

Accumulation, Profit Rate, and Financialization in Brazil, 2000-2016*

Acumulação, taxa de lucro e financeirização no Brasil, 2000-2016

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Resumo: Este artigo investiga a dinâmica da economia brasileira de 2000 a 2016, baseando-se na taxa e lucro e seus determinantes (tecnologia, distribuição e demanda) e estabelecendo uma conexão com a financeirização da economia. Entre 2003 e 2010, a economia brasileira experienciou crescimento econômico com distribuição de renda favorável aos salários. A taxa de lucro caiu a partir de 2011, culminando na crise econômica de 2014. A pesquisa aqui apresentada encontra uma cooperação entre capitalistas e trabalhadores durante os governos Lula e competição durante os governos Dilma. Nós calculamos a taxa de lucro sob patrimônio líquido, corroborando o resultado de funcionalidade entre o lado financeiro e o lado produtivo de 2003 a 2010, e disfuncionalidade das finanças para fins de acumulação a partir de 2011, quando a lucratividade caiu junto a um aumento da alavancagem.

Palavras-chave: Taxa de lucro. Financeirização. Economia brasileira.

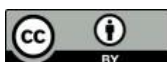
Abstract: This paper investigates the economic dynamics of Brazil in the 2000-2016 period, based on the profit rate and its determinants (technology, distribution, and demand), linking it with the financialization of the economy. Between 2003 and 2010, the Brazilian economy experienced economic growth with income distribution in favor of wages. The rate of profit fell from 2011 on, culminating in a crisis in 2014. The research finds the existence of cooperation between capitalists and workers under Lula's government and competition under Dilma's years. We calculate the profit rate on net worth, corroborating our findings of functionality between finance and production from 2003 to 2010 and the dysfunctionality of finance for accumulation starting in 2011, when profitability fell along with the increase in leverage.

Keywords: Rate of profit. Financialization. Brazilian economy.

JEL: B51. E66. N16.

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1. Introduction

Brazil¹ experienced quite different economic situations between 2000 and 2016². In the first decade of the twentieth century, the Brazilian society renewed its optimism because the country reconciled economic growth with income distribution and increased labor market formalization. Brazil also began to occupy a prominent position in the international scenario, both economically and politically. However, a couple of years later, the country faced a deep crisis and returned to experiencing unemployment. The stagnation led the Brazilian economy into its worst recession in modern history, creating the environment for a profound political crisis that culminated in the impeachment of a democratically elected president, and the first woman to serve as president in Brazil. Subsequently, a conservative government took over, carrying out a counterattack on democratic and popular movements by shifting onto workers' shoulders the burden of necessary adjustments for the resumption of capital accumulation.

As capitalism is a mode of production based on profit³, profitability is the engine of capitalist accumulation (Marquetti *et al.*, 2017). Capitalist decisions to produce and invest are guided by the expectation of future profit obtained after the production and realization of the commodities considering variations (positive or negative) in the present profit rate. In other words, a fall (an increase) in the current profit rate worsens (improves) profitability expectations that tend to negatively (positively) affect the firms' investment plans, damaging production, and employment.

This paper aims to present the performance of the Brazilian economy from 2000 to 2016, through the trajectory of the profit rate and its determinants (distribution, technology, and demand), highlighting the defining elements of the recent crisis and articulating this debate with the theme of financialization. Our thesis is that during Lula's Era (2003-2010), Brazil experienced cooperation between capitalists and workers, and during Dilma's term (2011-2016), this tacit social pact was broken due to some political decisions and the economic context.

¹ The author would like to express his sincere gratitude to the editors and anonymous reviewers for their invaluable feedback and suggestions, which greatly enhanced the quality of this paper.

² This paper uses different data sets with different time ranges. Even though the paper presents some data for 2017, the analysis is focused between from 2000 to 2016 when Dilma's impeachment happened.

³ "But the purpose of capitalist production is the valorization of capital, i.e. appropriation of surplus labour, production of surplus-value, of profit." (Marx, 1984, p. 360).

Anticipating some findings: Lula's⁴ government was sustained by a social pact between the banking-financial fractions of capital and the workers under the tutelage of Lulism. According to Singer (2009), Lulism can be understood as a representation of a class fraction that is unable to organize from below, leading to the emergence of a strong State. However, this State does not pose a threat to the capitalist mode of production,

The hypothesis I wish to suggest in this article is that the emergence of Lulism expresses a phenomenon of representation of a class fraction that, although in the majority, is unable to build its own forms of organization from below. For this reason, to the efforts made so far to analyze the nature of Lulism, I find it convenient to add the combination of ideas that, in our view, characterizes the class fraction that it would represent: the expectation of a State strong enough to reduce the inequality, but without threatening the established order.

In facing the rentier gains, Dilma's term lost political support and suffered the setback of the economic policy errors adopted in an environment of reduced Chinese dynamism and falling profitability.

This article is structured as follows. In Section 2, we present a methodological discussion regarding the economic variables that will be used throughout the rest of the paper. In this section, we present both the numerator and the denominator of the profit rate, we also discuss income distribution considering different classes and fractions of the capitalists and how to address the profitability in two different levels, the profit rate on capital stock (economy-wide level) and on net worth (firm level). Section 3 presents the results of the estimation of those variables previously stated. In Section 4, we present a novel narrative regarding the political and economic dynamics for the period comprised in this study by highlighting how the economic variables connect to the political dynamics of the period. Section 5 is a conclusion for the proposed discussion and retake the main findings of the paper.

⁴ Throughout the paper we will refer to many presidents which are Lula and Dilma, both from the leftwing party called Workers' Party (PT). Temer was Dilma's vice president, but he was not from the same party, being a member of the Brazilian Democratic Movement Party (PMDB) and now called Brazilian Democratic Movement (MDB). Even though this party was created to fight against the civil-military dictatorship in Brazil (1964-1985), it has become a co-called big tent party with a great impact from conservative politicians.

2. Methodology

In order to provide a clear understanding of the contradiction and complementarity between capitals and their material manifestation in the class struggle during Dilma Rousseff's government, it is crucial to draw upon the works of Claus Germer as discussed in Section 4. However, we acknowledge that this differentiation may initially appear somewhat ambiguous to readers, particularly concerning its significance for the Brazilian context during the analyzed period. Recognizing this, we believe it is essential to present and elaborate on this issue in the early pages of the paper, setting the stage for its detailed exploration in Section 4.

In the following sections, we will delve into the intricate relationship between financial and productive capital, shedding light on their contradictory dynamics and the role they played in shaping the Brazilian economy. By establishing a comprehensive understanding of this relationship, we can better comprehend the underlying forces driving class struggle and the subsequent implications for economic and political outcomes.

To provide readers with a comprehensive understanding of the dynamics at play, it is essential to introduce key concepts that underpin our analysis. Cooperation and conflict between social classes, as well as functionality and dysfunctionality within the capitalist system, are central to our investigation. Cooperation refers to instances where capitalists and workers find common ground and unconsciously work towards shared goals, leading to economic growth spurred by the profit rate and favorable income distribution. In contrast, conflict arises when opposing interests between these classes intensify, often associated with declining profit rates and economic crises. It is crucial to recognize that cooperation and conflict do not eliminate or substitute class struggle, and we use the two categories always assuming the operation of conflicting interests of class struggle. However, depending on the economic context, power asymmetries and economic policies, Brazilian capitalism will experience inclusive growth under cooperation or wage-squeeze with falling profitability under conflict.

Similarly, functionality pertains to the proper functioning of the financial sector, where it facilitates investment and growth by providing credit to productive sectors. Dysfunctionality, on the other hand, signifies a breakdown in this relationship, often characterized by excessive leverage and capital misallocation.

We will describe the role of leverage and its relationship with the profit rate path to discuss finance's impact and functionality in the productive sector. We need to point out that this paper does not assume total autonomy between the two economic spheres, and that our discussion intends to shed some light on the limits of the possible decoupling or partial autonomization of finance and production, elucidated by the dynamics of profit rates and leverage series. We will delve into these concepts and their implications in Section 4, providing a more comprehensive exploration of their significance in the context of the Brazilian economy during the analyzed period.

2.1 The denominator of the profit rate: capital stock

As the fixed capital stock is not calculated by the Instituto Brasileiro de Geografia e Estatística (IBGE), it is necessary to estimate it assuming some hypotheses. The 1901 to 2000 data on the gross fixed capital formation (GFCF) can be found in the Statistics of the Twentieth Century (IBGE (2006)). We completed the GFCF data from 2000 to 2017 using the Integrated Economic Accounts (IEA)⁵ (IBGE (2017)), which presents the data in current values. We bring the data from 2000 to 2017 at 1999 constant prices using the National Construction Cost Index (INCC)⁶ for the construction GFCF series and the Wholesale Price Index (IPA)⁷ for machinery and other assets. Due to methodological changes in the calculation of the GFCF, we follow the methodological notes number 24, from IBGE (2007), where table 8 compares the values of the GFCF calculated by the National Accounts Reference System 1990 (SCN 1990) for SCN Reference 2000 (SCN 2000)⁸.

Following Hofman (2000), Morandi (2011), Mesquita and Marquetti (2005), BEA (2003), and the Organization for Economic Cooperation and Development (OECD 2001, 2009) we use the Perpetual Inventory Method (PIM)

⁵ Equivalent to the NIPA tables in the US economy.

⁶ Reference in IPEADATA: Inflation - INCC - (% p.a.) - Getúlio Vargas Foundation, Economic Conjuncture - IGP (FGV/Conj. Econ. - IGP) - IGP_INCCG - - Period maintained, Base index in1999.

