

# Financialization, coalition of interests and interest rate in Brazil<sup>+</sup>

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**Abstract:** In this paper, we go back to the hypothesis of a pro-conservative monetary policy convention in Brazil, as initially formulated by Bresser-Pereira and Nakano (2002) and Erber (2011), and add three particular sub-hypotheses to it: (i) the prevalence of high real interest rates in Brazil for decades has led to the formation of a coalition of rentier-financier interests for keeping interest rates high and the resulting "financialization from interest income"; (ii) the existence of a "two-way" public-debt contagion effect between the banking reserves market and the public securities market; (iii) the use of a high interest rate to finance current-account deficits. To this end, the paper takes as its starting point Keynes's view of the interest rate as an eminently conventional phenomenon.

**Keywords:** financialization; monetary policy; convention; interest rate

**JEL Classification:** E43; E52; E58

## Financialisation, coalition d'intérêts et taux d'intérêt au Brésil

**Résumé:** cet article reprend l'hypothèse d'une convention pro-conservatisme dans la politique monétaire brésilienne, initialement formulée par Bresser-Pereira et Nakano (2002) et Erber (2011), et ajoute trois sous-hypothèses particulières à cette problématique: (i) le maintien d'un niveau élevé des taux d'intérêt réels au Brésil pendant des décennies ont conduit à une coalition d'intérêts rentiers et financiers à maintenir des taux d'intérêt élevés, ce qui a entraîné un processus de financement basé sur des revenus d'intérêts élevés. (ii) l'existence d'un double effet de contagion de la dette publique entre les réserves bancaires et le marché public des valeurs mobilières titrisées; (iii) l'utilisation de taux d'intérêt élevés pour financer les déficits dans la balance des paiements. À cette fin, l'article part du point de vue de Keynes sur les taux d'intérêt comme un phénomène éminemment conventionnel.

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## 1. Introduction

A recurring question in discussions of the Brazilian economy is *why does Brazil have one of the world's highest real interest rates*. Indeed, one would expect that after the Real Plan's successful stabilization of inflation in 1994, interest rates should have dropped to levels closer to those found in developed economies plus Brazil's sovereign risk. This was not the case. Even with the recent sharp drop in real interest rates within a context of acute and protracted recession and high unemployment, Brazil still has one of the highest real interest rates: in October 2018, the *ex-ante* real interest rate (net of inflation projected for the next 12 months) was at 3.71% p.a. It was the world's sixth highest, well above the overall average of 0.56% p.a.<sup>1</sup> Several reasons have been suggested as explanatory factors, such as the presence of "clogged" monetary policy channels due to financial indexation, earmarked credit, monitored prices, etc., not to mention other factors like jurisdictional uncertainty, the public sector's financial weakness, contagion from public debt, questions surrounding the public debt's sustainability, etc. Some of these lack plausibility and empirical evidence, but Brazil's high interest rates are likely to stem from a wide range of factors, as a groundbreaking paper on the subject pointed out (Bresser-Pereira and Nakano, 2002).

This paper goes back to and develops the *hypothesis of a conservative monetary policy convention in Brazil* – as formulated by authors like Bresser-Pereira and Nakano (2002), Erber (2011) and, more recently, Lara Resende (2017), in the framework of a financialization process. In addition the paper develops two further hypotheses (related to the former one):: (i) the formation of a coalition of interests of rentier capitalists earning interest, dividends and rents, and of financiers earning wages, bonuses and commissions; (ii) the presence of a "two-way" public-debt contagion effect between the banking reserves market and the public securities market, where both the Central Bank's conservative monetary policy and the National Treasury's difficulty in issuing debt may affect the return on (and terms of) financial operations in the reserves and securities markets; (iii) the use of a high interest rate to finance current-account deficits understood as "foreign savings" but which are essentially additional consumption expenditure.

To this end, the paper is organized into four sections in addition to this introduction. Section 2 analyzes certain interpretations of Brazil's high interest rates. Section 3 develops the hypothesis of the pro-conservative monetary policy convention in Brazil, taking as a starting point Keynes's view of *the interest rate as a highly conventional phenomenon*. Section 4 investigates the nature and unique traits of financialization in Brazil and its income and wealth redistribution effects, while Section 5 analyzes the channels by means of which the coalition of rentier-financier interests can affect interest rates in Brazil. The hypothesis of the pro-conservative monetary policy convention is developed, and the article concludes with some policy proposals.

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<sup>1</sup> According to data compiled from <http://infinityasset.com.br/blog/wp-content/uploads/2018/10/rankingdejurosreais301018.pdf>. It is worth emphasizing that, in recent decades, Brazil's real interest rates have been among the world's three highest. Add to this that market expectations (Focus) are trending towards interest rate increases in 2019/2021.

## 2. Some interpretations of Brazil's high interest rates<sup>2</sup>

Out of the many interpretations of Brazil's high interest rates, we mention a few that we believe to be subsidiary, but still noteworthy. One series of studies explains high interest rates as a product of "clogged" monetary policy channels in Brazil that force the monetary authority to raise the interest rate by a greater magnitude than otherwise necessary (to produce effects on aggregate demand). One factor contributing to Brazil's poorly functioning transmission channels is claimed to be the high share of the IPCA (broad consumer price index) represented by administered prices,<sup>3</sup> which are insensitive to market conditions (Modenesi and Modenesi, 2012). This is due to the fact that they are regulated by contracts or public authorities, be they federal, state or local. According to IBGE data (Brazilian Institute of Geography and Statistics), in August 2018 the IPCA was made up of 26.2% administered prices and 73.8% free-floating prices.

A second factor contributing to Brazil's poorly functioning transmission channels is allegedly the weight of BNDES<sup>4</sup> loans as share of total credit, as these operations fall into the earmarked credit category, which is not affected by monetary policy (Daniel, 2015). This factor has been controversial. There seems to be conceptual confusion regarding the assessment of the impacts of earmarked credit on monetary policy transmission: it is generally claimed that the BNDES would hold close to 20% of total credit, but this concerns credit volume. For the purposes of assessing the power of monetary policy, however, one must take credit approvals into account and, in this case, the share of BNDES loans averaged a mere 5.1% of total credit in 2011-2014, the bank's peak credit period, dropping to 2.8% of total credit in 2015-2018, as Figure 1 shows.

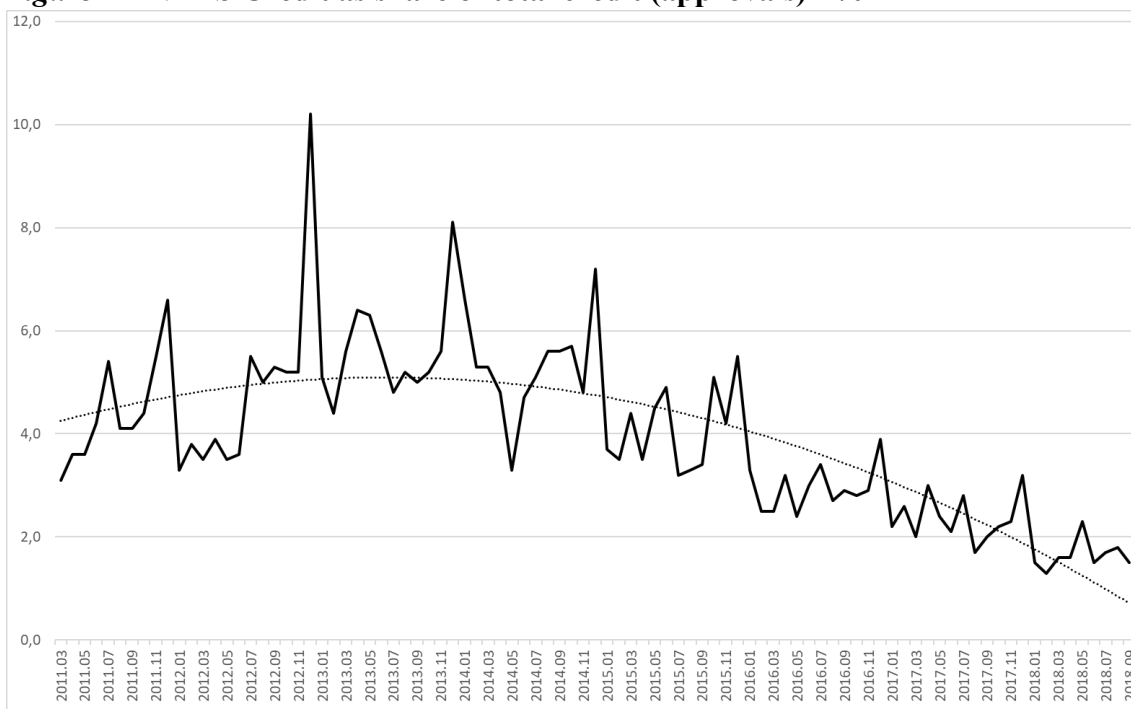
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<sup>2</sup> In this section we sum up some of the most influential explanations of high interest rates in Brazil. However, we do not intend to exhaust such contributions.

<sup>3</sup> Administered prices include, to name a few, transportation (including oil and oil products), communications (telephone charges, for example) and health insurance. Administered prices are insensitive to market conditions (supply and demand). This is due to the fact that they are regulated by contract or by a federal, state or municipal administration entity. It is worth emphasizing that, free prices are largely determined in oligopoly markets, whose big services companies set their prices by means of mark-ups on production costs, and have little or no sensitivity to aggregate demand controls through Central Bank interest-rate hikes. According to Auto Esporte magazine, the price of new cars in Brazil increased by 55.9% from 2015 to 2018, despite the production and sales retraction caused by the recessions of 2015 and 2016, and the low economic growth of 2017 and 2018.

