Economic Development and the Functionality of the Financial System in Brazil: A Keynesian Approach*

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Nowadays it is widely accepted that financial systems influence economic development in important ways, though there is no consensus regarding the requirements for a financial system to be able operate in a way that is functional for economic development[1]. The different approaches to this relationship between the financial system and economic developments share, roughly speaking, two basic premises: that investments play a central role in the process of economic development, whether as a determinant of aggregate demand or supply, and that the materialization of these investments is crucially dependent on the financing conditions that support them.

Orthodox theory maintains that the financial system is a neutral financial intermediary whose existence is justified mostly by its role in diversifying opportunities to savers and investors and minimizing agency costs between lenders and borrowers. In a world *à la* Arrow–Debreu, with perfect information and complete, frictionless markets, financial institutions are not necessary, as suppliers and demanders of funds can negotiate directly. The lack of perfect information about the opportunities related to productive investment makes financial institutions crucial for investments as savers frequently cannot select the best opportunities for investment, and investors cannot find all the financing opportunities[2]. So, due to the

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[1] There is an extensive theoretical and empirical literature on the subject. In the theoretical field, Keynes (1936, 1937) and Schumpeter (1911 [1982]) are, in practice, the founders of this debate, emphasizing the central importance of money and credit to economic growth and economic development. In addition, the seminal article of Gurley and Shaw (1955), the book by the same authors (Gurley and Shaw, 1960) and the books of Shaw (1973), McKinnon (1973) and Minsky (1986) explicitly refer to the financial system. In the field of applied analysis the list is even longer, and notably includes Zysman (1983), World Bank (1989), Fry (1995), Stiglitz (1994, 1998, 2003), Kregel (1995, 1997), and Levine (1997,2004).

[2] According to Levine (1997, p. 690), 'The costs of acquiring information and making transactions create incentives for the emergence of financial markets and institutions. Put differently, in an [Arrow–Debreu] state-contingent claim framework with no information or transaction costs, there is

existence of imperfect information, the lack of financial intermediaries would reduce aggregate investment, as productive investment projects could not be implemented. Thus, an efficient financial system is the system that provides the best distribution of information to guide consumers/savers in the inter-temporal allocation of income and wealth. In so doing the financial system can contribute to the better allocation of resources, raising economic growth (Levine 1997; Merton 1993).

The Post Keynesian approach differs from the conventional view in the sense that it sees the financial system as playing an ambiguous role in the economy: at the same time as it can enhance economic growth as a provider of liquidity and in allocating *ex post* savings, by transforming firms' short-term debts into long-term liabilities, the actions of speculators in financial markets (necessary to provide liquidity to secondary markets) and of financial institutions in liberalized markets can have a destabilizing effect in such markets. So the 'functionality' of the financial system in this approach has a very different meaning from that of the more conventional view, and, as we will see, this has political implications.

The Brazilian financial system is currently more sophisticated than those of some other developing countries: the banking sector has one of the most developed clearing systems in the world; financial markets have developed sophisticated financial instruments such as different sorts of derivatives and other financial assets. However, when we consider its role in economic development since the 1960s, we can see that the financial system, overall and most of the time, has not been functional for development, especially in the case of long-term financing. So the financial system is efficient from a microeconomic point of view (mainly in the case of operational efficiency and the sophistication of banking technology) but cannot be considered efficient from a macroeconomic point of view. The recent expansion of the Brazilian financial system – in either the capital market or the credit market – since 2004 raises the question whether it results from an important and structural change in the system in the sense that it is becoming more functional for economic growth.

This chapter seeks to enquire whether the Brazilian financial system has been functional for economic development. To this end we first discuss the concept of the functionality of the financial system from a Post Keynesian perspective, and then in the sequence we analyse the relationship between the financial system and economic development in Brazil since the

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no need for a financial system (…) Thus, any theory of the role of the financial system in economic growth (implicitly or explicitly) adds specific frictions to the Arrow–Debreu model'.

1960s. Finally, in the conclusion we summarize the main arguments and findings of the paper.

The financial system's functionality for economic development

The role that investment and its financing conditions play in the dynamic of economic development, in both the short run and in the long run, is easily and intuitively understandable, but the process of economic development has some specificities that should be emphasized. Economic development is well-recognized as a complex phenomenon which involves not only economic growth (an increase in aggregated output in a purely quantitative sense), but also, and mainly, so-called structural changes. The latter include many changes which, in varying combinations, may accompany the process of economic growth in the long run, such as:

- changes on the country's productive structure due to the implementation or consolidation of new sectors and, therefore, of new goods and services;
- changes in productive processes due to technological innovations which emerge in established sectors, usually followed by the growth in factor productivity;
- changes in social structure resulting from changes on the profile of wealth distribution, in consumption habits or, indirectly, in the degree of people's access to certain goods and services (for example, transport, sanitation, health, education, urban services and financial services); and
- institutional changes arising from the creation of development institutions or from institutions that regulate markets or specific sectors, among others.

The process of economic development in progress, whatever its characteristics, is realized through the implementation, either spontaneous or mandated by government policies, of a series of investment projects in new productive capacity, in both quantitative and qualitative senses. By involving a series of investments and some degree of innovation (in a broad sense) of productive, social and/or institutional structures, economic development is necessarily a long-term process, in both its evolution and results.

The complexity of the process of economic development has relevant implications for understanding and meeting its financing needs. Roughly speaking, the required conditions for financing any stage of economic development are similar to those that normally apply to financing investment in an individual company. But in the former these required conditions are present on a wide scale.

For a particular firm, the first issue related to investment financing is to have its demand for money provided by the banking sector at the moment that the firm decides to invest; the second issue is to find the appropriate combination of own resources and third-party resources to make the maturity and the size of its liabilities compatible with the maturity and the expected return (size) of its investments. The greater obstacle lies in the fact that the future is unknown, both for the firm seeking finance and for the lenders. Thus, the success of the business depends crucially on the realization of the expectations that motivated both the firm and its lenders (Keynes 1936; Minsky 1986).