⁷ Reference in IPEADATA: IPA origin - prod. industrial - index (Aug. 1994 = 100) - - - Getúlio Vargas Foundation, Economic Conjuncture - IGP (FGV/Conj. Econ. - IGP) - IGP_IPAI - - Period maintained, Base index in1999.

⁸ For details in how the adjustments were made, check Theodosio (2019).

to estimate the capital stock, which assumes a geometric depreciation rate, calculated as:

$$\delta = \frac{rd}{v}, \quad (1)$$

where rd is the asset decline rate and v the useful life of this asset, both calculated in years. Following OECD (2009) and Marquetti *et al.* (2010), we work with a double declined balance ($rd = 2$) and the useful lifetime of non-residential construction assets of forty (40) years, machinery, and equipment's lifetime of fourteen (14) years, and useful life of eight (8) years for other assets. Then, we estimate capital stock and depreciation at constant prices. Following Marquetti *et al.* (2019) and Basu (2013), the fixed capital stock at current prices can be calculated from the fixed capital stock at constant prices by multiplying the series by the price deflator for GFCF. We use INCC and IPA deflators as stated above.

2.2 The numerator of the profit rate: profits

Although the flow of profits is easier to calculate using the IEA data, the definition of profits is quite important here. Profit is the phenomenological form of the realized surplus value, while capital is a self-expanding value that accrues from other people's exploitation of unpaid labor time. Therefore, using national account data, profits are the net result of other types of income. In the literature, the flow of profits is calculated from the national accounts through the computation of value added (VA), which is the gross domestic product (Y) minus the depreciation (δ), minus the imputed rent (IR). Finally, profit (P) is the value added minus wages (W).

2.3 Distribution and output

We work with the distributive variable *à la* Gollin (2002), which proposes to divide mixed incomes in the same proportion as income from labor and capital appear in the economy. This form of adjustment delivers an intermediate profile for the wage-share, with neither underestimating nor overestimating it. Hence, the wage-share is

$$\frac{c}{c+GOS}, \quad (2)$$

and the profit-share is

$$\frac{GOS}{C+GOS}, \quad (3)$$

where GOS is the gross operating surplus and C is the labor compensation or wages plus social contributions.

2.4 The rentier-share

Still working with aggregate or national account data for the entire Brazilian economy, the intraclass and interclass distributive problem could be seen from the decomposition of the output as follows:

$$Y = C + \Pi, \quad (4)$$

Y is the output, C is the labor compensation, and Π the income of the capitalist classes, composed of the sum of the gross operating surplus (which we will take as a proxy for the profits) with the financial income composed of the sum of interest, dividends and withdrawals ($\Pi = GOS + \text{interest} + \text{dividends} = GOS + i$).

Therefore, the product calculated here differs from GDP, as it is the sum of the income of capitalists and workers, explaining the conflict between workers, working capitalists and rentiers:

$$Y = C_{workers} + GOS_{functioning\ capitalists} + i_{rentier}, \quad (5)$$

Through algebraic manipulations, equation 6 is obtained:

$$1 = \frac{C}{Y} + \frac{GOS}{Y} + \frac{i}{Y}, \quad (6)$$

more explicitly, the product is divided into the portion of workers' remuneration in income, the portion of profits in income and the portion of interest in income, that is, the rentier-share.⁹

$$1 = \frac{C}{(C+GOS+i)} + \frac{GOS}{(C+GOS+i)} + \frac{i}{(C+GOS+i)}, \quad (7)$$

2.5 The profit rate on capital stock

The theoretical profit rate is defined as:

⁹ This discussion is found in Bruno (2008) and Bruno and Caffé (2017, 2018). Germer (2011) has another formalization that elucidates the income division; however, his approach is not related to rentier-share discussions.

$$r = \frac{P}{K}, \quad (8)$$

r is the net profit rate, P is the profit flow and K is the net stock of non-residential fixed capital. The decomposition of the profit rate adopted here is suggested by Weisskopf (1979) and expresses the profit rate through its distributive, technological, and demand components:

$$r = \frac{P}{K} = \left(\frac{P}{Y}\right) \left(\frac{Y}{Y^P}\right) \left(\frac{Y^P}{K}\right) = \pi u \rho, \quad (9)$$

Y is the net domestic product and is Y^P the potential net output, π is the profit-share (distribution), ρ is the potential productivity of capital at the full employment of capital (technology), and u is the degree of capacity utilization (demand). These factors are related to the determinants of supply (profit-share and capital productivity) and aggregate demand (degree of utilization of installed capacity)¹⁰. As we calculate the net profit rate, we chose to work with the net domestic product (NDP) and not the gross domestic product (GDP) because the PIM also calculates the depreciation which allows us to work with net and not only gross variables.

Finally, the estimated net profit rate at current prices and its decomposition for the period 2000-2017 is:

$$r = \frac{P}{K} = \left(\frac{GOS}{C+GOS}\right) \left(\frac{NDP}{NDP^P}\right) \left(\frac{NDP^P}{K}\right). \quad (10)$$

2.6 The profit rate on net worth

Some modifications are necessary to highlight the role of finance in profitability. Using the Economática data set (2016) on the balance sheets of Brazilian companies, we calculate the profit rate on net worth (ROE), known as return on equity, to explain the impacts of financialization on the dynamics of the profit rate at the firm level in the period. The entire database is comprised of 98 enterprises, but after data cleaning we end up with 25 firms. This sample consists of firms operating in various sectors such as food, construction, paper and pulp, petroleum, fuels, industrial engineering, automotive parts, aviation, energy, sanitation, telecommunications, retail, transportation, and banks and were divided

¹⁰ An alternative to this formulation is to present the profit rate as: $r = \frac{P}{K} = \left(\frac{P}{Y}\right) \left(\frac{Y}{K_u}\right) u = \pi \eta u$. Where η is a measure of the product in relation to the capital in use.

into non-financial (all firms but banks), and financial sectors (banks). The sample has 25.5% of the firm's available population. Considering each firm by its participation in the population, the sample represents 34.7% of the entire Brazilian economy, while the financial sector represents 4.2% as it is represented by Banco do Brasil and Bradesco, which are respectively the largest public-owned bank and the second-largest private bank in Brazil.

The denominator of the profit rate needs to be changed to take into account the relevant facts of the financialization dynamics. The fixed capital stock, hitherto used, cannot capture the expansion of financial investments and the growth of debt that companies have experienced since the 1970s. It is necessary to seek a measure that can better mirror the notion of capital to be valorized. The use of net worth (NW) in the denominator of the profit rate reflects the amount of capital that will be valorized in each production process.¹¹ As discussed in Duménil and Lévy (2004), Freeman (2012), Bakir and Campbell (2013), Rodrigues (2018), and Rodrigues and Milan (2018), there are arguments favorable to the use of net worth in the denominator of the profit rate. Another framework is found in Germer (2011), in which the author proposes a formalization of the process of the average profit division between the entrepreneurial profit and interest; his main contribution is to show how the interest part of the average profit affects the whole capital, not only the capital owned by the capitalist but also the borrowed part of the capital. Another important aspect of Germer (2011) is that he additionally emphasizes the significance of the credit system as a lever of capital accumulation, enabling industrial capitalists to overcome the constraint of their profitability being restricted to the average rate of profit.

Those critical theoretical aspects mean to us that we must incorporate more than the net stock of nonresidential fixed capital into the profitability accounting to have a meaningful profit rate measure in current capitalism. Hence, as the corporate gain is the value generated in a productive process deducted from the

¹¹ Even though the literature makes use of the return on net worth (ROE) as a Marxian proxy, there are some caveats to this practice. First, Marx's profit rate is the surplus value over the advanced capital (constant plus variable capital). To use ROE, financial investment and indebtedness must fulfill the same function in order to be considered part of the capital stock, but not all financial investment or indebtedness fulfills this capital reproduction function. Part of capital allocation such as credit can be used not only to functional capital, but also to purchase financial instruments such as stocks either for their own appreciation or as a protection against price volatility. Even though these movements are represented into firms' balance sheet, not all of them are associate with capital reproduction.

incomes paid, we use net profit (NP) as a proxy of the value generated, that is, profit, and net worth (NW) as a proxy of the capital stock to be valorized, resulting in the profit rate known as return on equity (ROE).

The profit-on-net worth rate can be decomposed as we multiply and divide it by the company's total assets and rearrange the equation:

$$r = ROE = \left(\frac{NP}{NW}\right) \left(\frac{A}{A}\right) = \left(\frac{NP}{A}\right) \left(\frac{A}{NW}\right), \quad (11)$$

where NP = net profits; NW = net worth; A = total assets.