<sup>4</sup> The Brazilian Development Bank - BNDES is a state-owned development bank.

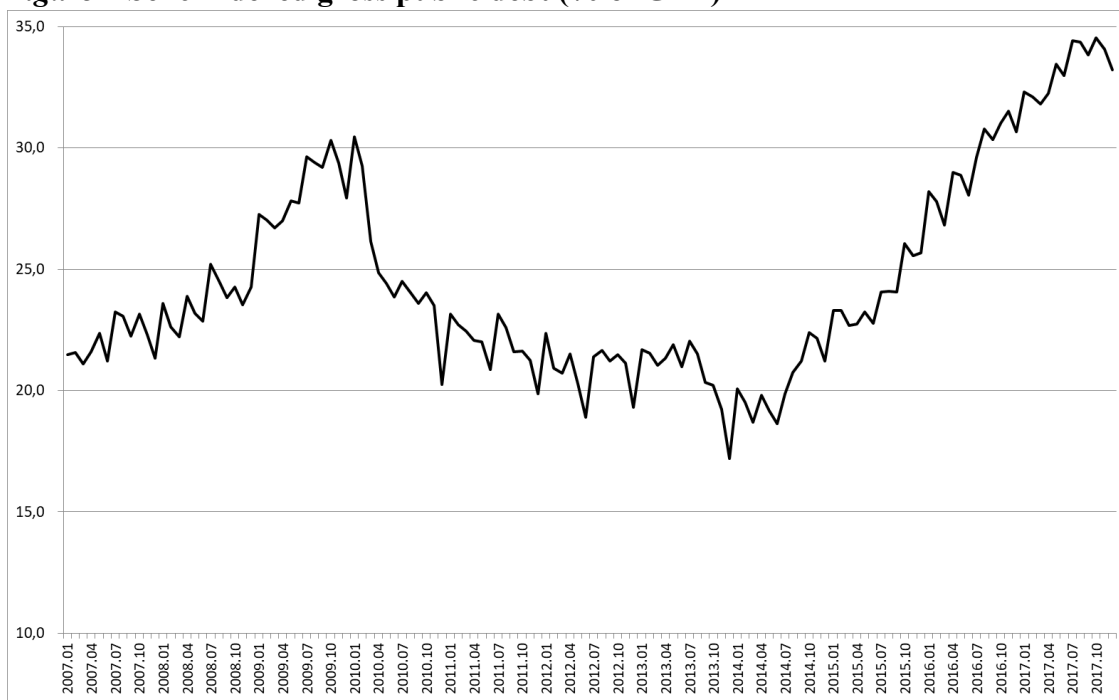
**Figure 1 BNDES Credit as share of total credit (approvals) - %**



Source: Prepared by the authors based on Central Bank of Brazil data

A third factor contributing to Brazil's poorly functioning monetary policy transmission channels is supposedly the continued presence of a far-reaching financial indexation process. The fact that a portion of the financial wealth is pegged to the Selic or basic interest rate creates an "inverted" wealth effect (Pastore, 1996). Under normal conditions (where debt instruments are mainly pre-fixed ones), the wealth effect operates as follows: an increase in the interest rate generates a negative wealth effect on economic agents because of the reduced worth of pre-fixed financial assets, considering that  $P = A/r$ , where  $P$  is the asset's market price,  $A$  is its coupon, and  $r$  is the market interest rate. Therefore, for a given  $A$ , if  $r$  increases,  $P$  must decrease. The loss of financial wealth makes economic agents (firms and households) reduce their spending. In Brazil, however, this effect is partly offset by the indexation of a portion of financial wealth: in this case, an interest-rate increase generates a positive income effect that may translate into increased aggregate demand, partly nullifying the previous effect. Figure 2 shows data on the Selic-indexed public debt (includes repo operations, outstanding treasury financial bills (LFTs), and does not include state-owned companies' debt) relative to GDP: the average in 2007-2017 was 24.5%!

**Figure 2 Selic-indexed gross public debt (% of GDP)**



Source: Paula and Marconi (2018) based on National Treasury data

Other interpretations concern the matter of public debt, some in connection with financial indexation. Oreiro and Paula (2011) argue that a significant share of public debt is indexed to the Selic<sup>5</sup>, making the National Treasury hostage to the financial market for public debt issues and rollovers. This interpretation connects with the hypothesis of the “public debt contagion effect” initially formulated by Barbosa (2006): because the Selic rate provide returns on both certain Central Bank of Brazil’s repo operations to fine-tune the banking reserves market’s liquidity and a portion of the Selic-indexed public debt (LFTs), it serves two purposes: it is the interest rate that regulates interbank loans and, at the same time, the one at which the Treasury rolls over a significant share of the public debt. Because a single interest rate must perform two functions, the public debt rollover function contaminates the monetary policy instrument function, as the Central Bank of Brazil (BCB) is unable to set one Selic for interbank market operations and another for public debt rollover operations. The BCB cannot set a single interest-rate value that is simultaneously compatible with the two functions. In this context, the persistent fragility of Brazilian public finances ends up having the interest rate that the market requires to roll over public debt become “excessively high”. It is then transmitted by arbitrage to regular monetary policy operations

Segura-Ubiergo (2012), in his turn, argues that the low savings rate in Brazil raises the interest rate set by the BCB. It is the product of high and insufficiently funded social-security transfers, of the high government consumption, and of the high return on

<sup>5</sup> The *Sistema Especial de Liquidação e Custodia* (SELIC) (Special Clearance and Escrow System) is the Brazilian Central Bank’s system for performing open market operations in execution of monetary policy.

public debt itself.<sup>6</sup> On the other hand, some argue that a history of sovereign defaults and questions surrounding the sustainability of Brazil's public debt force the country to pay a *high risk premium*, which, according to uncovered interest rate parity,<sup>7</sup> leads to high interest rates. However, as Bresser-Pereira and Nakano (2002) originally noted, the interest rate at the time was (and remains) significantly higher than uncovered parity might predict. Besides, Brazil does not have a history of public debt default; its sovereign defaults did not involve the State's inability to honor debt in its own currency, but the nation-state's, specially its private sector's, inability to honor debt denominated in foreign currency because of international creditors' refusal to roll over this debt. Reis (2016), on the other hand, shows that other countries with similar savings-to-GDP ratios as Brazil, such as Colombia and the Philippines, have far lower interest rates than Brazil. As for sovereign risk, Table 1 shows that in 2010-2014 countries with similar sovereign risk (EMBI+) levels showed far lower real interest rates than Brazil.

**Table 1 Real short-term interest rate\* and risk rating – 2010-2014 average**

Country	Country risk	Real interest rate
Brazil	916	4,25
Bulgaria	881	-1,73
Colombia	766	1,19
Mexico	532	0,10
Panama	1029	0,88
Peru	923	0,16
Phillipines	399	0,16
Russia	659	0,67
South Africa	215	-0,03
Turkey	416	-3,55

Source: Datamarket (EMBI+) and IMF; (\*) Central Government

While some explanations of Brazil's high interest rates are clearly questionable (weight of BNDES loans as share of total credit, history of sovereign default, etc.), other ones seems to be insufficient, as the weight of administered prices on broad consumer price index and the public debt contagion effect (see more on this in section 4). Financial indexation, as we will see in the next section, is part of our interpretation of high interest rates in Brazil. Our contribution is to integrate this factor in the Brazilian regime of financialization "through interest income": the formation of a coalition of rentier-financier interests for keeping interest rates can only be understood as part of this sort of regime of financialization, and to point out some consequences for the operation of the monetary policy, as detailed in section 4. The hypothesis that a coalition of rentier-financier interests exists bent on keeping interest rates high, has been raised by some Brazilian economists, such as Bresser-Pereira and Fabio Erber, as we will see in the next section.

<sup>6</sup> There is an underlying argument that a loss of government savings must imply an increase in rentier savings and of the private sector in general. An agent's debts and deficits are offset by other actors' credits and surpluses.

<sup>7</sup> According to uncovered interest parity, the domestic interest rate equals the international interest rate ( $r^*$ ) plus a country's sovereign-risk premium.

### 3. The pro-conservative monetary policy convention

A *convention* is a belief or expectations-forming rule shared by a large number of individuals, or an agreement between participants settling on a common strategy. In the *General Theory* (1936), Keynes suggests two concepts for convention, or agent behavior rule: (i) to assume that the current state of business will persist indefinitely (projecting the current situation); (ii) a propensity to follow the majority, or average opinion (the safest course of action may be to follow others). More than this, conventions are institutions, which leads Favereau (2002: 511-520) to add a normative dimension to them, arguing that they are “endowed with mandatory force”.

Keynes (1936) argued that *the interest rate is a highly conventional phenomenon*, rather than an essentially psychological phenomenon because “its actual value is largely governed by the prevailing view as to what its value is expected to be. Any level of interest which is accepted with sufficient conviction as *likely* to be durable will be durable” (Idem, p. 203, original emphasis). He believed that, in order to be effective, monetary policy must send clear signs to the agents: “a monetary policy which strikes public opinion as being experimental in character or easily liable to change may fail in its objective of greatly reducing the long-term rate of interest (....) The same policy, on the other hand, may prove easily successful if it appeals to public opinion as being reasonable and practicable and promoted by an authority unlikely to be superseded” (Idem, p. 203). Therefore, expectations surrounding the future behavior of monetary policy depend on what Keynes referred to as the “safe” interest rate, that is, the interest rate value that the public believes will prevail in the long term. In other words, it depends on a social convention.

