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Raising Investment in Brazil

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RAISING INVESTMENT IN BRAZIL

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ABSTRACT/RESUME

Raising investment in Brazil

Low investment rates are limiting Brazil's future potential growth rate. This paper analyses a number of potential reasons for these low investment rates and discusses policy options to achieve faster capital accumulation. A shortage of domestic saving appears to be a major constraint to higher investment rates in Brazil. Due to high levels of current expenditures, in particular pension entitlements, public sector saving is negative. In addition to being costly, the pension system redistributes income to individuals with relatively low saving propensities, thereby reducing private saving as well. In order to control pension expenses in the future, this paper suggests a number of parametric pension system reforms. Beyond a scarcity of domestic savings, major curbs on investment include the high level of real interest rates, whose reasons are not easy to pin down, and thin long term credit markets, which are dominated by the national development bank BNDES. Going forward, engaging commercial lenders in the provision of long term funding will be necessary to cover the country's investment needs. This will require leveling the playing field, which can only be achieved by removing BNDES' exclusive access to low-cost funding from a workers' welfare fund and through budget transfers. Another factor limiting investment is the fragmented tax system, which raises firms' compliance costs and adds to an already high tax burden. Finally, regulatory reforms, including the removal of remaining entry restrictions as well as reductions in trade protection, may reduce firms' costs and enhance investment incentives. This Working Paper relates to the 2011 OECD Economic Review of Brazil 2011 (www.oecd.org/eco/surveys/Brazil).

JEL classification codes: E21; E22 ; G21, G28, H20, H55, O16 ;
Keywords: Brazil; investment; saving; pensions; taxation; financial markets; directed credit; BNDES

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Accroître l'investissement au Brésil

La faiblesse des taux d'investissement limite le futur taux de croissance potentielle du Brésil. Cet article analyse des possibles raisons pour cette faiblesse et propose des réformes qui pourraient accélérer l'accumulation de capital. Un déficit de l'épargne intérieure semble constituer un sérieux obstacle à une accélération des taux d'investissement au Brésil. L'épargne du secteur public est négative en raison de l'importance des dépenses, notamment au titre des droits à retraite. Outre son caractère onéreux, le système de retraite redistribue des revenus à ceux qui sont relativement peu enclins à épargner, et entame ainsi l'épargne privée. Pour pouvoir maîtriser demain les dépenses de retraite, cet article propose une série de réformes des paramètres du système des retraites. Parmi les principaux freins à l'investissement figurent le niveau élevé des taux d'intérêt réels, qui ne s'explique pas aisément, et l'atrophie des marchés du crédit à long terme, dans lesquels la banque nationale de développement, la BNDES, joue un rôle dominant. Dans l'avenir, il faudra inciter les organismes de crédit privés à procurer des financements sur le long terme pour financer les besoins du pays en investissement. Ceci impliquera un besoin d'établir des règles du jeu équitables, en éliminant l'accès privilégié de la BNDES à des financements nettement moins onéreux que ceux des banques par le biais du fonds d'aide aux salariés et grâce à des transfers du gouvernement. De plus, l'investissement est limité par la fragmentation du système fiscal, qui alourdit le coût de la discipline pour les entreprises et accentue une pression fiscale déjà forte. Enfin, l'adoption de mesures visant à réformer la réglementation, et notamment la suppression des restrictions à l'entrée sur le marché qui persistent, ainsi que l'assouplissement de la protection douanière, pourrait diminuer les coûts supportés par les entreprises et renforcer les incitations à l'investissement. Ce document de travail se rapporte à l'Étude économique de l'OCDE du Brésil 2011 (www.oecd.org/eco/etudes/Bresil).

Classification JEL : E21, E22, G21, G28, H20, H55, O16
Mots clefs : Brésil ; investissement ; épargne ; retraites ; impôts ; marchés financiers ; crédit administré ; BNDES

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RAISING INVESTMENT IN BRAZIL

By Jens Arnold[1]

Introduction

Having successfully achieved macroeconomic stability and being generously endowed with natural resources, Brazil is well positioned to achieve high growth rates in the near future. But one of the major drivers of growth is the accumulation of capital, and the country is investing too little of its current income for future growth. Despite increases in recent years, the current investment rate stands at 18%, a figure that is low when compared to emerging-market economies across the world and also slightly below the average in Latin America (Figure 1). Most of this investment takes place in the private sector, with the public sector accounting for around 12% of domestic investment (Figure 2, Panel A). Developing countries in Asia invest close to 40% of GDP in the accumulation of their capital stock. In Latin America, investment rates are 24 and 25% of GDP in Mexico and Peru, respectively, while Chile and Colombia invest 22% of domestic output. There appears to be ample scope for raising Brazil's growth potential if more of its output were used for enhancing its capital stock. Furthermore, a comparison across industries shows that Brazil's petroleum sector gets an unusually large share of investment outlays (almost 30%).

Similarly, domestic saving rates in Brazil are low in international comparison. When compared to other developing economies, a striking observation is that Brazil's saving rate is only about a third of the average rates in East Asian developing economies. A generally lower extent of social protection in Asia may explain part of this difference. But even in Latin America, the average saving rate is about 50% larger than that of Brazil. While public saving is negative, Brazilian corporate and household saving rates were about 16 and 5% of GDP in 2006, respectively, compensating negative public sector saving.[2] Almost 90% of national saving comes from the corporate sector (Figure 2, Panel B).

Investment rates have traditionally been low, suggesting that the explanations are likely to be structural. However, it is not so much the historical investment rates that are surprising as the current low level: much of the 1980s and 1990s was characterised by macroeconomic instability, which created clear disincentives to invest in long-term projects. But in the light of the substantial progress made in stabilising the Brazilian economy, it is puzzling that the economy has not witnessed substantial increases in the aggregate investment rate. A number of structural factors still seem to be holding investment back.

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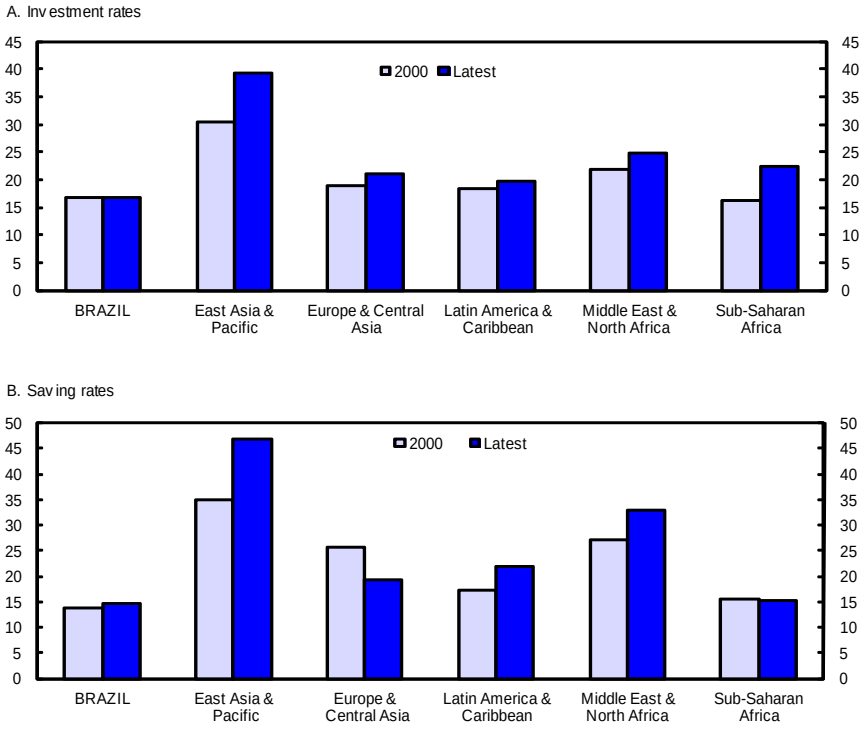
1. OECD Economics Department, 2, rue André Pascal, 75775 Paris Cedex 16, France, jens.arnold@oecd.org. This paper initially appeared as a chapter in the OECD Economic Survey of Brazil 2011. I am indebted to Annabelle Mourougane, Peter Jarrett, Andrew Dean and Robert Ford, Sebastian Schich, Monika Queisser, as well as to other colleagues in several OECD departments (DAF, ELS, ECO) for useful comments, as well as to Anne Legendre for statistical and Mee-Lan Frank and Maartje Michelson for editorial assistance. All remaining errors are mine. The views expressed here are my personal views, and do not necessarily reflect those of the OECD or its member countries.

2. The year 2006 was the last for which this breakdown is available.

Figure 1. **Investment and saving rates in selected regions**

In per cent of GDP

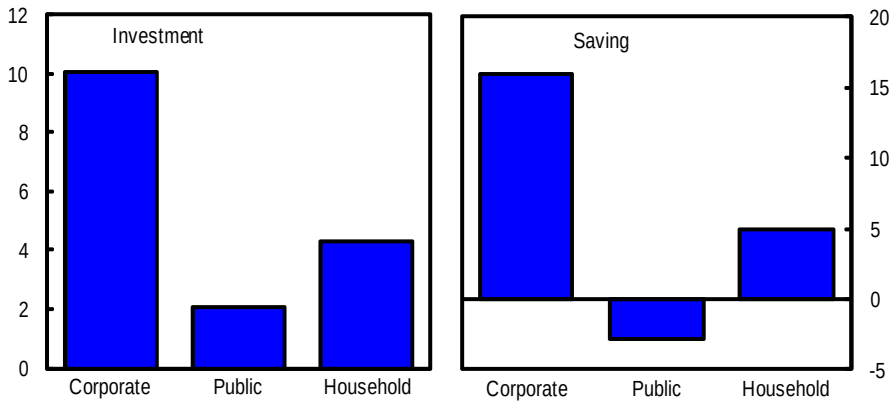


Note: Latest year is 2009 for most economies/ regions.

Source: World Bank (2011c).

Figure 2. **Investment and saving by origin sector, 2006**

In per cent of GDP



Source: IPEA (Ipeadata).

Given that investment essentially implies putting liquid funds today into less liquid projects that promise a return in the future, potential explanations for low levels of investment in Brazil can in principle be grouped into two categories (Hausmann, 2008). On one hand, a dearth of saving available to finance

investment projects could be the binding constraint, and there are a number of explanations why saving is low in Brazil. Alternatively, there may not be enough projects with expected investor returns above the relevant costs of capital – which are closely related to domestic interest rates and the development of the financial system. Investors' returns may fall short of project returns due to shortcomings in the business climate, such as legal uncertainty or excessive taxation.