As it is well known, for Keynes (1936, 1937, 1939), in an entrepreneurial economy saving is not a precondition for investment as the *ex post* equality between savings and investments arises from the change in the level of income, while the investment decision precedes the income creation. Investment is determined mainly by the entrepreneur's expectations related to the future income of its capital assets. So investments will be realized if the entrepreneur's animal spirits are awakened, but also if there is credit is made available by the banking sector. In such an economy, finance, which is independent of prior saving, precedes investment. Savings are created simultaneously with investment: if there is enough finance to meet the needs of investment, the latter will generate sufficient aggregate income to make a variation in the desired saving equivalent to the initial variation in investment. In Keynes's words:

> Saving at the prior date cannot be greater than the investment at that date. Increased investment will always be accompanied by increased saving, but it can never be preceded by it. Dishoarding and credit expansion provides not an alternative to increased saving, but a necessary preparation for it. It is the parent, not the twin, of increased saving. (1939, p. 572)

The aggregate supply of finance is mainly determined by the banks' willingness to actively create deposits and credit. Keynes (1937), by analyzing the process of financing capital formation, described such a process as having two steps: first, the provision of money to facilitate the investment expenditure (*finance*), and second, the channels through which *ex*

post savings can help to consolidate the debts created to finance the expenditure (*funding*), that is, the process of transformation of short-term liabilities into long-term liabilities. Keynes suggested a circuit – finance →investment → savings → funding – in which savings are generated by investment decisions, as a result of the income multiplier, and the *ex post* savings could be channeled to capital markets to fund the short-term debt of the investors. Keynes summarized the financial requirement of the process of capital formation as follows:

> The entrepreneur when he decides to invest had to be satisfied on two points: firstly, that he can obtain sufficient short-term finance during the period of producing the investment; and secondly, that he can eventually fund his short-term obligations by a long-term issue on satisfactory conditions. Occasionally he may be in a position to use his own resources or to make his long-term issue at once; but this make no difference to the amount of 'finance' which has to be found by the market as a whole, but only to the channel through which it reaches the entrepreneur and to the probability that some part of it may be found by the release of cash on the part of himself or the rest of the public. Thus it is convenient to regard the twofold process as the characteristic one. (1937, p. 664)

Finance is a demand for money required for the purchase of investment goods. Finance is a *revolving fund* that does not require the prior existence of savings: if the flux of aggregate expenditures remains constant, given a constant money velocity, the existing monetary stock can finance it just by the normal changing of hands consequent upon market transactions, so that it is not necessary in this case to create new credit[3]. However, if aggregate expenditures increase, so that it new money (liquidity) has to be created, that can be done by agents' dishoarding or by banks' credit expansion – that is to say, all that firms need is for banks to be willing to accommodate their demand for money. For this reason banks 'hold a key position in the transition from a lower to a higher scale of activity' (Keynes 1937, p. 668). Banking liquidity is restored as long as the investment expenditures generate a higher income in the economy, which agents save in the form of banking liabilities. For this reason banks' creation of money is a bookkeeping operation that involves no actual resources (savings).

[3] According to Carvalho (1997, p. 467, emphasis in original), '*Banks do not have to create new loans*. The next spender in line will use the money received to make his or her payments. *Total deposits do not have to change for new payments to be made: They just change hands*. (…) [So] finance in the Keynesian concept has nothing to do with a constant flow of expenditures, finance remains a revolving fund.'

One of the characteristics that distinguish investments from other assets is that investments are constituted by long-lived assets; as a result firms face the problem of how to match their assets with their liabilities' structure, that is, how to consolidate their debts. The funds for the consolidation of firms' short-term debts into a structure of longer-term financial assets are available as the savings arise *pari passu* to the flux of investments[4]. So funding plays an important role in mitigating the increase in the financial fragility that is typical of monetary economies in the process of growth. Financial markets play an important but ambiguous role in supporting sustained growth. On the one hand, they can help to transform firms' maturities when financial markets are able to mediate between those demanding securities and those firms wishing to convert their short-term liabilities into long-term ones. That is, the lack of organized and developed financial markets can have the result that finance tends to be very short-term and credit rationing may occur in times of growth. Consequently, the financial positions of both firms and banks will become more fragile (Studart 1996, p. 283). On the other hand, financial markets can be a source of instability created by the action of speculators and by the debts that sustain growth. As speculators dominate financial markets, short-run practices dominate the rhythm of assets prices.

Speculation is essentially the activity of forecasting the psychology of the market. In an entrepreneurial economy, the organization of financial markets needs to face a severe trade-off between liquidity and speculation, as Keynes pointed out in Chapter 12 of his *General Theory* (GT). In his words,

> (…) for most of these persons are, in fact, largely concerned, not with making superior long-term forecasts of the probable yield of an investment over its whole life, but with foreseeing changes in the conventional basis of valuation a short time ahead of the general public. They are concerned, not with what an investment is worth to a man who buys it 'for keeps', but with what the market will value it at, under the influence of mass psychology, three months or a year hence. (1936, p.154–5)

The primary function of financial markets is to provide liquidity, which involves the ability to buy and resell assets in a well-organized market where financial assets can be readily resold

[4] However, *ex post* savings cannot be necessarily channeled into long-term financial assets, and may have to be used to buy short-term assets. This depends on the availability of adequate financial assets as well the liquidity preference of savers.

for cash. Since market provides liquidity to these assets, this characteristic facilitates their use to finance fixed investments[5].

The mechanism of investment financing, however, is not perfectly coordinated in an economy under uncertainty. The capital requirements and uncertainty involved in the process are broadly extended when it comes to financing a heterogeneous set of investments – which may occur simultaneously or be staggered over a relatively short period of time, as often happens in each round of the process of economic development (Gershenkron 1962). The difficulties are even greater in light of two other typical aspects of the development process: first, in market economies, even if they are deliberately subjected to development policies, there is no way to promote a perfect coordination between the various investments in order to avoid overloading financial markets with prolonged periods of excess demand; and second, part of the ongoing investment is applied to new sectors, products or production processes, which do not have a history of previously accumulated profits.

Finally, it is worth noting that, when the financing of a particular enterprise is considered from the perspective of the borrower, the existence of a diversified financial infrastructure is generally assumed, enabling the firm to assess the possibilities of the market and to opt for a satisfactory combination of equity and debt. In practice however, this condition is not guaranteed either for a firm or (even less) for the whole economy, especially in the case of developing countries.

Therefore, from a long-term and aggregated perspective, attempting to solve the problem of financing economic development requires much more than entrepreneurial 'expertise' in choosing the best capital structure. It is necessary to establish and maintain an environment that is favorable to the *formation* of a diversified system of financial institutions (private, public and regulatory) and instruments, which compete with and/or complement one another and are able to offer alternative financing sources for the spending units. Besides, it is necessary to develop instruments that protect savers from risk.