The net profit-to-asset ratio delivers another measure of profitability, the return on assets, that expresses the revenue generation the company can accomplish from its own assets. On the other hand, the division of assets by net worth is a measure of leverage because "an increase in this express relationship that the acquisition of assets was financed by third-party capital" (Rodrigues, 2018, p.146). The financialization process adds a set of new determinations to the capitalist dynamics, such as securitization, and the development of new financial instruments such as derivatives, and financial speculation, but leverage is the central factor in understanding the relationship between financial explosion and accumulation. Therefore, the profit rate calculated from the company's balance sheets is the return on equity (ROE) and can be decomposed as the return on assets (ROA) times leverage (LV).¹²

$$r = ROE = \left(\frac{NP}{NW}\right) = \left(\frac{NP}{A}\right) \left(\frac{A}{NW}\right) = (ROA)(LV) \quad (12)$$

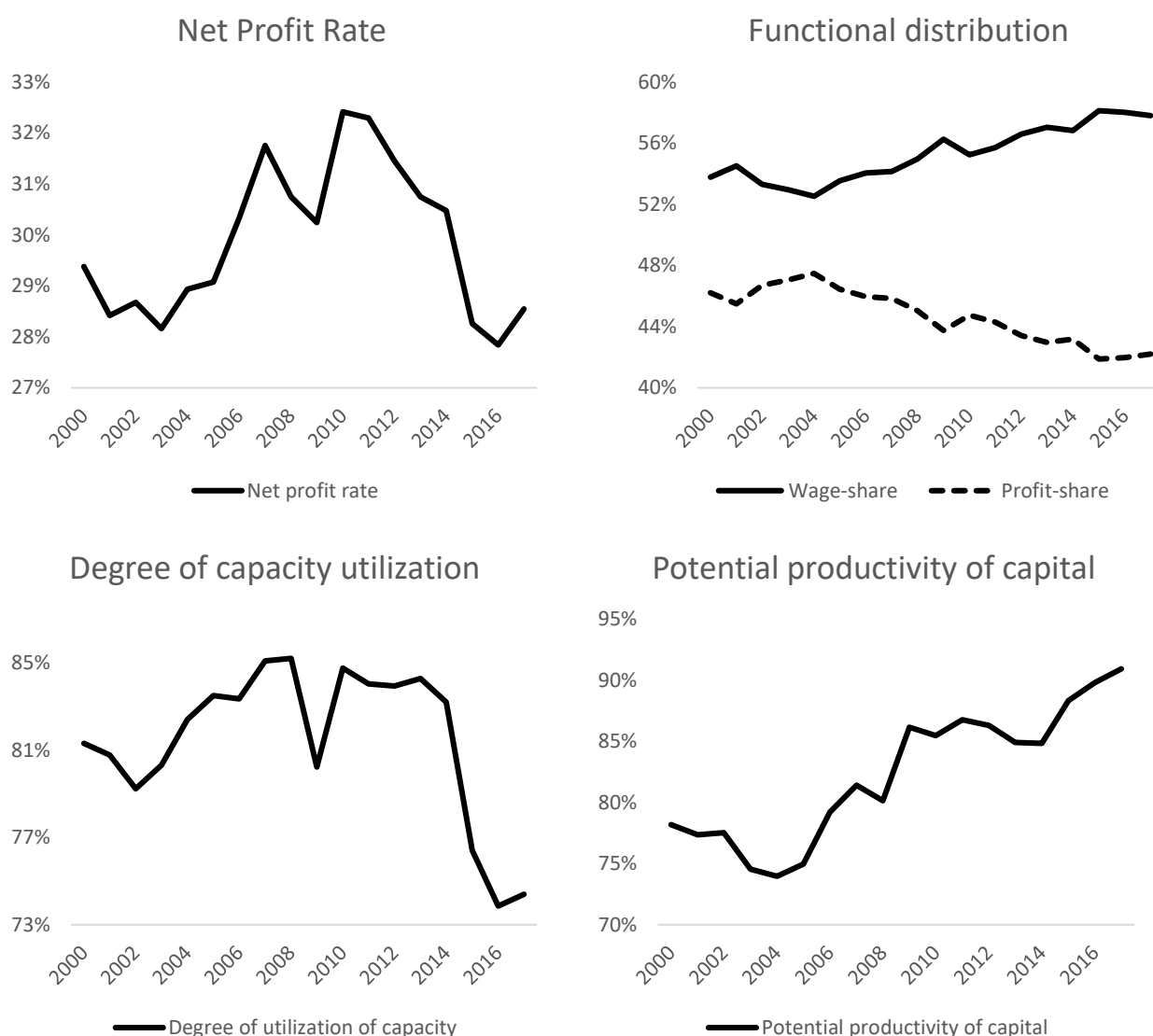
3. Results

In this section, we present several results that will be thoroughly discussed in the subsequent section within the context of political dynamics. To aid the reader in understanding the upcoming graphical analysis, it is crucial to highlight that between 2000 and 2017, a dual phenomenon unfolded: a decline in the profit rate and a shift in income distribution favoring wage gains at the expense of profit gains. This significant occurrence bears vital implications for our study, shedding light on the conventional class struggle between capitalists and workers but also

¹² These measures are all firm-centric in nature. However, aggregation obscures certain facts, such as the fact that in the double-entry bookkeeping system, what one company considers as an asset appears as a liability for another firm. Therefore, when working with aggregated data at the firm level, some individual firm-specific facts disappear from view.

stressing the intra-capitalist struggle between functional or productive capital and financial capital. A similar pattern emerges when examining capitalist profitability based on balance-sheet data, manifesting itself as a decrease in the profit rate on net worth (ROE) and growth in leverage during the specified period. For a comprehensive exploration of these phenomena and their underlying dynamics, we refer readers to Section 4. Figure (1) shows the result for the profit rate and its components or determinants.

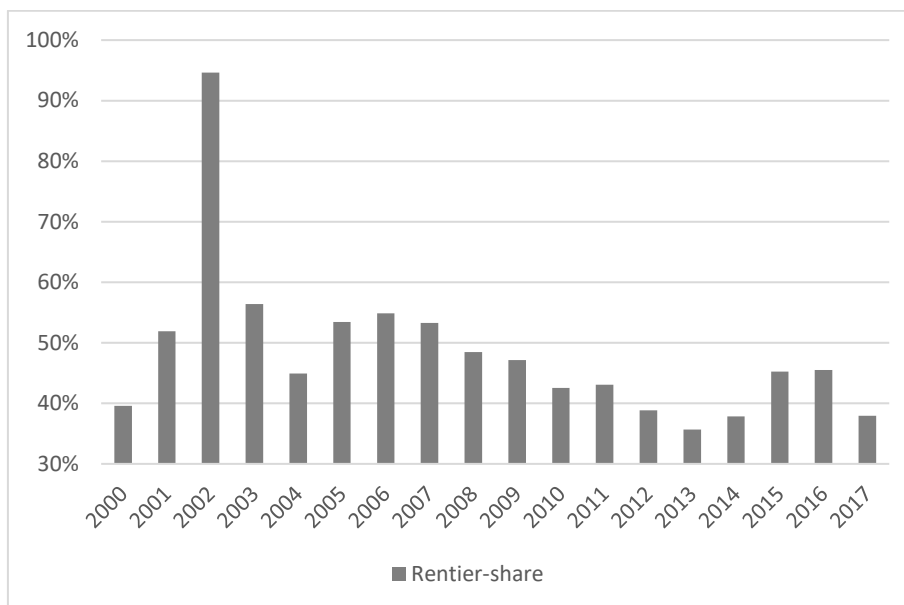
Figure 1 – Profit rate and its decomposition (Brazil, 2000-2017)



Source: IBGE (2006, 2007, 2015b, 2017), FGV (2019). Own elaboration.

In figure (2), we present the result of the rentier-share estimated with national account data.

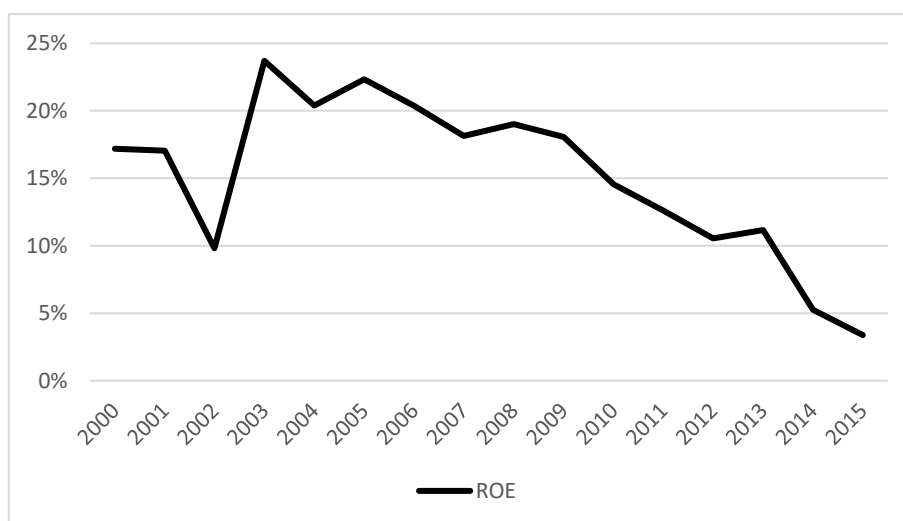
Figure 2 – Rentier-share (%) (Brazil, 2000-2017)



Source: IBGE (2006, 2007, 2015b, 2017). Own elaboration.

Finally, figure (3) depicts profitability from balance sheet data or the return on equity.

Figure 3 – General rate of profit on net worth (Brazil, 2000-2015)



Source: Economática (2016). Own elaboration.

4. Discussion

The 2000-2016 period comprises the last three years of Fernando Henrique Cardoso's government (FHC), Luiz Inácio "Lula" da Silva's (Lula) two terms, the two terms of Dilma until the impeachment, and the first two years of Temer, who took over after the parliamentary coup against Dilma. Data are analyzed based on the configuration of presidential terms and are presented in Table 1 below.

**Table 1 – The breakdown of the net profit rate (%) (Brazil, 2000-2017)
(compound annual growth rate)**

Period	r	π	u	ρ
2000-2017	-0.16%	-0.50%	-0.49%	0.84%
2003-2016 (PT)	-0.08%	-0.81%	-0.60%	1.34%
2003-2006 (Lula 1)	1.87%	-0.58%	0.93%	1.53%
2007-2010 (Lula 2)	0.52%	-0.60%	-0.10%	1.22%
2011-2014 (Dilma 1)	-1.44%	-0.63%	-0.25%	-0.56%
2015-2016 (Dilma 2)	-0.74%	0.12%	-1.68%	0.83%
2016-2017 (Temer)	2.53%	0.52%	0.73%	1.25%

Source: IBGE, FGV. Own elaboration.