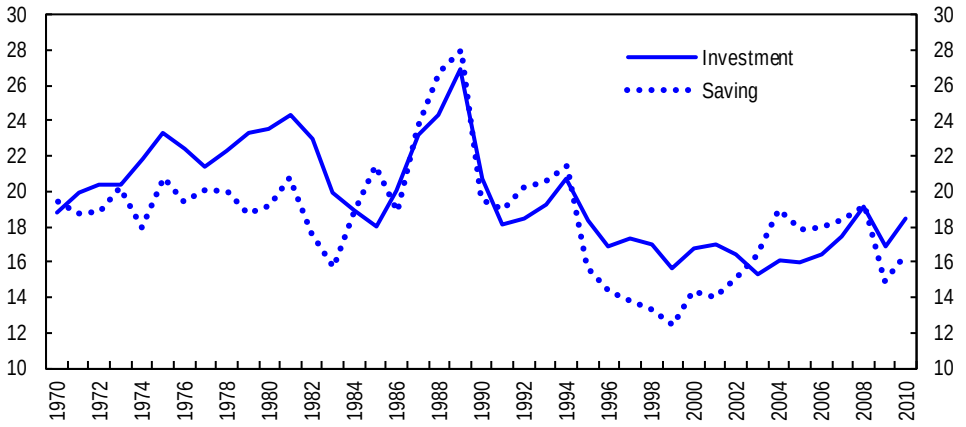
Following this distinction, the next section presents a few explanations for low saving in Brazil and provides policy recommendations for how these could be raised. The following section then discusses non-saving-related institutional features that may be holding back investment, including potential reasons for the high level of interest rates, features of the Brazilian financial markets, the tax system and regulatory policies pertaining to product markets. A final section concludes and summarises policy options for enhancing investment in Brazil.

Determinants of low saving rates

The low level of domestic saving is likely to provide a first explanation for the low investment rate in Brazil, although it need not be the only reason. A first look at the development of investment and saving rates over time shows a visible correlation between the two (Figure 3), in line with the well known Feldstein-Horioka (1980) Puzzle. The scarcity of saving relative to potential investment projects is also confirmed by the observation that Brazil is a country that remunerates saving at real interest rates that are unequalled on the world scene (Bacha, 2010a). Another way to assess the degree to which deficient domestic saving has constrained investment is by looking at varying access to foreign saving over time, because domestic saving is not a binding constraint for investment in times of easy access to external funds. A simple analysis reveals a significant (at 10%) negative correlation between the total investment rate and the current account over the last 35 years, which is consistent with the view that investment responds strongly to changes in the tightness of the domestic saving constraint. Hausmann *et al*. (2005) confirm this view, observing that Brazil's economic performance was good whenever it enjoyed access to foreign capital, but declined when a tightening external constraint pushed up real interest rates and the currency depreciated.

Figure 3. **Investment and saving rates over time**

In per cent of GDP



Source: IBGE, IPEA (Ipeadata).

Policies aimed at raising investment rates should hence include attempts to boost domestic saving. Besides increasing the funds available for investment, higher domestic saving in Brazil would also have

additional side benefits. These include a reduction in inflation pressures and in the current account deficit, or both. In fact, in the current situation it is hard to see how Brazil could increase its investment without adding to inflationary pressures unless some current consumption is turned into saving. In addition, higher domestic saving is likely to have a downward effect on domestic interest rates, although there may be other reasons for high interest rates besides a low level of saving. The discussion of ways to raise domestic saving examines in turn measures aimed at affecting public, corporate and household saving, before moving on to foreign saving.

Public savings and fiscal policy

The total government sector contributes negatively to national saving. Overall government financing needs stood at -2.6% of GDP in 2010, with an average over the preceding three years at around -2.7% of GDP. Further increasing the primary surplus with a view towards eliminating the negative contribution of the government sector to national saving could raise investment rates in Brazil if achieved by a reduction of public expenditure. Raising the primary surplus through tax hikes is likely to be less effective due to Ricardian equivalence-type behaviour (Paiva and Jahan, 2003).

Reforming the pension system

A major burden on public finances is social security and in particular retirement pensions, which account for almost one third of current expenditures. Brazil has a costly pension system, whose assets and liabilities are not aligned and whose sustainability is threatened by changing demographic trends and steadily increasing pension benefit levels (World Bank, 2011b). From a longer-term fiscal standpoint, keeping pension expenditures under control is key to getting a grip on public finances in Brazil.

Brazil's defined-benefit pension system includes separate regimes for private and public employees. The private-sector regime (*Regime Geral da Previdência Social*, RGPS) has around 23 million beneficiaries and currently disburses over 7% of GDP, while the public-sector regime (*Regimes Próprios de Previdência Social*, RPPS) pays out around 2% of GDP to about 3 million beneficiaries. In addition to these two schemes, a social assistance programme accounting for 0.4% of GDP pays means-tested non-contributory pensions to the elderly and the disabled with family income per capita of less than 25% of the minimum wage.

These high expenditure levels, particularly in light of Brazil's demographic structure and level of development, reflect the high promises of the pension system in international comparison. The gross replacement rate for full-career workers at average earnings is 86% compared to an average of 57% in the 34 OECD member countries, while the net replacement rate is 97% versus 69% on average in the OECD (OECD, 2011a). The current levels of benefits are in part attributable to a continuing indexation of minimum pension benefits to increases in the minimum wage, which has seen real increases of over 70% over the last decade. In the future, minimum pensions should be indexed to the consumer price index for a number of years to reverse the fast pension increases of the past while preserving the purchasing power of pensioners. Thereafter, a more appropriate long-term anchor for indexing pension benefits could be an average of consumer price inflation and average wages, as applies in Switzerland. Applying such a formula would pass part of current productivity gains on to pensioners. Assuming annual productivity growth of 3%, pension benefits would have seen around 42% of the increases of average wages after 25 years with this formula. Political acceptance of these necessary reforms would be enhanced by phasing them in gradually or exempting current and imminent pensioners, who can no longer adapt their saving behaviour during their working lives.

In addition, retirement ages are relatively low. In the RGPS system, minimum retirement ages are waived after 35 years of contributions for men and 30 years for women. Around three-quarters of workers

retire after having completed the minimum length of contribution, and average retirement ages for these retirees are only 54 for men and 51 for women. In the case of women, this implies almost as many years of benefit as of contribution (World Bank, 2011b). In other emerging-market economies including China, India, Russia and South Africa, retirement ages tend to be higher than in Brazil, although generally lower than in OECD countries (OECD, 2011a). Brazil should consider equalising the retirement age for men and women, as is the norm in the vast majority of OECD countries. Minimum retirement ages of 65 years, as currently under discussion within the government, or 40 years of contributions, would seem more in line with current practice in most OECD countries. In a second step, the retirement age should be linked to rising life expectancies.[3] Brazil also offers relatively easy access to early retirement, which is possible at age 53 for men with 30 years of contributions and at age 48 for women with 25 years of contributions. In order to increase the effective retirement age, it would be necessary to substantially raise the earliest possible retirement age and introduce stronger penalties for early retirement. Brazil should also consider increasing the contribution requirement of only 15 years to access a full pension at the official retirement age. Similarly to the private-sector system, the RPPS is characterised by "excessive generosity in both the retirement age and determination of benefits provision" (Ter Minassian, 2011). In 2003, the government proposed changes in the RPPS system that would introduce a ceiling on the pensions of new civil servants and establish a complementary pension fund (FUNPRESP) to which both the employer and the employee would contribute. These measures, if implemented, would be likely to increase household savings and reduce the burden of civil servant pensions on the social security budget in the long run.

Such parametric changes do not exhaust the possibilities of pension reform in Brazil. Other countries have embarked on broader pension reform agendas, including, for example, the introduction of a notional individual accounts system within a pay-as-you-go framework. Such individual accounts can constitute a way to tie individual benefits more closely to individual contributions, increasing the incentives to contribute to the system. In addition, complementary and voluntary defined-contribution pillars have been used to generate additional retirement saving in a number of ways, including through preferential tax treatment of such savings or by matching any contributions that are made by the employee for a set period. In New Zealand's Kiwi Saver scheme, for example, participation in this pillar has been encouraged by enrolling new workers automatically while giving them the choice to opt-out. Establishing such an additional pillar for public pensions has been under discussion in the National Congress since 2003 but was never implemented. Currently, there is no such second pillar in Brazil, although there is an expanding network of private pension funds.

Saving of households

Household saving is influenced by changes in the propensity to save and by disposable income growth, which in turn is affected by changes in employment, incomes and taxation. These two factors are likely to pull in opposite directions in the future, with the net effect on household saving being unclear. On the one hand, the saving propensity is likely to be affected by demographic changes. Brazil's population is set to age fast, with the dependency ratio expected to rise from 2025 onwards. Assuming that saving ratios decrease around retirement age, the country's demographic developments would imply lower household saving propensities in the future. On the other hand, Brazil's income distribution is becoming more equal, with a growing middle class and decreasing poverty rates. Since saving part of family income becomes a reasonable option only once basic household needs are satisfied, rising incomes at the bottom of the distribution may suggest higher levels of household saving in the future.

While the demographic effects will become visible only later, micro data from household surveys that allow a comparison of the saving behaviour of families between 2002 and 2008 already show evidence of

3. Currently, pension benefits in the private scheme are adjusted for changes in life expectancy at the moment of retirement through the *fator previdenciário*.

income distribution effects (Rocha, 2010). Families in the lower range of the income distribution saved larger fractions of their disposable income in 2008 than in 2002, and positive saving started at a lower percentile of the income distribution. Comparing the saving behaviour in 2002 and 2008 for households with similar real income levels suggests that low-income households have increased their saving because their income has risen, although there is also some evidence of a higher saving propensity conditional on real incomes among low-income earners.

While household saving rates are the result of individual decisions on inter-temporal optimisation and therefore a question of personal preferences, they may be distorted by public policies. One possible source of distortion may be the benefit levels in the current pension system. Households that expect to receive ample pension income in the future may have lower incentives to save for their retirement during their working lives. The current level of pensions compares well with working incomes and reduces the need to save for retirement. In fact, a retired couple with two pensions would in most cases have an income of at least two minimum wages, which may place it far above the bottom of the income distribution in some areas. Pensions also represent transfers from working-age individuals towards the elderly who have lower incentives to save. Indeed, empirical results obtained by Rocha (2010) suggest that the marginal propensity to save out of labour income is significantly higher than out of transfer income (including pensions), which is consistent with the idea that high pensions reduce household saving. To sum up, a successful pension reform could increase domestic savings not only through its effect on public saving, but also by increasing household saving rates. This strengthens the argument for pension system reform.

Available financial instruments for saving and dissaving also influence household behaviour. High inflation expectations coupled with a lack of opportunities to hedge against the erosion of nominal asset values may have made saving unattractive for many years in Brazil, and only the price stability of the last decade may have enabled some families to take a longer-term view and save for the future. While this may increase household saving, loosening credit constraints faced by households may work in the opposite direction. In fact, household credit has increased rapidly in recent years, despite very high interest rates charged on consumer loans. From a saving perspective, the measures taken by the government in April 2010 that subject consumer credit to the financial transactions tax (IOF) and are expected to limit the growth of consumer credit are therefore welcome in principle, although the price sensitivity of consumer credit decisions seems limited in Brazil.