The *conservative convention* for monetary policy is a hypothesis originally argued by Bresser-Pereira and Nakano (2002: 169): “after the interest rate is kept at a very high level for a lengthy period of time, it is natural for fears of reduction to emerge and for this level to become *conventional*”. Bresser-Pereira (2007: 200) adds: “the Selic funds rate is high in Brazil because, under the argument that a very high interest rate is required “to fight inflation”, [it] is set at an artificial level that compensates rentiers and the financial industry”. That is, a coalition of rentier-financier interests exists bent on keeping interest rates high in Brazil.

Erber (2011) later suggested that excessive monetary policy strictness should be explained from the political economy angle, according to which the interest rate in Brazil is not an exclusively macroeconomic problem, but rather the outcome of the formation of a *coalition of interests around keeping the interest rate high*. Such a coalition would in fact be beneficial to the reputation of a conservative central bank. In this sense, a convention is created that is shared both by the financial market and the Central Bank. According to Erber (2011: 43),

a broad and powerful constellation of interests exists, formed over time around the high interest interest-appreciated currency binomial, that has established a convention according to which these elements are key to the country’s development [...] This coalition of interests has powerful instruments available to consolidate and disseminate its development convention. The most explicit one lies in the hands of the financial system [...]. The Central Bank is a required member of the coalition [...]. For the coalition and the convention that acts as its social representation to form, all it takes is for the Central Bank and private-

sector members to extract shared benefits from a single policy – in this case, the prestige that stems from hitting targets and the profits from high interest and an appreciated currency.

Therefore, the maintenance of high real interest rates for decades in Brazil, within the context of the presence and maintenance of an overnight circuit, led to the creation of a *conventionally “safe” interest rate*. Thus was formed a belief in or conviction of continued high rates. Such a vicious cycle greatly contributed to the development of a process of financialization of the Brazilian economy “through interest income”, a central feature of the country’s prevalent rentier-financier form of capitalism.

More recently, Lara Resende (2017) argued that Brazil’s sustained high interest rates proved themselves ineffective lowering inflation and raised the hypothesis that high interest rates may lead to elevated inflation rates, in what has been known as “neo-Fischerian hypothesis.”<sup>8</sup> :

#### **4. Financialization in Brazil: particular traits and redistribution effects**

The central feature of the development of finance-led capitalism lies in financialization<sup>9</sup> – which, according to Epstein’s (2005: 3) well-known definition, means “the increasing role of financial motives, financial markets, financial agents and financial institutions in the operation of the domestic and international economies”. Brazil, as measured by several indicators, is a highly financialized economy, but with unique characteristics, as we will discuss ahead (see also Bruno et al, 2014).

International studies show that financialization significantly reduces national states’ autonomy, whether in formulating economic policies independently from international conditions, or in connection with a long-term development strategy consistent with the productive conditions and interests of non-financial sectors (Becker et al, 2010).

Bresser-Pereira (2018), in his turn, shows that a new class coalition is dominant since the late 1980s – a “rentier-financier coalition”, a social organization in which capitalists are predominantly rentiers, whereas the upper technobureaucrats are either the top managers of the corporations, or the financiers” (Ibidem: 27). In such an organization, the rentiers, most of whom are heirs, have replaced business entrepreneurs in the ownership of the large business firms; the financiers, on their turn, are the young and bright technobureaucrats that manage the rentiers’ wealth. Most of them come from the upper middle class and have earned a MBA or a PhD in Economics abroad. Besides their management of financialization, they use the radical economic liberalism that they learned overseas to become the organic intellectuals of this neoliberal class coalition.

Singer (2012; 2018) holds that over the course of the PT administrations in Brazil, two opposite coalitions of classes formed. One is a *rentier* coalition that unites financial capital and the traditional middle class, more closely aligned with neo-liberal prescriptions; the other is a *productive* coalition made up of industrial entrepreneurs in association with the organized portion of the working class. During the first Dilma

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<sup>8</sup> The mechanism is that the Fisher relation must hold in the long run, so given a constant steady-state real rate of interest, raising the nominal interest rate will eventually lead to a higher inflation rate. For more, see Cochrane (2016).

<sup>9</sup> For a comprehensive review of financialization on its various dimensions, see van der Zwan (2014).



administration, however, excessive interventionism created mistrust among industrial entrepreneurs, who backed away from the administration beginning in the second half of 2013. By bringing about changes in interest and exchange-rate policies, with a drastic reduction in the SELIC rate and bank spreads, Dilma eventually strained the relationship with representatives of financial-rentier segment. Furthermore, in June 2013 erupted widespread protests in the country's capitals that produced a fundamental cleavage in the Dilma government. The political climate of the country was rattled by the episode. The drop in the president's popularity put the federal government in a defensive stance, with setbacks such as the restoration of higher interest rates by the Central Bank in mid-2013 and “the beginning of the mobilization of the middle class, which would eventually play a decisive role in the fall of Dilma” (Singer, 2018: 103). This new window of opportunity caused much of business representatives and actors to detach themselves definitively from the governing coalition and protest against the prevailing economic policy (see also Paula et al, 2020).

Bresser-Pereira (2016) adds another economic factor leading to the collapse of this attempted coalition. Quoting data from Rocca (2014), he argues that the first Dilma administration (2011-2014) saw a sharp drop in industrial companies’ profit rates, due largely to the marked appreciation of the Brazilian Real in the Lula administration and the resulting loss of domestic market share to manufactured goods imports that took place thereafter. Table 2 shows the drop in business firms’ return rate between 2010 and 2014, while the interest rate remained extremely high.

**Table 2 Return on equity (ROE) and Selic Over rate– 2010-2014 (%)**

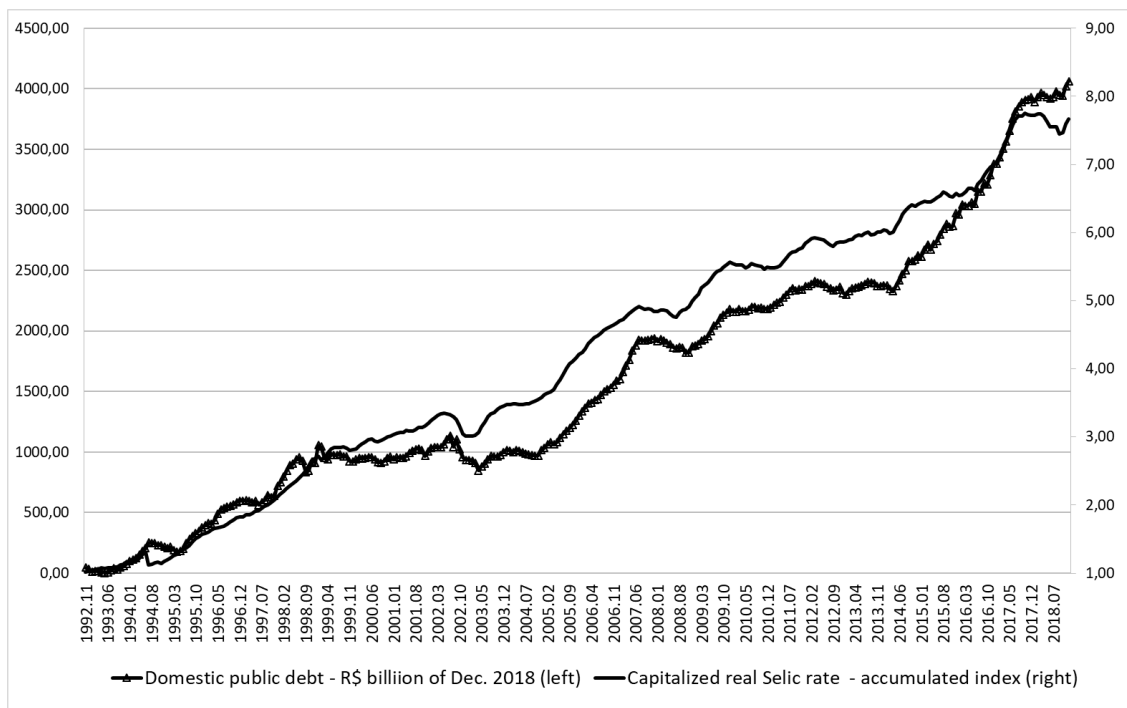
<b>Year</b>	<b>ROE</b>	<b>Selic/Over</b>
2010	16.5	9.8
2011	12.6	11.7
2012	7.2	8.5
2013	7.0	8.2
2014	4.3	10.9

Source: Rocca (2014) and Oreiro and d’Agostini (2017). Average rates.

