

The rate of surplus value in Brazil, 1996–2016

Antônio Albano de Freitas¹

48° Encontro Nacional de Economia - ANPEC
Área 2 – Economia Política

Abstract

This paper analyzes the Brazilian economy's last two decades (1996-2016) based on estimates of the rate of surplus value, as well as its determinants, i.e., the wage rate and labor productivity. Taking into account these empirical estimates, a theoretical narrative of the Brazilian economy is also carried out, considering its political cycle, that is, having as a benchmark the governments of Fernando Henrique Cardoso (1995-2002), Luiz Inácio Lula da Silva (2003-2010), Dilma Rousseff (2011-August 2016), and also the parliamentary *coup d'état* (December 2015- August 2016). The approach used throughout this article was based on the classical political economy tradition, which sees in the capital-labor struggle a key, albeit not exclusive, conditioning of the economic, political and ideological disputes of society.

JEL classification: B51; E25; N16

Keywords: Brazilian economy; rate of surplus value; capital-labor struggle; System of National Accounts

Resumo

O artigo analisa as últimas duas décadas da economia brasileira (1996-2016) baseado na estimativa da taxa de mais-valia, bem como os seus determinantes, i.e., a taxa salarial e a produtividade do trabalho. A partir dessa estimativa empírica, uma narrativa teórica da economia brasileira também é desenvolvida, levando em consideração o seu ciclo político, isto é, tendo como referência os governos de Fernando Henrique Cardoso (1995-2002), Luiz Inácio Lula da Silva (2003-2010), Dilma Rousseff (2011-Agosto de 2016), e também o golpe parlamentar (Dezembro de 2015- Agosto de 2016). A abordagem utilizada ao longo do artigo é a da economia política clássica, que enxerga no conflito capital-trabalho um condicionante chave, embora não exclusivo, das disputas econômicas, políticas e ideológicas da sociedade.

Palavras chave: economia brasileira, taxa de mais-valia, conflito capital-trabalho, Sistema de Contas Nacionais

1. INTRODUCTION

Brazil is currently experiencing its worst political crisis since the redemocratization period of the 1980s. It is worth remembering that, by Brazilian standards, the country had been enjoying a somewhat longer and unusual period of relative political stability after the impeachment of President Fernando Collor de Mello that occurred in 1992 (De la Fontaine, and Stehnen 2016). With this in mind, one could genuinely argue that the Federal Constitution of 1988 brought positive impacts to Brazilian society since it allowed for interactions to occur within its different strata. It also established some social rights and the formal implementation of public services within the federal budget. In addition, much of the reference regarding rules and the process of elections is found in the Brazilian Federal Constitution of 1988.

¹ Postdoc scholar at the New School for Social Research. Email: antonio.albanodefraitas@gmail.com.

In relation to presidential elections, it is worth noting that the year 2014 marked as a stylized fact the fourth victory in a row of the Workers' Party (*Partido dos Trabalhadores* – PT). After a fierce dispute, PT won the elections in October 2014 through an alliance composed of different parties (with the Party of the Brazilian Democratic Movement – PMDB – assuming the vice presidency post), classes and sectors, in what Graham (1996) would have named a clientelist center. Less than two years later, however, this coalition collapsed, and the chronology of events culminated in President Dilma Rousseff's impeachment in August 2016.

From the economic point of view, Brazil is presently also suffering a severe crisis. In 2016, for instance, the Gross Domestic Product (GDP) contracted -3.6% and the unemployment rate estimated by the Brazilian Institute of Geography and Statistics (IBGE), after reaching 6.5% in the fourth quarter of 2014, almost doubled, reaching 12.0% in the last quarter of 2016.

Faced with this difficult scenario of political and economic crisis, which Milan (2016) has named the Brazilian twin crises, it is therefore fundamental to analyze their causes and determinants, trying to explain if and how they feed back to each other.

As expected, there is a heated debate between different interpretations and schools of thought for the explanation of these events. For example, for economists with a neoclassical tradition, the origins of the economic crisis would be found in the fiscal imbalance of public finance, and its reversal would come through an increase in public saving (CEMEC/IBMEC 2017). Conversely, for Keynesian and Kaleckian economists, the reason for the slowdown in the performance of the Brazilian economy would have to be found in the sharp decline of domestic demand, initiated in 2011, and its recovery would only come through a rise in effective demand and public investment (Serrano & Summa, 2015). From the stance of political science, there are also different readings and analyses.

Limongi (2017), for instance, says that the economic crisis and social protests that have been occurring would be necessary conditions, but not sufficient ones to explain the dimension of this current political crisis. For this author, the complex political crisis would necessarily have to have come through the Car Wash Operation (*Operação Lava Jato*) and through the threat that corruption investigations are representing to a significant share of the Brazilian political elite. Alternatively, for Dos Santos (2017) the roots of the crisis should be placed in the inability of democracy to establish, on an ongoing basis, an adequate representation of the whole society. This would be particularly true in a world atmosphere in which capitalism supersedes historically constructed national frontiers and favors the concentration of wealth and power in the hands of a minority with a strong capacity to monopolize political decisions, albeit in disregard of the democratic will of the majority.

The present research, however, proposes an unconventional approach. In order to examine the origin of the Brazilian political crisis, this paper analyzes the Brazilian economy in its last two decades (1996-2016) based on the estimate and evolution of the rate of surplus value, as well as its determinants, i.e., the wage rate and labor productivity.

The paper presents two original contributions. The first has an empirical feature given that there is scant literature on the measurement of the rate of surplus value in Brazil and Developing countries. The article therefore helps to fulfill this lack of national and international literature by transforming the latest Brazilian official statistics into a social accounting *à la* Marx.

The second contribution is theoretical since in discussing recent Brazilian history, the article builds a narrative of contemporary Brazilian capitalism based on the analytical framework of the classical political economy. Although the use of this framework is currently far from mainstream interpretations (thus also far from the theoretical framework of most of the country's current policymakers), its exposition allows for a comprehensive discussion for the understanding of this historical period of Brazil, acting as a mode of resistance to the "single speech rhetoric".

The methodology followed is Shaikh & Tonak (1994), whose essential starting point is the distinction between labor considered productive and unproductive from the capital's point of view. Besides this empirical estimate of the rate of surplus value, a theoretical narrative for the Brazilian

economy last two decades was carried out, taking into account its political cycle, that is, having as a benchmark the governments of Fernando Henrique Cardoso (FHC, 1995-2002), Luiz Inácio Lula da Silva (2003-2010), Dilma Rousseff (2011- August 2016), and also the parliamentary *coup d'état* (December 2015- August 2016).

