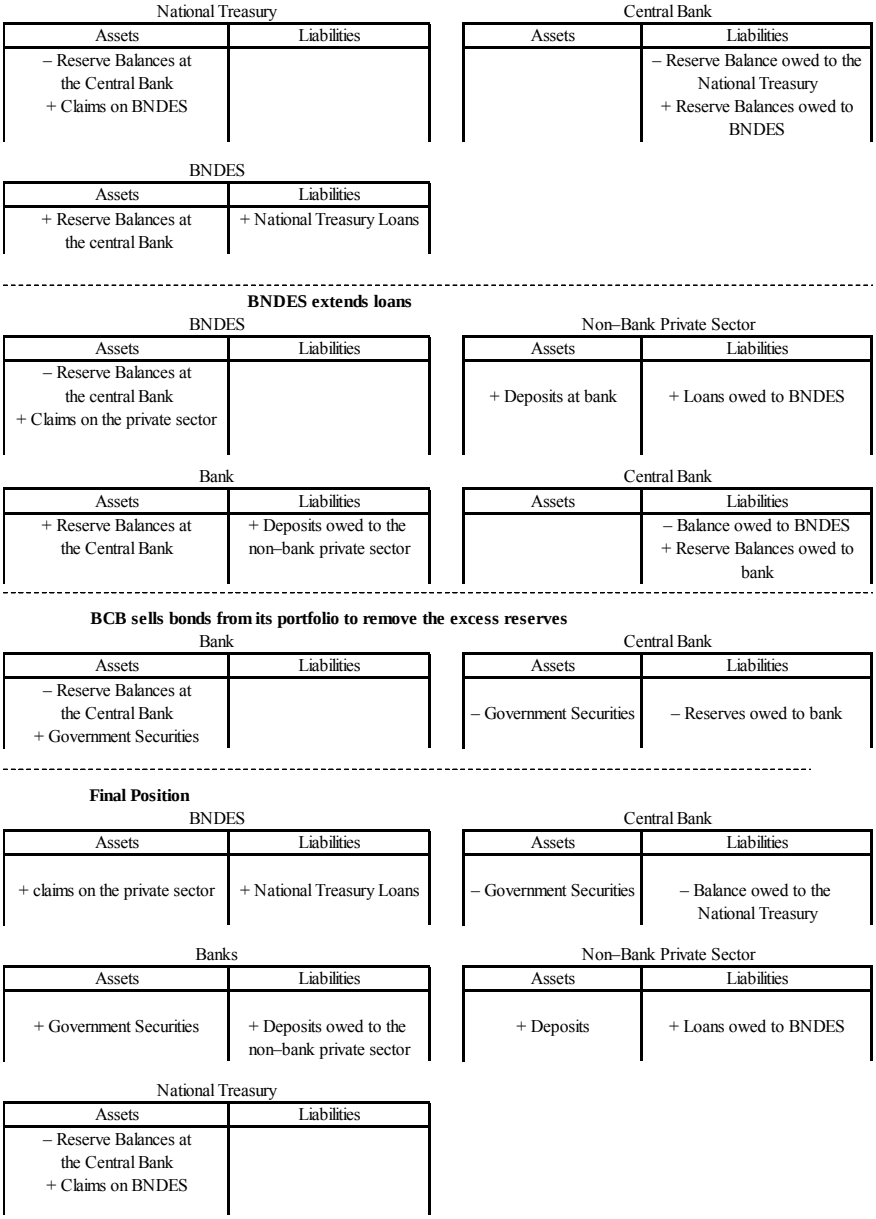
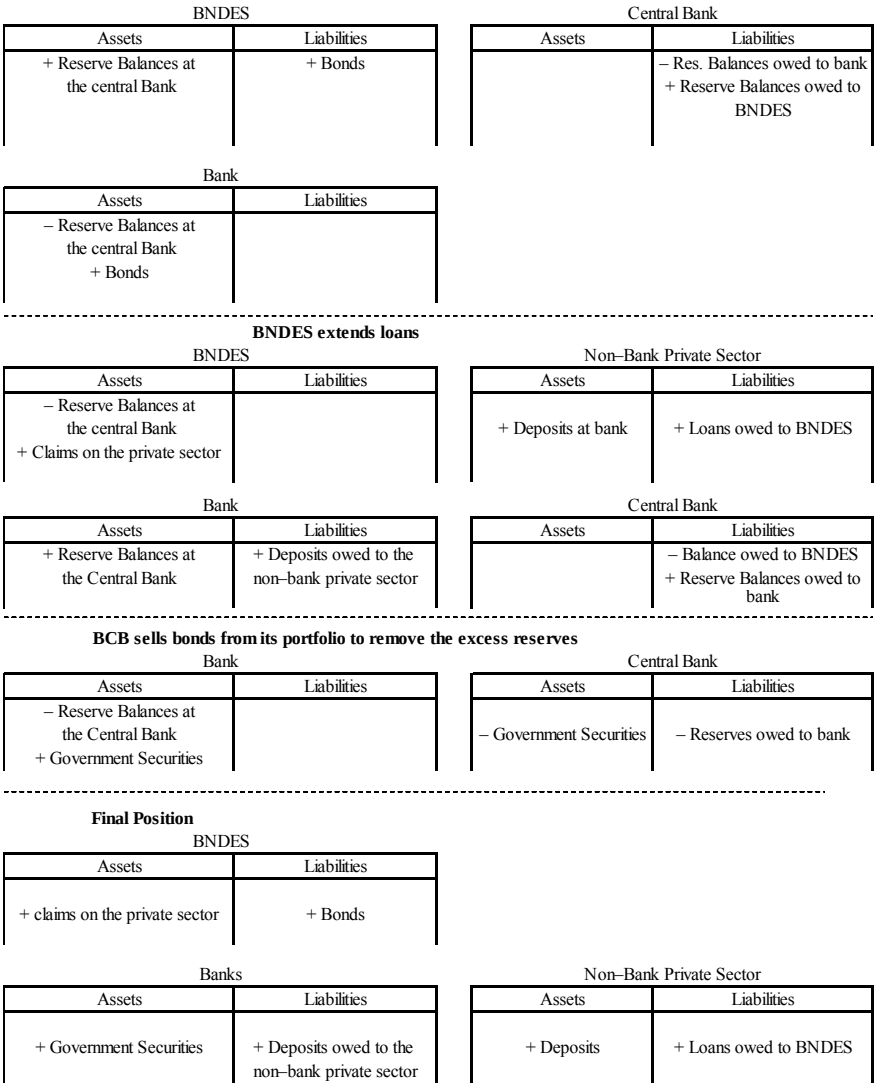