In Brazil, within the framework of a basically liberal economic policy regime ever since the trade barriers lifting of 1990 and the financial barriers lifting of 1992, financialization, according to Paula and Bruno (2017), came to pass through “interest gains”, which replaced the previous monetary regime, the “inflation gains financialization regime”. Both processes were stimulated by financial liberalization in terms of capital inflows and outflows, and by the speculative nature of capital flows from residents and non-residents alike. Due to the high levels of interest rates practiced and the high level of public debt in Brazil (which part are indexed to Selic rate, see more below), usurious financialization remained, but increased to a new level in which the interest gains appropriated by the big banks and capital holders were drastically amplified by the high cost of financing and loans granted by the financial market to Brazilian households and companies (Bruno and Caffè, 2017). Figure 3 shows how the evolution of net domestic debt (of the central government and the BCB) tracks the

accumulated real Selic rate factor, which appears to show that the capitalized real Selic endogenously expanded domestic public debt in the 1990-2018 period, as an important share of public bonds is directly denominated in the Selic rate (between 20-40% of the total in 2006-2018)<sup>10</sup> The interest gains financialization regime that is prevalent in Brazil differs from the “dividends gains financialization regime” that has been a leading feature of financialization in developed economies because interest rates, given the presence of an overnight circuit in the Brazilian economy, have been kept at very high rates ever since the 1994 implementation of the Real Plan.

**Figure 3 Capitalized real Selic endogenously expands domestic public debt (1992-2018)**



Source: Authors’ calculations based on Central Bank of Brazil data. Note: The capitalized real Selic is obtained via the accumulated factor of the real Selic, using the IGP-DI (Prices General Index – Internal Availability), base: Dec 2018 = 100, as a deflator. The formula used to arrive at the monthly real Selic factor =  $\frac{(1+\text{nominal selic})}{(1+p)}$ . Then simply accumulate the monthly factors over the years in the series.

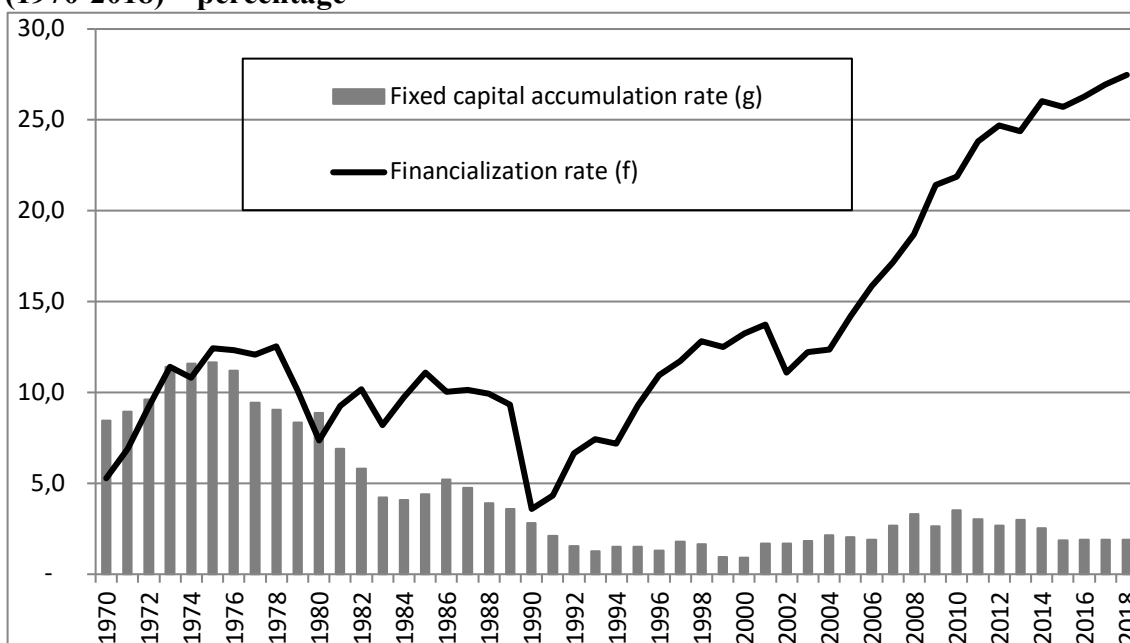
Figure 4 shows the behavior of the financialization index (calculate based on the ratio of total stock of non-monetary financial assets to the economy’s total stock of fixed capital<sup>11</sup>) and of the rate of productive fixed capital accumulation in 1970-2015.

<sup>10</sup> See also Annex 1, where we investigate empirically the relationship between the Selic (real and capitalized to reflect compound interest capitalization) and total public debt.

<sup>11</sup> This index is inspired in the findings of the empirical literature. Davis (2017), in a broad and recent review on the relationship between financialization and investment, highlights that the result of a large body of empirical work suggests a robust and negative relationship between financialization and fixed capital investment. Particularly in the USA, since the 1980s, there has been a substantial expansion in financial investments of non-financial firms replacing fixed investments, as well as an increase in the payments of these firms to financial markets. This

The financialization index of 1970-1980 does not support the existence of a financialization process in Brazil at the time (Table 3). For every Brazilian Real (national currency) allocated to directly productive activities, there was 1.06 Brazilian Real invested in financial assets. In 1981-1994, under what we call the “inflation gains financialization” regime, the index averaged 2.04, indicating, on the macroeconomic level, that for every Brazilian Real invested in productive activities, 2.04 Brazilian *Reais* had been invested in financial assets. In 1995-2018, under what we have termed “interest gains financialization regime” the index reached a rather high average level of 8.63 (for every Brazilian Real invested in productive activities, 8.63 had been allocated to financial assets<sup>12</sup>). It is worth emphasizing from this period something that was already present in 1981-1994, but gains weight in 1995-2016: a sharp and increasing decoupling between rentier-financier accumulation and the rate of productive fixed capital accumulation.

**Figure 4 Rentier-financier accumulation vs. Fixed capital accumulation (1970-2018) – percentage**



Source: Prepared by the authors. Note: the accumulation rate was calculated based on the fixed capital stock data in Morandi (2015). The financialization rate relied on the total stock of non-monetary financial assets data provided by the Central Bank of Brazil, deflated at the IGP-DI.

trend would be related to the growing shareholder value orientation as the dominant corporate governance ideology whose main goal is to "downsize and distribute". According to Miranda (2013), there are strong evidences that the Brazilian companies can be considered financialized, due to a type of governance closer to the Anglo-Saxon model that seeks short-term results and convergence to the maximization of shareholder value.

<sup>12</sup> Of course, as part of the financial assets are equities the increase in the stock of non-monetary financial assets can be the result (at least partially) of price valorization of the equities. However, so far most part of financial assets in Brazil are bonds, mostly public bonds.

**Table 3 Financialization index in three periods of the Brazilian economy's evolution**

Period	1970-1980	1981-1994	1995-2018
Financialization index = f/g	1,02	2,25	8,63

**Source:** Authors' calculations.

In the context of the interest gains financialization regime, the Brazilian government attempted, until 2016, to reconcile the interests of rentier accumulation and redistributive social policies, in benefit of the social segments whose income derives from interest income and other financial gains (Paula and Bruno, 2017). Kaltenbrunner and Paineira (2018) argue that one of the features of Brazilian financialization is what they call “subordinated financial integration”, a process that connects domestic financialization with international capital flows. Indeed, the international financial integration process in context of capital account liberalization is asymmetric inasmuch it is an integration between unequal partners: firstly, as capital flows ultimately depend on exogenous sources, emergent countries have become even more vulnerable to the inherent volatility of these flows – in Ocampo (2001)’ terms, whereas advanced economies are “business cycle makers”, emerging economies are “business cycle takers”; secondly, the relatively marginal insertion of emerging economies’ assets in the portfolios of global investors since the 1990s (as it is the case of Brazil) has also contributed to this higher macroeconomic vulnerability as capital flows have a procyclical behavior pattern (Paula et al, 2017).

Specifically, the subordinated financial integration shapes the relationships between agents and the financial markets through *carry-trade* operations that exploit the interest-rate spreads that stem from Brazil’s very high domestic interest rates compared with developed economies (such as the US Fed funds rates). The connection with the Brazilian economy’s financialization takes place via the international reserves accumulation policy and the Central Bank’s intensive use of repo operations (“*operações compromissadas*” in Portuguese<sup>13</sup>) to calibrate liquidity in the banking reserves market. As Pellegrini (2017) points out, the problem is not the Central Bank’s use per se of repo operations, but the *ammount* of these operations in Brazil. The sharp growth of repo operations in 2006-2010 is mainly due to the accumulation of international reserves, forcing the BCB to sterilize accumulated currency flows to prevent greater oscillation of the interest rate in the interbank market.

Another aspect worth emphasizing is that the BCB policy of accumulation of foreign exchange reserves (to works as a “cushion safety” in periods of stress) takes place largely through portfolio investments (speculative and short-term capitals) whose inflows are attracted by Brazil’s high real interest rates and the trend to cyclic exchange rate overappreciation, which is ultimately stimulated by the policy of “growth cum foreign savings” (and its mirror-image current account deficits) and the exchange rate

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<sup>13</sup> Repo operations are public or private securities buy (or sell) operations that include an obligation to resell (or repurchase) the same securities on a future date. The BCB uses them to control the overall economy’s liquidity so that the Selic rate tends towards the BCB-set target. These are very short-term operations with returns based on the BCB’s target Selic rate.

anchor policy to keep inflation in check. These factors contribute to keeping interest rates at a higher level than sovereign risk would justify. Indeed, the resulting currency appreciation is convenient for profits, interest and dividends payments abroad, when the time comes to convert these gains in Brazilian Reais into US Dollars. In other words, a floating currency exchange regime biased in the direction of real appreciation reproduces the Brazilian economy's subordinated international financial integration, as the attraction of abundant foreign capitals forces the BCB to sterilize these funds, leading to a sharp increase in repo operations, which, as already stressed, stimulates interest gains financialization in Brazil.