Apart from this Introduction, this paper is divided into five more parts. In part two we introduce the classical political economy framework and the background behind the relationship between the rate of surplus value, labor productivity and wage rate. In part three we explain the methodology chosen. Part four attempts to show and analyze the rate of surplus value evolution and its determinants. Part five develops a narrative of the last two decades of the Brazilian economy. Lastly, Part six concludes the paper. The appendix discusses the construction of an estimate for the Variable Capital.

2. THE CLASSICAL POLITICAL ECONOMY FRAMEWORK AND THE RELATIONSHIP BETWEEN THE RATE OF SURPLUS VALUE, LABOR PRODUCTIVITY AND WAGE RATE

The approach used throughout this article was based on the classical political economy tradition, which sees in the capital-labor struggle a key, albeit not exclusive, conditioning of the economic, political and ideological disputes of society.

The relevance of this topic stems from the fact that the rate of surplus value is one of the pillars of the Marxian theory of crisis, along with the organic composition of capital and the rate of capital rotation. The movements in the profit rate result from changes in one or more of these variables (Foley, 1986). For Marx, the rate of surplus value tends to grow in the long run, given that productivity increases at a faster pace than real wages. This is due to the pressure exerted on wages by the large and growing reserve army of unemployed workers. However, the increase in the rate of surplus value would not be enough to compensate for the downward trend in the profit rate due to the rise in the organic composition of capital.

Productivity growth is effectively a measure of technical change (and its steady long-term rise corresponds to the fundamental role of technological progress in capitalist development) which is imperative for capitalist firms, rooted in the very nature of profit-driven competition.

Even though one of the great strengths of developed capitalism is that real wages generally also rise over the long run, productivity growth provides only the material foundation for a potential rise in real wages. Productivity growth does not automatically lead to growth in real wages. It takes social and institutional mechanisms to create (historically hard won) linkages between the two, and these connections can always be rent asunder.

Real unit labor cost, the ratio of real wages to productivity, is of paramount importance to business. At the individual level, labor costs are an important component of total costs, and for individual firms to survive in competition, labor costs must not rise relative to that of their competitors. Competition therefore constantly impels firms to keep down their own real unit cost. At the aggregate level, a rise in real unit labor costs lowers real profit margins (Shaikh, 2016).

The category of surplus value rate is vital in Marxian economic theory, since in this category the two main forms of income appropriation are placed in direct contrast – which reflects the working and capitalist classes. The rate of surplus value, therefore, represents an index of the primary income distribution within the capitalist production, when labor-power becomes a commodity and the wage falls short of the value that labor produces. Marx (1992, p.326) defined the rate of surplus value as the exact expression for the degree of exploitation of labor-power by capital. Algebraically, it can be defined as the ratio of surplus value to variable capital, the first being the surplus of the product's value over the sum of its elements of production. The variable capital is the part of capital which reproduces the equivalent of its own value and produces an excess, a surplus value, i.e., the part of capital that is continuously transformed from a constant into a variable magnitude.

$$\frac{S}{V} = \text{Rate of Surplus Value} \quad (1)$$

Being V the Variable capital and $S = VA - V$, the Surplus Value (in money form).

If we break down the abstract equation of the surplus value rate, taking into account that the surplus value is a residual from Value Added (VA) and Variable capital (V), both expressed in constant terms, and being N_p the number of productive workers; π_p and w_p the labor productivity and real wage of productive workers respectively, we get:

$$\text{Rate of surplus value} = \frac{\frac{(VA*dP)}{N_p}}{(V*dP)/N_p} - 1 = \left[\frac{\pi_p}{w_p} \right] - 1 \quad (2)$$

We verify then that the rate of surplus value depends directly on real labor productivity and is inversely related to real wages (adjusted all by the price index relation). The change in the rate of surplus value is explained by the margin on wages or the difference between labor productivity and real wage ($\pi_p - w_p$).

3. METHODOLOGY

This paper aims to formulate a series for the rate of surplus value of the Brazilian economy between 1996 and 2016, based on data from the Brazilian System of National Accounts (SNA), set by IBGE. It is important to emphasize, however, that due to methodological changes in IBGE surveys, it is not prudent to compare the period 1996-2016 as a whole, but rather divided into the two sub-periods 1996-1999 and 2000-2016².

The rate of surplus value measured here stems from Marxian concepts and is obtained by the ratio of the mass of surplus value to the variable capital. The mass of surplus value, in turn, is achieved subtracting from the Marxian Value Added the Variable Capital. As expected, since they are variables in Marxian Categories, not presented in official statistics, it is necessary to expose the estimate methodology. It is worth noting that the methodology we follow is based on Shaikh & Tonak (1994), even though peculiarities arising from unavailability of data in Brazil, as well as specificities related to economic structures and census codes, do not allow us to state they are identical.

In this transformation of the Official National Accounting into Marxian categories, the essential starting point is the distinction between labor which is considered productive of capital and that which is not. According to Shaikh & Tonak (1994, p.21-22), in the process of social reproduction it is possible to distinguish four types of social activities:

- (i) Production – in which objects of social use (use values) are utilized in the process of the creation of new objects;
- (ii) Distribution – in which objects of social use are utilized in order to transfer such objects from their immediate possessor to those who intend to use them;
- (iii) Social Maintenance and Reproduction – in which use values are used up in the private and public administration, maintenance, and reproduction of the social order by the government, the legal system, the military, corporate security personnel etc. and
- (iv) Personal Consumption – in which the objects of social use are consumed directly by individual consumers.

² The period 1996-1999 has as year of reference the year 2000 and is based on the 1993 System of National Accounts (SNA) of the United Nations. In turn, the most recent methodological update IBGE made, which covers the period 2000-2016, has as benchmark the year 2010. The latter is based on the 2008 SNA.

Of these activities, only the first three are considered labor. And only the first activity (production) qualifies as productive labor. It is important to point out that all economic theories distinguish production and consumption, recognizing that only production creates new use values (the wealth of nations). The particularity of Classical and Marxian theories, therefore, lies in the fact that they classify (as opposed to Neoclassical and Keynesian theory) activities of distribution and social maintenance in the sphere of nonproductive activities (Shaikh & Tonak 1994). A fundamental point in Shaikh's and Tonak's methodology is the distinction between primary and secondary sectors:

Sectors (such as production and wholesale /retail trade) which are directly involved in the production and domestic realization of the total commodity product will be called *primary* sectors. Those (such as finance, land rental and sales, and general government) involved in the subsequent recirculation of the value and money streams originating in the primary sectors will be called *secondary* sectors (Shaikh & Tonak, 1994, p.39)

Due to this sectoral distinction, secondary sectors incomes are considered as transfers (denominated royalties) originated from primary sectors. For these reasons, these incomes (such as interests and land rent) cannot be included in the measure of the total value of production, which is restricted to production and trade.