The experience of so-called developed countries demonstrates that there is no an ideal model of financial system to support economic development. As is well known, Zysman (1983) suggested a taxonomy of financial systems with two types: a *capital market-based* system

[5] Conversely, the lack of secondary market can inhibit the development of financial markets. See Alves Jr, Filho and Paula (1999/2000).

where there is significant participation of direct instruments (stock and bonds) as sources of long-term funding and a predominance of specialized financial institutions (segmentation), and a *credit-based* system where the capital market is weak and there is the predominance of long-term banking loans. In a capital market-based system (the Anglo-Saxon model) the finance and funding functions are separated, so that the banking sector provides short-term credit while the funding is undertaken in the capital markets. In the credit-based financial system both functions are performed by universal banks (the German model), or alternatively by specialized banking institutions such development banks (the French model)[6].

Zysman (1983) pointed out that, historically speaking, both capital market-based and credit-based systems have been successful in supporting economic development. His analysis also showed that few countries have been able to combine financial and economic development in a synchronized way. Among the G-7 group, for example, only the United Kingdom, the United States and Germany have done it, the first two with capital market-based systems and the last with a credit-based system. All another industrialized and developing countries, whose industrialization process strengthened after the Second World War supported it with a government credit-based financial system, in charge of large public banks and/or development agencies, in partnership with major private banks[7]. In line with Zysman (1983), Aghion (1999) notes that in the early post-war years, especially the 1950s, there was an unprecedented movement to establish public development banks, especially in the developing countries.

The predominance of public credit systems at key stages of post-war economic development in various countries is no accident. From the Keynesian perspective adopted here, the conditions inherent in the process of economic development and the typical mode of operation of financial markets explain this trend[8]. As already noted, the process of economic development is marked by great uncertainty and high capital costs even though they may also involve high private, macroeconomic and social rates of return. However, due to the rational behaviour of the agents, it is natural that the potential suppliers of finance reject presumably (though not necessarily) high risks, especially in scenarios with a high degree of uncertainty,

[6] Of course, since the 1980s financial systems in both developed countries and developing countries have greatly changed.
[7] In developing countries foreign debt was another important component of the financing structure of the development process; and in some cases it remains one.
[8] See Hermann (2011) for an analysis of the theoretical discussion of the role of public banks in the financial systems of developed and developing countries.

for two reasons. on the one hand, a high degree of uncertainty makes it even more difficult to forecast and assess the risks involved; on the other hand, the incorporation of high risk premiums in the required rates of return of financial assets can raise them substantially for potential borrowers, reducing their demand for funds. In other words, a higher degree of uncertainty increases risks for both lenders and borrowers (Minsky, 1986).

The conjunction of these elements makes the financing of development a difficult task, even in countries where an advanced stage of economic and financial development has been achieved. In short, the usual conditions of operation of the assets markets contribute to making the financial market (and the financial system) systematically 'incomplete' and dysfunctional with respect to the financial needs of the economic development process[9], especially in the case of developing countries that still have underdeveloped financial markets. In this respect, firms' investments tend to be particularly penalized, since in these cases the uncertainties regarding business outcomes tend to be higher for both the creditor and the debtor sides.

The 'dysfunctionality' of the financial system for the needs of economic development (or even economic growth) may have unfavorable consequences for the dynamics of the economy that go beyond a 'simple' delay of this process. Indeed, in periods marked by pessimistic 'long-term expectations' (Keynes 1936, ch. 12) any progress in the economic development process tends to be prevented because, on the one hand, spontaneous investment is limited and, on the other hand, policies encouraging investment unaccompanied by an adequate provision of public financing (especially credit) are doomed to failure because of a total lack of other financing sources.

In periods characterized by optimistic expectations, given the scarcity of the most appropriate sources of financing, planned investments may be financed by some combination of equity, short-term credit and, if available, foreign loans.[10] In this case, the (inadequate) structure for financing investment will be characterized by a relevant degree of mismatch of terms and currencies, and therefore of high risk conditions.

[9] A market is said to be incomplete when some of its (theoretically) possible segments do not develop or exist, due to lack of interest on the part of agents located on either the supply side or the demand side of the market.

[10] Foreign credit will be available only if the economy operates with a reasonable degree of financial openness and if foreign investors are optimistic about the prospects of the country in question.

In short, in the absence of a financial system able (or willing) to meet the needs of the economic development process, each cycle of expansion in investment will be accompanied by increased financial and/or external fragility (Minsky 1986; Paula and Alves Jr 2000). This condition increases the risk of the cycle being interrupted by banking and/or currency crises. The concept of financial functionality, formulated by Rogerio Studart, synthesizes the idea:

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

There is clearly a Keynesian dimension (solving the problem of financing investments) and a Minskyan dimension (seeking to reduce financial fragility) involved in the concept of the functionality of the financial system. Indeed, the functionality of the financial system is not a detail that can 'boost' the results of each round of economic development, but a fundamental condition for development in the long run. One important consequence of the theoretical approach developed here is that, although investment decisions determined by the entrepreneur's long-term expectations generate their own aggregate savings, the development of the financial system is very important: it supports economic growth in order to avoid financial constraints that can halt investment decisions, and its ability to channel *ex post* savings so as to fund firms' liabilities more securely reduces firms' financial fragility. One cannot expect private financial markets to create such financial tools spontaneously, especially in developing countries.

The financial system and economic development in Brazil

The lack of a *private* financial structure to support economic development is an old and well-known limitation of the Brazilian financial system (BFS). This problem has persisted to the present day in spite of several governmental attempts to solve it. These include (*a*) the 1964–67 financial reform, which was designed to promote the development of a capital market-based system and implemented a banking reform inspired by the North American-type segmentation of financial systems; (*b*) the 1988 banking reform (more modest than that of 1964–67) which established the model of universal banks in the country in order to stimulate the development of a private (long-term) credit based system; and (*c*) the whole set of

liberalizing financial policies implemented since the 1990s (and still in progress), which supposedly would stimulate financial development, based on sources of private finance, both external and domestic, and operating through both the credit and the capital markets[11].

The main objective of the 1964–67 financial reform was to provide non-inflationary financial mechanisms for the Brazilian economy in order to support industrialization. The idea of the reform was to set up a diversified and segmented banking sector (commercial banks, investment banks, finance companies, thrift institutions, etc.) and to establish a 'private arm' of the BFS to be supported by the capital markets as in the US model. Financial institutions were authorized to issue some liabilities – such as saving deposits – with monetary correction clauses, a mechanism that would also be used to create viable domestic long-term financing (real estate credit and public bonds). Legislation on foreign exchange operations permitted the entry of foreign capital through the modalities of foreign direct investment and foreign loans (for both corporations and banks). The task of providing funds to finance investments was ascribed to the National Economic Development Bank (BNDES), regional development banks, investment banks and brokerage firms (Hermann 2002). The reforms succeeded in expanding and diversifying the BFS, resulting in an increase in the number of financial institutions in operation in Brazil, from 499 in 1964 to 1,615 on average in the 1970s; at the same time the total private-sector credit's share of GDP increased continually from 26.1 percent in 1968 to an average of 48.4 percent in the 1970s (Hermann 1998, p. 40).