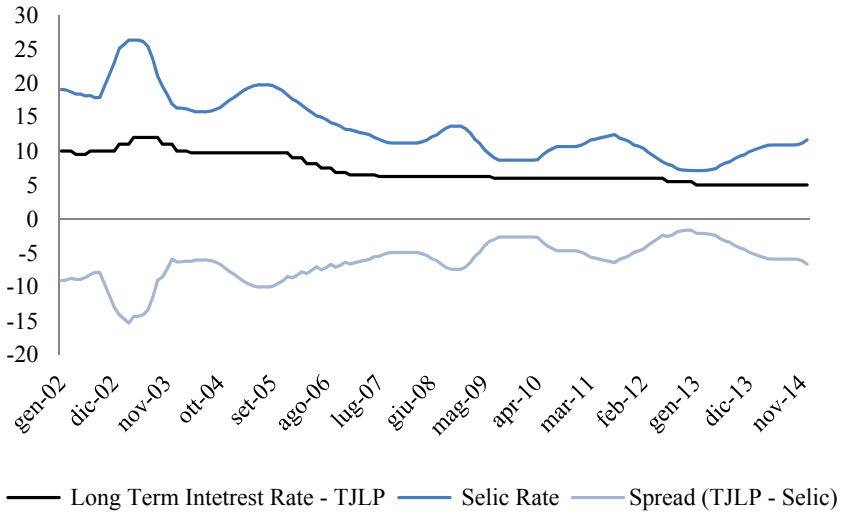
Figure 11 – *BNDES issues bonds before it can extend new loans*



This approach to banking sees money creation as going from banks' assets to liabilities. Banks purchase assets (such as borrowers' IOUs) through the issuance of liabilities (such as deposits, banks' IOUs). The federal government operates in a similar way as it buys assets (claims on the nongovernment sector) by issuing its own IOUs (either reserves or government securities). This transaction should not be seen as an accounting trick, but rather those funding options presented above represent accounting transactions with government debt (either reserves or government securities).