Given that, Shaikh & Tonak (1994) develop the following accounting identities from a Marxian perspective:

$$TV = GOp + GOt \quad (3)$$

$$GOp = Mp' + RYp + VAp \quad (4)$$

$$GOt = Mt' + RYt + VAt \quad (5)$$

Where TV is Total Value; GOp the Gross Output of production and GOt the Gross Output of distribution (Trade). Mp' being the intermediate inputs of productive sectors; RYp the Royalties paid in these sectors, and VAp the gross Value Added in productive sectors. On the other hand, Gross Output of trade (GOt) is the sum of intermediate inputs of trade sector, Royalties of trade sector and gross Value Added by trade sector. Constant Capital estimate in monetary terms is given by the intermediate inputs of productive sectors:

$$C = Mp' \quad (6)$$

Marxian gross Value Added in money form is obtained subtracting from the Total Value of production the intermediate inputs of productive sectors:

$$VAm = TV - C \quad (7)$$

This way, Marxian gross Value Added can be rewritten as:

$$VAm = Mp' + RYp + VAp + GOt - Mp' \quad (8)$$

$$VAm = RYp + VAp + GOt \quad (9)$$

That is, the Marxian gross Value Added is the sum of the gross Value Added of productive sectors, plus Royalties paid and the Total Value of trade sector. It should be remembered that the System of National Accounts considers the interests paid to financial sector (and other similar transfers) a component of a companies' costs, and therefore exclude them from the Value Added measurement, whereas in the

Marxian view they are part of the surplus value. Moreover, including Total Value of Trade in the *VAm* means that intermediate inputs and wages of this sector (besides profits) are considered as part of the surplus value.

In this article, within the set of economic activities which integrate the SNA, the following sectors of the Brazilian economy were considered as productive: (i) agriculture, forestry and fishing; (ii) Mining industry; (iii) Manufacturing industry; (iv) Public Utilities (production and distribution of electricity and gas, water, sewage and urban cleaning); (v) Construction Industry and (vi) productive services, such as: Transport; Storage; Post; Telecommunication and information services; Repair services; Restaurants, Hotels and other lodging places; Health and Education private services.

In contrast, the sectors considered as unproductive from the point of view of capital were: (i) Wholesale and Retail Trade; (ii) Finance, insurance and related services; (iii) Real estate and rental activities; (iv) Other services and (v) Public Administration, Health and Education, and Social Security.

From a theoretical point of view, an important principle in Marxian theory is not to compare the rate of surplus value with the profit-wage ratio obtained by conventional National Accounts. As a matter of fact, for example, Shaikh (1978) and Shaikh & Tonak (1994) criticize even Marxists (such as Glyn & Sutcliffe 1972), who assume that the rate of surplus value could be approximated by the profit-wage ratio, so that the level and trend of the former could be presumed from those of the latter. Shaikh & Tonak (1994) empirically calculate that the rate of surplus value in the United States is four to five times greater than the profit-wage ratio, and that over the period 1948-1989 the average annual growth of the surplus value rate in the United States increased 0.9% while the profit-wage ratio fell -0.8%.

Our estimates for the Brazilian economy in the period 2000-2016 also indicate that comparing the Wage Share in GDP with the Variable Capital share in Marxian Value Added, for instance, can be problematic. As shown in Figure 1, the level of the rate of surplus value in Brazil, throughout this period, is on average three times higher than the level of the conventional profit-wage ratio. Furthermore, in case it was only a matter of level, we would expect that the gray solid line in Figure 1 presented below would be constant over time. Nonetheless, as can be also seen in Figure 1, the ratio of the rate of surplus value to the conventional profit-wage ratio shows an upward tendency, rising from 2.73 in 2000 to 3.16 in 2016. That is, both level and movements of the rate of surplus value have significant differences when compared to their naïve Orthodox counterpart.

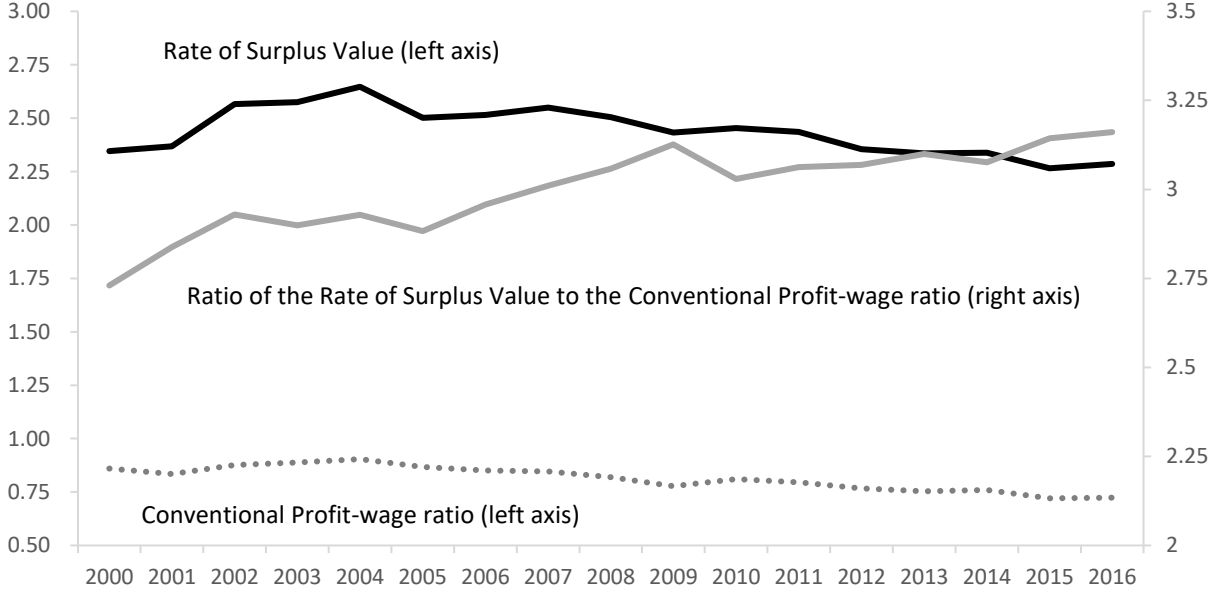


Figure 1 – Differences between the Rate of Surplus Value and the Conventional Profit-Wage ratio, Brazilian economy, 2000-2016.