However, in practice the performance of the BFS was somehow very different from its original conception. The capital market did not succeed in becoming an important alternative for firms' long-term financing, due to the lack of institutional investors and of an efficient disclosure system, the speculative boom in this market[12], and structural factors on the demand side (see below). Institutional diversification did not result in the segmentation of the financial system; in practice, although it was forbidden by the constitution of universal banks, financial conglomerates formed, headed by commercial banks or investment banks, followed by banking concentration. Investment banks became direct suppliers not of long-term financing but rather of working capital, or of long-term credit with the use of external

[11] For discussions about the political and financial constraints on financial developments in Brazil in the post-war period, see the classic analysis of Tavares (1979), and also Studart (1995) and Hermann (2002, 2010).

[12] The tax incentives encouraging savers to participate in the stock market, as part of the 'dream of popular capitalism', generated a speculative boom in 1971 that eventually resulted in a sudden and rapid bursting of the Brazilian stock market.

loans. In particular, after 1973, due to the increase in domestic prices, private banks avoided issuing liabilities indexed to a monetary correction clause, and at the same time reduced the average term of their loans. Consequently, during the 1970s investment and growth were supported by public loans (via BNDES and Banco do Brasil) and also external loans, which increased substantially, favored by the increasing liquidity in the international financial market.

The lack of private long-term financing mechanisms in Brazil has deep structural roots, related to how the strategy of import-substitution industrialization was implemented, giving support to heavy industrialization. This strategy was sustained by the tripod of multinational enterprises, state-owned firms and private domestic firms, with multinational firms dominant in the most dynamic segments of the manufacturing sector, such as automobiles. The industrialization consisted of imitation, without any relevant effort to effect technological transfer or to stimulate innovation. According to Fajnzylber (1983), one of the main features of Latin American industrialization was the lack of an 'endogenous development nucleus', that is, the development of strong domestic industrial conglomerates. The multinational enterprises that dominated the more dynamic manufacturing sectors (vehicles, consumer durables, etc.) in Brazil formed concentrated oligopolies that, combined with the implementation of widespread protectionism in the domestic market with no predetermined time limit, resulted in very high firms' markups; this encouraged firms to rely mainly on self-finance. This feature of industrial organization in turn helped ensure that Brazil's industrialization contributed, from the demand side, to the underdevelopment of long-term financing instruments in the domestic financial system.

Brazil's economic development in the post-war period, especially firms' long-term financing, relied at every stage on a combination (with varying weights in different periods) of self-financing, public credit and foreign capital. In particular, BNDES played a crucial role in the long-term financing (investment) of industrial firms in Brazil. Although this financing model failed to develop private domestic financial instruments to support firms' investments, and even contributed to the failure of the mechanisms of financing the Brazilian economy (due to the external debt crisis and the related fiscal crisis), it encouraged somehow the economic development process in the years 1950–70, the period of the greatest advance of the industrialization process in Brazil. The following decades, however, show clear signs of financial system 'dysfunctionality'. The serious financial difficulties faced by the country in

the 1980s, marked by the well-known foreign debt and fiscal crisis and high inflation, started a long period of economic stagnation that lasted, almost without interruption, until 2003[13].

However, unlike what is observed in other developing countries with financing difficulties, the dysfunctionality of the BFS does not at all reflect any financial fragility on the part of private banks. The private banking system showed a clear trend to balance sheet diversification, high profitability and financial strength. Until the Real Plan, Brazil experienced a period of very high inflation (sometimes higher than 1,000 per cent), when the existence of 'indexed money' (short-term domestic denominated financial assets, i.e. quasi-money, which were mostly indexed to overnight rates of interest) was responsible for the maintenance of savings in the domestic financial sector, avoiding in Brazil the demonetization and consequently the dollarization of the economy, such as occurred in Argentina and another countries in Latin America subjected to a high-inflation environment[14]. In this context, credit supply declined sharply (Figure 1) and was almost entirely short-term in this period, but banks could survive very well thanks to short-term and inflationary revenues[15]. In parallel, due to the high macroeconomic risks and the existence of public bonds with high liquidity, private capital markets could not develop, making the funding of investment impossible or very difficult and, therefore, constraining economic growth and development.

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[13] The 'stagflation' in Brazil during this period was to a minor degree interrupted several times: in 1984–86, in response to exports and the temporary positive effects of the Cruzado Plan; in 1993–95, reflecting the implementation and success of the Real Plan; and in 2000, when exports recovered from the 1999 crisis and the exchange rate anchor was consequently replaced with a flexible exchange-rate regime. Over the whole period, however, economic growth in Brazil has displayed broadly speaking a stop–go pattern.

[14] According to Bresser-Pereira and Ferrer (1991, p. 10), in Argentina both M1 and M4 (which includes M1 plus financial assets) decreased after the late 1970s. In February 1990, M1 was less than 3 percent of GDP, while M4 was less than 5 percent of GDP, because economic agents reallocated their portfolios into the US dollar. Differently, in Brazil accelerating inflation decreased M1 from the early 1970s, but M4 remained stable as a consequence of the supply of domestically denominated indexed money. According to data from Central Bank of Brazil, the M1:GDP ratio and the M4:GDP ratio were, respectively, 9.2 percent and 25.1 percent in 1980, while in 1993 they were 1.3 percent and 23.1 percent, respectively.

[15] Inflationary revenues accounted, on average, for 38.5 percent of banks' value added (the difference between banks' interest revenues and interest expenditures) between 1990 and 1993, and they were even more important for state-owned banks than for private banks (Paula 2011, p.155).

After the implementation in 1994 of the Real Plan, a successful program of price stabilization by means of a semi-pegged exchange rate[16], there was a mini-credit boom, propelled by individual and working-capital loans. After the contagious Mexican crisis at the beginning of 1995, the Central Bank of Brazil adopted a very restrictive monetary policy, and, consequently, the credit boom was followed by a quick decline in the supply of banking credit, which, together with the deterioration in the quality of bank credit portfolio, soon resulted in difficulties for Brazil's banks. The Brazilian government responded by implementing bank restructuring programs – to stimulate acquisitions of private banks in trouble (PROER[17]) and privatization of various state-owned banks (PROES[18]) – and by partly opening the economy to foreign banks. As a result of such measures, the 1995 banking difficulties did not trigger a banking crisis, as was the case in Argentina and Mexico. More importantly, since the 1997 Asian crisis the Brazilian government had offered the banking sector hedges against exchange devaluation and interest rate changes, by making available to them public bonds indexed to the exchange rate and the overnight interest rate. Banks could therefore adopt a conservative financial stance, that is, with a high proportion of government securities in their portfolios, low levels of mismatch between assets and liabilities, and low leverage levels. Consequently banks were able to afford risk aversion strategies, thanks to the availability of high-yielding, relatively risk-free government securities as an alternative to private-sector lending[19].