Corporate saving

Corporate saving is the main contributor to Brazil's domestic saving at present and has recently been rising due to large increases in export revenues. Still, it is probably held back by high corporate tax rates of 34% including surtax and social contributions (Deloitte, 2011). Increasing tax incentives for companies to retain profits may be one way to increase corporate saving, which could be achieved by reducing the unequal tax treatment of dividends and capital gains. While the latter are taxed at the corporate tax rate when accruing to corporations and at a rate of 15% when accruing to individuals, dividends paid by domestic companies are tax exempt (Deloitte, 2011). This implies a more favourable tax treatment for distributed than for retained profits. Eliminating this distortion would enhance the incentives for corporate saving, as would lowering the comparatively high tax burden on enterprises.

Foreign saving

Foreign saving can complement domestic saving to finance domestic investment. Brazil has had access to foreign saving at several points in its history, although such access has often been unstable. Over recent years, Brazil's access to foreign funds has improved dramatically, after having needed to borrow from the International Monetary Fund to shore up its foreign liquidity as recently as in 2002-03 (Hausmann, 2008). Greater stability of domestic financing may be one of the reasons why comparisons

across countries usually reveal a high correlation between domestic rates of investment and saving (the aforementioned Feldstein-Horioka Puzzle).

Brazil's position as a middle-income country with comparatively high growth suggests that using foreign saving to finance part of its investment needs may be desirable, and a moderate current account deficit should not be a surprise when capital intensity is low and returns to capital are high. But unlike Brazil in recent years, many countries in similar situations fail to receive substantial capital inflows due to shortcomings of institutions, financial markets or education (Lucas, 1990). Structural policy reforms that can make a country more attractive to foreign investors may thus play a key role in defining the scope for complementing domestic with foreign saving.

Foreign capital inflows take different forms, with some more desirable for the host economy than others. Foreign direct investment (FDI) inflows have often been mentioned as particularly beneficial. FDI inflows are typically geared towards the longer term and are less liquid than other forms of capital inflows, which means that they are unlikely to leave the host economy quickly in the event of adverse circumstances. In addition, by transferring more risk to the foreign investor, the remuneration of FDI inflows is more tightly linked to domestic economic conditions than interest payments on debt. Finally, FDI often brings technology spillovers into the host economy and may hence have both direct and indirect productivity benefits for the host economy (Arnold *et al.*, 2011, Arnold and Javorcik, 2009; Haskel *et al.*, 2007; Javorcik, 2004; Keller and Yeaple, 2009).

Brazil receives significant FDI inflows, with a record level of USD 48 billion reached in 2010. It is the 12th country in the world in terms of the stock of inward FDI and the third developing country in terms of inflows (UNCTAD, 2010). FDI inflows have constituted around 10-15% of gross fixed capital formation in recent years. These numbers and Brazil's current account deficit of around 2% of GDP suggest that the country is already making strong use of foreign saving, although, given that 104 countries listed in a recent edition of the IMF's World Economic Outlook have current account deficits higher in terms of GDP than Brazil's, there is no reason to believe that the country has already hit the limit of attracting FDI inflows (IMF, 2010). Policies that can improve Brazil's attractiveness for further FDI inflows are essentially the same as those that would enhance the attractiveness of domestically funded investment, including reforms to the tax system and product market regulation (see below). But beyond the domestic investment climate, particular legal or regulatory restrictions to FDI can render foreign investment more difficult or impossible where domestic investment would be viable. FDI restrictions should be kept to a minimum, given that FDI projects add to domestic investment without subtracting from domestic savings and are a comparatively stable source of finance. With very few exceptions, Brazil has a low level of FDI restrictions. The OECD produces an FDI restrictiveness that aggregates policy information on restrictions to FDI inflows (OECD, 2011d). Measured by this index, Brazil shows a considerable improvement between 2006 and 2010, bringing its outcome slightly ahead of the United States and above the OECD average. Sectors with relatively high levels of restrictions include fishing and the transport sector. In addition, Congress has recently passed laws to strengthen state control in the development of the offshore oil reserves via the state-owned oil company Petrobras and to limit private (including foreign) equity stakes in production-sharing contracts to 70%. In these sectors, there would be scope for attracting additional foreign direct investment inflows by lowering the legal barriers, which mostly take the form of equity restrictions.

Brazil has also had recourse to measures aimed at controlling capital inflows (Mourougane, 2011). For example, the *Imposto sobre operações financeiras* (IOF) has been applied on portfolio capital inflows going towards assets with short maturities, although the threshold maturity has been successively extended, and the IOF now applies to inflows with maturities up to two years. While the IOF targets financial flows with short maturities, which are typically not those used to finance long-term investment, there is a risk of collateral damage, although there is no evidence of FDI inflows having suffered from the IOF so far. Given

its shortage of domestic saving and high real interest rates, Brazil can ill afford to keep out capital flows that may be used for domestic investment projects. Policy makers should continue to be careful in the design of measures aimed at reducing portfolio capital inflows so as to avoid a reduction of the resources available to finance fixed investment.

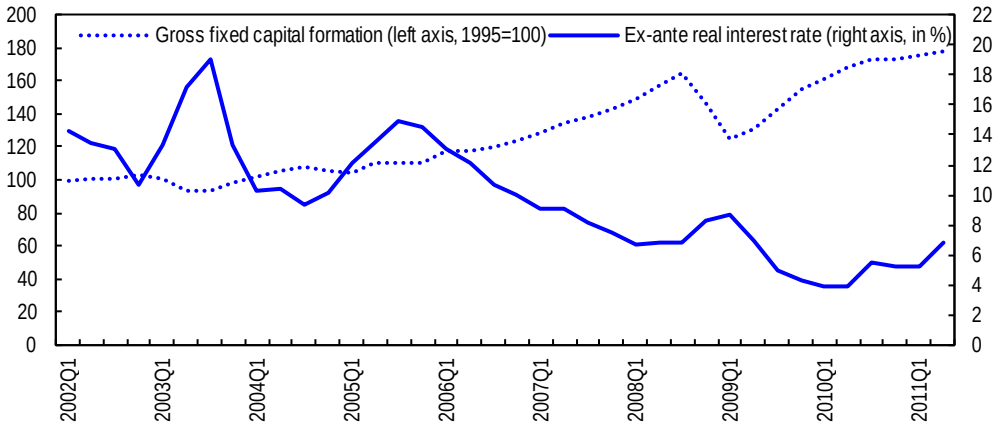
Other impediments to investment

To the extent that a lack of saving is the binding constraint for investment in Brazil, and substantial evidence points in this direction, policies to foster saving, particularly public saving, should be first priority. In a stylised world, removing barriers to investment while keeping the pool of available saving fixed would affect only the price of capital but not increase investment volumes. In the real world, however, there are good reasons for policy to improve the conditions for investment. One of these is that identifying and removing distortions and frictions that hamper investment will improve the allocation of capital and generate productivity increases. Particularly given that its existing savings are scarce, Brazil must optimise its use and reduce any distortions in their allocation to a minimum. Another reason is that better investment conditions can attract additional financing resources for domestic investment from abroad. This section on removing impediments to investment examines issues related to high domestic interest rates, the structure of financial markets, the tax system and regulation of product markets.

High interest rates

Arguably the greatest deterrent to investment is the extraordinarily high level of interest rates. Retail interest rates charged on bank loans vary considerably according to the type of borrower, the kind of credit contract and the use of collateral, but they are extremely high across the board. Real interest rates have fallen over the past decade, and investment has drifted up (Figure 4). Nevertheless, corporate borrowers are still charged average interest rates of 31%, and personal loans carry a 45% interest rate. With these rates, only very profitable investment projects are economically viable. High interest rates hurt small and medium-sized enterprises particularly severely, because they do not have access to foreign finance. Indeed, 90% of small Brazilian firms report high interest rates as one of their major growth obstacles (World Bank, 2011a). Lower bank lending rates would also raise the incentives to join the formal sector, because the most significant advantage of going formal is often the possibility to access bank finance.

Figure 4. **Real interest rates and investment**



Note: The *ex ante* interest rate is derived as the difference between the Selic rate and inflation expectations 12 months ahead (IPCA).

Source: Central Bank of Brazil.

Why interest rates are so high in Brazil is a question with no easy answer. Beyond the scarcity of domestic saving as one obvious candidate explanation, several – not necessarily conflicting – explanations have been put forward in the literature without providing a fully satisfactory answer. Since the high interest rates are common to all freely negotiated credit contracts, it is unlikely that the explanation lies in some financial market detail, but rather in systemic factors affecting the Brazilian economy.

History

History is one of the most widely heard explanations for the high general level of interest rates. Former Central Bank governor Arminio Fraga once called the high Selic rate "the consequence of a long history of misbehaviour". But though history certainly plays a role, this explanation is not fully satisfactory, because other countries with turbulent economic histories manage to keep inflation in check with much lower real interest rates.

Fiscal accounts and public debt management

Brazil's fiscal situation has improved markedly over the last decade, the level of public debt has come down, and the solvency of the government is clearly not an issue these days. Despite these positive developments, however, the interest rates for Brazilian debt might be reduced by further improving market confidence in the country's fiscal prospects. Indeed, the primary surpluses of the last few years have been mostly achieved through an increasing tax burden rather than expenditure control, and GDP growth rather than a genuine fiscal effort has been the main contributor to the decline in public debt over the last decade (FUNDAP, 2011). Another factor that has contributed to the debt reduction has been the declining level of real interest rates. The downward rigidity of public current expenditures may be a concern in light of the demographic changes ahead. Parametric reforms to the pension system that reduce the future burden of social security on public finances would be a useful signal to improve market confidence. In addition, lowering the expected trajectory of public debt through a successful reduction of public current expenditures would be likely to accelerate the recent downward trajectory of the Selic rate. Bacha (2010a) estimates that, due to the country's history, the downward effect of reducing public debt levels on interest rates would be considerably larger than in other countries. A percentage point reduction in the debt ratio would lower interest rates by 0.19 percentage point, and he suggests targeting a reduction in public debt to 20% of GDP to align Brazil's real interest rates with international averages (Bacha, 2010b).

Beyond the level of the public debt, its structure may also play a role in determining risk premiums embedded in the Selic rate. Exchange-rate risks to which the government debt was exposed in the past have been completely eliminated because the Brazilian public sector has become a net creditor in foreign currency. This improvement has probably reduced the role of the public debt in explaining the high level of interest rates compared to the past. But one remaining peculiar feature of Brazilian public debt is a combination of short maturities and interest rate indexation, which exposes the government to significant interest rate risk. While the average maturity increased between 2004 and 2010, it still stands at only 3.4 years, which is around a quarter of the corresponding figure for Chile and Peru, and less than half the average across Australia, Belgium, Canada, Germany, Spain, the United Kingdom and the United States (Bank for International Settlements, 2011). As a consequence, more than a quarter of the outstanding debt matures within 12 months or less, and the government needs to refinance about 8.1% of GDP over the next year at any point in time. But the interest rate risk is not limited to maturing debt due to the high share of floating rate securities whose interest rates are adjusted for changes in the Selic on a daily basis. Reducing the share of floating rate securities (now down to less than 40%) and raising the average maturity are part of the government's debt management strategy and will help to improve investor confidence over the medium term. In the short term, however, pursuing these objectives more aggressively could require paying even higher rather than lower rates to creditors to create more demand for securities with fixed rates and longer maturities. Indexing the debt to the price level instead of the Selic rate may be a relatively

favourable option from a stability perspective, as the Chilean example has shown (Eichengreen and Hausmann, 2004; Inter-American Development Bank, 2007). The government has recognised this in its debt management strategy and has increased the share of inflation-indexed government debt over recent years (Tesouro Nacional, 2011).