It is worth mentioning some of the process's perverse effects in Brazil. On the one hand, financialization enhances to frenzy the liquidity preference of capital holders (including industrial entrepreneurs who become rentiers), reducing gross fixed capital formation because of the presence of short-term financial investments that compete with investments in capital assets by increasing the liquidity premium (Figure 4). In this sense, according to Carvalho (2005: 332), "the focus on short-term interest rates may be simply due to the high return that financial operations have to offer compared with the expected return on productive investments, making the choice between a short-term placement and productive investment a relevant one, as such a placement may yield in a few periods what a real investment would take much longer to provide, even if the much higher risks of all kinds surrounding the acquisition of capital assets were to be disregarded." Consequently, financialization leads to the expansion and increased importance of the financial industry (and of the financial motives in agents' portfolios) at the cost of the real economy, transferring income from the real to the financial sector, and even to the stagnation and decline of production.

On the other hand, one can expect that interest gains financialization increases personal income concentration with concentrating effects on high-income segments, as financial income, dividends, rents, and inheritances and donations answer for almost 40% of Brazil's income (Menezes Filho, 2017). Recent studies (see, for example, Souza and Medeiros, 2017; Morgan, 2017) using Personal Income Tax (IRPF) data have enabled a new view of the top of income distribution in Brazil, showing evidence of persistent income concentration at the very top. Souza and Medeiros (2017) show that both the richest 10% and the richest 1% in Brazil have maintained their appropriated shares of total income, at around 50% and 22-24% in 2006-2014, respectively, the latter being far above the 5-15% of total income in 24 out of 29 countries surveyed in 2014<sup>14</sup>. Morgan (2017), in turn, provides evidence that the share of income of the top 10% showed a small reduction from 54.7% to 53.4% of pre-tax income from 2001 to 2015, whereas the share of the poorest 50% increased from 10.6% to 12.5% and that of the intermediate 40% dropped from 34.7% to 34.1%. The author concludes that, in Brazil, "income growth (...) has been uneven, with gains at the lower range at the expense of the higher one without, however, affecting the groups at the very top" (Morgan, 2017, p. 254). The data thus shows that the portion of income received by the richest strata has recently remained essentially stable in Brazil.

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<sup>14</sup> Only South Africa, Argentina, Brazil, Colombia and the United States exceeded 20% total income appropriation by the richest 1%.

## 5. Monetary policy, financialization and rentier coalitions of interests

The Brazilian economy's increasing financialization is associated with a high interest rate, as we have seen. We have identified five channels through which the rentier-financier coalition of interests can affect interest rates in Brazil.

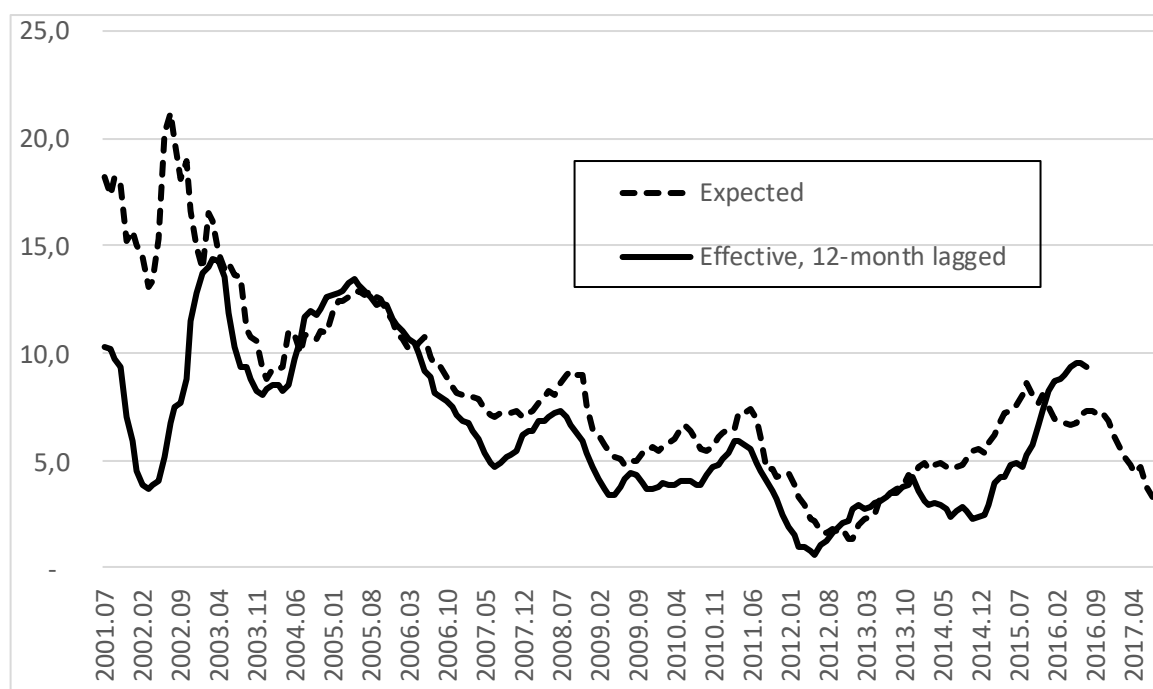
Given the conservative policy monetary convention supported by the dominance of a rentier-financier class coalition in the framework of a financialization process, we can ask which are the channels through which this rentier-financier can affect interest rates in Brazil. The first and the second channels are just ways the financial market and the central bank relate one with the other. The third, the fourth and the fifth channels are more structural channels. The third is related to the subordinated financial integration, a process that connects domestic financialization with international capital flows, while the fourth is institutional, associated to the existence of an indexed public debt that involves a two-way public debt contagion. Finally, the fifth channel is more than just a biased form of relating the rentier-financier coalition with the central bank: the high interest rates are a consequence of the erroneous belief that countries can grow with current account deficits or the growth with "foreign savings" – a belief is anchored in the domestic populism and the foreign interest in exporting capitals to Brazil.

The first channel relates with the BCB Focus Report, by means of which the Central Bank surveys the financial market's forecasts for several economic indicators, including inflation and interest rates. At this juncture, the market has an upwards bias for its expected interest rate and inflation rate that puts pressure on the BCB to endorse their expectations. This view has been held by several authors. Oreiro and Passos (2015: 163) argue that "the Brazilian financial system can influence the Central Bank's decisions setting the interest rate because, if the banks reach a mutual agreement, they can 'force' an interest-rate increase by "revising up" their expectations surrounding inflation." Figure 5 compares the expected and effective (12-month lagged) Selic to show that: (i) the expected rate is a good indicator of the effective rate's direction, which may be regarded as a good predictor of the interest rate to be set by the BCB; (ii) however, generally speaking, the expected rate is higher than the effective one, which seems to suggest that the market tends to overshoot its interest estimates in the Focus Report in hopes that the BCB will endorse such expectations.<sup>15</sup>

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<sup>15</sup> Balassiano (2019) conducted an empirical experiment for the Sep/2016-January/2019 period, concluding that both the Central Bank's and the private sector's (Focus, Focus short-term Top 5 and Bloomberg) projections systematically overestimated inflation. The monetary authority overestimated it in more than 75% of months; median and Top-5 Focus estimates did so in over 65% of months; and Bloomberg projections overestimated inflation in almost 70% of months.

**Figure 5 Expected (Focus) and effective Selic rates (% p.a.)**



Source: Barbosa (2017), from BCB, IPEADATA and BM&Bovespa data.

The second channel concerns the connection between the financial market and the National Treasury in the government securities trading process, where the market brings to bear its power to exert pressure on the Treasury, making it hostage to the financial market for the purposes of issuing and rolling over public debt, particularly at times of financial stress and macroeconomic instability. As noted earlier, Figure 3 shows that accumulated real interest in 1992-2016 went hand-in-hand with public debt growth, suggesting that a significant portion of this growth is due to the effects of interest on the debt<sup>16</sup>. With high public debt and an unwholesome health structure (short terms and partial Selic indexation), the market is able to put pressure on the Treasury to sell bills under favorable conditions, including in terms of returns. A negative corollary of the process is the presence of a flat and relatively short return curve in Brazil, with little distinction between short- and long-term rates.

Table 4 shows, starting in 2006, the prevalence of Selic- and IPCA-indexed public securities and pre-fixed ones. In periods of greater macroeconomic stability, such as 2004-2014, the share of fixed-income securities (LTN and NTN-F) increases, whereas times of greater stress see increased issues of LFTs (Selic-indexed), also known as “crisis papers”; in 2011-2015, when inflation accelerated, issues of IPCA-indexed securities (NTN-B) increased. This clearly shows that, under certain conditions, the

<sup>16</sup> According to Magalhães and Costa (2017: 11), “the contamination of public debt by monetary policy creates an endogenous mechanism increasing the stock of public debt, which is a consequence not of increased federal primary spending or investment, but of service of the debt itself”.

holders of federal debt (investment funds, financial institutions, pension funds, etc.<sup>17</sup>) can put pressure on the National Treasury to issue debt under conditions that frequently favor them, as the wind of economic developments blows, providing a hedge against interest-rate or inflation risks.<sup>18</sup> One potential implication of this kind of “game” is that the financial market can arbitrage its investments in securities with different indexers at its convenience, so that, to an extent, it can exert pressure on the National Treasury to provide returns on securities issued under favorable conditions.<sup>19</sup> This brings up our hypothesized presence of a “two-way” “contagion effect”, our third channel.