In spite of the structural problems still present in the Brazilian economy, 2004 opened a new phase in the history of the Brazilian economy and to the BFS. After the years of stagnation that followed the Asian crisis (1998–2002), the external environment significantly improved as world economic growth resumed, stimulated by plentiful international liquidity, low interest rates and relative exchange-rate stability. Domestically, although the restrictive bias

[16] However, the Real Plan generated enormous economic problems related to external vulnerability. On this topic, see Paula and Alves Jr (2000).

[17] The Program of Incentives for the Restructuring and Strengthening of the National Financial System (PROER), under Provisional Measure No. 1179 issued in November 1995, aimed to preserve the solvency of the financial system by removing distressed banks and bolstering those that remained. PROER financed some of the most important banking acquisitions in the following years, including the acquisition of Nacional by the domestic bank Unibanco, the acquisition of Economico by the domestic bank Excel, and the sale of Bamerindus to the British bank HSBC.

[18] The State-Owned Banks Reduction Incentive Program (PROES) was initiated in August 1996, in order to restructure the public-sector financial system. One of the primary goals of PROES was to reduce public-sector participation in the financial system under an overall strategy to force a fiscal adjustment of the states and the restructuring of their debt.

[19] See also Paula and Sobreira (2010) and Paula (2011).

of short-term macroeconomic policy (and also fiscal policy and monetary policy) was maintained during both of President Lula da Silva's terms of office (2003–06 and 2007–10), it was to some extent relaxed in his second term[20]. This slight change was made possible by the improvement of external environment, which resulted in the appreciation of the exchange rate and, hence, the achievement of inflation targets with some reduction in interest rates.

After 2004, Lula da Silva's government sought to reconcile the basic principles of the liberal model of economic policy[21] with a more active role for the state in the economy, including the implementation of an industrial policy. In March 2004 it launched the Industrial, Technological and International Trade Policy (PITCE, in the Portuguese abbreviation), which integrated governmental programs supporting exports with programs supporting industrial development, with the focus on increasing innovation diffusion and boosting competitiveness.

In its second term (2007–10), Lula's government initiated three programs to stimulate investment: the Growth Acceleration Program (GAP), the Productive Development Program (PDP) and the Investment Support Program (ISP). The first two programs are classified as structural and developmental actions of government.

The GAP, announced in January 2007, is a program of public and private investments in infrastructure (especially transport and energy), of about R$500 billion for the period 2007–10. In May 2008 the Brazilian government launched the PDP with the aim of increasing private investment, especially that linked with research and development (R&D). Like the PITCE, PDP is a program of industrial policy that aims at increasing productive and R&D investment in general, as well as stimulating the export activities of small firms and increasing Brazilian exports in the international trade. Unlike the GAP and the PDP, the ISP is an emergency program launched in June 2009 (initially expected to end in June 2010, but

[20] At the same time, the Central Bank of Brazil implemented a policy of accumulating international reserves, which increased from US$53.2 billion at the end of 2005 to US$192.8 billion in 2008. This policy was particularly important to Brazil's response to the effects of the international financial crisis, as the country's net external debt balance of around 15% of GDP at the end of 2002 was transformed into a net credit balance of around 10% of GDP at the end of 2007 (Coutinho and Borges 2009, p. 208).

[21] In 1999, after the Brazilian currency crisis, there was an important change in configuration of economic policy, such that by adopting the 'tripod' of a floating exchange-rate regime, an inflation targeting regime, and a primary fiscal surplus it moved closer to what is known as the 'New Consensus on Macroeconomics' (Arestis, Paula and Ferrari-Filho 2007).

extended until December of that year) as part of the government's counter-cyclical response to the international financial crisis.

This new scenario had clear positive effects on the Brazilian economy, which resumed investments projects and economic growth after 2004 (except in 2009 due to the international financial crisis). In this context, the response of the BFS was positive, evidence that the macroeconomic environment plays a crucial role in the development of finance in the Brazilian economy. Compared with the average performance in the last phase of stagnation (1999–2003), the period 2004–08 is one of significant recovery of public credit, especially BNDES loans, which played an important role in financing programs designed to stimulate investment; of continuous and strong expansion of private bank credit, extended mainly by domestic private banks (Figure 1); and of strong and unprecedented expansion of capital markets, in both the stock market and the corporate bond segments[22] (Figure 2).

<INSERT FIGURE 2 ABOUT HERE>

Although this phase of growth was interrupted in 2009, in response to the effects and uncertainties resulting from the international financial crisis triggered in the United States in 2008, in 2010 the economy showed clear signs of recovery. To respond to the effects of the 2008–09 financial crisis, the Brazilian government used instruments that contributed to the rapid recovery of the economy, including liquidity-enhancing measures, intervention in the foreign exchange markets, the use of fiscal measures (such as a reduction in the industrial-products tax burden on motor vehicles), and government encouragement of federal state-owned banks to expand their credit operations. As Figure 1 shows, federal state-owned banks (the main ones were BNDES, Banco do Brasil and Caixa Economica Federal, CEF)[23] implemented a significant contra-cyclical policy in the credit market 2008-2009, steadily increasing their credit supply, while the growth rate of loans of private banks (both domestic and foreign) was falling. The important presence of federal state-owned banks in the bank credit market – in particular of BNDES in supporting long-term financing to industry and

[22] The issue of debentures was reduced after 2008 partly because the Brazilian government forbad the leasing institutions from issuing debentures.

[23] Banco do Brasil and CEF are commercial banks. Banco do Brasil is a universal bank and the leading institution in Brazil's banking sector. CEF focuses its banking activity mainly on saving deposits and real estate credit, where it is the leading institution. It should be stressed that both banks played an important role in avoiding a collapse in the credit market after the contagion of the international financial crisis in September 2008 by purchasing the credit portfolios of small and medium banks.

infra-structure – was an outstanding feature of the Brazilian government's reaction during the contagion of the international crisis.