Inflationary pressures and directed credit

The Selic rate is the Central Bank's key tool to control inflation. While the Central Bank and the inflation-targeting framework have been extremely successful in bringing inflation under control, it is nonetheless puzzling why balancing aggregate demand and supply has required interest rates "that would drive any other economy into a deep recession" (Hausmann, 2008). But taming inflationary pressures may have required higher rates in Brazil than elsewhere due to the particular features of the Brazilian credit market. Through the national development bank *Banco Nacional do Desenvolvimento Econômico e Social* (BNDES), the government has extended increasing amounts of credit for long-term investment projects undertaken by private companies. In the long run, these investments may enhance capacity and hence reduce inflationary pressures, but in the short run they drive up demand because capacity increases take time to realise (Garcia, 2011). Some observers have argued that the expansion of credit by BNDES has fuelled demand, thus forcing the Central Bank to become more contractionary and keep the Selic rate higher than would have otherwise been necessary to manage domestic demand (Hausmann, 2008; Garcia, 2011; Schwartsman, 2011). Ricardo Hausmann refers to this as pushing the accelerator and the brake at the same time (Folha de São Paulo, 30/08/2010). While it is not easy to evaluate this hypothesis empirically, the argument could in principle add another explanation why the Selic rate has not come down as much as the improvement in economic fundamentals might have suggested.

Uncertainty and property rights

Another widely heard explanation for the high level of interest rates is that jurisdictional uncertainty and an insufficient protection of property rights make long-term lending risky, thus driving up interest rates and reducing the term at which private agents are willing to lend (*e.g.* Arida *et al*., 2005). Proponents of this hypothesis often point to a systematic anti-creditor bias of the judiciary (generally in favour of small borrowers) and a risk of surprise inflation. In the view of Arida *et al*. (2005), insufficient property rights protection increases the country risk premium unnecessarily and thereby exerts upward pressure on domestic interest rates, while International Commission of Jurists (2008) suggests that there is scope for enhancing the efficiency of Brazil's judiciary. Gonçalves *et al.* (2007) test different variants of the jurisdictional uncertainty hypothesis and fail to find much empirical support for it, with similar evidence reported in Bacha *et al*. (2009). Pessoa and Nakane (2011) make the point that even if the evidence does not confirm jurisdictional uncertainty as a major determinant of the level of basic interest rates in Brazil, it does help to explain the high level of intermediation spreads referred to below. Regardless of how much this hypothesis adds to explaining the current levels of lending rates, strengthening creditor protection is likely to foster investment.

Indeed, Brazil scores comparatively poorly on the "Strength of legal rights index" produced by the World Bank, which measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending. With an index value of 3, Brazil performs less well on this indicator than the average Latin American country with 5.5 or the average OECD country with 6.9. Debtors in Brazil can pledge assets as credit collateral without having to surrender them, but creditors' access to collateral is hampered by burdensome and uncertain judicial procedures. Collateral cannot be described in general terms: each item needs to be listed specifically, such that an automobile or a property pledged to guarantee a loan will no longer be able to serve as collateral once it is replaced by another one. It must be registered with a public registry in the debtor's city of residence. There may be more than one of these in a given city, and they are not linked across regions, with the result that a lender may find it

cumbersome to assess the pledgeable value of a given asset. In addition, a creditor who wants to seize and sell collateral upon default will need a court ruling which may take four to five years to obtain, with the asset remaining with the debtor in the meantime. Judges may even put in doubt collateral that has been pledged by contract if it is deemed essential for the defaulting debtor, such as a taxi driver's vehicle (World Bank, 2006). Out-of-court enforcement, which may provide a faster and safer alternative to court orders, are possible only with the defaulting debtor's consent. Enhancing creditor protection through reforms of the legal and judicial system would increase the willingness of private agents to lend over longer terms and reduce a risk premium embedded in current lending rates. In particular, a unified national collateral registry should be created, providing easy online access to debtor information. In addition, court procedures for repossessing collateral should be made faster. Enforcement of collateralised credit contracts without a court ruling should be made easier and not require the defaulting borrower's consent if agreed upon as part of the credit contract. Stronger creditor protection is associated with deeper credit markets and lower default rates (World Bank, 2006). That such legal reforms can have a noticeable impact on the development of credit markets has been vividly demonstrated by recent reforms in Brazil's mortgage regulation, where private markets started to develop once it became possible for the lending bank to remain the legal owner of the property until the mortgage is paid back.

Multiple equilibria

Some observers have claimed that the existence of multiple equilibria is responsible for the high interest rates. According to this argument, there are different equilibrium constellations of interest rates and default risks that are sustainable, with Brazil currently "trapped" in a sub-optimal one. In the current equilibrium, high interest rates are self-sustaining because they imply a higher risk of default than the one that would prevail at lower rates. At the same time, a lower interest rate, implying a smaller risk premium would be equally sustainable now, but high interest rates were initially required to bring down inflation expectations in the process of macroeconomic stabilisation. Regardless of whether this hypothesis is true, it does not provide clear policy implications. Indeed, it is hard to imagine an inflation-targeting Central Bank jeopardising its hard-earned reputation through substantial interest-rate cuts in the hope of finding another stable equilibrium at lower rates.

The structure of financial markets

Financial markets in Brazil are largely bank-based. Despite recent increases in market volumes, Brazilian corporate bond markets are small in international comparison, even for Latin American standards. While the outstanding stock of corporate bonds was only around 0.5% of GDP in December 2010 in Brazil, the corresponding figures were 1.8% in Argentina, 3.4% in Mexico and 14.6% in Chile (Bank for International Settlements, 2011). Some OECD countries have large corporate bond markets, including Japan, Italy and the United States (16.5%, 17.7% and 19.8% of GDP, respectively, according to the same source). The economics literature has not reached clear conclusions on the relative merits of bank-based *versus* market-based financial systems, but rather suggests that overall financial development is what matters most (Levine, 2002). In Brazil, corporate bonds appear to be a financing option only for the largest enterprises, and attempts to develop corporate bond markets further may be useful. At present, however, bank credit is the more relevant source of financing for most Brazilian corporate borrowers.

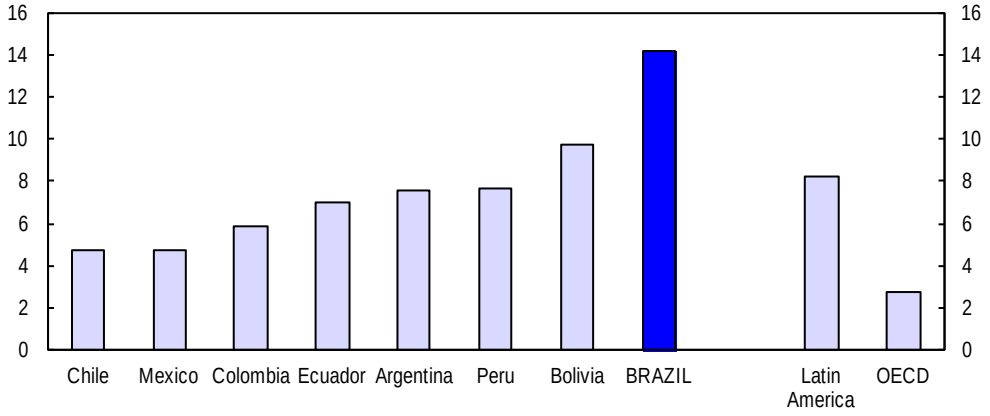
Bank lending is characterised by high intermediation spreads in international comparison. Brazil's net interest margins are over 70% above the Latin American average, and over five times the OECD average (Figure 5). Although margins have come down significantly over the last decade, they were flat in 2010, and recent trends suggest that they are on the rise again. Such high spreads are a symptom of a poorly functioning financial system and mean high and often volatile lending rates. This adds substantially to the

cost of capital and creates a bias towards short-term, high-risk investment, instead of the long maturing investments with higher returns that the country needs.

Despite a great deal of research aiming to uncover the reasons behind the high banking spreads in Brazil, considerable disagreement and uncertainty remain. Factors that may contribute to high spreads include the high Selic rate, implicit and explicit taxation of financial intermediation and inefficiencies in the banking industry, along with possible interactions among several of these factors.

Figure 5. **Net interest margins in international comparison**

Averages for 2007-09, in percentage points

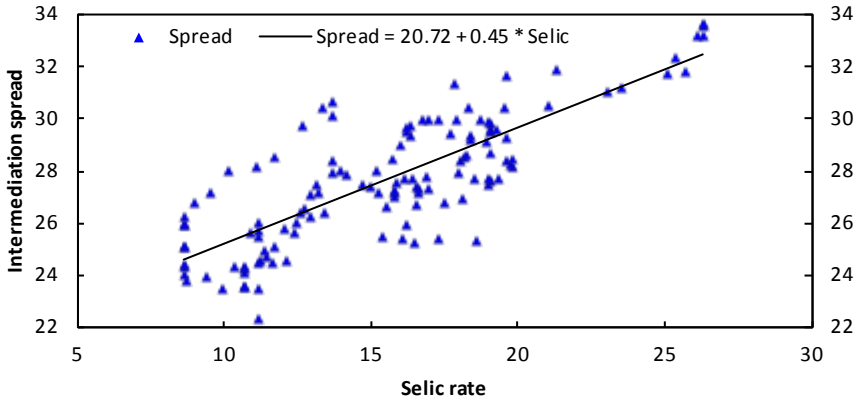


Source: Beck and Demirgüç-Kunt (2009).

The high Selic rate is probably one of the major reasons why interest margins are so high in Brazil, as the two series are strongly correlated (Figure 6). In fact, the simple linear regression line in the figure is able to explain 64% of the variation in the intermediation spread over the last decade. A vector autoregression between the Selic rate and interest spreads suggests that past values of the Selic rate add significantly to explaining the level of interest spreads (or in other words that the Selic rate Granger-causes spread levels; see Box 1). One explanation for this may be that the Selic rate is a reasonable proxy for bank funding costs. In fact, the Selic rate shows a correlation coefficient of 0.96 with the measure of average bank funding costs published by the Central Bank. Factors other than the high level of interest rates, such as bank reserve requirements, may interact with the latter, and have stronger upward effects on interest spreads at higher interest rates. Policy action should therefore prioritise reforms that can reduce the level of the Selic rate without increasing inflationary pressures, although micro issues related to banking-sector policies may become binding constraints once interest rates have come down further.