**Table 4 Federal public debt broken down by indexer (% of total)**

	FX	TR	IGP	IPCA	Selic	Pre-fixed	Total
2002	22.4	2.1	11.0	1.6	60.8	2.2	100.0
2003	10.8	1.8	11.2	2.4	61.4	12.5	100.0
2004	5.2	2.7	11.8	3.1	57.1	20.1	100.0
2005	2.7	2.1	8.2	7.4	51.8	27.9	100.0
2006	1.3	2.2	7.2	15.3	37.8	36.1	100.0
2007	1.0	2.1	6.5	19.8	33.4	37.3	100.0
2008	1.1	1.6	5.7	23.6	35.8	32.2	100.0
2009	0.7	1.2	5.0	23.6	35.8	33.7	100.0
2010	0.6	0.8	4.8	23.3	32.5	37.9	100.0
2011	0.6	0.8	4.2	25.4	30.8	38.3	100.0
2012	0.6	0.6	4.1	31.4	22.2	41.2	100.0
2013	0.6	0.5	4.1	32.0	19.5	43.3	100.0
2014	0.6	0.5	4.0	32.7	19.2	43.1	100.0

<sup>17</sup> In November 2018 the main holders of public debt securities were investment funds (26.3%), pension funds (24.7%), financial institutions (23.1%) and non-residents (11.7%), according to National Treasury data.

<sup>18</sup> Clearly, the National Treasury avoids paying too high a risk premium on securities issues. It prefers, instead, to issue LFTs at times of stress rather than a fixed-income security at an exceedingly high interest rate.

<sup>19</sup> Carvalho (2005) suggests that this kind of behavior may be the product of high macroeconomic uncertainty and instability (in an economy characterized by “stop-and-go” cycles), a feature that the Brazilian economy does show, even after successfully stabilizing prices with the Real Plan.



2015	0.7	0.4	3.7	30.6	23.6	41.0	100.0
2016	0.5	0.4	3.7	29.4	29.1	36.9	100.0
2017	0.4	0.3	2.9	27.6	32.4	36.3	100.0
2018	0.5	0.2	2.9	26.4	36.4	33.5	100.0

Source: Central Bank of Brazil (2018). (\*) Data as of December each year, except for 2018 (October)

Note: TR is a reference rate calculated as adjusted weighted average monthly rate of fixed-rate certificate of term deposit of the country's thirty largest financial institutions; IPCA is the official consumer price index calculated by IBGE; IGP – price general index, is calculated by a private foundation, FGV.

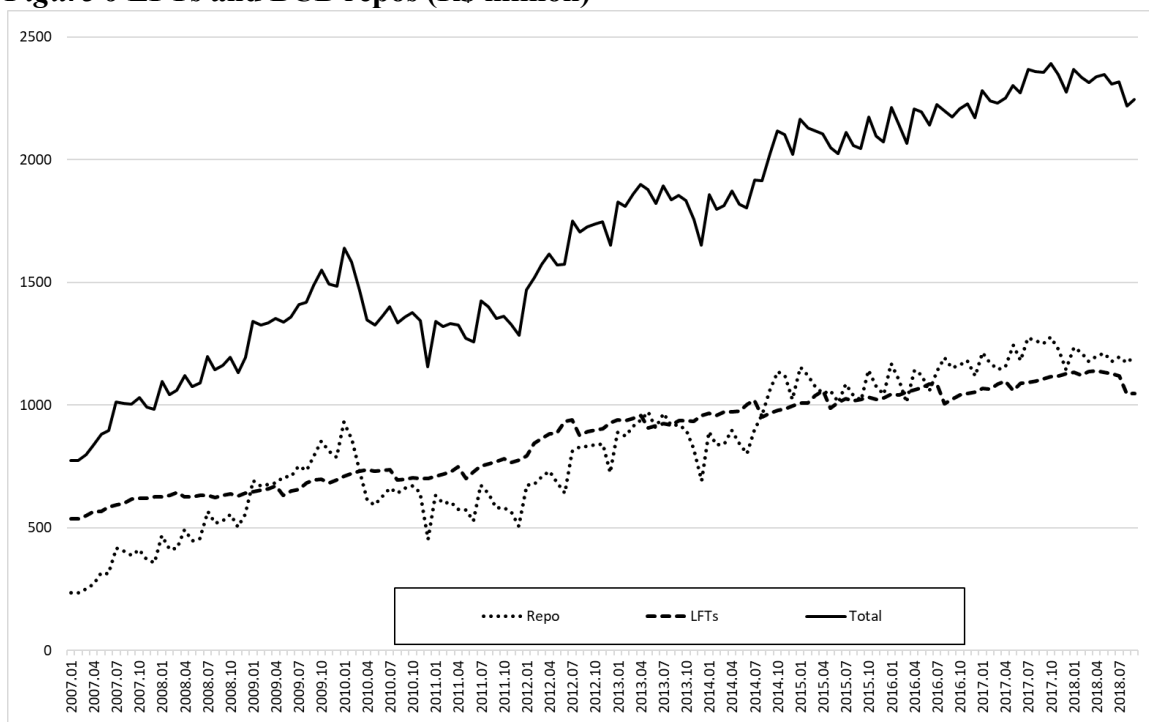
Barbosa (2006) developed the idea of monetary policy contamination by public debt because of public debt indexed to the BCB-set interest rate, making public debt and banking reserves perfect substitutes and leading the interbank market rate to incorporate the Brazilian public debt's risk premium. Figure 6 shows the evolution of LFT issues and repo operations, whose growth as quite matched in 2007-2018.<sup>20</sup> Clearly, investors have a choice to arbitrage their highly liquid investments at the Selic rate, be it on the reserves market (repos), be it on the securities market (LFTs). However, the contagion effect is a two way street (due to the presence of a reverse contagion effect from the interbank to the securities market<sup>21</sup>) where contagion may come either from the securities to the reserves market – as analyzed above, because of the impact of the public sector's feebleness, this may cause the interest rate that the market requires to roll over public debt to be “too high”; or from the banking reserves to the public securities market, due to the Central Bank's conservative monetary-policy behavior. This behavior frequently causes an upwards bias for the interest rate, which, through arbitrage, may end up contaminating the financial costs associated with public debt issues and rollovers.<sup>22</sup>

<sup>20</sup> According to Magalhães and Costa (2017: 12), “repo operations not only control the economy's liquidity, but also serve as an alternative means to shorten the maturity of the financial market's investments in public debt securities, with minimum return guaranteed at the Selic rate. That is, in practice, repo operations provide an alternative to LFT operations with guaranteed profits, high liquidity and minimum risk”.

<sup>21</sup> In this case, a BCB Selic rate increase affects the banking reserves market's interest rate (the BCB uses repo operations to adjust the market's liquidity conditions and bring its rate close to the stipulated Selic target). This, through arbitrage, affects the financial cost of LFTs, and an increase in these costs ends up increasing sovereign risk (SR) and, under free capital mobility conditions, the interest rate on Brazilian sovereign securities. Therefore,  $r_{selic} \rightarrow r_{interb} \rightarrow r_{lft} \rightarrow SR \rightarrow r_{sover}$

<sup>22</sup> Modenesi (2011) shows empirical evidence that the Selic rate's formation is driven by pro-conservative behavior. The BCB behaves asymmetrically, increasing the interest rate more sharply in the face of rising output gaps and/or inflation, and reducing it relatively less when these variables drop. Modenesi et al (2014), in turn, reinforces and expands the results of Modenesi (2011) and offers the novel evidence that the BCB reacts to foreign interest rates when setting its funds rate. Therefore, the BCB's policy autonomy is reduced: the funds rate