The overall trend in the entire sample period is the reduction in profitability influenced by workers' earnings. The profit share (π) fell at a rate of more than 0.5% per year and the degree of capacity utilization (u), which captures the impact of aggregate demand, decreased at a rate of 0.49% per year between 2000 and 2017. The potential productivity of capital (ρ) balanced the decline of them growing at 0.84% per year. An important conclusion is the inflection of the sign for the potential productivity of capital. This technological variable can be understood as a proxy for the organic composition of capital; when it *falls*, it is similar to an *increase* in the organic composition of capital, meaning that the economy is under a labor-saving and capital-using technical change process, also known as Marx-biased technical change. During Lula's terms, the economy was under a process of formalization of the working-class, jobs creation and the economy can be regarded as more labor-intensive. The historical trend of capitalism is of increases in the organic composition of capital, but in the short-run the cyclicity of this variable has to do with the level and type of widespread technology adopted. Moreover, during economic crises the capitalists attempt to

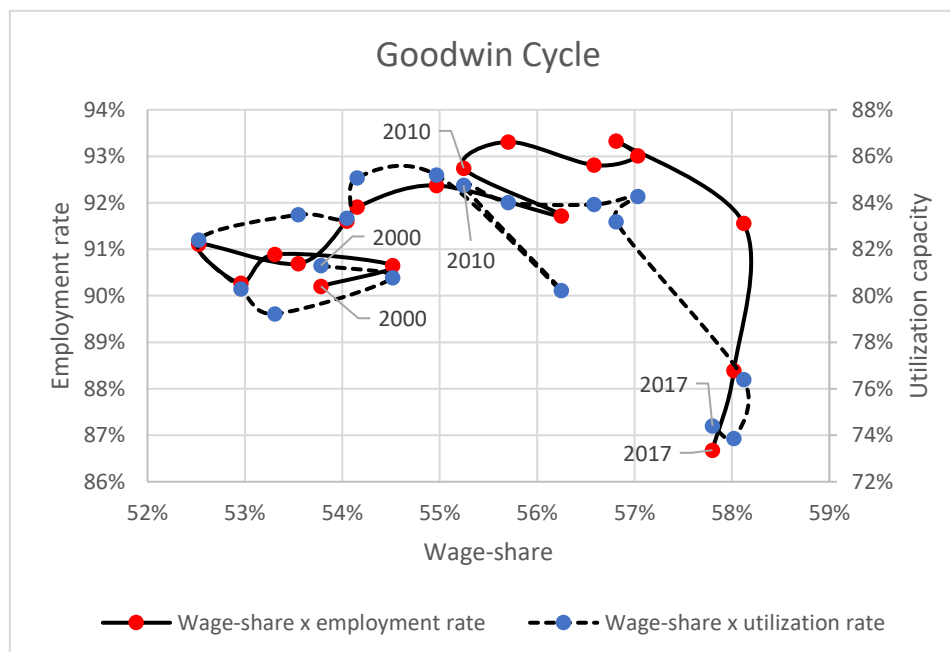
restore their profitability by cutting costs associated with labor, so the deepening of the substitution of workers by machines is a result strongly correlated with economic turbulences as those Dilma was facing by the end of her first term and which resulted in her impeachment during her second term.

The *Worker's Party* (PT) period allowed for unprecedented results from the distributive standpoint. Even though the inclusive growth was impressive, the growth rate of the period is still inferior compared to Juscelino Kubitschek's Developmentalism (1956-1961) in Brazil. It resulted in a win-win game between the banking-financial fractions of capital and the workers, orchestrated by the composition of the government under the guidance of Lulism, and by greater protagonism of specific organized social sectors. This tacit class agreement supported the government through both an economic agenda based on distributive policies and the increase in labor market formalization, employment level sustenance, and increase in public investment also allowed exorbitant gains for interest-bearing (financial capital) and fictitious capital as credit and indebtedness supported domestic consumption in a high-interest rate and high banking spread environment. This scenario was boosted by the so-called "China effect," which enabled a more significant generation of surplus-value within the country and its appropriation in the national territory due to the positive effects in terms of trade. A very important consideration is the role of the rural elites and agribusiness in Brazil and how much power they have. Historically, the correlation between land ownership and political power has been evident since Brazil's colonization. Within the context of this research, the boom in Brazilian commodity exports, driven by China's increasing demand for Brazilian commodities in the 2000s had significant implications for the rural elites and their relationship with the exchange rate. Despite the relative appreciation of the Brazilian currency against the US dollar during that period, the favorable terms of trade played a crucial role. The terms of trade had a dual effect: on the one hand, they enabled a portion of the elites to access imported goods, satisfying their consumption demands. On the other hand, they also pleased the rural elites and agribusiness by allowing them to continue exporting their agricultural commodities, despite the appreciated exchange rate. It is worth noting that from an international competition standpoint, a devalued currency generally stimulates net exports. However, the rural elites were not solely reliant on the exchange rate to determine their export viability because the terms

of trade, with higher export prices for exported commodities, compensated for the challenges posed by the appreciating exchange rate. This compensation helped mitigate the potential decrease in profit margins for the rural elites when measured in local currency terms. Moreover, China's expanding demand for agricultural commodities further contributed to the profitability of rural exports. This growing market provided lucrative business opportunities for the rural elites, reinforcing their incentive to engage in export activities despite the challenges posed by the exchange rate. It is important to acknowledge that the rural elites in Brazil held significant political power during this period. Their influence was so substantial that they were actively involved in organizing the coup against Dilma Rousseff's government. Therefore, the role that the Chinese boom had in the rural elites cannot be underestimated, as it has eased the potential tensions between the leftwing government and the rural elites.

The struggle between capitalists and workers becomes even more complex when considering the fractions of class, which act in their own interests. The endless accumulation logic, boosted by economic disputes resulting from class struggles, imposes the alternation between moments of robust accumulation followed by crises resulting from capital overaccumulation. Capitalist cyclicity imprints a dynamic behavior on the capitalist system exquisitely understood by Marx and formalized by Goodwin (1967). Figure 4 shows the income distribution in favor of wages and economic growth until 2009.

Figure 4 – Goodwin cycle for the Brazilian economy with wage-share, employment rate and capacity utilization (2000-2017)



Source: IBGE (2006, 2007, 2015b, 2017), ILO (2017), FGV (2019). Own elaboration.

The connection between the Goodwinian predator-prey model to the profitability discussion is straightforwardly seen through the lenses of the profit squeeze movement: as the growth rate directly impacts the level of employment demand, it makes the real wage to fluctuate and impact the capitalists' profits. It worth mentioning that the Great Recession negatively affected the economic activity and profitability, and 2010 marks the peak for both the rate of profit and the level of activity growth; from then on, profitability falls rapidly along with the reduction in GDP growth.

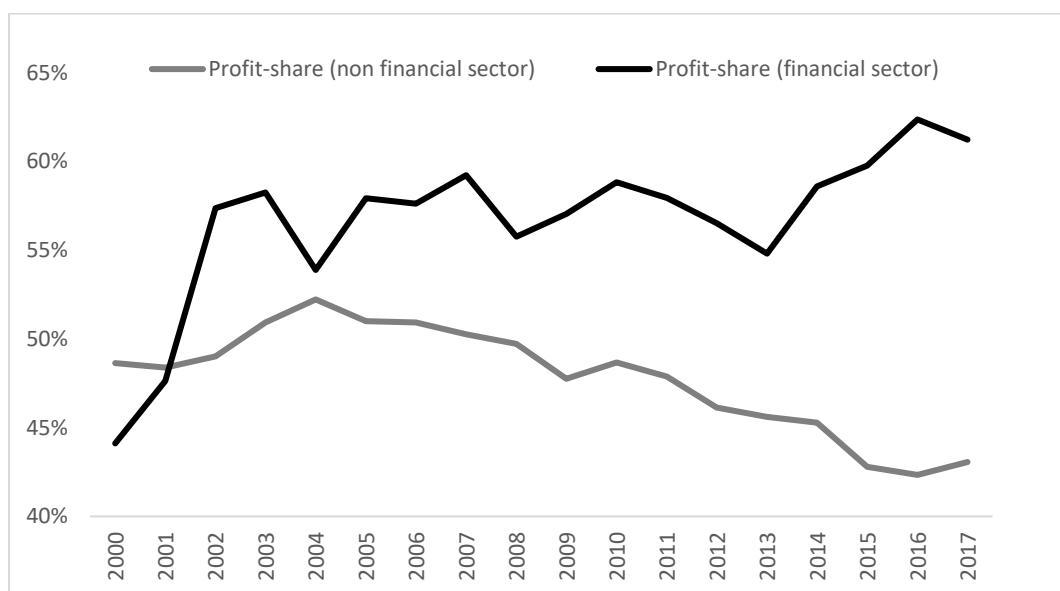
The Brazilian Goodwin cycle¹³ supports theory that there was the win-win game between sectors of capitalists and the working class. However, the cycle was broken due to the confrontation¹⁴ conducted by Dilma in her developmentalist attempt in mid-2011 which explains the genesis of the future crisis. This attempt

¹³ One central assumption of Goodwin's model is that the output-to-capital ratio is constant. However, when analyzing the profitability we decomposed it into different components, including the technological one, the potential productivity of capital, which is not constant and has changed its sign from positive to negative in the period. Therefore, the path and importance of technical change are not the focus for Goodwin's model, while it is a major factor of the profitability discussion in this paper.