Figure 6. **Intermediation spreads and the Selic rate**

Monthly data in percentage points, 2000-2011



Source: Central Bank of Brazil, OECD calculations.

An example for such an interaction is the level of reserve requirements. Banks' costs associated with holding required reserves at the Central Bank are positively related to their funding costs. Required reserves are either not remunerated or are remunerated below market rates and act as an implicit tax on financial intermediation. Higher interest rates imply higher opportunity costs of reserve holdings at the central bank and hence a higher implicit tax. The high level of reserve requirements strengthens the link between intermediation spreads and the level of interest rates. Reserve requirements for demand deposits are currently at 43% (Montoro and Moreno, 2011). This high level may also explain why the ratio of bank credit to bank deposits is only 0.8 in Brazil, while it is above one for both the average Latin American (1.1) and OECD country (1.4). Azevedo and de Carvalho (2008) estimate that some 1% of federal revenues are implicitly collected by the Central Bank through remunerating reserve requirements below market rates, and empirical evidence suggests that reserve requirements affect the interest-rate spreads between lending and borrowing rates (Souza Rodrigues and Takeda, 2005) and credit volumes (Montero and Moreno, 2011; Mesquita and Toros, 2010). The reduction in reserve requirements in reaction to the crisis, for example, is estimated to have caused an expansion of credit of the order of 3-4% of GDP in Brazil (Montero and Moreno, 2011). Reducing the level of reserve requirements for banks would reduce the level of implicit taxation of financial intermediation and contribute to lower intermediation spreads and costs of capital, thereby making more funds available for loans. Regarding the timing of such a reform, the short-term expansionary effects of lower reserve requirements need to be taken into account.

Brazilian banks are also subject to other explicit taxes that add to their costs. Apart from facing the generally high level of taxes on corporations, there are a number of specific distortions that add to the tax burden on financial institutions. For example, the banking sector has been excluded from a 2003-04 tax reform that changed the revenue base for the social security contributions PIS and COFINS from revenues to income. A Financial Operations Tax (IOF) is levied on selected financial transactions including bank loans. Finally, financial-sector companies are subject to a special rate for the Social Contribution on Net Profit (CSLL), which is 15% for financial institutions as opposed to 9% for other companies. Empirical evidence suggests that there is an almost complete pass-through of taxes on lending institutions into lending rates, which would imply that these taxes are ultimately borne by borrowers (Cardoso, 2003). Taxation of financial-sector profits should be aligned to the tax burden borne by other industries, because reducing intermediation spreads should be a priority to foster investment.

Box 1. **Direction of causality between the Selic rate and interest spreads**

The existence of a causal relationship between the Selic rate and interest spreads can be tested empirically by running a vector autoregression (VAR) model and testing for Granger-causality. A VAR is an empirical model in which one time series is explained by its own past values and those of other time series. In this context, a time series X is said to Granger-cause another Y if past values of X can significantly add to the explanation of present values of Y. Technically, establishing Granger-causality requires rejecting the null hypothesis that X does not Granger-cause Y. Estimations suggest that there is a causal link from the Selic rate to interest rate spreads. In contrast, no such link seems to exist in the opposite direction (Table 1).

Table 1. **Selic rate and interest spreads: Vector autogression and Granger-causality tests**

	Dependent variable: Selic		**Dependent variable: Spread**	
	Vector autoregression			
Selic (t-1)	1.82	***	0.24	**
	(0.00)		(0.05)	
Selic (t-2)	-0.84	***	-0.14	
	(0.00)		(0.27)	
Spread (t-1)	-0.05		0.89	***
	(0.21)		(0.00)	
Spread (t-2)	0.04		-0.09	
	(0.27)		(0.30)	
Constant	0.37		4.09	***
	(0.43)		(0.00)	
Observations	126		126	
R-squared	0.99		0.89	
	Granger-causality tests			
–H_0: Spread does not Granger-cause Selic	1.55			
	(0.46)			
H_0: Selic does not Granger-cause spread			19.32	***
			(0.00)	

Note: P-values in parentheses. ** and *** indicate statistical significance at the 5% and 1% levels, respectively. Monthly data from June 2000 to January 2011. Different numbers of lags have been tested and yield qualitatively similar results.

Source: OECD calculations using Central Bank data.

Directed lending obligations force banks to lend to certain priority sectors including rural borrowers and housing. As a result, these sectors get more and cheaper access to credit than they would under a free-market allocation, and banks forego potential profits that could be made on other lending operations whose volume is reduced as a result of the directed lending schemes. This is often aggravated by regulations on the interest rates that banks can charge on these forms of lending. Taken together, the mandated rural and housing lending schemes accounted for around 13% of those credit volumes that are unrelated to the national development bank BNDES at the end of 2010. Over the past three years, the volume of the rural lending has come down, while the housing scheme has expanded and is currently much larger than the former. The lost profits for commercial banks on these schemes may be substantial, thus forcing up interest margins on those operations that are not subject to rate ceilings. The extensive interventions in the allocation of credit by commercial banks create complex relationships between prices and volumes on the credit and deposit side, with fixed shares of given savings instruments allocated to particular directed lending schemes. In some of these cases, the margins that banks can earn on this part of their operations are completely determined by regulation. The exact costs of these schemes and their

impact on interest margins in free lending operations is very difficult to quantify, because even individual banks themselves struggle to separate out cleanly the revenues and costs associated with directed and free operations. What can be said with certainty, however, is that these directed lending schemes distort relative prices and credit allocation, and are costly for banks to administer. Part of their costs is borne by existing non-preferential borrowers in the form of higher spreads. But the supply of customer deposits is a finite resource, and these directed lending operations commit a fraction of the deposits that could otherwise be lent under free-market conditions. As a result, part of the cost of the schemes is shifted onto potential borrowers who are crowded out of the credit market. These directed lending schemes represent a complex and inefficient way to subsidise housing investment and the rural sector by committing existing customer deposits. They should be phased out. If such phasing out is done gradually over some time, these subsidies should be financed by a broader tax base, such as general taxation, pending their full removal.

Operating costs of Brazilian banks are also comparatively high. Compared to the average OECD country, they are almost three times higher relative to banking assets, and about 40% above the average in Latin America (Beck and Demirgüç-Kunt, 2009). Access to borrower information is also more difficult than in other countries, and the government has only recently passed a law authorising the creation of a credit bureau containing both negative and positive information. Despite high interest margins, the high costs of doing banking business in Brazil imply that banks are not more profitable than in other parts of the world. According to Beck and Demirgüç-Kunt (2009), Brazilian banks had returns on assets of about 2.3% in 2009 as opposed to 2.6% in OECD countries, with a similar picture emerging for returns on equity. The cost-to-income ratios of Brazilian banks (89%) are high compared to the OECD average (70%), or even the Latin American average (83%).

While directed lending schemes and the difficulties in enforcing credit contracts mentioned above drive up financial institutions' costs, uncompetitive market structures and a low level of contestability may also reduce the pressure for banks to minimise costs and reduce margins. Government-owned commercial banks have large market shares (45% in 2009, mainly *Banco do Brasil*, the largest bank in Latin America by assets, and *Caixa Econômica Federal*), and there is evidence that they operate less efficiently (Tecles and Tabak, 2010). As a result, private banks may be able to charge similar spreads as public banks despite lower costs. In other words, the size and market power of the public banks may reduce the downward pressure on spreads. This is consistent with the observation that private banks tend to be more profitable than public banks in Brazil (Micco and Panizza, 2005; Tecles and Tabak, 2010). Low banking efficiency may also increase default rates, which one would already expect to be high in Brazil, given the high lending rates and difficulties in contract enforcement. Indeed, empirical tests of causality suggest that the comparatively high default rates (currently at 4.9%) are the consequence rather than the cause of inefficient banking institutions (Tabak *et al*., 2010).

Although it is difficult to establish the exact extent of competition in the Brazilian banking sector, evidence suggests that there are significant differences across market segments. Retail operations, in particular short-term sight deposits and credit card services, tend to display lower degrees of competition, while corporate banking operations seem to be more competitive (World Bank, 2006). For example, fees on consumer loans and mortgages were close to 0.2% of GDP per capita in 2007, about three times the world average (Beck *et al*., 2007). The Brazilian authorities themselves have raised concerns that "the spread in the interest rates and the level of fees practiced by banks in the national market are beyond the competitive level" (OECD, 2009c). This perception has led to efforts to reduce the switching costs between banks. Competition and efficiency in the Brazilian banking sector could also be enhanced by reducing the dominant role of publicly owned banks. Increasing the role of private ownership in *Banco do Brasil* and *Caixa Econômica Federal* may be useful. In the short run, their dominant roles could also be scaled back by breaking them up and creating several smaller entities, without restricting their operations geographically.

The national development bank and long-term credit markets

Credit markets in Brazil can be characterised as a dual system in which short-term credit is provided by the private sector at market interest rates, while long-term loans are allocated by the national development bank *Banco Nacional do Desenvolvimento Econômico e Social* (BNDES) at rates considerably below the short-term borrowing costs of the government. Investment decisions at the margin are probably determined by market interest rates because firms will always face the opportunity costs of investing any extra resources at the Selic rate and would not invest in their own company unless they expect a return above this rate.

Due to a reluctance of the private sector to provide long-term finance, this segment is currently the exclusive domain of BNDES. It is financed from several sources, including through 40% of the revenues of the *Fundo de Amparo ao Trabalhador* (FAT), a workers' welfare fund that receives taxes collected through a tax on the revenues of private and public firms. The FAT is meant to provide social benefits to employees including supplementary unemployment insurance and annual salary bonuses (the "14th wage"), and to finance long-term development through BNDES. The latter objective gives it a notion of mandatory saving by employees, remunerated at below-market rates. In addition, BNDES receives occasional direct transfers from the budget. The institution extends credit for long-term investment projects directly to investors for projects above BRL 10 million, while loans below this level or those for financing machinery acquisitions are channelled through commercial banks acting as agents for BNDES.

Given its unique sources of funding, BNDES is able to extend the majority of these loans at rates considerably below domestic market rates for short-term credit operations (which are the only feasible comparator, given the absence of private long-term credit), and often considerably below the Selic rate at which the government finances its debt.[4] Interest rates for BNDES finance are typically guided by a long-term interest rate (*Taxa de Juros de Longo Prazo, TJLP*), which is set by the National Monetary Council on the basis of the forward-looking inflation target and a risk premium, and which is also the rate at which the mandatory FAT savings of workers are remunerated. Two spreads are added on top of the TJLP to cover BNDES' operational expenses and credit risk. The TJLP currently stands at 6%, and the spreads can be as low as 3.5%. By way of comparison, the Selic is currently at 12%, and private banks lend to commercial borrowers at an average rate of 31%. The allocation mechanism for BNDES financing does not follow market principles but criteria established by BNDES in accordance with industrial policy guidelines. This allocation mechanism may take into account positive externalities of certain investment projects if correctly identified by public officials, but it also creates considerable scope for government failure and is generally considered inferior to allocation by market principles. A large share of lending goes to companies with over 500 employees (72.5% in 2010). Across broad sectors, almost half of BNDES funds go into industry (47%), followed by infrastructure and trade and services (31% and 16%, respectively). An important distinction between BNDES credit and the directed credit obligations imposed on commercial banks is that BNDES provides additional tax-financed funding and does not draw on deposits collected by banks.