Source: Author’s elaboration

Another important aspect to be analyzed in the Brazilian economy, from a Marxian perspective, is productive labor³, that is, that one capable of producing surplus value.

From a theoretical point of view, once it is recognized that non-production labor is a form of social consumption, then the equivalence between an increase in employment and enhanced capital accumulation, does not, necessarily, hold anymore. While an increase in the employment of production workers will imply a corresponding rise in the production of net output, an increase in the employment of nonproduction workers will actually absorb a portion of the net output and hence decrease the amount available for personal consumption or further production and investment (Shaikh, 1980, p.6).

Empirically, let it be said, the Brazilian economy cycles seem to be approaching this pattern. Between 1996 and 1999, for example, the ratio of productive labor to total labor did not increase (to be precise it declined -0.04%), so that the annual average rate of investment as a percentage of GDP fell -3%. In turn, during the period 2000-2016, as shown in Figure 2, the ratio of productive labor to total labor presented three phases. Between 2000 and 2002, it had a sharp decline (-3%). In this very same period, the annual average rate of investment in GDP fell -1%. Between 2003 and 2008 there was, on average, an annual increase of 0.6% in the ratio of productive labor to total labor. Likewise, the average annual rate of investment in GDP grew by 3.2%. Lastly, between 2009 and 2016 whereas there was a -0.3% decline in the ratio of labor which produces surplus value to total labor, the annual average rate of investment in GDP fell by -2.9%.

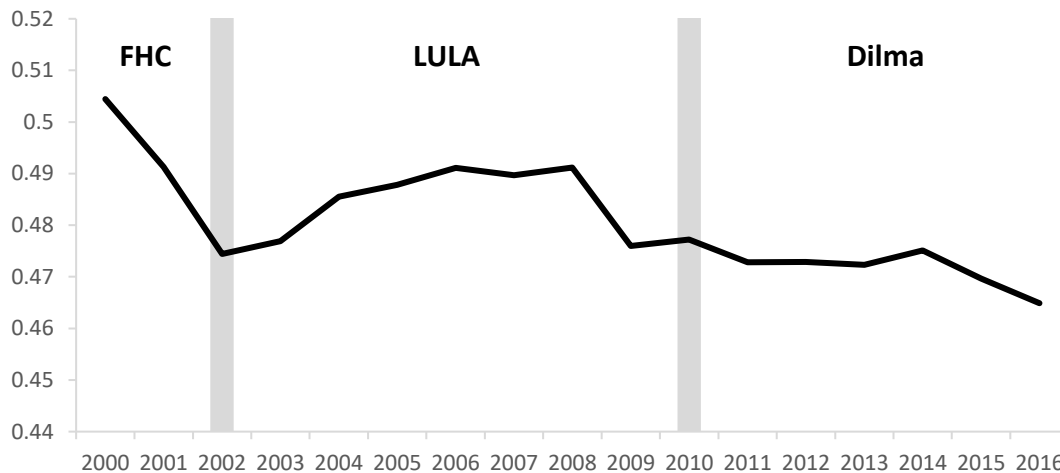


Figure 2 – Ratio of Productive Labor to Total Labor, Brazilian Economy, 2000-2016

Source: Author's elaboration

4. THE ESTIMATE OF THE RATE OF SURPLUS VALUE AND ITS DETERMINANTS

The estimate results for the rate of surplus value of the Brazilian economy are presented in Tables 1 and 2 below. Moreover, the rates of annual change and the indexes for the sub-periods 1996-1999 and 2000-2016 are also shown.

³ Methodologically, the labor considered here as productive refers to those workers linked only to production and in sectors considered productive (previously mentioned). The ratio of workers linked to production to total workers, originated either from SIDRA or CEMPRE, therefore, was multiplied by the number of workers in the respective sector/activity (coming from the SNA).

Table 1 – Rate of Surplus Value, Brazilian economy, 1996-1999

	Rate of Surplus Value	Annual Rate of Change (%)	Index (1996 = 100)
1996	2.31		100.00
1997	2.47	7.19%	107.19
1998	2.46	-0.61%	106.54
1999	2.64	7.37%	114.39

Source: Author's elaboration based on IBGE

In the sub-period 1996-1999, under President Fernando Henrique Cardoso's administration, the level of labor-power exploitation in Brazil experienced a clearly upward trend. In this sub-period the rate went from 2.31 in 1996 to 2.64 in 1999, accumulating a growth of 14.4% in just four years, which meant a 4.6% annual average rate.

Table 2 – Rate of Surplus Value, Brazilian economy, 2000-2016

	Rate of Surplus Value	Annual Rate of Change (%)	Index (2000 = 100)
2000	2.35		100.00
2001	2.37	0.91%	100.91
2002	2.57	8.39%	109.38
2003	2.57	0.33%	109.74
2004	2.65	2.80%	112.81
2005	2.50	-5.51%	106.60
2006	2.51	0.55%	107.18
2007	2.55	1.36%	108.64
2008	2.50	-1.72%	106.77
2009	2.43	-2.90%	103.67
2010	2.45	0.89%	104.59
2011	2.44	-0.74%	103.81
2012	2.35	-3.31%	100.37
2013	2.34	-0.84%	99.53
2014	2.34	0.15%	99.68
2015	2.27	-3.13%	96.55
2016	2.29	0.87%	97.40

Source: Author's elaboration based on IBGE

The upward trend in the level of labor-power exploitation continued up to 2004. Between 2000 and 2004, for instance, the rate of annual average growth was 3.1%, and in the period 2000-2002, still under Fernando Henrique Cardoso's presidency, this annual average rate was 4.6%. The estimates found here for the Brazilian economy rate of surplus value, therefore, are in line with the results obtained by the few studies in the area. Guedes Pinto (2010), for example, analyses the period 1990-2004 and Araújo (2013) the period 1990-2007. Both report an increase in the rate of surplus value throughout the 1990s until 2004.

From then on, the rate of surplus value in the Brazilian economy declined until 2015, with different phases and intensities though. If we take the whole 2005-2015 period, this rate fell back at an annual average rate of -1%. Under President Luiz Inácio Lula da Silva's command (2003-2010), the rate of surplus value decreased -0.7% – in his first government (2003-2006) at a pace of -0.8% and in his second government (2007-2010) at almost double pace, i.e., -1.3%.

In the first government of President Dilma Rousseff (2011-2014) the annual average rate for the decline in the level of labor-power exploitation of the Brazilian economy was -1.3%, that is, the very same

rate as in the second government of President Lula. It was only in the hectic and politically turbulent period 2015-2016 that the rate of surplus value grew again, at an annual average rate of 0.9%.