¹⁴ The Goodwinian approach does not embrace a full-fledged confrontation between the classes only the predator-prey population's fluctuation.

was built around the understanding that productive and financial capital are opposite fractions and economic spheres. However, from the Marxian standpoint, both are mere different *forms* of capital, and the complementarity (functional finance) and opposition (dysfunctional finance) are successive phases highly influenced by the institutional and regulatory frameworks of each historical period and the path taken by the political fight. Even though there is distribution in favor of wages during the studied period, we must discuss the division of profits and its impacts on the class struggle within the capitalist side. We apply the same adjustment proposed by Gollin (2002) to other units of the institutional sectors¹⁵.

Figure 5 – Profit-share (adjustment 2 Gollin (2002)) for the financial sector and non-financial sector (%) (Brazil, 2000-2017)



Source: IBGE (2006, 2007, 2015, 2017). Own elaboration.

Between 2000 and 2017, the profit share for the nonfinancial sector (NFS) fell while the profit-share for the financial sector (FS) rose. This trend clarifies the existence of a decoupling between the distributive situation for the different capitalist sectors. This result is expected for the period and makes sense theoretically because the rate of the surplus-value of the FS is higher than that of the NFS: the fictitious capital generates payment flows by the mere promise of

¹⁵ On the definitions adopted by IBGE, see IBGE (2015a), referenced on the website as Methodological Note No. 04 (Institutional Sectors).

future production. This occurs because the surplus value extraction accrues from labor-power exploitation, but the level of employment in the FS is considerably lower than in the NFS. Therefore, the denominator of the rate of surplus value is expected to be lower for the NFS as the value amount of variable capital is higher in the NFS compared to the FS for a given surplus value in the numerator. Furthermore, not only the denominator is greater for the NFS, but the numerator, the surplus value extracted, is potentially greater for the FS compared to the NFS due to nature of how this process takes place in different sectors. While the surplus extracted in the NFS accrues from wage-labor exploitation, the FS appropriates surplus value created in the NFS through competition and speculation. Therefore, the limit for the growth of the numerator is given by the employment level for the NFS, while it is virtually limitless for the FS: it can be increased by both removing value from production via competition or by the financial mechanisms of fictitious creation of value, while the NFS needs to produce and sell its commodities to realize profits.

Furthermore, the estimation suggests that by the end of the FHC term, Brazil represented a platform to fictitious capital valorization due to the high interest share in income. In contrast, during the Lula Era, the rentier share had a downward trend but stayed at a high level, corresponding to the coalition of classes under Lulism. Dilma's confrontation with the banking-financial fractions of capital threatened the interest share in income, which decreased from 0.43% to 0.38% between 2011 and 2012.

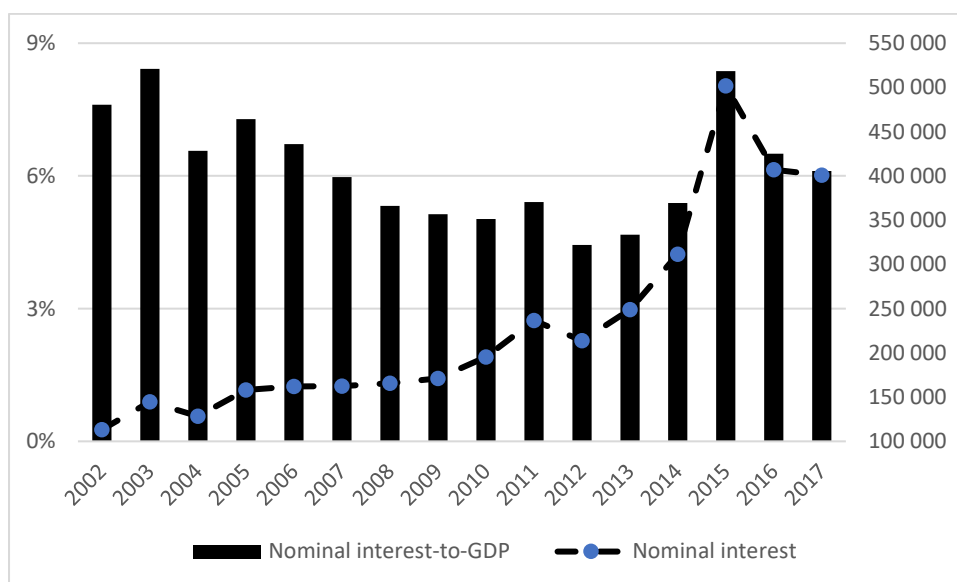
The rentier-share behavior opens the possibility of the state being captured by the banking-financial fraction. It does not necessarily mean the entire political subordination of the Brazilian state to the rentier fraction. However, it expresses the deepening of the logic of capitalism under the dominance of financial valorization.¹⁶ Some institutional spaces are occupied by representatives of these fractions, such as the Central Bank, making monetary policy, under the pretext of inflationary combat, to reflect the interests of this fraction in pursuit of more significant gains and higher profitability. Just as when Rouseff decided to

¹⁶ The crisis of the 1970s introduced qualitative changes in the pattern of capitalist accumulation, introducing financial dynamics as the kernel around which the accumulation of capital was shaped. The post-Keynesian tradition has often called this pattern of finance-led accumulation. At the same time, the Marxist perspective discussed the phenomenon from the point of view of an accumulation regime with the dominance of financial valorization (Bruno *et al.*, 2011; Paulani, 2009).

confront banks, resistance from the Brazilian business sector emerged, accusing the government of economic populism and irresponsibility with public money.

To restore “markets’ confidence”, Dilma’s Finance minister, Joaquim Levy¹⁷, chose to make a fiscal adjustment on the expenditure side, but without impacting the reduction in financial expenditure, the interest. The result of the austerity policy was contractionary in the short-run, increasing the interest burden and the government’s financial expenditure.

Figure 6 – Nominal interest expenses as a proportion of GDP (% , left axis) and absolute terms (R\$ million, right axis) (Brazil, 2002-2017)



Source: BCB (2019), IPEADATA (2017). Own elaboration.

¹⁷ Joaquim Levy was Dilma’s Finance Minister during the year of 2015, and the choice of his name for this role was very controversial. He holds a PhD in economics from the University of Chicago and he was the CEO of Bradesco Asset Management S.A. *Distribuidora de Títulos e Valores Mobiliários*, division of Banco Bradesco S.A., Brazil’s second-largest private bank group, handling a portfolio of more than \$130 billion. Therefore, he was seen as disconnected from the type of worldview from the Workers’ Party (PT) and Dilma ideas. To add more supporting information regarding his conservative view, Levy served as Managing Director and Chief Financial Officer of the World Bank from 2016 to 2018 and as President of the Brazilian Development Bank (BNDES) from 2018 to 2019. In his role as Minister of Finance, he was preceded by Guido Mantega, who holds a PhD in Sociology from the University of São Paulo and published books such as *Acumulação Monopolista e Crises no Brasil* (Monopolist accumulation and crises in Brazil) and *A lei da taxa de lucro. A tendência da queda ou a queda da tendência?* (The profit rate law. Tendency to fall or fall of the tendency?). Levy was succeeded by Nelson Barbosa, an economist who holds a PhD from The New School for Social Research being recognized as a macroeconomist who contributed to Neo-Goodwinian, and Post-Keynesian literatures, and many macroeconomic debates involving hysteresis, inflation, labor-share decline, etc. The presentation of the predecessor and successor of Levy is to show how far he was from the usual economic perspective of PT’s ministers.

To dispel any uncertainties about the impact of austerity, we compute the growth rate of the nominal interest-to-GDP ratio. The growth rate of this relationship between 2014 and 2015 was 55.3%, much higher than the second-highest peak of 15.44%. Thus, the vast interest expense should be added to the short-term adverse effects that fiscal austerity represented in Brazil in 2015. The interest expenses reached their highest value not only in absolute terms, but they grew annually in proportion to the GDP. The much-debated result of austerity was negative GDP growth, the increase in the debt-to-GDP ratio, fiscal deficit despite efforts to reverse the primary result, high inflation, and unemployment along with the reduction of the trade balance, and the rentier-share growth in an environment of falling profitability.¹⁸

As suggested by Theodosio (2019), the Brazilian banking system is made up of large commercial banks, which are largely responsible for managing financial assets in the country, containing almost half of the assets of the entire financial system. If in other countries there is the spraying of the private credit market, the Brazilian commercial banks, an already very concentrated market, also centralize the operation of financial investments, acting as investment banks. Brazil had a *sui generis* process of financialization, differing from the typical processes of central economies in which power took off from commercial banks to investment banks (Duménil and Lévy, 2013). The historical evolution of the national financial system resulted in virtually nonexistent private credit, insufficient public credit, and a capital market that has developed inward and not outside commercial banks.

Although the profitability dynamic elucidates the Brazilian economy's overall performance, the political struggle is only partially captured by the estimated profit rate on fixed capital. The ROE calculation sheds some light on that political struggle by introducing the financialization discussion into a distributive conflict highlighted by the profitability debate. Between 2000 and 2015¹⁹, profitability at the level of firms had a sharp drop of almost 10% per year, strongly pulled by the drop in return on assets, despite a slight increase in leverage. The central point of analysis is that until 2010 the profit rate and leverage had a

¹⁸ See Theodosio (2019) for a table with all the values and a thorough investigation on the correlation between profitability and macroeconomic performance of the Brazilian economy between 2000 and 2016.

¹⁹ The balance sheet data is available until 2015, not 2017, as the national account data used here.

similar profile; however, the connection was totally lost in 2011, when the series completely decoupled from then on. After the takeoff from 2011, leverage peaked, and the profit rate reached its lowest level in 2015.