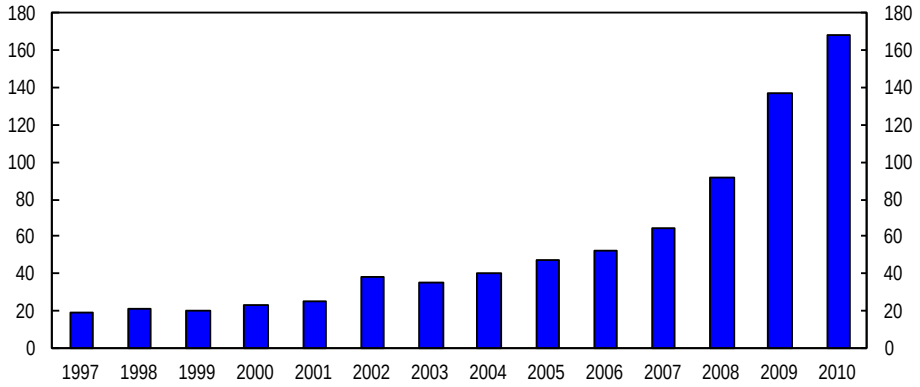
The volume of BNDES financing has been increasing rapidly over the years, with a sharp acceleration since 2006 (Figure 7). Part of the expansion of BNDES lending volumes in the last two years is related to the global financial crisis. While private banks' credit growth declined markedly in the autumn of 2008 due to the crisis, public financial institutions including BNDES started increasing their loan volumes massively so as to compensate for the decline in private supply (Figure 8). As a result, total credit remained on a fairly smooth upward path despite the financial crisis. In other words, public financial institutions – and most of all BNDES – were used by the government to extend liquidity during the financial slump and to

4. Gobetti and Schettini (2010) calculate the implicit interest rate paid on government debt for the 12 months preceding June 2010 and show that it was actually slightly higher than the Selic rate.

avoid a decline in total credit outstanding. Between September 2008 and January 2010, credit from private banks grew by less than 10%, while credit from public banks rose by 50%. The massive expansion of BNDES credit volumes proved to be a successful tool to avoid a credit crunch for Brazilian firms in adverse times. At the same time, BNDES, in the context of the crisis, has ventured into areas in which private credit institutions were active before the crisis, such as the provision of short-term working capital for firms, but has started to withdraw from these areas now.

Figure 7. **The evolution of BNDES disbursements**

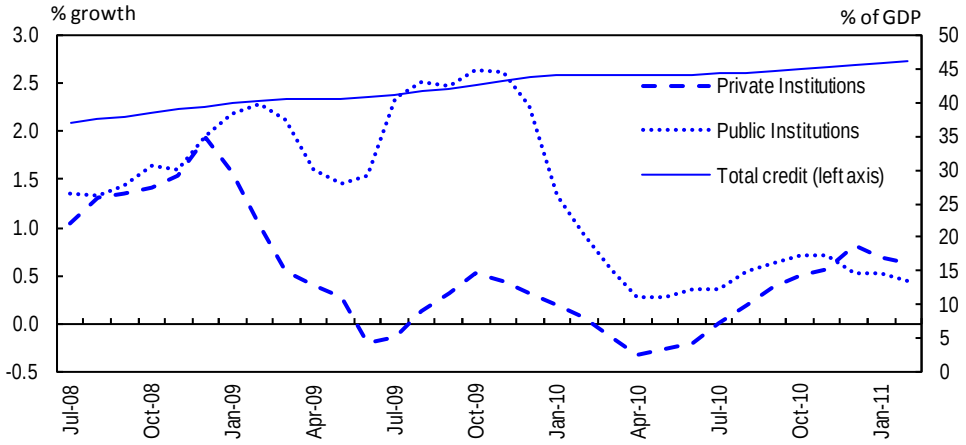
In BRL billion



Source: BNDES.

Private credit markets in Brazil operate almost exclusively on the short term, in sharp contrast to most OECD countries where they typically provide both short- and long-term lending operations. Banks have traditionally been unwilling to provide long-term funding, and borrowers looking for bank loans with longer maturities to finance long-term investment have typically been unable to find a market. Private credit institutions have instead preferred to invest in relatively high-yield short-term assets available in Brazil, including a considerable amount of public debt, as well as credit card and other short-term consumer lending. This feature is not unique in Latin America where thin or non-existent markets for long-term bank finance are fairly common (BNP Paribas, 2005). Domestic credit to the private sector relative to GDP – currently at 58% – is below the average of the lower half of OECD countries (OECD, 2011b), although in Latin America only Chile and Panama score higher on this indicator (with 97% and 85% of GDP, respectively). In Brazil, reasons for low credit-market development are likely to overlap with those lying behind the high level of interest rates. Indeed, public debt typically serves as guidance for private credit contracts in many ways, and it is hence not surprising that with an average maturity of public debt around 3.6 years in 2010 (Tesouro Nacional, 2011), private credit contracts exceeding this maturity horizon are rare. The average duration of the current loan portfolio of private banks to corporate clients is below 13 months.

Figure 8. **Credit by private and public financial institutions**



Source: Central Bank of Brazil.

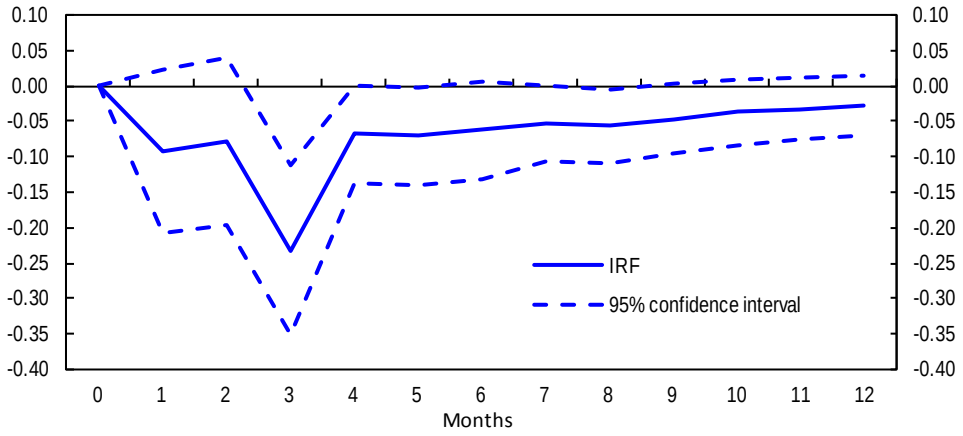
The link between BNDES and private credit

The existence of large amounts of directed long-term lending *via* BNDES and the absence of private credit in this segment raises a question about the direction of causality. While BNDES was designed to overcome the failure of private actors to enter the long-term credit segment, it is possible that the private sector has failed to enter this market in the meantime due to the strong presence of BNDES. In other words, BNDES credit may now be crowding out private credit. While this argument has some appeal in theory, the empirical evidence points to rather small effects. It should be recalled that thin private long-term credit markets are a feature of many Latin American economies, none of which has a development bank of comparable size to BNDES, so it would be surprising if this was the major explanation in Brazil. Testing this hypothesis empirically is intrinsically difficult because the counterfactual of a Brazil without BNDES cannot be observed. The link between BNDES credit growth and the growth of non-directed credit volumes appears to be weak. An impulse response function calculated from a vector autoregression (VAR) model on monthly data for 2000 to 2010 (including also *ex ante* real interest rates as a control variable) suggests that an increase in BNDES lending reduces non-directed credit growth by about a quarter of its size after three months. While this effect is statistically significant, its economic significance is far from enough to explain the thinness of private credit markets (Figure 9). The upper bound of a 95% confidence interval suggests that the response could be as little as a tenth.

In light of the weak evidence for crowding-out effects, it is doubtful that private long-term financial markets would have developed much more fully in the absence of BNDES in the past. Although BNDES is undoubtedly part of an institutional constellation that does not deliver satisfactory access to long-term credit, other potential reasons for the inability of the private sector to provide long-term finance seem more convincing than the existence of BNDES itself. Regardless of the degree of crowding out, however, political interference and clientelism are generally harder to avoid when credit is directed rather than market-allocated, and the directed credit at rates below short-term market rates is unlikely to allocate scarce capital to those projects with the highest risk-adjusted returns. Indeed, Muendler *et al.* (2002) provide evidence that reallocations of market shares from less to more efficient firms are not the norm in Brazil. Such reallocations are an important contributor to aggregate productivity growth in OECD countries, but they can be realised only if factor reallocations – including of capital – can take place smoothly (Arnold *et al.*, 2008). Although rollover of BNDES loans is not automatic, the fact that many maturing BNDES loans are refinanced may suggest that it is easier to obtain BNDES credit for incumbents

with existing access to BNDES funds than for potentially more efficient new entrants, which may create a rigidity in product markets that slows down aggregate productivity growth.

Figure 9. **Impulse response function (IRF) of non-directed credit growth on BNDES credit growth**



Note: The vertical axis measures the response of non-directed credit growth to BNDES credit growth, expressed as a fraction of the change in the latter.

Source: OECD calculations using data from Central Bank of Brazil.

But regardless of the role of BNDES in the past, it is clear that Brazil's future investment needs cannot be financed by a continuous expansion of BNDES' balance sheet. As the country develops, it will be necessary to increasingly involve the private sector in the provision of long-term finance beyond acting merely as distributors of smaller BNDES loans, with a view towards replacing most of BNDES lending in the longer run.[5] How this transition can be made without cutting the credit flow to the corporate sector is a challenging question. Private credit institutions are still struggling with a number of obstacles to enter the long-term credit segment, including difficulties in obtaining long-term funding themselves, as well as the uneven playing field that results from the unique funding sources available to the dominant player, BNDES.

Bank funding and maturity mismatch

Brazilian banks are reluctant to lend long-term because most of their own funding, both through deposits and debt issues, has very short maturities. In the present situation, attractive investment options with very short maturities abound in Brazil, not least due to the availability of government bonds indexed to the policy interest rate and to the high mandated remuneration of savings accounts (Freitas, 2011). As a result, most private investors have a strong bias towards the short term. In this context, banks wishing to venture into long-term credit markets risk a substantial maturity mismatch. A major challenge going forward will be to channel more savings into financial assets with longer maturities, which will require a steeper yield curve so as to make long-term assets more appealing to investors.