One can see the counterpart of this situation to the 'real' side of Brazilian economy in Figure 3. This figure shows the sources of investment financing in Brazil in 2001–10, according to BNDES estimates. Self-financing (firms' accumulated profits) has been responsible on average for around 46 percent of investment financing in Brazil. That share was much lower in 2009–10 than in 2001–08, when it represented 50 percent of total investment finance); this shift is related to the increase of BNDES loans, whose share of total investment finance increased from 20 percent in 2004–05 to more than 38 percent in 2007–10[24], as BNDES played an important counter-cyclical role in the credit market after the contagion of the international financial crises. External funds amounted on average to 15 percent of total investment financing in 2001–10, a figure that oscillated considerably over the period. Primary stocks and corporate bonds (mainly debentures) have an oscillating and minority participation in the investment financing: debentures and equities together contributed 14 percent of total investment financing, and could constitute an important source of external financing in the event that the investment rate accelerates in Brazil.

<INSERT FIGURE 3 ABOUT HERE>

However, the 'preference for flexibility' that was typical of the high-inflation environment has persisted in the Brazilian economy: 'savers' still prefer short-term and/or liquid financial assets. Debentures, which are the main private debt bond issued in Brazil, have mostly been issued indexed to the interbank interest rate (DI), which is the interest rate defined in the banking reserves market[25]. This means that financial fragility, arising from changes in the interest rates, is handled by the issuer firms as they assume the market risk[26]. Besides, credit banking has been mostly supplied with some sort of collateral (vehicles and payroll) or short-term credit (firms' working capital and firms' overdraft accounts). Figure 4 shows that the increase in credit since 2007 has followed the increase in working capital that has been the main modality of corporate credit in Brazil. For long-term corporate loans, the only

[24] It should be pointed out that BNDES lent PETROBRAS, the Brazilian oil firm, around R$25 billion in each of 2009 and 2010.
[25] In 2005–08 debentures issued indexed to the DI rate contributed more than 90% of the total issues of this type of corporate bond.
[26] Market risk is the risk that an increase in the interest rate will reduce the price of the bond. In the case of the debentures issued indexed to the DI rate, there in no such risk, as the price of the bond does not vary with the change in the interest rate.

alternative has been BNDES loans. In turn, although securities markets (equities and debentures) have increased since 2004, the weight of foreign investors on the Brazilian stock market had increased dangerously, exposing this market to greater volatility and vulnerability (BNDES 2009)[27]. This scenario leads us to an important conclusion: although the response of the BFS to the recovery of the Brazilian economy in recent years has been positive, it is not sufficient to amount to a situation of 'high' functionality of the financial system for economic development, although there is some evidence that financial deepening increased somewhat during 2004–10. On the other hand, the counter-cyclical role of public banks during the contagion of the 2008–09 financial crisis showed the importance of these banks have in Brazil in 'complementing' the private banking sector.

<INSERT FIGURE 4 ABOUT HERE>

More recently, the gradual and steady reduction in the Selic interest rate – from 12.5 percent in August 2011 to 7.5 percent in September 2012 – and the more intense change in the structure of government bonds, reducing the percentage share of interest rate-indexed public bonds, began to provide a stimulus to the growth of private bonds, and in particular longer-term bonds and/or bonds indexed to indexes other rather than the DI rate. The reduction in the interest rate in Brazil has stimulated at the margin the diversification of investors' portfolios – in particular investment funds, pension funds and insurance companies – a trend that will have important and positive effects on the development of the market for corporate bond in Brazil. Further, the Brazilian government launched a stimulus packet for the development of the private bond market at the end of 2010, providing tax incentives to investors to purchase corporate bonds oriented to financing infrastructure projects and investment, but the results have so far been very limited[28].

[27] The weight of foreign investors in the Brazilian primary stock market, from the point of view of acquisitions, was 54%, on average, in the *boom* period (2004–08), having reached 71% in 2007.
[28] Law 12,431/11 prescribed that the granting of tax allowances would require the funds raised to be used exclusively in investment projects, including R&D and innovation. It also eliminated certain legal and tax constraints that affected the performance of the secondary market of debentures, such as double taxation of periodic earnings. The Brazilian government provided tax exemption for non-residents on earnings related to corporate bonds linked to investment projects acquired since January 2011.

Conclusion

This chapter has analyzed certain characteristics and structural changes in the recent evolution of the Brazilian financial system, including both the banking sector and the capital market.

In theoretical terms, we understand that a more functional financial system is that financial structure that performs well the functions of finance and funding; that is to say, it supports financially stable growth by providing finance and funding to investors at the lowest possible cost. In the case of developing countries, with still underdeveloped financial markets and high macroeconomic uncertainty (which increases financial risks and consequently capital costs), one cannot expect private markets spontaneously to create the appropriate financial instruments. One important policy implication of this analysis is that, for the purposes of economic development, historical experience shows that in most countries industrialization was supported by some sort of government credit-based financial system (large public banks, development agencies and/or subsided private credit for some industrial segments).

In this chapter, we have shown that during the period of industrialization in Brazil the lack of private long-term financing for firms was a sort of Achilles heel of Brazilian development. More recently, the recent growth in either credit or securities markets may be not sufficient to create a situation of 'high' functionality of finance for economic development, when we consider the following. First, among the banks a high liquidity preference is still dominant, so that credit is mostly short-term and frequently related to some collateral. Second, the capital market is still underdeveloped, and the recent growth of the stock market is associated mostly with the increasing weight of foreign investors, which exposes this market to greater volatility and vulnerability. Third, corporate bonds have also increased recently but they are mostly concentrated in shorter maturities and/or are issued indexed to short-term interest rates (DI). The functionality of the financial system, however, demands further and broader study, in order to include some indicators related to the stability (or instability) of the financial system.

In conclusion, the macroeconomic environment and economic policy play a crucial role in determining the financial conditions of the economy. In the case of Brazil, the level of the short-term interest rate (Selic) has direct and indirect impacts on the supply of private finance: directly as the reduction in the interest rate (which remunerates some public bonds) results in a change in the risk behavior of investors, who move from more liquid and less

risky financial assets to more long-term assets; and indirectly as the determination of monetary policy has an impact on effective demand, and consequently on output growth and productive investment decisions. Furthermore, macroeconomic volatility (the interest rate, the exchange rate and the inflation rate) also has important effects on private financial instruments as these variable rates define the risks conditions for both investors and savers. So the achievement of a more stable macroeconomic environment is crucial for the development of long-term financial relationships in Brazil.