Having said that, we now aim to analyze the factors that determined the rate of surplus value behavior in this period, namely, labor productivity and the wage rate.

4.1. Labor Productivity

Labor productivity was computed as the ratio of Value Added to productive labor (that is, those workers employed in sectors considered productive whose job is connected only to production). Value Added was deflated by GDP deflator (implicit price deflator). Tables 3 and 4 show the labor productivity evolution in the 1996-1999 and 2000-2016 sub-periods respectively.

Table 3 – Labor productivity, Brazilian economy, 1996-1999

	Labor Productivity	Annual Rate of Change (%)	Index (1996 = 100)
1996	0.060		100.00
1997	0.061	2.4%	102.40
1998	0.061	0.0%	102.42
1999	0.058	-5.7%	96.62

Source: Author's elaboration

In the 1996-1999 sub-period, labor productivity clearly declines, most of all due to the -5.7% sharp fall in 1999. In only four years there was a cumulative decrease of 3.38 points in its index. In this sub-period, the annual average rate of labor productivity growth was -1.1%.

Table 4 – Labor productivity, Brazilian economy, 2000-2016

	Labor Productivity	Annual Rate of Change (%)	Index (2000 = 100)
2000	0.060		100.00
2001	0.062	2.3%	102.27
2002	0.063	2.2%	104.51
2003	0.065	2.3%	106.96
2004	0.065	1.0%	108.06
2005	0.064	-1.5%	106.49
2006	0.064	0.2%	106.70
2007	0.068	5.0%	111.99
2008	0.070	3.9%	116.34
2009	0.071	1.4%	117.91
2010	0.076	6.0%	125.03
2011	0.079	4.4%	130.56
2012	0.079	0.5%	131.27
2013	0.080	1.2%	132.82
2014	0.078	-2.8%	129.11
2015	0.077	-1.3%	127.41
2016	0.076	-1.9%	124.93

Source: Author's elaboration

On the other hand, labor productivity in the entire 2000-2016 period presented a cumulative growth of only 24.93% in 17 years, which meant an annual average growth of only 1.4%. Once again, it was

possible to observe different phases in this trajectory. Between 2000 and 2004, for instance, there was a cumulative growth of 8.06%. In the following two years, however, this variable performed very poorly. It was between 2006 and 2013 that labor productivity showed a reasonable performance, especially when compared with the 1980s and 1990s. Between 2006 and 2013, for example, it grew annually an average of 3.2%. In fact, nonetheless, as of 2011 the speed of labor productivity growth already started to slow down. Between 2011 and 2013 it grew annually an average of 0.9%, and as of 2014 it started to fall. Between 2014 and 2016, labor productivity declined, on average, -1.6%.

4.2. Wage rate

The wage rate was computed as the ratio of Variable Capital to total productive labor. Variable Capital, like Value Added, was deflated by GDP deflator. Tables 5 and 6 show the productive labor wage rate evolution for the 1996-1999 and 2000-2016 sub-periods respectively.

Table 5 – Wage rate of productive workers, Brazilian economy, 1996-1999

	Real Average Wage of productive workers	Annual Rate of Change (%)	Index (1996 = 100)
1996	0.018		100.00
1997	0.018	-2.49%	97.51
1998	0.018	0.46%	97.96
1999	0.016	-10.36%	87.80

Source: Author's elaboration

Between 1996-1999 there was a fierce reduction in the average wage of production workers. In this period, there was a cumulative decrease of more than 12% in the wage rate, standing out the year 1999, when this wage rate had an annual change of -10.36%.

Table 6 – Wage rate of productive workers, Brazilian economy, 2000-2016

	Real Average Wage of productive workers	Annual Rate of Change (%)	Index (2000 = 100)
2000	0.018		100.00
2001	0.018	1.62%	101.62
2002	0.018	-3.50%	98.06
2003	0.018	2.10%	100.12
2004	0.018	-0.97%	99.15
2005	0.018	2.65%	101.78
2006	0.018	-0.19%	101.58
2007	0.019	3.95%	105.60
2008	0.020	5.19%	111.07
2009	0.021	3.50%	114.96
2010	0.022	5.37%	121.14
2011	0.023	4.98%	127.16

2012	0.024	2.96%	130.93
2013	0.024	1.77%	133.26
2014	0.023	-2.89%	129.41
2015	0.024	0.89%	130.56
2016	0.023	-2.53%	127.26

Source: Author's elaboration

In the period 2000-2016 the index of the average real wage of production workers presented a cumulative growth of 27.3%. Between 2000-2006, nevertheless, this performance was quite erratic and stagnant. To be more precise, between 2000 and 2004 the wage rate of production workers declined -0.2%, and it was only from 2006 on that this rate began to grow more steadily. Between 2006-2013, for instance, the wage rate of production workers grew by 4%, coming to fall -0.8% between 2014-2016.

5. A NARRATIVE OF THE LAST TWO DECADES OF THE BRAZILIAN ECONOMY

Since the mid-1970s, in aiming to restore capital profitability, advanced countries have begun to implement neoliberal policies that would stimulate capital at the expense of labor (Dumenil & Levy, 2011; Shaikh, 2010). For no other reasons, policies such as labor laws flexibilization, finance deregulation, budget austerity, reduction of public spending, privatization of public assets (and services), as well as trade liberalization have gained prominence. These countries, led by the USA, of Ronald Reagan, and England, of Margaret Thatcher, established from 1980 onwards a “conservative revolution” in their policies, benefiting mainly rentiers and the financial sector – the neoliberalism.

In Brazil, on the other hand, there is no doubt that the pressure exerted by rich countries was an important factor in deciding to implement the neoliberal institutional framework. That is, both in the 1980s, through the debt crisis, and even more directly in the 1990s, via price stability and the foreign saving strategy for supposed economic growth, Brazil and other countries from the global south have deeply subordinated themselves to International Financial Institutions, given their severe economic crises. It was under this scenario that Brazil plunged into neoliberalism approximately until the first half of the 2000s, adopting the set of policies that later were coined as the Washington Consensus.

In the sub-periods 1996-1999 and 2000-2002 the rate of labor exploitation increased, as did the reserve army of labor. The labor market flexibilization imposed in the 1990s and the consequent rise in unsafe working conditions, contrary to what their advocates had argued, did not lead to a greater job hiring. In fact, the increase in informality and precarious working conditions contributed to weakening unionization, and to enlarge the income gap between formal and informal sectors.