One way to make more long-term funding available to the banking sector may be through a reform of the *caderneta de poupança* savings accounts. Such accounts are widely used in Brazil, with deposits in excess of 10% of GDP. They are a fully standardised product, offering uniform and legally guaranteed

5. There may be a role for a development bank in some niche areas of the financial system where specific characteristics in terms of risks, returns or required maturities raise the degree of uncertainty, such as financing for research and development, innovation or infrastructure projects (Freitas, 2011).

returns of 0.5% per month plus a Reference Rate (TR), which is determined by the Central Bank. Currently, this results in a tax-free remuneration of saving accounts of close to 7% per year in nominal terms. Removing the rules on the uniform conditions and returns of the savings accounts may facilitate the emergence of a more diverse array of savings instruments with differentiated maturities and interest rates, allowing banks to gather deposits with longer maturities for a premium.[6] At the same time, transforming the current unique tax exemption of the uniform savings account into a tax reward for longer-term instruments may increase the average maturity of bank funding and support the development of private long-term credit markets (Mesquita, 2011). The potential benefit of relaxing the tight rules on the remuneration of savings accounts would be amplified by a removal of the restrictions on the use of such funds, 65% of which must currently be devoted to housing finance.[7]

Another potential source of long-term funds would be through increased bond issuance by banks, which accounts for up to a quarter of bank liabilities in OECD countries. Private bond markets in Brazil are underdeveloped and characterised by low levels of liquidity, implying that investors are often forced to hold bonds until maturity. As a result, banks (and non-financial companies) face difficulties to fund themselves through issuance of bonds with longer maturities. Only bond markets with short maturities exist, with interest rates generally indexed to short-term interbank rates (Freitas, 2011). In December 2010, the government announced a number of measures to foster the development of long-term bond markets. One feature of these measures is to authorise the establishment of a liquidity fund for private long-term bonds that will act as a market maker through daily sales and purchase operations, thus increasing the liquidity of such bonds and making them more attractive to investors. Banks will be allowed to channel 3 percentage points of their current reserve requirements into this fund, which will guarantee a contribution of approximately BRL 2.2 billion. BNDES may contribute additional resources if deemed necessary (Freitas, 2011). In addition, these measures removed restrictions facing financial institutions on selling long-term bonds with a minimum maturity of 24 months (so-called *letras financeiras)* directly to the public. Prior to this measure, *letras financeiras* could be sold only to a reduced range of buyers. Most of the current stock (BRL 73 billion in April 2011, up from BRL 31 billion before the new measures came into effect) is remunerated at interest rates indexed *ex post* to overnight interbank rates.

BNDES itself has also taken a number of measures to support the crowding-in of private actors in long-term financing and to reduce the use of long-term instruments indexed to short-term interest rates. It has reduced its maximum share of financing capital goods acquisitions from 80 to 70% for large companies and from 100 to 90% for small and medium-sized companies, which encourages borrowing firms to seek co-financing from private lenders. BNDES has also become more active as an investor in primary corporate bond markets, with the objective of fostering the use of long-term corporate bonds that are not indexed to the short-term interbank rate and that use transparent pricing and distribution mechanisms. It has launched a new programme under which it intends to purchase such bonds up to BRL 10 billion (BNDES, 2011). On secondary markets, BNDES has become a more active purchaser of private long-term bonds using open electronic auctions. Finally, through own bond sales *via* its subsidiary BNDESPar, it has tried to play a pioneering role in bond markets by implementing new indexing mechanisms that are more appropriate for long-term financing than the current practice of *ex post* indexation to overnight interbank rates. In particular, BNDESPar has placed a bond series worth BRL 1 billion whose remuneration is indexed to a forward-looking 3-month interbank interest rate created in a similar way to the 3-month LIBOR rate and adjusted every three months (BNDES, 2011). Given the

6. Mesquita (2011) argues that a closer link between the remuneration of savings accounts and the policy rate would enhance the effectiveness of monetary policy and allow the Central Bank to reach the inflation target with lower interest rates. He also argues that subsidised credit undermines the effectiveness of conventional monetary policy.

7. This restriction was relaxed slightly in December 2010 by allowing banks to continue counting a gradually decreasing fraction of securitised loans towards the 65% requirement.

leading role of BNDES in Brazilian financial markets and the successful placement of this novel product, it is expected that the private sector will emulate such practices and gradually move away from indexing long-term bonds on very short-term interbank rates. The measures adopted in December 2010 go in the right direction of transforming BNDES into a coordinating agent that helps to reduce transaction costs. Leveraging its strong potential as a market maker is a useful strategy, as is the implicit reduction of non-remunerated reserve requirements implied by the liquidity fund.

Liquidity in secondary markets for private securities with long maturities can also be enhanced by reducing the tax burden on buying and selling private bonds, and by creating additional tax incentives for investing in longer-maturity assets. Such tax incentives were implemented as part of the measures announced in December 2010. They seem appropriate to foster the development of private markets for long-term investment funding.

Experience from other countries has shown that a stable local investor base can be helpful for creating demand for financial assets with long maturities, with domestic institutional investors such as pension funds playing a leading role (IDB, 2007). In that respect, the emergence of a complementary funded pension system could be a valuable contribution by increasing the amount of assets currently administered by the existing private pension funds. Pension funds have a long-term horizon by their very nature, and once the yield curve has become steeper, pension funds will seek assets with longer maturities.

Levelling the playing field in the long-term segment

But difficulties in obtaining long-term funding are probably not the only obstacle for private lenders to enter the long-term lending segment. Even once banks manage to secure funding with longer maturities, their entry into long-term credit markets will still be hampered by the uneven playing field and the dominant role of BNDES in this segment. Through the FAT and explicit government support, BNDES receives considerably cheaper funding than private banks, which allows it to lend at rates that are well below the funding costs of private banks. In the current set-up, it is hard to see how private banks would be able to compete with, let alone gradually replace, BNDES lending operations unless they get access to funding at the same cost as BNDES. Although there is probably unsatisfied demand for long-term credit even in the current situation, as long as BNDES is the only potential provider of such loans with access to cheap funds, it will always be able to skim the cream off the market by picking the lowest credit risks, and there will not be a level playing field in the market for long-term credit. The large share of its loans going to very large companies is an indication that it is already doing this at present (Garcia, 2011).

These obstacles to private market entry could be removed by aligning the funding costs of private banks to those of BNDES while establishing an explicit tax credit for borrowers that would be independent of whether the lender is BNDES or a private entity.[8] The tax credit could be revenue-neutral if financed by demanding a higher remuneration for FAT and government transfers from BNDES, while for borrowers, interest rates could be maintained at present levels through the tax credit. Such a first-stage reform would not remove the problems associated with directed credit, because scarce resources for interest–rate subsidies would still have to be allocated across competing potential borrowers. But it would make market entry feasible and allow the most efficient private financial institutions to gain market share once they have entered the segment. Until this condition is met, BNDES would continue to be the dominant long-term lender, thus avoiding a sudden deterioration in the supply of credit, and lending rates would remain largely unchanged. But as soon as other lending institutions are willing and able to lend long-term, they would not

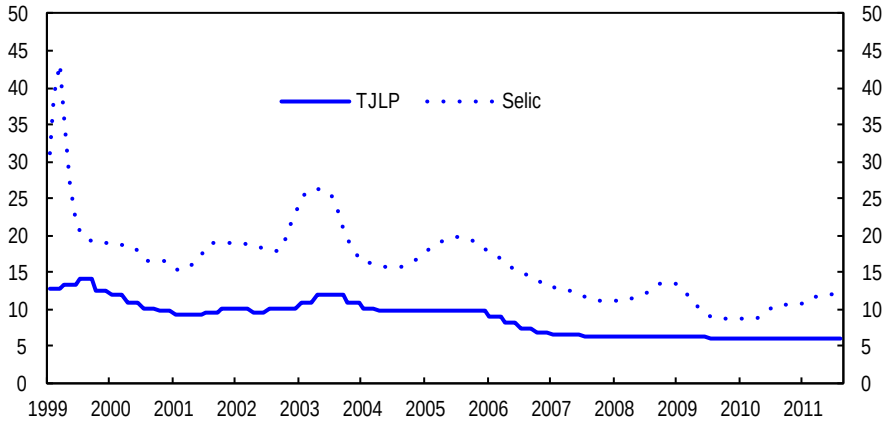
8. BNDES loans below BRL 10 million are channelled through commercial banks acting as agents for BNDES, but commercial banks only influence a small spread of the pricing of these loans. In this paragraph, lender refers to the ultimate lender, which is BNDES for such loans.

face obstacles to market entry under this set-up. In fact, the extension of long-term credit *per se* can be evaluated separately from the issue of lending at rates below domestic short-term rates.

In a second step, and once the funding situation of private banks has improved, subsidies could be reduced. The fiscal implications of current BNDES lending are sizeable, given the gap between the rates at which funding is provided to BNDES through the FAT and government transfers on one hand and yields on long-term government bonds on the other. Although BNDES is currently profitable in commercial terms, the fiscal implications of the current constellation would become more visible if its preferential access to workers' mandated savings in the FAT were properly accounted for. These savings are remunerated at below-market rates, and if not made available to BNDES, they could be used to reduce the public debt or workers could be given higher remuneration. Moreover, the fact that part of loan demand is satisfied at below short-term market rates reduces the political pressure for reforms that would allow market interest rates to come down, which would benefit all potential borrowers and not just those that are able to secure BNDES financing. In the past, the government has often lowered the interest rate that guides BNDES lending (the TJLP) *pari passu* with the Selic rate and hence has missed opportunities to close the gap between the two (Figure 10). Moreover, less expansionary lending by the BNDES would reduce the need for the Central Bank to set high interest rates (Bacha, 2010a; Hausmann, 2008).

Figure 10. **Market (Selic) and administrated interest rate (TJLP)**

Annualised rate in per cent



Source: Central Bank of Brazil and OECD calculations.

Taxes and the returns to investment

With general government revenues at 38% of GDP in 2010, according to OECD estimates, Brazil has high levels of taxes for an emerging market economy. An ensuing high tax burden on corporations – resulting from a number of different and sometimes cascading taxes – reduces the after-tax returns of any investment project and hence curbs the incentives to invest. The total tax rate on profits for a benchmark corporation is estimated at 69%, which ranks Brazil at 168th out of 183 economies surveyed (World Bank, 2010). Still, there may not be much scope for reducing taxes without jeopardising fiscal soundness, at least until social security expenditures are reined in. Nonetheless, the efficiency of the current tax system can be enhanced through revenue-neutral reforms, because taxes levied on Brazilian companies are not only high, but also complex and costly to comply with. Brazil comes last with respect to the time needed to comply with tax requirements in the World Bank survey. For all tax obligations together, the time requirements are more than four times the South American average and more than nine times the world average. Not surprisingly, high tax rates and difficulties in dealing with tax administrations come out on

top of the complaint list of firms in the World Bank's Enterprise Surveys – together with access to finance (World Bank, 2009). Some relief may come from the new Public System of Digital Bookkeeping (*Sistema Público de Escrituração Digital* or 'SPED') that the tax authorities are currently rolling out. This electronic system may lead to less required reporting to government and reduced compliance efforts.