**Figure 6 LFTs and BCB repos (R\$ million) \***



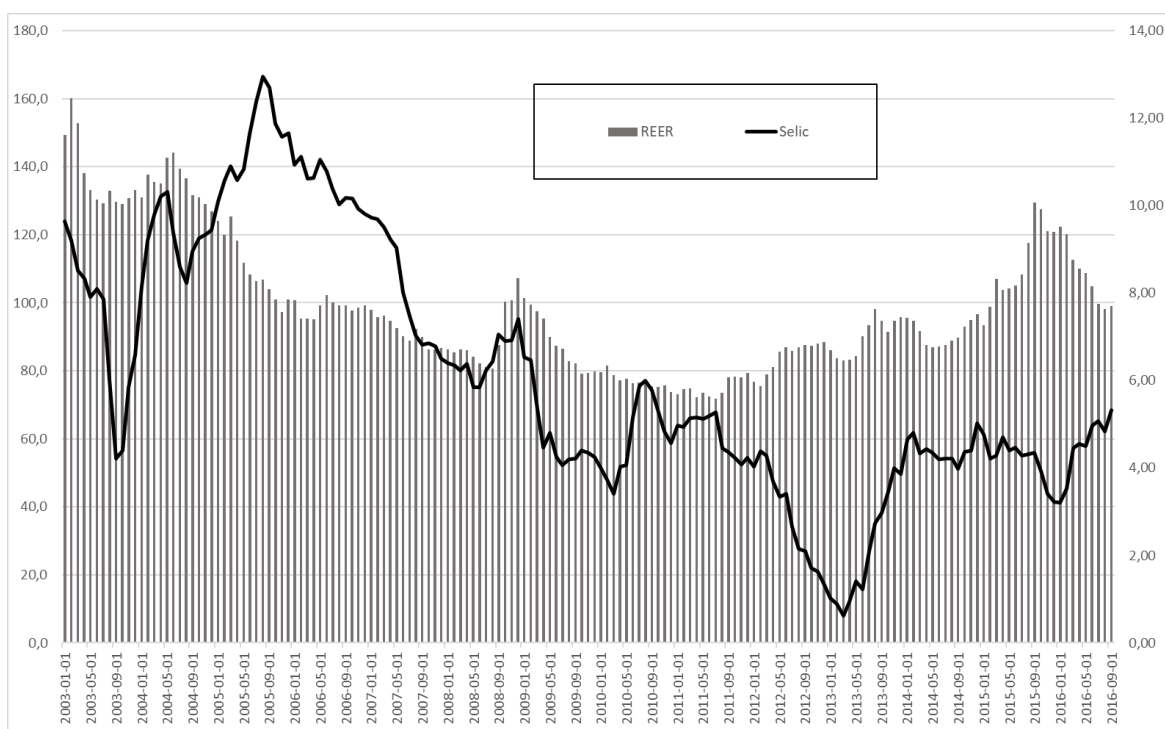
Source: Central Bank of Brazil (2018). (\*) Amounts deflated at the IGP-DI of September 2018.

Finally, the fourth channel is connected to the relationship between interest rates and exchange rates in Brazil, and it is directly related to “subordinated financial integration” of emerging economies (see section 4). This relationship is very well documented in the literature as for emerging economies that have liberalized their financial account: studies have shown that not only exchange rate volatility is higher in emerging economies compared to advanced ones but also exchange rate pass-through has tended to be stronger in such economies (Mohanty and Scatigna, 2005); therefore, as exchange rate movements play a more prominent role than in advanced economies, central banks rely often on interest rate changes to stem exchange rate volatility in periods of instability, but also tolerate currency appreciation for price stabilization purposes (as tradeable goods become cheaper) in periods of capital inflows boom. As we can see in Figure 7, in most time the movement of interest rate is somehow connected to exchange rate: under a context of exchange rate depreciation in 2003 and the confident crisis due to the election of a leftist government, BCB increased Selic interest rate until mid-2005; since then, under a context of commodities boom and capital inflows’ surge, real effective exchange rate appreciated until 2011, while Selic rate reduced gradually. Following the gradual worse in the international environment (capital flows, terms of trade, etc.) and the domestic inflationary pressures, we can note since 2013 both a trend of currency appreciation and an increase in the Selic rate<sup>23</sup>.

(Selic) is endogenous not only to internal conditions (inflation and output gap), but also to foreign interest rates (as measured by the Libor).

<sup>23</sup> As we can see in Figure 5, real interest rate increased sharply in 2015-2016.

**Figure 7 Policy rate (SELIC interest rate - % p.a.) and real effective exchange rate (June 1994 = 100)**



Source: Prates et al (2019, p. 54), with data from Central Bank of Brazil.

Finally, the fifth channel is the misled belief of the Brazilian policymakers that the country should grow with “foreign savings”, that is, with current-account deficits financed by direct investment and foreign loans. As Bresser-Pereira and Gala (2006) have shown, this is a self-defeating policy because the additional capital inflows required to finance the foreign deficit appreciate the currency for the duration the deficit and turn the manufacturing companies in the country non-competitive, while encouraging consumption. Bresser-Pereira (2020: 7) states that “the critique that New Developmentalism makes to the growth with foreign indebtedness policy is highly counterintuitive because it seems ‘logical’ or ‘natural’ that capital-rich countries transfer their capitals to capital-poor countries”. New Developmentalism argues that this thesis is generally false. The additional capital inflows keep the overvalued exchange rate in the long-term, while the current-account deficit is in place.”<sup>24</sup> Nevertheless, the conventional wisdom that capital rich countries are supposed to transfer their capitals to capital poor countries is deeply ingrained in developing countries and the international agencies. Thus, what determines the current-account balance of a country that adopts the policy of growth with “foreign savings” (current account deficits) are not the variations in the exchange rate, which may have several causes, but is the policy *decision* of incurring in current account deficit. Therefore, given the usual adoption of the *growth with foreign indebtedness policy* in Brazil and most developing countries

<sup>24</sup> Bresser-Pereira et al (2014: 66) demonstrated empirically that “the empirical analysis done for the Brazilian economy showed a stable long-term relation was found between the exchange rate and domestic savings, and that relative overappreciations of the real exchange rate have positive and significant impacts on domestic savings in the 1994–2013 period.”

except the East Asian ones, the current account balance is an exogenous variable and the exchange rate, the endogenous one. How to enforce such policy? By increasing imports of capital goods, say the policymakers, but in fact what increases are imports of consumption goods, since the appreciation of the exchange rate increases the revenues of consumers, while make the companies less competitive and discourage investment. How to finance the deficits? By attracting foreign capitals *with high interest rates*. Policymakers never acknowledge this: their standard argument is that the control of inflation requires high interest rates, but the fact is that if the country incurs in foreign deficit it must to finance it, and as the direct investments are usually not sufficient is necessary to attract other foreign capitals, such as portfolio ones.

## 6. Conclusion and policy proposals

This paper goes back to the hypothesized presence of a pro-conservative monetary policy convention in Brazil, as initially formulated by Bresser-Pereira and Nakano (2002) and Erber (2011), integrating this hypothesis in the Brazilian regime of financialization “through interest income”: the formation of a coalition of rentier-financier interests for keeping high interest rates can only be understood as part of this sort of regime of financialization. We also add the hypothesis of a “reverse” public debt contagion effect, due both to the National Treasury’s difficulty managing public debt given market pressures in a context of macroeconomic instability and to the pro-conservative monetary policy convention, which creates an upward bias for the Selic interest rate. More specifically, our main contribution is to show that the decades of prevalence of high interest rates in Brazil in the context of a highly financialized economy has led to the formation of a rentier-financier coalition of interests for keeping interest rates high, as this favors the appreciation of their financial wealth, resulting in a pattern of “interest gains financialization”. Related to the former, we also add a hypothesis that points out the use of a high interest rate to finance current-account deficits under the context of “growth cum foreign savings strategy”.

We suggest that a sustained reduction of real interest rates in Brazil demands a wide range of policies that must include the gradual elimination of financial indexation in Brazil<sup>25</sup> by means of the replacement of BCB repo operations with voluntary interest-bearing deposits and of the end of the LFTs; the implementation of a feasible long-term fiscal consolidation policy (free from the constraints of a fictional spending ceiling), the creation of mechanisms to reduce the volatility of the foreign exchange rate (given the exchange-interest connection), a review of the inflation targeting regime (changing the target’s horizon to a longer period than the calendar-year), and, last but not least, the adoption of a less conservative management of monetary policy on the part of the BCB.

These measures involve both an institutional reconfiguration of the Brazilian economy’s financial liberalization standard and the consolidation of a new monetary-financial regime.

This new agenda, however, involves not just reviewing the interest of capital holders in the comfort of financial gains through short-term assets (combining return, liquidity and low risk), distant from the riskier fixedness of directly productive activities. But it also means recovering the national State’s roles in the Brazilian development process, which have been obscured and politically voided, by the nature and rationale of the rentier-financier accumulation that financialization replicates on the structural and

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<sup>25</sup> For a proposal regarding financial de-indexation in Brazil, see Paula and Marconi (2018).

macroeconomic levels. In conclusion, reducing interest rates in Brazil is not just an economic matter; it is also a political economy matter.

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## Annex 1: The relationship between the real interest rate and total public debt – Jan/1991 to Dec/2018

### Unit root and Stationarity tests

The stationarity tests for the variables internal public debt and interest rate show that both have a unitary root. The two series are non-stationary, however, the Johansen test detected the presence of a linear combination of these series that is stationary, expressing the cointegration between the domestic public debt and the interest rate.