However, the design and reform of financing mechanisms involves a political choice about how to direct and allocate public resources. For instance, a financing agreement between the Treasury and BNDES stipulates the costs of Treasury loans tied to the TJLP, currently at 5%, and the costs of securities issued by the Treasury is approximated by the overnight SELIC rate (figure 12).

Figure 12 – *SELIC rate and TJLP* (*long-term interest rate*)



Source: BCB.

Critics point to the negative carry of Treasury loans represented by the difference between the SELIC rate and the long-term interest rate (TJLP). Most economists believe that in order to decrease the subsidy implicit in BNDES's loans, the TJLP should be close, if not equal, to the SELIC rate. Some commentators argue that the government should raise the TJLP toward the SELIC rate (Garcia, 2014), while others suggest that the SELIC rate should fall towards the long-term rate (Romero, 2014).

The proposal to increase the TJLP would decrease the demand price of an investment project, that is it would decrease the net present value (NPV) of the discounted expected future cash flows of an investment project, so fewer investment projects would be more profitable than holding money. As is well known, Keynes proposed policies that would increase expected future cash flows and reduce the interest rate, thus increasing the demand price relative to the supply price of capital assets. As Keynes noted, "those assets of which the normal supply-price is less than the demand-price will be newly produced; and these will be those assets of which the marginal efficiency would be greater than the rate of interest" (Keynes, 1936, p. 228). That is, an increase in the TJLP would lower the demand price relative to the supply price of capital assets, deterring investment, as investors would require higher rates of return on new investment projects.

Moreover, not only do investors have to formulate expectations about future cash flows (or future "*q*"s) but they must form expectations about future interest rates, which are included in the calculation of the project's net present value. This is a system in which expectations of future conditions determine present decisions. As Keynes put it, "it is by reason of the existence of durable capital equipment that the economic future is linked to the present" (Keynes, 1936, p. 146). Changes in the market interest rate level bring about change in the NPV of an investment project. Interest rate volatility affects the real economy through changes in the discount factor of investment decisions. Thus a high and volatile interest rate increases uncertainty associated with productive investments. From this perspective, funding from BNDES at a relatively stable long-term interest rate reduces uncertainty.

Long-term funding options involving domestic capital markets

There has been much discussion about the development of longer-term private finance.[5] Contrary to the mainstream view, banks are not constrained in their ability to originate loans, that is, they can create as much finance as they wish. They are constrained in terms of 'willingness to accept'. Banks can operationally finance long-term assets by issuing government-insured deposit liabilities and profit from a steep and normal-shaped yield curve. However, their financing of long-term assets would impose significant asset liability mismatches on their balance sheets. Thus, the relevant question is related to the costs of carrying a mismatch between the duration of assets and liabilities on bank balance sheets as long as interest and funding risks are carried on their books.

A number of policy initiatives designed to encourage local private banks and capital markets to provide funding to support long-term investments have been implemented and tailored to meet investors' needs, such as private sector long-term bonds, credit rights investment funds, infrastructure bonds, and infrastructure bonds investment funds. One of the main challenges is the creation of long-maturity instruments to be sold to investors with long-time horizons. Recent efforts by policymakers directed at lengthening the duration of bank liabilities include the development of financial bills (letras financeiras), thus imposing maturity matching on banks' books. Though much of the discussion agrees that a basic requirement to foster long-term funding is low interest rates, most economists overlook the fact that this alternative requires low and stable market interest rates. In spite of the belief that this policy initiative raises funding to finance long-term assets, it is rather an asset liability management (ALM) strategy to reduce the interest rate risk on banks' balance sheets by increasing the duration of their liabilities, thus reducing the mismatch between assets and liabilities.