Brazil's tax system is fragmented into several taxes. Indirect taxes, for which compliance costs are particularly high, consist mostly of a state level value added tax (ICMS) that is applied to intra- and inter-state sales of goods and selected services, in addition to a municipal level tax on other services (ISS). Since the ICMS is levied on an origin rather than a destination basis for inter-state trade, Brazilian states have engaged in competitive tax wars to attract producers by offering favourable tax treatment (de Mello, 2007). Selective excises such as taxes on industrial products (IPI) and so-called contributions (PIS and COFINS), whose revenues are often earmarked for specific uses, are levied by the federal government. The indirect tax system could be improved by unifying the fragmented system of taxes and contributions and combining the ICMS, ISS, IPI, COFINS and PIS into a value added tax with full credit for exports and capital goods purchases. If designed properly, value added taxes can be a comparatively growth-friendly tax instrument, as the experience of OECD countries has shown (Arnold *et al*., 2011). A government proposal to harmonise and reduce state-level ICMS to 4% was discussed by state finance ministers in July 2011. Such a harmonisation would help to reduce tax distortions and is an important step in the right direction. The simplified presumptive tax regime for small enterprises, *Simples Nacional*, has shown that it is possible to merge several different taxes across different jurisdictions. Should state-level variation in tax rates be maintained, however, taxation should at a minimum be destination-based to avoid distortions to inter-state trade.

Some taxes paid by companies continue to be levied on enterprise turnover rather than value added, especially for small enterprises that are subject to the *Simples Nacional* and some specific sectors. While taxation based on turnover makes compliance easier, this creates incentives for shorter production chains and distorts production patterns, with a possibly detrimental effect on productivity and therefore investment returns (OECD, 2009b). For small firms, reducing compliance costs is probably the dominant argument, but the distortions to the organisation of the production chain gain in importance with increasing firm size. The eligibility threshold for participation in the simplified tax regime has been raised from annual turnover of BRL 2.4 million to BRL 3.6 million in August 2011.

Budget permitting, additional reforms that could enhance investment incentives include raising depreciation allowances for corporate income taxes. Brazil's tax system is furthermore characterised by a heavy taxation of labour income, which can exceed 50% (OECD, 2009b). So far, progress on tax reform has been limited, despite widespread recognition of the need for reform. Several reasonable packages have been unable to gain approval from Congress due to concerns about further tax increases and issues relating to revenue distribution across sub-national jurisdictions.

The government also plans tax reforms in order to foster the development of private long-term credit markets. One of these measures is a tax reduction (or exemption in the case of natural persons and foreign residents) for direct or indirect investments in infrastructure projects with a maturity above four years at fixed or inflation-indexed interest rates, with no possibility of repurchase in the first two years of the investment. For non-residents, the tax exemption is also extended to long-term bonds issued to finance non-infrastructure investment with the same maturity and repurchase restrictions. These measures are likely to be beneficial and to enhance the incentives for private savers to put their funds into financial assets with long maturities. They may also help to improve the structure of foreign portfolio capital inflows.

Regulation on product and labour markets

A common feature that Brazil shares with many other emerging market economies is a generally high level of regulation in product markets relative to OECD countries. Investment incentives can be affected by regulatory policies in at least two ways. First, compliance with regulation can impose a significant cost burden on investment projects, lowering their expected profitability and rendering some economically non-viable at the margin. Second, regulations can hinder the entry of new firms with potentially innovative investment projects, with the result that some investment projects not originating in incumbent companies will not be realised due to regulated market entry. Alesina *et al.* (2005) provide evidence that various measures of regulation in the product markets, concerning in particular entry barriers, are negatively related to investment in OECD countries. Similarly, Djankov *et al.* (2002) focus on regulations that affect the ease of starting a business in 85 countries, and their findings lend support to the view that excessive regulation is a hindrance to entrepreneurship. Arnold *et al.* (2008) provide evidence that anti-competitive regulations can reduce productivity growth in ways that extend far beyond the regulated sectors themselves, which in turn reduces the expected return to investment.

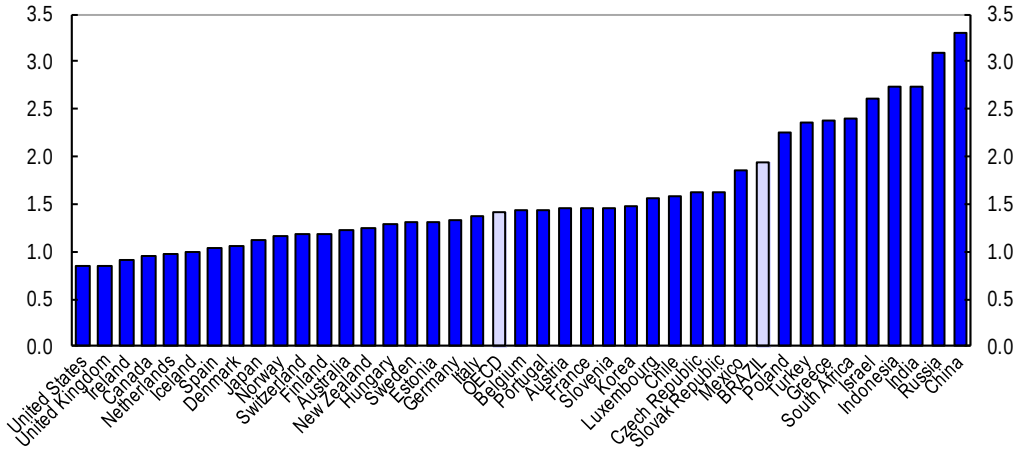
The Product Market Regulation (PMR) indicators produced by the OECD apply a comparable methodology to quantify anti-competitive regulations across OECD and Enhanced Engagement countries.[9] On the overall indicator, Brazil's level of restrictiveness is about 37% higher than the OECD average, but it is the lowest among the Enhanced Engagement countries and lower than quite a number of OECD countries (Figure 11). Areas where regulation is considerably more stringent than what is average practice in OECD countries include administrative burdens on start-ups, barriers to competition and explicit barriers to international trade (Wölfl *et al.*, 2010). Start-ups are particularly hampered by regulation in the case of sole proprietor firms, where procedures required to register an individual enterprise are numerous, lengthy and costly in comparison to OECD countries. This is confirmed by World Bank (2011a), which ranks Brazil in position 128 out of 183 countries with respect to the ease of starting a business. Barriers to competition include legal restrictions on the number of competitors in specific sectors including air transport, water transport, telecommunications and financial services. Sectors where the level of anti-competitive regulation in Brazil diverges significantly from average OECD practice include the airline industry, where entry barriers are high, the postal sector, where entry restrictions and the level of public ownership are significant, and the railways, where excessive vertical integration by incumbent operators, limits on the number of firms and uncompetitive market structures stand out (Conway and Nicoletti, 2006).

Barriers to international trade are mainly related to comparatively high levels of tariff protection in Brazil. With an average applied tariff rate on non-agricultural goods of 14.1%, Brazil's tariffs remain relatively high compared to major OECD countries (European Union 4%, Japan 2.5%, United States 3.3%) and also emerging-market economies (China 8.7%, India 10%, Indonesia 6.6%, Russia 10.1%) (World Trade Organization, 2010). In addition, high costs and time requirements for container handling and customs clearing also act as obstacles to foreign imports (World Bank, 2011a). A new industrial policy plan launched in August 2011 (called *Plano Brasil Maior*, "Greater Brazil Plan") contains a range of measures aimed at protecting the domestic market. These include preferential treatment to domestic products in public procurement under conditions to be specified unless the price differential *vis-à-vis* imports exceeds 25%, stronger use of "anti-dumping" duties such as those imposed on Chinese steel tubes in September 2011 and a reduction in the number of goods subject to automatic import licenses.

9. These indicators are available at http://www.oecd.org/eco/pmr.

Figure 11. **Product market regulation by country**

2008, Index scale of 0-6 from least to most restrictive



Note: The indicator is for the economy as a whole.

Source: OECD (2011c).

Although the most binding barriers to higher investment rates are probably concentrated in other areas, investment incentives could be enhanced by removing remaining anti-competitive restrictions in product markets. In particular, the government may want to remove remaining entry restrictions, as well as making further reductions in trade protection.

Conclusion

Investment rates have traditionally been low in Brazil, and the slow pace of capital accumulation is curbing the country's growth potential. This paper suggests that low saving rates and thin credit markets are essential elements of the explanation behind this, and identifies a number of policy options to address these issues. Reducing the burden of pension expenditures on public finances would allow higher public savings, while at the same time improving the incentives for households to save. This could be achieved by introducing a general minimum retirement age, raising the earliest possible retirement age and strengthening the penalties for early retirement. In the light of increasing longevity, the general minimum retirement age should be indexed to life expectancy in the future. Pension expenditures could also be contained by replacing the current indexation of minimum pension benefits to the minimum wage by a more moderate anchor, such as an average of consumer price inflation and average wage gains.

Besides a dearth of savings, Brazil's financial system fails to deliver satisfactory access to long term credit, which is urgently needed for long term investment projects. Long term funding is currently the exclusive domain of the national development bank BNDES, but substantial private entry into this segment will be required to meet future investment needs. Private entry into the long-term credit segment will require enhancing the possibilities for commercial banks to obtain long term funding, including through deregulating savings accounts and leveraging the strong potential of BNDES as a market maker. Public debt management can also play a guidance role through a continued reduction of the share of Selic indexed securities and increased debt maturities. Directed lending schemes to the rural sector and to housing should be phased out because they commit lendable funds of banks and drive up the costs of financial intermediation, as does the high level of reserve requirements for financial institutions. Higher levels of competition and lower margins in the banking sector are likely to be possible by moving progressively towards greater private ownership among commercial banks.

Achieving the necessary level playing field between private and public lenders will require removing BNDES' exclusive access to low-cost funding from the workers' welfare fund FAT and through budget transfers in order to align private banks' funding costs to those of BNDES. At the same time, an explicit tax credit for borrowers that is independent of the choice of lender could help to maintain borrowing costs at present levels, and could be financed in a revenue-neutral way by demanding a higher remuneration for FAT and government transfers from BNDES.

Finally, this paper suggests a number of policy options to reduce the costs of investing in Brazil. These include lowering the costs of complying with a comparatively onerous tax system by unifying the fragmented system of taxes and contributions. In particular, a single value added tax with full credit for exports and capital good purchases would make compliance with indirect taxes easier, while accelerated depreciation allowances on new capital purchases for corporate income tax would enhance investment incentives. Improving creditor protection by creating a unified national collateral registry, expediting court procedures for repossessing collateral, and introducing the possibility of extra judicial enforcement of credit contracts involving collateral without the defaulting borrower's consent may reduce frictions in credit markets. Finally, remaining entry restrictions in air transport, water transport, telecommunications and financial services as well as reductions in trade protection could strengthen competition and improve performance in these sectors.

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