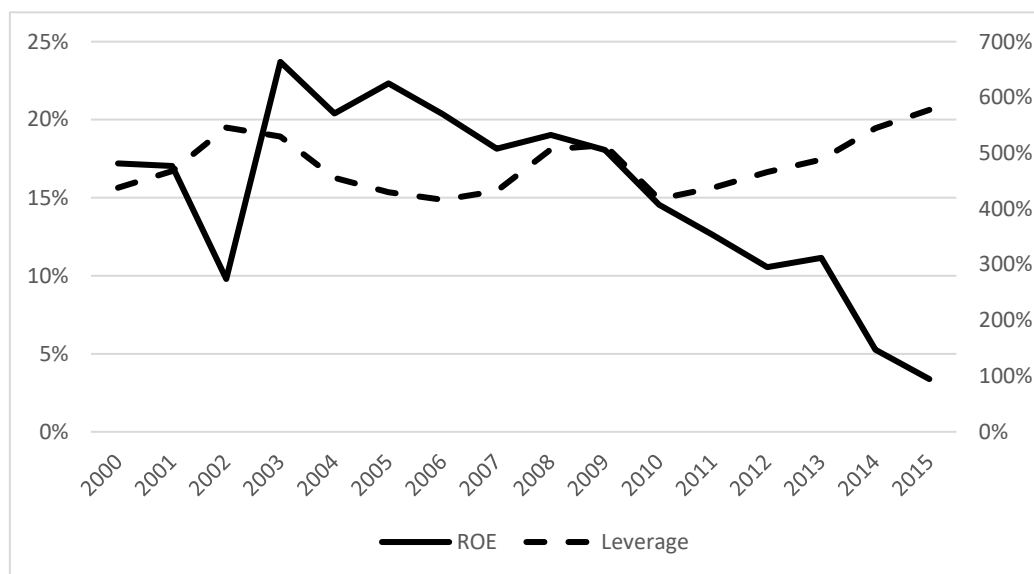
Table 2 – The breakdown of the profit rate on net worth (%) (Brazil, 2000-2015) (compound annual growth rate)

Period	ROE	ROA	Leverage
2000-2015	-9.67%	-11.22%	1.75%
2003-2015	-13.92%	-14.49%	0.67%
2003-2006 (Lula 1)	-3.73%	2.24%	-5.84%
2007-2010 (Lula 2)	-5.34%	-4.53%	-0.85%
2011-2014 (Dilma 1)	-19.61%	-23.89%	5.61%

Source: Economática (2016). Own elaboration.

As the materialistic dialectics incorporates the contradictory relationship between accumulation and finance, the resulting relationship between leverage and profitability can synthesize the type of connection that exists between them: if the leverage series follows the movement of profitability, there is a cooperative relationship between them and we refer as finance being functional to production in this paper; the functionality is broken as leverage grows with the fall in profitability, indicating the exacerbation of the fictitious valorization of capital through the predation of interest on profits or dysfunctional finance. The decoupling is visually evident by plotting yearly ROE and leverage, as shown in figure 7.

Figure 7 – Profit rate net worth (% , left axis) and leverage (% , right axis) – (Brazil, 2000-2015)

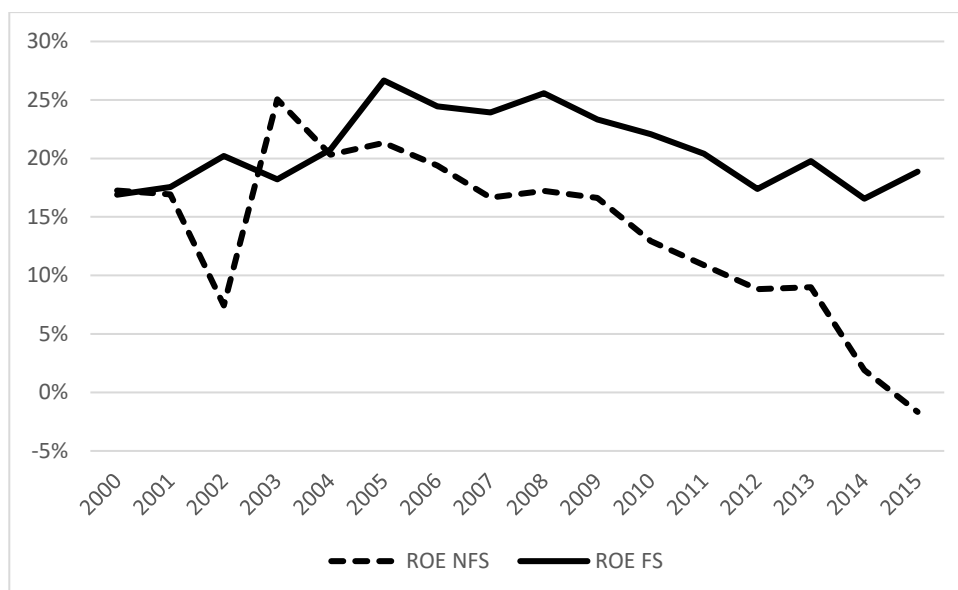


Source: Economática (2016). Own elaboration.

We divided the sample into two dimensions depending on the purpose of each sector for the reproduction of capital: the non-financial sector and the financial sector. Purpose is understood in the Marxist perspective of functioning capital or financial capital and fictitious capital. We jointly allocate the last two in the financial sector, meaning that both can lend resources to production. The financial sphere is comprised of capital operating as interest-bearing capital (financial capital) and fictitious capital, that is, money that is not, has never been, and will not be capital but works as such²⁰. The banks form the financial sector (FS) in this sample, while, the non-financial sector (NFS) has companies that do not have financial services as an end activity: agribusiness, construction, industry, and services companies.

²⁰ “Capitalization is the characteristic way of determining the value of fictitious capital. This is the opposite of what happens with real capital. In this case, the value of the capital is prior to that of the income, which is the result of the functioning of the capital. With fictitious capital, the opposite occurs: the capital value is deducted from the income value, given the interest rate. That is, the capital value consists of the capitalization of known or expected returns”. Germer (1994) [Direct translation from the original].

Figure 8 – Functional profit rate on net worth: the financial sector and non-financial sector (%) (Brazil, 2000-2015)



Source: Economática (2016). Own elaboration.

The first notorious and expected fact of figure 8 is that the FS's profitability is higher than NFS's. We pointed out that the period had formed an amalgam between those of the bottom (workers) and those from above (banking-financial fraction), and the functional distribution of income along with the profitability of the FS starting at 2003 precisely depicts this result: the workers gains occurred alongside with the gains for the banking-financial fraction. The win-win game was broken in 2011 when Dilma decided to confront the financial sector to reinstate the NFS's profitability. The understanding of the economic team supporting Dilma's government was of a clear separation between FS and NFS, therefore, by facing the FS's gains, they anticipated that the available funds invested would automatically be moved into the NFS. This rigid separation is not only wrong as financial and fictitious capital and productive capital are only *forms* of capital (self-expanding value), but the political strategy has proven unsuccessful as well. Furthermore, the period started in 2011 marked a trough in the FS's profitability, which reached its lowest value in 2014 (16.56% per year), corroborating the thesis that the loss of support for that political composition had a decisive impact on Dilma's impeachment.

A very important aspect of Dilma's impeachment is that she is a woman. Dilma was the first woman to serve as president in Brazil, and sexism or anti-

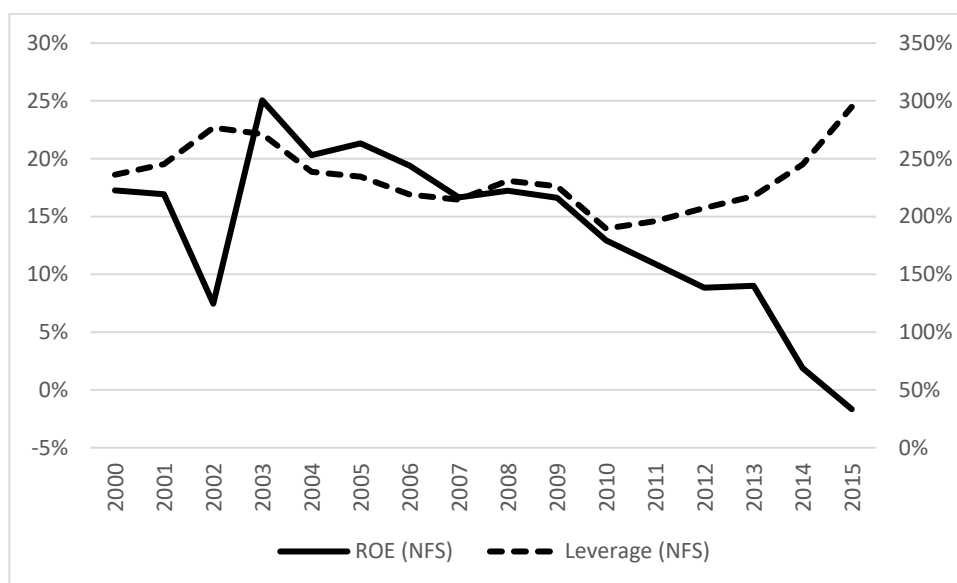
feminism plays a major role in Latin American societies such as Brazil. The very first notorious debate after her election was among journalists regarding how to refer to her role. In Brazilian Portuguese, the end of a word marks the gender of the substantive, such as “*presidente*”, which can be understood as gender neutral as it ends in “e” and usually male words end in “o”. However, as a political affirmation, Dilma herself, many journalists, writers, academics, and people connect to gender issues have been suggesting the use of “*presidenta*” to refer to a female president, as “a” is the usual female marker. While this might appear as a minor issue in a male-centered and conservative society, it has garnered significant attention during numerous debates among Brazilians who have previously disregarded correct grammar but suddenly become experts in standard language²¹ to express their frustrations regarding Dilma's denomination. After the coup, Dilma's vice president, Temer, requested Brazilian official media to avoid the use of “*presidenta*” in official communication, showing how this mere adoption of a gender-oriented word to refer to the first female president has been of major importance. During the public debates regarding Dilma's government, another media topic was regarding her personality. For any male figure who occupies decisive roles in society, technical ability and resolution are desirable, as well as an uncompromising attitude towards errors and omissions. However, these very traits present in her started to populate the news headlines as indicators of a lack of political articulation and dialogue skills, and she was perceived as a “hard person” to deal with. Therefore, Dilma's gender was not only central to how the critics were directed towards her, but also facilitated the acceptance of the coup among Brazilians.