Finally, the recent growth of the financial system in Brazil, in terms of both capital markets and credit markets, shows that the development long-term financial relationships in Brazil has a long way to go. Although one can expect private securities (stock and bonds) to grow as an alternative to firms' self-finance in coming years, they are not going to be enough to overcome the financial constraints to investment in Brazil that arise from the structural characteristics of incomplete financial markets. Therefore, the presence in Brazil of a big public development bank (BNDES) cannot be seen as an anomaly, but actually it is a distinguishing feature of the BFS that has been used to expand the productive capacity of firms that helps to enhance growth. Furthermore, BNDES can be even used to give stimulus to the development of private financial instruments, in particular corporate bonds, for instance by providing the liquidity to form a secondary market in corporate bonds in Brazil.

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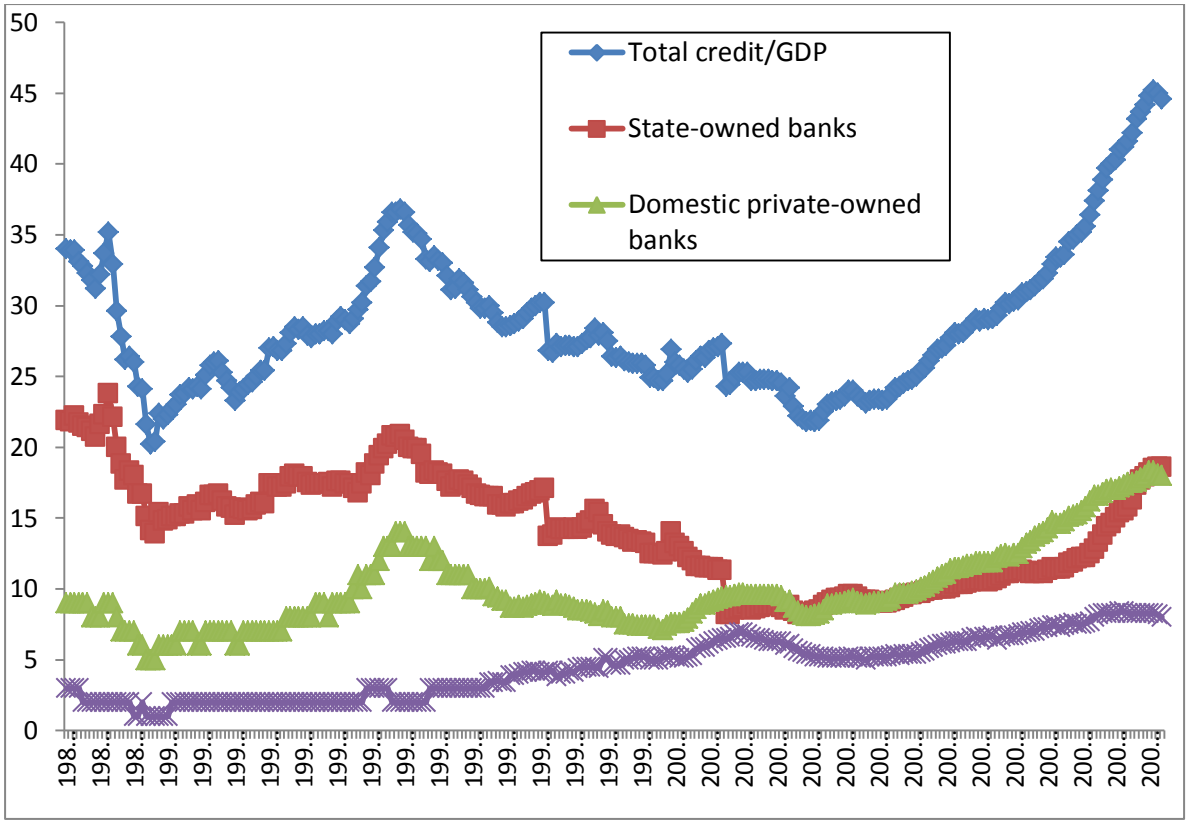

Figure 1: Banking credit supply in Brazil (% of GDP), June 1986 – December 2009

Source: Central Bank of Brazil

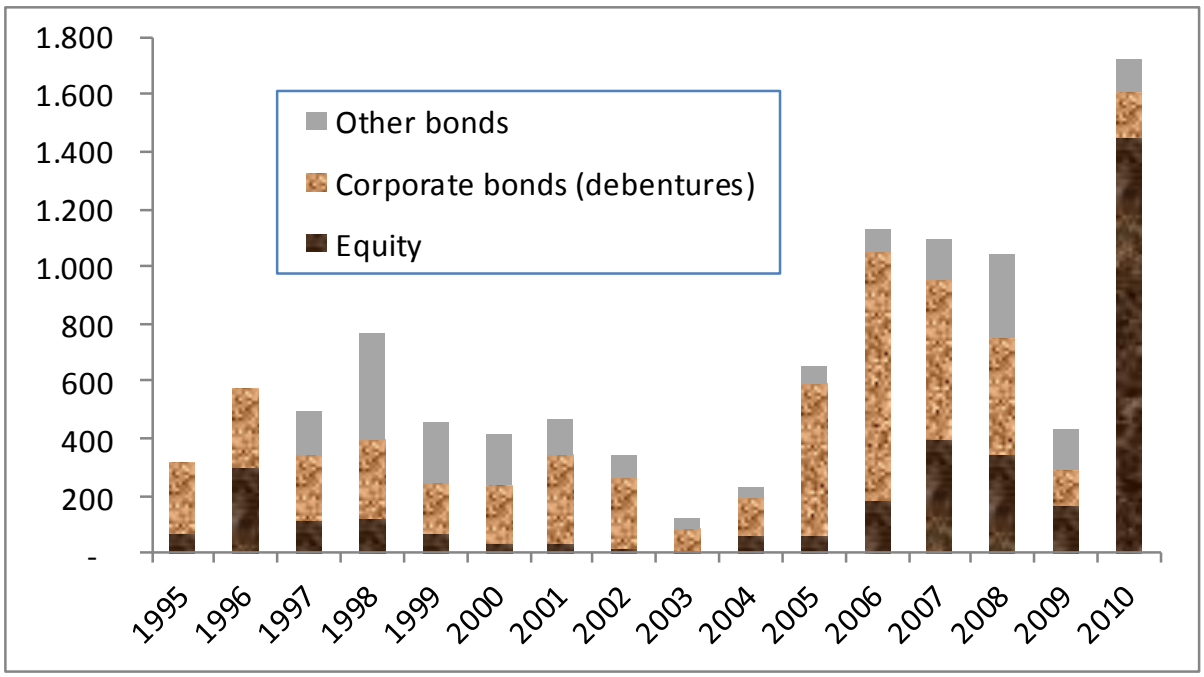

Figure 2: Capital market primary issues in Brazil (R$ billion at 2010 prices), 1995–2010