During this period a combination of abrupt trade and financial openness (efficiency shock in Brazilian companies) in parallel with a reduction in public and private investment took place in Brazil (the investment share in GDP decreased an average of -1.8% annually between 1995 and 2002, going from 20.3% to 17.9%). This combination, despite reversing the downward trajectory of the Brazilian profit rate, demanded the corrosion of the national labor market to take effect⁴. Moreover, these policies did not

⁴ The economic rate of profit (r) is the ratio of current economic profit (P) to the current cost of capital advanced (K). In fact, the profit rate can be decomposed into structural and cyclical factors. The structural one represents the normal rate of profit obtained at normal-capacity utilization. The cyclical one relates to fluctuations of actual output around capacity output (actual utilization around the normal level). The actual and normal profit rates can be written as follows:

$$r = \frac{P}{K} = \left(\frac{P}{Y}\right) \cdot \left(\frac{Y_n}{K}\right) \cdot \left(\frac{Y}{Y_n}\right)$$

$$r_n = \left(\frac{P}{Y}\right)_n \cdot \left(\frac{Y_n}{K}\right)$$

promote capital accumulation and per capita GDP growth in Brazil. The promised increase in labor productivity did not come as expected by their advocates. As can be seen in Table 7, between 1996-1999 the annual average growth rate of labor productivity was even negative (-1.1%), and between 2000 and 2002 it was only 2.2%. This sluggish growth, by the way, stemmed much more from a strategy of cost minimization and outsourcing rather than innovations and investments. Thus, an inactive attitude in face of a new international competition.

Table 7 also indicates that between 1996-2002 not only the production workers wages growth was negative, but also the wages of unproductive workers. It is worth mentioning that out of the total wages of unproductive workers around 49% come from Public Administration, Health and Education, and Social Security, i.e., they come from public services. This corroborates the idea that during Fernando Henrique Cardoso's governments (1995-2002) the neoliberal strategy of reducing the role of the State was fully implemented in Brazil.

That is to say, faced with a reduction of the production capacity of surplus value in this neoliberal period, capitalists resorted to increasing the degree of exploitation of workers who managed to remain employed, as a way of ensuring the extraction of a sufficient mass of surplus value to remunerate all the capital. Moreover, the pressure for new spaces for capital valorization in this environment of neoliberal ideology and policies spread by the USA, inflicted on developing countries an unprecedented degree of opening up of their economies. Considering the greater integration of these countries in the world economy at all stages of the capital cycle, since the 1990s, they have had to cope with a large volume of value transfers to advanced economies, with emphasis on the income growth of foreign direct investment. The increase in the rate of surplus value was therefore necessary to face this increase in value transfers.

Table 7 – Compound Annual Growth Rates of Labor Productivity, and that of Average Wage of Productive and Unproductive workers, Brazilian Economy, 1996-2016

Year	Growth rate of real Labor Productivity	Growth rate of real average Wage of Productive workers	Growth rate of real average Wage of Unproductive workers
1996-1999	-1.10%	-4.20%	-1.70%
2000-2002	2.20%	-1.00%	-2.50%
2003-2010	2.30%	2.80%	2.20%
2011-2014	-0.40%	0.60%	1.10%
2015-2016	-1.90%	-2.50%	-1.40%

Source: Author's elaboration

During Luiz Inácio Lula da Silva's governments (2003-2010), in turn, the situation changed. In this period, the rate of surplus value in the Brazilian economy declined, due to a combination of labor productivity growth (on average 2.3% per year) and an even higher growth rate in the average real wage of production workers (on average 2.8%). Benefited by a commodity prices boom in Brazil's main export goods, and by a strong Chinese demand, the government was able to deploy internal policies which stimulated output and the expansion of surplus value (it should be remembered that between 2003-2008 there was an increase in the ratio of production labor to total labor). The investment/GDP ratio presented

Where $\left(\frac{p}{v}\right)$ is the distributive element, the profit share in output; $\left(\frac{Y_n}{K}\right)$ is the capacity-capital ratio, and $\left(\frac{Y}{Y_n}\right)$ is the rate of capacity utilization, whose normal level is 1. In debates about the long-run tendency of the profit rate to fall, by the way, is the normal profit rate which is on focus. In Marxian terms this tends to occur because technical change raises the monetary equivalent of the ratio of constant capital to living labor (Shaikh, 2016).

a reasonable growth (on average 3.1% per year, going from 16.6% in 2003 to 20.5% in 2010), as also did the real minimum wage (average growth of 7.5% per year between 2003-2010). The real minimum wage expansion, as well as the *Bolsa Familia* conditional cash transfer program development, besides reducing significantly the poverty rate in Brazil, also enabled an increase in the consumption/GDP ratio (and credit), which, in a feedback effect, also influenced the increase of investment in GDP. As a result, between 2003-2010 the average real growth of GDP in Brazil was 4.08%, compared to only 2.43% between 1995-2002.

In hindsight, some analysts have referred to this period as a win-win momentum, since all economic classes had absolute gains. Looking *exclusively in terms of labor income*, however, there was redistribution, because, relatively, poorer classes had higher gains than the rich ones. An alternative way of observing this phenomenon is to note that the distance between real minimum wage and real average income shrank. Even so, as will be mentioned further, there was no redistributive improvement in relation to property incomes. The very top income distribution (when included not only labor income, but also income coming from financial assets, inheritances etc.) remained stable at its historically high level. In this sense, no proposal for progressive taxation, aiming to tax more the richest (in proportion to their income or wealth), came into force. This period was also very profitable for banks and the financial sector for example (refer to Pinto et al, 2016).

Conversely, in the first term of President Dilma Rousseff the distributive conflict intensified, and the win-win momentum was challenged. This is because between 2011 and 2014 the rate of surplus value continued to decline, but then under a different arrangement. In this period there was a decrease in labor productivity (on average -0.4% per year) and a small increase in the real average wages of production workers (0.6%).

The external scenario from Brazil's point of view deteriorated along these years. And not just because the commodities boom was over. If we consider the average GDP growth rate of the five main export destinies of Brazil (composed by China, the United States, Argentina, the Netherlands and Germany), one can note that their compound average growth was 4.3% between 2003-2010 and only 2.7% between 2011-2014.