To discuss the impact of financialization on capital accumulation for non-financial companies, we plot NFS's profit rate and leverage. As we can see in Figure 9, from 2000 to 2002 leverage increased while the profitability of the productive sector fell sharply, indicating that Brazil had become a platform for valorizing fictitious capital. This trend changed between 2003 and 2010, when both measures went in the same direction, showing some cooperation between gains linked to production and those associated with financial market instruments, marking finance's functionality. However, between 2011 and 2012, the

²¹ Rubim and Dantas (2018) talk about that topic. In the same book, Tiburi (2018) debates how language can be a stage for political power fights.

profitability fell, recovering briefly in 2013 when it dropped until 2015, reaching the lowest value in this series while leverage increased. This dynamic shows that there was opposition or dysfunctionality between finance and productive accumulation between 2000 and 2002, complementarity or finances were functional to productive accumulation between them from 2003 to 2010, and opposition or dysfunctionality from 2011 onwards, exactly when Dilma led a developmentalist policy to cope with bank spreads by forcing the fall of SELIC²², exchange rate devaluations and several other economic policy decisions. As leverage shows how much of the growth of assets is financed by third-party capital, the growth of this measure from 2011 on shows that finance became dysfunctional for productive capital accumulation, differently from what occurred under Lula.

Figure 9 – Profit rate on net worth (% , left axis) and leverage (% , right axis) for the non-financial sector (Brazil, 2000-2015)



Source: *Economática* (2016). Own elaboration.

This significant result aligns with the Marxian perspective, where production and finance have some level of autonomy²³. By autonomy, we do not

²² The central bank interest rate.

²³ “This does not mean, however, that the autonomization of commercial capital and the constitution of the banking system constitute avoidable deformations of capitalism. On the contrary, they are necessary elements and factors for dynamizing the economy, but they have a contradictory character, or, in Marx’s words, they eliminate contradictions at one level to replace them at a higher level, which is also inevitable. Commercial and bank capital expand the accumulation capacity of the system as a whole, or ease the

mean that complete autonomy is the rule, but moments of opposition and cooperation dynamically succeed each other. Germer (2010) points out this by showing how cooperation (functionality) means that “the banking system collects and concentrates all other monetary fractions and also converts them into loanable monetary capital, thus giving the system an elasticity that goes beyond its possibilities of productive expansion” and opposition (dysfunctionality) can be found “[w]ith regard to the banking system, its action gives the capitalist economy an appearance of independence in relation to money as a general equivalent, which translates into a high elasticity of the credit system, generally leading it to extend beyond its real possibilities and consequently to crisis.” Paul Mattick (2020) also led Marxism away from the naïve interpretation that the productive and financial sectors are always in opposition. In Marxian tradition, the financial sphere acts as a value vampire removing surplus-value from production but also works as a lever for capital accumulation²⁴.

The abstract/concrete dialectics²⁵ must incorporate the contradictory relationship between these two vital spheres of the capitalist system; otherwise, the presentation of Marxian ideas would be unscientific²⁶; that is, the appearance forms on reality's surface would wrongly express the essence. The scientific understanding of this mode of production is crucial to clarify that contradictions are founding parts of reality, born within the material reproduction of social life.

By emphasizing Marxian method, we support that the logic that governs this contradictory mode of production is the inversion of the processes in the surface of the system, that is, they do not present themselves as they are, but they assume forms of appearance that hide, obscure, and complexify the inner nature of the capitalist mode of production and its essential nature. This contradictory interaction between essence and forms of appearance and the inversion and concealment camouflage the real nature of the capitalist mode of production, and this is how fetishism is presented and complexifies with new determinations

barriers placed in front of the overall accumulation process, but they do so at the expense of expanding the potential for crisis and its effects, when they occur.” (Germer, 2010) [Direct translation from the original].

²⁴ “Thanks to credit, the industrial capitalist frees himself from the limitation of his profitability to the average rate of profit, converting credit into a true lever of accumulation.” Germer (2011) [Direct translation from the original].

²⁵ For a thorough investigation of the Marxian method and the meaning of science for him, check Germer (2003). [Direct translation from the original].

²⁶ “[A]ll science would be superfluous if the outward appearance and the essence of things directly coincided.” (Marx, 1984, p. 956).

through Marx's work. Although humans are the agents (subjects), working over the things (objects), it is the market and the demands of the system that guide social reproduction, making the objects, such as the commodities, money, and value to look like the agents while the human aspect of the system, people, appear as mere appendages of it. For example, the reserve army of labor is the contingent of people that do not have an occupation because they are not *needed* by the system: for the purposes of capital accumulation and value expansion, just a percentage of people need to work, so part of the determination of what happens with people derive from the necessities of the economic system itself. Furthermore, this inversion takes place in all spheres of the system: the commodity fetishism hides the humankind social relations²⁷ behind the backs of the commodity exchanges mystifying the process of exchange by hiding the exchange of different types of labor as mere exchange of different *things* (commodities); money fetishism illusorily suggests that the commodity working as money *is money by nature*, while, in reality, it *works* as money merely because it detached itself from the "realm of commodities" to become the general equivalent due to all commodities referring their exchange values into it²⁸; finally, capital fetishism in its final form is presented in the context of interest-bearing (financial capital) and fictitious capital, and can be referred as the notion of capital creating value by itself without any reliance on labor exploitation²⁹. In our opinion, the consequence of interest-bearing capital and fictitious capital fetishism is best translated into another expression of this fetish, which is the misunderstanding that the financial sphere can create value without any reference to the productive sphere. This is what we have been calling in this paper as the break of the link between the production and finance or the so-called *dysfunctionality* of finance: the moment of actualization of the decoupling between the two spheres; although we call it decoupling, this is merely temporary and partial, as both financial capital and productive capital are different *forms* of the same self-contradictory subject, capital. This wrong notion flourishes in capitalism

²⁷ According to Bogdanov (1920, p.105 apud RUBIN, 2020, p.60), "[i]n other words, that which is in reality a relationship among people, appears as a relation among things within the context of commodity fetishism."

²⁸ "What appears to happen is not that a particular commodity become money because all other commodities express their values in it, but, on the contrary, that all other commodities universally express their values in a particular commodity because it is money." (Marx, 1981, p. 187)

²⁹ "In the form of interest-bearing capital, capital appears immediately in this form, unmediated by the production and circulation processes. Capital appears as a mysterious and self-creating source of interest, of its own increase." (Marx, 1993, p. 516)

as part of the nature of the structure of the system, but it strengthens itself under a highly financialized context, such as Brazil in the decades comprised by this study. Therefore, one way to give materiality to the *dysfunctionality* of the finance, or the attempt to completely decouple finance from production, is shown by the increased indebtedness or leverage, very much correlated with valorization of value without direct labor exploitation³⁰. At the same time, the profit rate calculation shows the determinants of accumulation emanating from technology, distribution, and demand, three classes of categories which are intimately related to labor-power exploitation. When the two series – profit rates and leverage – are plotted, we are indirectly modeling how capital accumulation from labor-power exploitation and capital accumulation from speculation or money-lending activities behave and interact. The results found here, namely, the NFS companies trying to reverse the falling profitability by using third-party capital increasing their indebtedness is, therefore, the expression of the contradictions of capital accumulation and money-capital management activities. Even though the decoupling is not and can never be total, the attempt of autonomization of finance over production is expressed by the loss of connection between profitability and leverage.

Therefore, although we show how a specific fraction of the capitalists stand in the middle of the crisis of the Brazilian economy, we are far from supporting the idea of putting financial capital back on the leash as the final battle of our times. Yet, the relationship between production and finance and how it relates to leverage and profit rates is crucial here. By following Marx's method, we avoid this misleading inversion of reality and emphasize the class struggle between the working class and the capitalists as the driving force of political action in capitalism. Germer (1994) brilliantly succeeds in avoiding that wrong interpretation,

O capital fictício aparece como o coroamento fantástico de todo o edifício, um castelo de papel de colorido espalhafatoso, que oculta o processo de produção em que o capital e o trabalho se enfrentam e, de certa maneira, tumultua o cenário teórico e inverte os dados da realidade: de fato, a riqueza ilusória do papel pintado aparece a todos como a mais sólida realidade, enquanto o processo granítico de trabalho, através do qual o ser humano deve continuar subjugando a

³⁰ “In interest-bearing capital, therefore, this automatic fetish is elaborated into its pure form, self-valorizing value, money breeding money, and in this form it no longer bears any marks of its origin.” (Marx, 1993, p. 516)

natureza, parece uma fantasia ultrapassada. O papel parece mover a economia, ou o rabo é que abana o cachorro.

Furthermore, this paper claims the occurrence of cooperation or lack of it between workers and capitalists. The working hypothesis here stems from the political sphere, its decisions and how the economy sustained a win-win game for both classes. This win-win game does not mean that both classes were gaining at the same rate or that this process suppressed class struggle. The cooperation, presented as wage gains associated with increases in profitability was undermined when those gains start to threaten profitability, both by the profit squeeze from wages and from the economic context with lower growth rates from China ending the commodities boom, economic policy decisions like the fight against the banking-financial fraction of the capitalist class led by Dilma, and other aspects discussed throughout the paper.