Though modern central banks implement policy by operating with a short-term interest rate target to influence the longer end of the yield curve, the objective of low and stable interest rates requires a policy to

[5] See for instance Torres and Macahyba (2012).

influence the entire yield curve. For example, the central bank would have to announce targets for the whole yield curve and it would buy and sell securities at prices compatible with the targeted yields.[6]

By reducing interest rate volatility, the monetary authority can effectively induce financial institutions to 'shift the yield curve' by targeting long-term interest rates and reducing future rate uncertainty. A basic requirement for banks' exposure to long-term fixed assets is an upward sloping yield curve and a stable interest rate environment to mitigate interest rate risk. In the presence of a stable and low yield curve, banks could ride the yield curve and raise returns. A steep yield curve for Treasury bonds and the promise that short-term interest rates would remain low for an extended period would provide the basis for financial institutions to profit from a steeper yield curve. A reduction in expected rate volatility would minimize the expectation of capital losses on long-term bond positions, encouraging financial institutions to profitably ride the yield curve (Rezende, 2015). As a result, if those conditions are fulfilled, we can foresee banks lengthening the maturity of their assets.

To this end, the Brazilian central bank should determine the term structure of risk-free interest rates by setting both the long-term rate and the short-term rate. Keynes (1936) correctly criticized central banks' decision to operate only in short-term debt markets:

> "[t]he monetary authority often tends in practice to concentrate upon short-term debts and to leave the price of long-term debts to be influenced by belated and imperfect reactions from the price of short-term debts; though here again there is no reason why they need do so" (Keynes, 1936, p. 206).

He went on to say that since "open-market operations have been limited to the purchase of very short-dated securities, the effect may, of course, be mainly confined to the very short-term rate of interest and have but little reaction on the much more important long-term rates of interest" (*ibid.*, p. 197). He then concluded that:

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[6] The transmission mechanism of monetary policy implemented by changing the overnight lending rate is supposed to have an impact on the level of economic activity through changes in bank lending. However, this effect is uncertain and indirect: the operation of public banks by influencing bank lending has a direct and more effective impact on monetary policy's objective.

> "[i]f the monetary authority were prepared to deal both ways on specified terms in debts of all maturities, and even more so if it were prepared to deal in debts of varying degrees of risk [, …] the complex of rates of interest would simply be an expression of the terms on which the banking system is prepared to acquire or part with debts […]. *Perhaps a complex offer by the central bank to buy and sell at stated prices gilt-edged bonds of all maturities, in place of the single bank rate for short-term bills, is the most important practical improvement which can be made in the technique of monetary management*" (*ibid*., p. 205, italics added).

In order to set interest rates of longer term debt, the central bank should offer interest-bearing term deposits for different maturities to support longer term rates. In fact, the US Treasury-Fed accord created a system of pegged rates generating an upward sloping yield curve. Financial institutions sold short-term instruments, such as three-month Treasury bills, to buy long-term instruments. This policy was so successful that it was necessary to "limit bank purchases of long-term debt" (Meltzer, 2003, p. 591). This policy created an increase in the demand for long-term securities and "by 1945 the Federal Reserve had acquired almost all of the outstanding bills" (*ibid*., p. 596).

If the administration wishes to encourage funding of long-term assets from private banks, it should allow them to borrow at the discount window at low rates, such as the TJLP, to fund long-term assets. This initiative would encourage competition in the market so that banks expand their lending into longer maturities. Initially, the credit line could be up to one-third of banks' equity.[7] This proposal deals with potential liquidity problems due to maturity mismatch.

However, there would still exist interest rate risk on banks' balance sheets. As Minsky put it,

> "[r]ediscounting was not a lender-of-last-resort activity reserved for a crisis, it was the mechanism by which part of the normal reserve base of banks was brought into being […]. The use of the discount window as a normal source of financing by member banks legitimated the regulation, supervision, and examination of member banks by the Federal Reserve" (Minsky, 1994, pp. 11-12).

[7] This rule is arbitrary and ultimately depends on the country's long-term investment needs, the availability of real resources, and the state of the economy.

If the central bank starts discounting bank assets that are related to the financing of businesses, it "both creates a market for this paper by its purchases and assures that it will have a protected status in financial markets. Such a paper will therefore be in a preferred risk class" (Minsky, 1986, p. 362). This framework is biased towards hedge financing and it restores banks' competitiveness in the lending market. Alternatively, banks could sell their long-term portfolio to BNDES in order to avoid the interest rate risk due to the funding of long-term assets with short-term liabilities. BNDES would buy these long-term assets using reserves balances. In this regard, private banks would focus on their specialization in underwriting. On the originators' balance sheet, we would have maturity matching, that is reserves as assets and short-term liabilities, and BNDES would hold long-term assets on its portfolio.