From the domestic point of view, the policies adopted were not capable of boosting output growth and capital accumulation. As shown in Figure 3, labor productivity peaked in 2013, with smaller growth rates after 2010 though. Two correlated elements, related to employment and wages, were striking in the first government of President Dilma Rousseff:

(i) The growth in the ratio of production labor to total labor was only 0.2% between 2011-2014, an insufficient rate to trigger a significant increase in output and surplus value;

(ii) There was a higher growth of unproductive workers average real wages compared to the average real wages growth of production workers (an average of 1.1% per year versus 0.6% respectively). And as Shaikh points out (1980, p.27):

It is clear that the relative rise in non-production expenditures as a portion of the surplus product contributes significantly to the decline in the general rate of profit. Since the latter is the maximum rate of growth, non-production expenditures may be said to be an important factor in decreasing growth potential – even though they provide employment in the short run.

These factors caused the profit rate to already begin declining in the first period of Dilma's government. According to the Marxian literature, the profit rate is a key determinant of the expected profitability of new investments, playing a central role in the business cycle (Weisskopf, 1979). The increase in the profit rate raises the expected profit rate, which drives up investment, which expands both production and employment. On the other hand, in a context of a declining profit rate and expected profitability, investment will decline, and the economy will slow down.

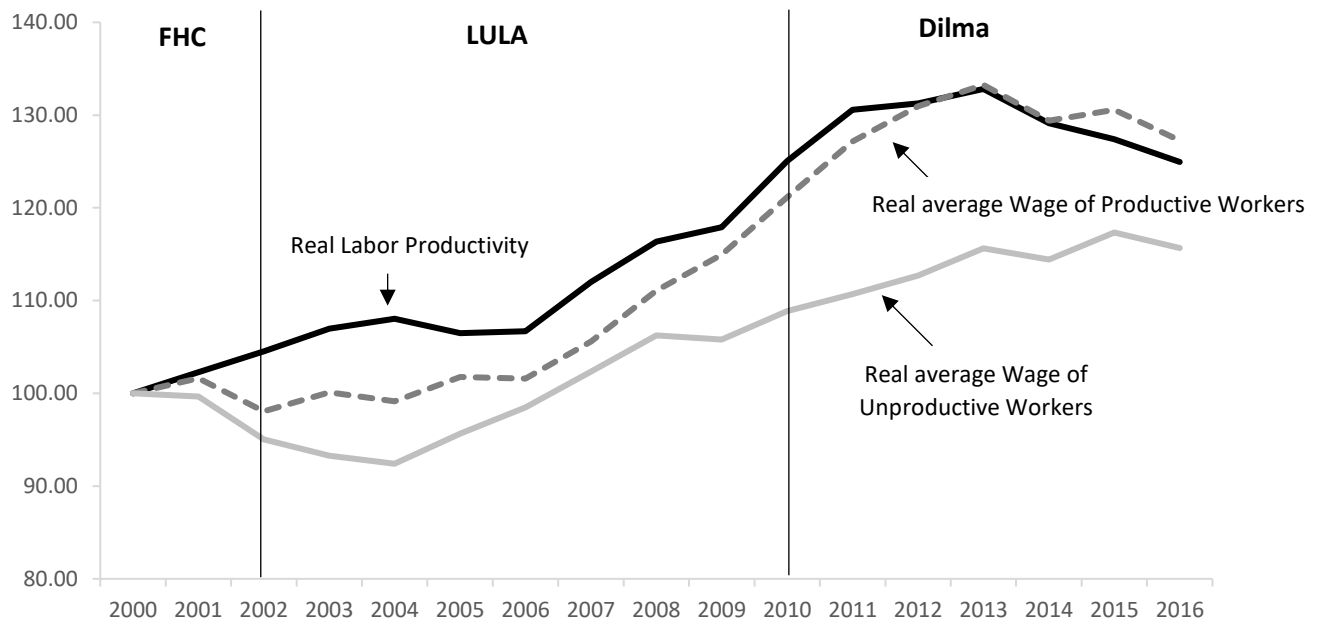


Figure 3 – Labor productivity, and Wages of production and nonproduction workers, Brazilian economy, 2000-2016

Source: Author's elaboration

Although this paper does not aim to analyze the Brazilian profit rate, as this as before mentioned would imply estimating not only the rate of surplus value but also the capacity-capital ratio and the rate of capacity utilization, it is interesting to mention that these last two variables declined in the first Dilma government according to Marquetti et al (2020). According to this author, between 2010 and 2014 the capacity utilization fell -1.28% per year in the Brazilian economy⁵. Considering then that the rate of surplus value was also declining, the key to ease the capital-labor conflict would have been to restore capital accumulation, which would have facilitated increased output and surplus value and given the potential for a possible real wage rise.

However, between 2011-2014 the investment/GDP ratio declined by an average of -1.2% per year (from 20.6% in 2011 to 19.9% in 2014), which was a decisive factor for the slowdown in GDP growth in this period (between 2011-2014 the average GDP growth was 2.35%, a similar pattern to that of the second Fernando Henrique's government).

Although the unemployment rate in the 2011-2014 period remained at very low levels (considering Brazilian history), the net creation of jobs (formal employment) peaked in 2010 and successively declined thereafter (Figure 4). To put it differently, there was a deliberate effort from the government in trying to maintain social policies, and labor income redistribution, while its attempts to boost output and investment repeatedly failed.

⁵ According to Marquetti et al (2020), the Brazilian economy capacity-capital ratio also declined between 2010 and 2014 (-0.79%), which also contributed to the rate of profit fall during this period.