We defined the capitalist dynamics in two possible scenarios: cooperation and conflict. In these scenarios, the profit rate plays a crucial role in shaping the outcomes. Cooperation is what happens in certain contexts where capitalists and workers may find common ground and work towards a shared goal, leading to economic growth and income distribution in favor of wages. Regardless of this cooperative framework, class struggle remains present and the distribution of real gains and the power dynamics between classes are still influenced by factors such as income distribution, inflation, and the overall level of exploitation. The cooperative dynamic may alleviate some forms of oppression, but it does not eradicate the inherent tensions and struggles that arise from the capitalist system. A good example of cooperation is pre-2011, when capitalists and workers worked together towards a common goal, leading to economic growth and income distribution in favor of wages. Conversely, in certain contexts characterized by open conflict or opposition between capitalists and workers, as the profit rate decreases and leads to economic crises, the capitalists may shift the burden of the adjustments to resume accumulation onto workers' shoulders. Therefore, as the profit rate falls, the decentralized decision-making process of capitalists attempting to restore profitability by cutting costs, primarily those associated with labor, through worker layoffs and the substitution of labor with machines, leads to the unintended consequence of further declining profitability. As previously stated, class struggle is the inner nature of capitalism, so the conflict here is an exacerbated

form of opposition between the classes which can be thought via the increase of the rate of exploitation, intensification of labor, lengthening of the working-day, increased of extraction of relative surplus-value, and many other mechanisms that deepen the forms of exploitation and try to revert the fall in the profit rate at the expenses of wage-laborers. In this conflictual dynamic, the profit rate acts as a key variable that influences the outcomes and intensifies class struggles. Moreover, when we refer to cooperation, we do not think that this is a conscious phenomenon or an agreement between the classes. We support the idea that workers and capitalists independently behave in a way that the emergent phenomenon is such that it generates the results presented.

Similarly, the functionality of the financial sector is intimately linked to the profit rate. According to capitalist competition, when the financial profitability is higher than productive profitability it may occur capital migration from production to the financial sector. The profit rate equalization via capital migration can be matched with indebtedness dynamics as a proxy for financialization to discuss the functionality of finance. The variable in this research that helps us understand this complex relationship in a more straightforward way is leverage. Thus, when leverage and the NFS profit rates are coupled, interest-bearing capital (financial) and fictitious capital play a positive role by providing credit to productive sectors of the economy, facilitating investment and growth, and finance is seen a functional lever for accumulation. The functional arrangement has to do with the willingness of financial institutions to extend credit to finance production as the return from production, measured by the profit rate, is high. For instance, before 2011, Brazil experienced a period of economic expansion fueled by credit expansion in the financial sector, aligning with favorable profit rates. On the other hand, the dysfunctionality of the financial sector occurs when leverage grows in a scenario where the NFS's profitability is falling. This means that firms are trying to reverse the falling profitability by deepening the use of third-party capital. However, this depicts a composition effect or a change in the allocation of funds within the NFS that moves capital from productive to unproductive activities, or a crowding-out effect where financial investment occupies the place of productive investment. When leverage grows but the profit rate cannot reverse its trend and continues to fall it means that interest-bearing capital (financial capital) and fictitious capital hinder investment and growth due to excessive leverage. This can

lead to overaccumulation of capital in unproductive sectors such as finance, resulting in a decrease in credit availability for investment and growth in productive sectors of the economy. For example, after 2011 Brazil experienced a period of competition between capitalists and workers, leading to a decrease in the rate of profit and economic crisis, trend not reverted by the increased leverage of the NFS companies.

By integrating the centrality of the profit rate within the discussion of capitalist dynamics and the functionality of the financial sector, we can understand how the profit rate shapes both the cooperative or conflictual dynamics between classes and the impact of the financial sector functionality on investment and growth.

5. Conclusion

This paper sought to fill a gap in the Brazilian Marxist literature, that is, the measurement of the profit rate and its declining tendency along with the financialization process of the Brazilian economy for the 2000-2016 period, and the impacts of those dynamics for the electoral political processes. Our analysis shows that the profit rate is a fundamental variable for capitalist dynamics because it is not only the stimulus for production, but also causes a disruption for capital accumulation when it falls, as a result of the overaccumulation of capital. We claim that there was an informal and implicit agreement between the working class and the banking-finance capital fringe during Lula's government, that was later dismantled during Dilma's turns. Such claim is supported by the national account data, the Goodwin cycle, and the return on equity of the Brazilian firms.

The Marxian theoretical elaboration does not deny but instead welcomes the contradictions of capitalist society, embracing a process that simultaneously develops itself and creates the conditions of its crisis. The profit rate encourages investments until the overaccumulation of capital puts a limit on capitalist accumulation. The transposition of limits occurs by transforming the limits into barriers, that is, in the operation of endogenous mechanisms that create conditions for the process to resume. To this process, which is not merely a result, Marxian Economics calls the law of the tendency of the rate of profit to fall: while profitability encourages production, excessive accumulation engenders crises that burn capital to create fresh opportunities for accumulation. The counteracting

factors restore capital accumulation, bringing new possibilities for accumulation; while some of these trends increase the rate of surplus-value, others reduce the organic composition of capital, both restoring profitability.

This work shows that the Brazilian aggregate profit rate fell between 2000 and 2017, and the results can be summarized as follows.

- There was a reduction in the degree of capacity utilization (u) accompanied by a slight improvement in the potential productivity of capital (ρ), a result associated with the deepening of the labor-intensive character of Brazilian production.

- The profitability calculated from the balance sheets (ROE) dropped sharply during the period.

- The GDP growth rate was high during the Lula Era, driven by increased profitability that positively influenced investments. Domestic demand, shaped by the distributive nature of this government, further fueled the growth process, complemented by the impact of China's growth, which bolstered the Brazilian economy through external demand.

- Due to the deterioration of Brazilian profitability, accumulation rates started to fall, negatively impacting GDP growth under Dilma, who stressed the limits of the class struggle by confronting the financial fraction of capital, which lived in harmonious composition with workers under the tutelage of Lulism, an environment represented by the coexistence of the high profitability of both FS and NFS sectors, and real gains for the workers. By breaking this bond that conformed to the previous period, Dilma needed to deal with the return of inflation and the increase in unemployment in an environment of falling profitability.

- Experiencing a drop in the profit rate, the NFS companies tried to reverse this trend by using third-party capital to restore their profitability (increase leverage); however, the profit rate continued to fall. This process occurred in the context of currency devaluation and deterioration of the cash flow of companies indebted in dollars. The balance of payments in current transactions worsened, strongly influenced by the Chinese slowdown that reduced demand for Brazilian exports from 2014 on, bringing reductions in the trade balance. Public debt as a proportion of GDP has been falling since 2002 and reached a trough in 2013, but it has started to rise again since then.

- The Goodwin cycle shows cooperation between capitalists and workers during Lula's government and opposition or conflict under Dilma.
- The studied period is also marked by a high share of interest and dividends in income, called rentier-share.
 - Brazil under FHC was transformed into a platform for valorizing fictitious capital, what continued during Lula's first term and its maintenance of orthodox policies through the macroeconomic tripod³¹.
 - In Lula's less orthodox phase, 2007 – 2010, the fall in rentier gains was associated with the international crisis.
 - As early as 2011, those gains took off again and Dilma Rousseff decided to confront the sector with the forced fall in banking spreads through the fall of interest rates and increase in credit lines from public banks, destroying the government's credibility. A fiscal contraction was pursued to restore the fallen confidence resulting in a reduced pace of economic activity and accelerated growth of financial expenditures in 2015. The understanding of the economic team was that productive investment would replace financial investment, but this never happened.
- Losing the political coalition that gave support to the government in an environment of low profitability, increased unemployment, and a falling level of activity, Dilma suffered a parliamentary coup associating her name with the theme of corruption.
- Subsequent governments, outside the analysis undertaken here by the absence of available data, served a purpose: restoring capitalist gains that were undermined by the tone of progressive distribution of the income of the PT government, stealing the public fund, and transferring wealth from the public sector to the private sector through privatizations, deepening the dominance of finance logic by the dissemination of austerity discourses. All of that served for the maintenance of interest payments on public debt.
- It exacerbated the class struggle by putting all the burden of adjustment on workers to restore capital gains with much more strength than before. Michel Temer had not run an election with a regressive political agenda, but he was president after the impeachment, and could launch this attack without the fear of

³¹ Macroeconomic tripod is an expression to summarize three policies pursued in Brazil: primary surplus, inflation targeting, and a floating exchange rate.

losing his voters as an elected president. This result is supported by available data for 2017, in which the profitability of the Brazilian economy started to increase again, but more research is needed to check this result for additional years.

A final remark regarding one of the main findings which is worth mentioning with more emphasis is the role of leverage in our research. The profit rate is a variable that expresses the overall health of the economy as it is intimately linked to the pace of capital accumulation via labor-power exploitation. Commodity and money fetishism are the primary sources of confusion and the inversion experienced by agents in their daily lives. Still, the final dimension of the inversion appears through interest-bearing (financial capital) and fictitious capital, which not only appears to generate value through the mere legal possession of capital, but also hides workers' exploitation behind this candid confusion between production and finance. This confusion would suggest that production should be supported against finance. The underlying reasoning is that productive capital is good as employment-generating capital, while financial capital is the resource-draining capital that bleeds funds from production. Following this erroneous interpretation, the main struggle would be eased by institutional and legal reforms or some "domesticated capitalism." In contrast, the kernel of the struggle, the exploitation of others' unpaid labor time, would vanish away, delegitimizing all possible revolutionary fights to overcome this system.

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