Source: Central Bank of Brazil

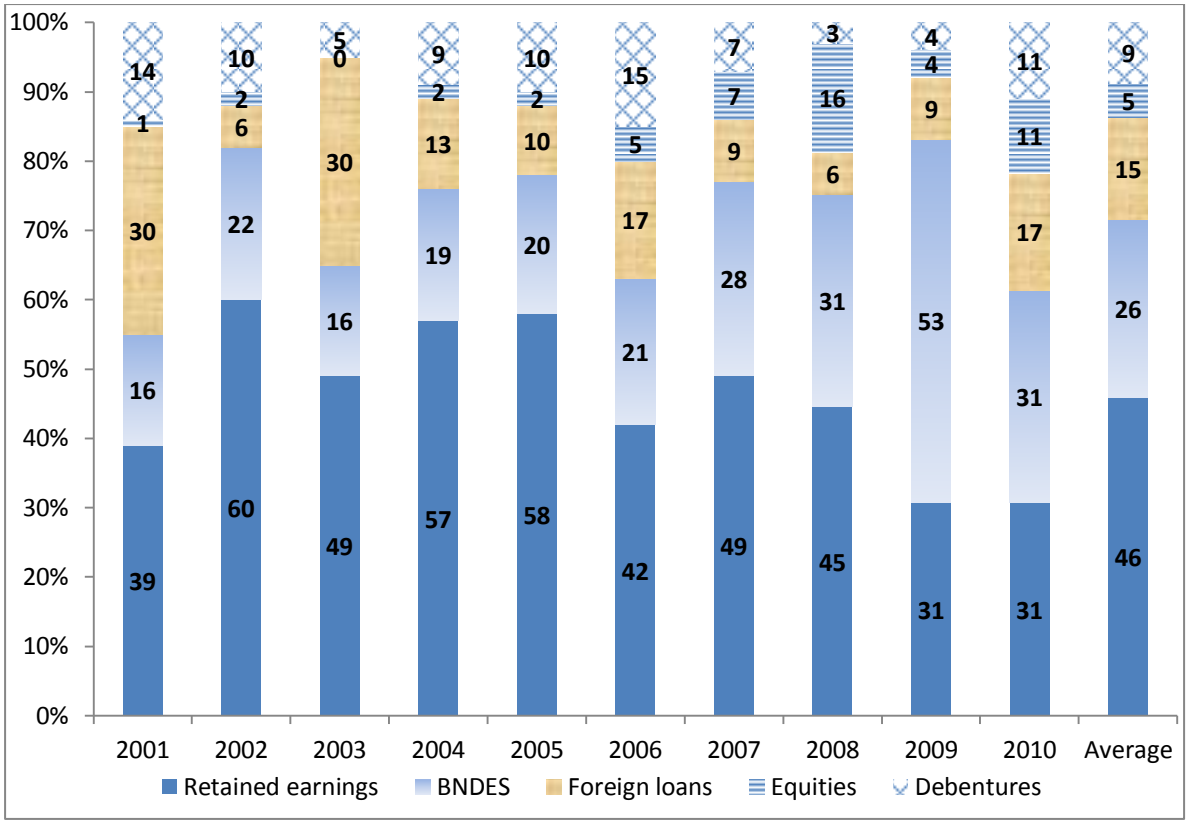

Figure 3: Sources of firms' investment finance (percentage share)

Source: BNDES

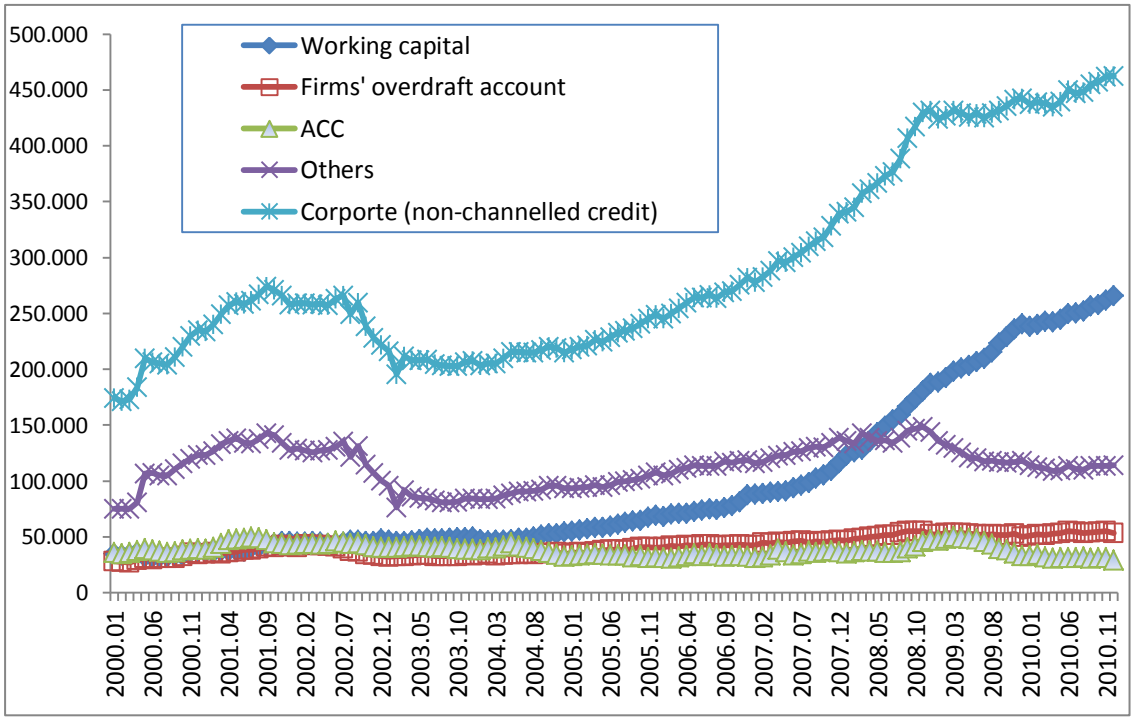

Figure 4 – Main modalities of corporate loans (non-channeled credit)*

* R$ million at 2010 December prices (IGP– General Price Index[29])

ACC, advanced on exchange contracts

Source: Authors' elaboration of data from Central Bank of Brazil

[29] IGP is prepared by Getulio Vargas Foundation, a private foundation, and it is calculated through a weighted index that includes wholesale price index (60.0%), consumer price index (30.0%) and national index of building costs (10.0%).