#### 1. Variable: public debt

Null Hypothesis: DIVPUB has a unit root  
 Exogenous: None  
 Lag Length: 3 (Automatic - based on SIC, maxlag=15)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	3.436314	0.9999
Test critical values:		
1% level	-2.572419	
5% level	-1.941847	
10% level	-1.616017	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation  
 Dependent Variable: D(DIVPUB)  
 Method: Least Squares  
 Date: 04/21/20 Time: 14:35  
 Sample (adjusted): 1993M02 2018M12  
 Included observations: 311 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DIVPUB(-1)	0.004031	0.001173	3.436314	0.0007
D(DIVPUB(-1))	0.134544	0.056501	2.381245	0.0179
D(DIVPUB(-2))	0.121670	0.056881	2.139019	0.0332
D(DIVPUB(-3))	0.177086	0.057065	3.103215	0.0021
R-squared	0.096339	Mean dependent var		12635.47
Adjusted R-squared	0.087508	S.D. dependent var		34127.72
S.E. of regression	32600.32	Akaike info criterion		23.63481
Sum squared resid	3.26E+11	Schwarz criterion		23.68291
Log likelihood	-3671.213	Hannan-Quinn criter.		23.65404
Durbin-Watson stat	1.988305			

Null Hypothesis: DIVPUB is stationary  
 Exogenous: Constant  
 Bandwidth: 15 (Newey-West automatic) using Bartlett kernel

	LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic	1.918750
Asymptotic critical values*:	
1% level	0.739000
5% level	0.463000
10% level	0.347000



\*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Residual variance (no correction)	9.22E+11
HAC corrected variance (Bartlett kernel)	1.36E+13

KPSS Test Equation  
 Dependent Variable: DIVPUB  
 Method: Least Squares  
 Date: 04/21/20 Time: 14:39  
 Sample: 1992M10 2018M12  
 Included observations: 315

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1569287.	54200.76	28.95323	0.0000
R-squared	0.000000	Mean dependent var		1569287.
Adjusted R-squared	0.000000	S.D. dependent var		961968.0
S.E. of regression	961968.0	Akaike info criterion		30.39452
Sum squared resid	2.91E+14	Schwarz criterion		30.40643
Log likelihood	-4786.137	Hannan-Quinn criter.		30.39928
Durbin-Watson stat	0.001416			

## 2. Variable: Capitalized real Selic interest rate

Null Hypothesis: SELICRCAP has a unit root  
 Exogenous: Constant  
 Lag Length: 1 (Automatic - based on SIC, maxlag=15)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	0.171746	0.9704
Test critical values:		
1% level	-3.451078	
5% level	-2.870561	
10% level	-2.571647	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation  
 Dependent Variable: D(SELICRCAP)  
 Method: Least Squares  
 Date: 04/21/20 Time: 14:38  
 Sample (adjusted): 1992M12 2018M12  
 Included observations: 313 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SELICRCAP(-1)	0.000151	0.000876	0.171746	0.8637
D(SELICRCAP(-1))	0.554816	0.047493	11.68213	0.0000
C	0.012977	0.005960	2.177427	0.0302
R-squared	0.306391	Mean dependent var		0.030872
Adjusted R-squared	0.301916	S.D. dependent var		0.052465
S.E. of regression	0.043835	Akaike info criterion		-3.407231
Sum squared resid	0.595667	Schwarz criterion		-3.371324
Log likelihood	536.2316	Hannan-Quinn criter.		-3.392882
F-statistic	68.46888	Durbin-Watson stat		1.968282

Prob(F-statistic) 0.000000

Null Hypothesis: SELICRCAP is stationary  
 Exogenous: Constant  
 Bandwidth: 15 (Newey-West automatic) using Bartlett kernel

	LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic	2.051006
Asymptotic critical values*:	
1% level	0.739000
5% level	0.463000
10% level	0.347000

\*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Residual variance (no correction)	8.106214
HAC corrected variance (Bartlett kernel)	122.9564

KPSS Test Equation  
 Dependent Variable: SELICRCAP  
 Method: Least Squares  
 Date: 04/21/20 Time: 14:40  
 Sample: 1992M10 2018M12  
 Included observations: 315

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.031923	0.160673	37.54150	0.0000
R-squared	0.000000	Mean dependent var		6.031923
Adjusted R-squared	0.000000	S.D. dependent var		2.851671
S.E. of regression	2.851671	Akaike info criterion		4.936857
Sum squared resid	2553.457	Schwarz criterion		4.948770
Log likelihood	-776.5550	Hannan-Quinn criter.		4.941617
Durbin-Watson stat	0.000453			

We estimated an ARDL model to investigate the relationship between the Selic (real and capitalized to reflect compound interest capitalization) and total public debt. The series were taken at constant prices according to the IGP-DI of December 2018.

Date: 03/20/19 Time: 12:29  
 Sample (adjusted): 1991M06 2018M12  
 Included observations: 331 after adjustments  
 Trend assumption: Linear deterministic trend  
 Series: DIVPUB SELICRCAP  
 Lags interval (in first differences): 1 to 4

#### Unrestricted Cointegration Rank Test (Trace)

Hypothesized	Trace	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical	Prob.**

	Value			
None *	0.064968	25.64135	15.49471	0.0011
At most 1	0.010240	3.406757	3.841466	0.0649

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

#### Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized	Max-Eigen 0.05			
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.064968	22.23460	14.26460	0.0023
At most 1	0.010240	3.406757	3.841466	0.0649

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

#### Unrestricted Cointegrating Coefficients (normalized by b'\*S11\*b=I):

DIVPUB	SELICRCAP
-2.445416	2.616243
7.365152	-2.441042

#### Unrestricted Adjustment Coefficients (alpha):

D(DIVPUB)	0.007457	-0.003384
D(SELICRCA P)	-0.002344	-0.000935

Log  
1 Cointegrating Equation(s): likelihood 1539.745

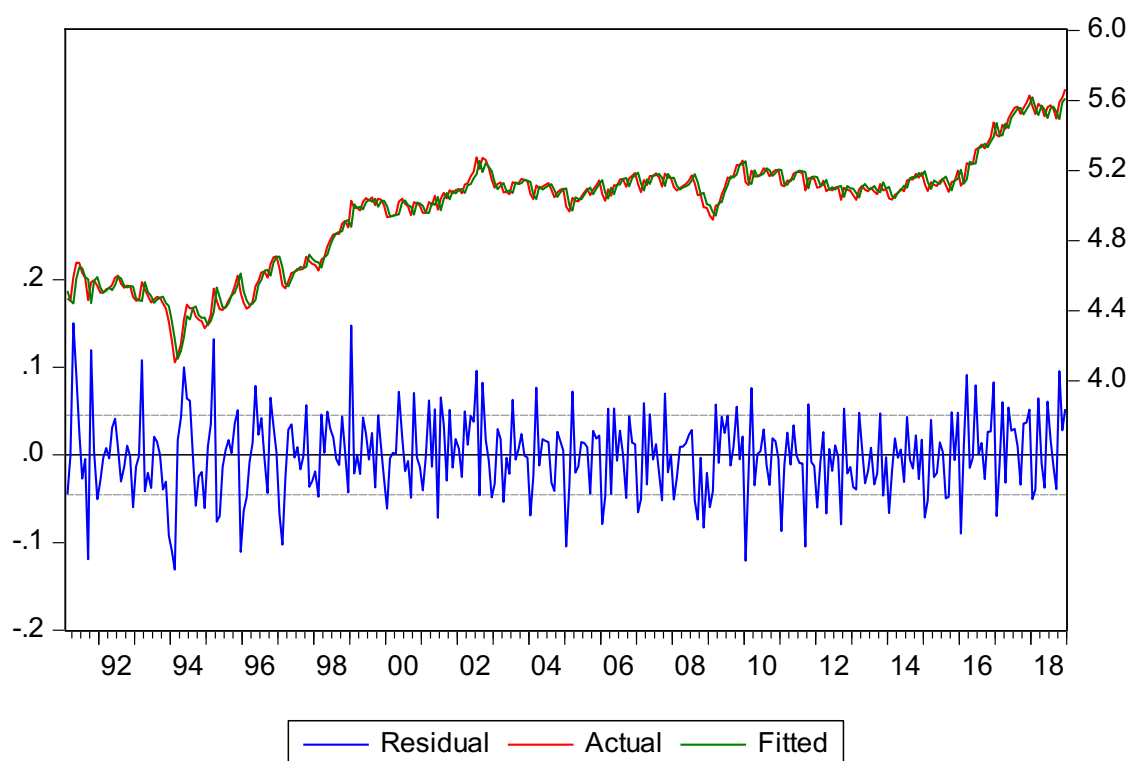
#### Normalized cointegrating coefficients (standard error in parentheses)

DIVPUB	SELICRCAP
1.000000	-1.069856
	(0.14839)

#### Adjustment coefficients (standard error in parentheses)

D(DIVPUB)	-0.018236
	(0.00598)
D(SELICRCA P)	0.005732
	(0.00175)

A fitted ARDL model showed statistically significant results and the residuals were stationary. The graph next shows the real and adjusted series.



The results show that the capitalized real Selic and total public debt stock series cointegrate. This means that they share a common evolution trend. We must now determine the causality direction. The Granger causality test ahead shows that it is the changes in the capitalized real Selic that cause changes in the total public debt stock, and not the other way around.<sup>26</sup> Therefore, on a very short-term dynamics, the capitalized real Selic increases cause total public debt stock increases, but the opposite does not take place.

Note that the estimated coefficient between the capitalized real Selic and the total public debt stock was 1.069856, which denotes almost unit elasticity between the two variables. To illustrate, a 1% increase in capitalized real interest will *cause* a 1% increase in the total stock of public debt. It is in this sense that public debt stands as the main pillar of rentier accumulation in Brazil. This explains the heavy political and institutional pressure that the holders of public debt securities – mainly big banks and the rentier elite – put on the Central Bank of Brazil for keeping real interest rates extremely high by international standards or, as has often been the case, raising those rates if perceived risk reaches levels capable of compromising the real return on their assets portfolios. These macroeconomic and structural regularities, therefore, express the Brazilian economy’s interest gains financialization process, setting it apart from financialization patterns seen in developed countries.

Pairwise Granger Causality Tests  
 Date: 03/20/19 Time: 12:23  
 Sample: 1991M01 2018M12

<sup>26</sup> The structural stability tests conducted were satisfactory.

Lags: 2

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Null Hypothesis:	Obs	F-Statistic	Prob.
SELICRCAP does not Granger Cause DIVPUB	334	4.46512	0.0122
DIVPUB does not Granger Cause SELICRCAP		0.75235	0.4721

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