In addition to low and stable interest rates to foster private sector investment in long-term assets, policy alternatives to augment investment may involve both the private and the public sector, i.e. the federal government could undertake investment projects itself through fiscal policy or allowing BNDES to fund long-term investment activities by the private sector. Indeed, though public investment has increased in the last few years, it remains low compared to Brazil's investment needs (Rezende, 2014).

One of Keynes' fundamental policy proposals was his call for a 'socialization of investment'. The State could use its fiscal power to mobilize resources generating domestic demand to achieve full employment. In Keynes's framework, the condition required to get expansion of output is to produce a situation of normal backwardation.[8] This will reduce the available/current supplies so that individuals can expand production of output in order to sell forward, leading to an increase in employment. The idea of normal backwardation can be seen as the motor force for expansion in the economy. The expansion of output requires changes in the spot price relative to the forward price of capital goods, that is, backwardation will lead to profit incentives that will

[8] See Kregel (2010) for a detailed exposition of Keynes's contributions to the theory of finance.

encourage individuals to invest, leading to an expansion of output through the multiplier process.

Brazil is a sovereign government. As the monopoly issuer of a non-convertible currency, it is not subject to the same constraints that businesses, local States and households face. It can always spend by crediting bank accounts. The federal government can never become insolvent on debt denominated in its own currency (Rezende, 2009). In this regard, though public banks play an important role in promoting real capital development and dampening market instability, their actions must be coordinated with macro policies to keep the economy in a quasi-boom state and prevent depressions.

Keynes's economic policy views went beyond public spending as a counter-cyclical policy tool. Public sector policy, by using the fiscal power of the federal government, should be designed to fully mobilize unexploited domestic resources. In Keynes's framework, in order to smooth the cyclical movements of employment and output, we should set the market interest rate as low as possible, so that carrying costs of holding commodities are low, and reduce excess stocks by buying existing commodities or existing capital stock. At the same time, it is necessary to shorten the time interval in which investors run off excess capacity. That is, the government should step in as a buyer, reducing excess stocks and excess productive capacity. As government purchases increase, capacity utilization also increases, and it will reach a state in which investors will engage in replacement of investment and output expansion.

3. Final remarks

Minsky's proposals on the financial system went beyond Keynes' call for socialization of investment. His proposals called for institutions to constrain the inherent instability of capitalist economies. In his framework, the main institutions put in place to stabilize the economy are the 'Big Bank' and the 'Big Government'. Minsky's instability theory provides the basis for dynamic regulation and a system of intervention to

stabilize an unstable economy. His approach combined reorienting finance to promote capital development of the economy in conjunction with the Big Bank in constraining instability.

A well functioning financial system must provide long term funding, promote the real capital development of the economy, and be designed to generate greater financial stability. Brazil's national development bank and the other public banks conform to Minsky's call for government involvement in direct provision of financial services. Brazil's investment needs require a bigger – not smaller – role played by BNDES and other public financial institutions, although one with a different set of organizational capabilities to foster public-private partnerships and develop a capital market complementary to BNDES. However, if government policies are successful in reducing system instability, then government intervention itself will lead to a model revision in which agents will behave in a riskier way. As Minsky emphasized, stability is destabilizing. Domestic policies must continuously pay attention to changing institutions in order to reduce the instability created by stabilization policies.

Moreover, such interventions should be accompanied by other objectives too. Brazil's development bank, in cooperation with other innovation-related institutions, can play a bigger role to support technological development and innovation policies in which the State plays an active role. That is, a development strategy should be designed not only in terms of stabilizing income and employment levels, but also by singling out the specific sectors for intervention, and how to intervene in conjunction with the private sector.

The involvement of the private financial sector in long-term financing of development requires lower and stable interest rates. Not only financial institutions currently have little incentive to be exposed to longer maturities of government debt but they have also shown no preference to be exposed to corporate credit risk. A high and volatile interest rate environment due to active manipulation of the central bank's policy rate (the Selic rate) and the effects of mark-to-market volatility have shifted portfolio preferences of long-term private domestic fixed income investors towards low duration, short-term assets. That is, high

and volatile interest rates are one of the main obstacles to the development of long-term financing. This calls for a major reform of Brazil's central bank institutional framework aimed at ensuring transparency and accountability.

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