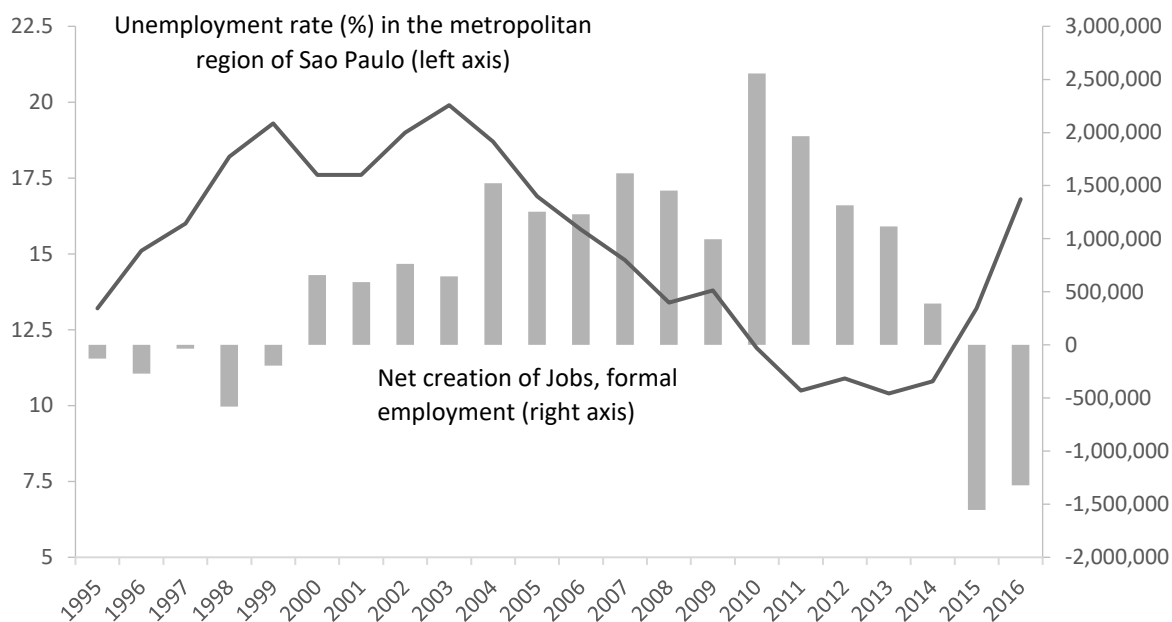


Figure 4 – Net Creation of Jobs and Unemployment rate, Brazilian economy, 2000-2016
 Source: MTE/CAGED and Seade/Dieese

Dilma’s second government began during this turmoil of events. It is worth remarking that her reelection with 51.54% of valid votes represented the fiercest election (the lowest difference) in Brazil since its redemocratization. It also expressed the fourth electoral victory in a row of the Workers’ Party (PT), and the discontent of its defeated political opponent, Aécio Neves (from the Party of Brazilian Social Democracy, PSDB), and of all those that he somehow represented, including several celebrities, conservative parties and most of the Brazilian bourgeoisie.

Paradoxically, nevertheless, Dilma’s government nomination of Joaquim Levy to the Ministry of Finance, right after her re-election, denoted what would become the year 2015, and symbolizes the right turn of Dilma’s government, with austerity and fiscal adjustment policies that had already been made in a non-systematic way throughout her first term.

It is important to recall, nevertheless, that around 2012-2013 Dilma’s Government faced an arm wrestling against the oligopolized Brazilian banking sector, in an attempt to reduce interest rates, and most of all, the banking spreads. This battle was lost due to the presence of a powerful, and highly financialized, industrial sector. In 2012, for instance, the net interest paid by the Public Sector, in % of GDP, reached 4.4%, the lowest value recorded at its historical series. By 2015 though, that percentage had already reached the record of 8.4%. This turning point also marks the abandonment of support of the Federation of Industries of the State of Sao Paulo (FIESP) to President Dilma – federation which later would support the parliamentary coup d’état on President Dilma. The abandonment of support, however, was not due to lack of incentives received. This is so because, since its inception, one of the most striking features of the Dilma government was the significant, and with no strictness, increase in tax breaks. According to the Brazilian Internal Revenue, these tax expenditures soared from BR\$ 135.8 billion in 2010 (17.5% of all revenue collected) to BR\$ 270 billion in 2015 (22.7% of all revenue collected). This amount, just to illustrate, was even larger than the Federal government spending on the Growth Acceleration Program (PAC), which applied BR\$ 251.7 billion in 2015.

These inconsistent subsidies and tax breaks did not stimulate private investment and consequently neither the economic growth, which declined year after year⁶. This happened because in a scenario where

⁶ The primary surplus also declined sharply. It went from 2.13 percent of the GDP in 2011 to -0.32 percent in 2014.

the idle capacity of companies increases there is no reason for them to expand their capacity beyond the existing one. It is worth recalling that private companies reduce their investment in periods of declining profitability. Despite subsidies, for many Brazilian nonfinancial enterprises, the cost of capital was greater than its actual profitability.

It is worth pointing out that in 2013 the first protests in São Paulo due to increases in the bus fares also took place. These local protests culminated in protests all over the country with demands ranging from improvements in public services and criticisms against the realization of the 2014 FIFA soccer World Cup (let it be said, by a National State which financed the construction of luxurious soccer stadiums while accelerating the gentrification process of cities) to several others⁷. The fact that the government's response to these protests was not a strong commitment to a structural change, capable of significantly expand public investment in infrastructure and public services (which would allow increases in the productivity of consumption goods and services of workers) made the government raise the working class distrust.

Thus, with a tiny political support base, and in face of a conservative Congress, mostly white, rich and male, it is not surprising that the parliamentary coup d'état took place with legal appearance between December 2015 and August 2016.

In reality though, President Dilma Rousseff's impeachment, through legal casuistry, sought to criminalize fiscal policy with the aim of removing from power a government that was no longer functional to the interests of the country's elite, insofar as the level of labor-power exploitation continued to decrease. That is, a large portion of the economic elite sought guarantees (through a new government) that would be the working class the one to bear the cost of one of the deepest economic crises in Brazil's recent history.

With the president's impeachment, then also took place the adjustment in the rate of surplus value. The wages of production workers, which had not declined since the FHC period, fell on average -2.5% between 2015-2016. As this decline was bigger than the fall in labor productivity (-1.9%), the rate of surplus value increased again between 2015-2016 (Figure 5). Federal investments, largely affected by the Operation Car Wash, declined -28.4%, and the investment/GDP ratio reached miserably 15.5% in 2016. GDP growth, unsurprisingly, declined on average -3.5%, and the unemployment rate in the metropolitan region of São Paulo reached the expressive level of 16.6% in 2016. Moreover, between the last year of the first Dilma's government and 2016, not only the ratio of production labor to total labor declined (-2.2% per year), but also the very total labor in absolute terms (-2.5% per year). These elements certainly contributed to the absence of growth in output and surplus value in this period.

Lastly, it should be mentioned that although the rate of surplus value declined, especially between 2004-2015, there were few losses for the capitalist class in Brazil under the period of this study. As shown in Figure 6, between 2007-2016, despite a significant change in GDP growth rates, the share of the 1% richest in terms of total income (labor and property income) remained practically fixed, having them biting, on average, 22.1% of all total income in Brazil. This reveals that the inequality reduction reached in recent decades (a process, by the way, which has been reversed since 2015) was achieved not touching at all the richest. This fact, if one takes into consideration the international nature of capital as a social relation, stands out not only as specific to Brazilian reality but as a global anomaly, given that the exploitation rate experienced a significant global increase in the period, as one can infer from the 2018 World Inequality Report (WIR, 2018).

⁷ According to DIEESE, in Brazil the number of strikes in 2013 reached 2050, declining to 1566 in 2017. Moreover, between 1999 and 2005, the number of strikes decreased from 506 to 299, indicating that working class militancy is negatively related to changes in the surplus-value rate.

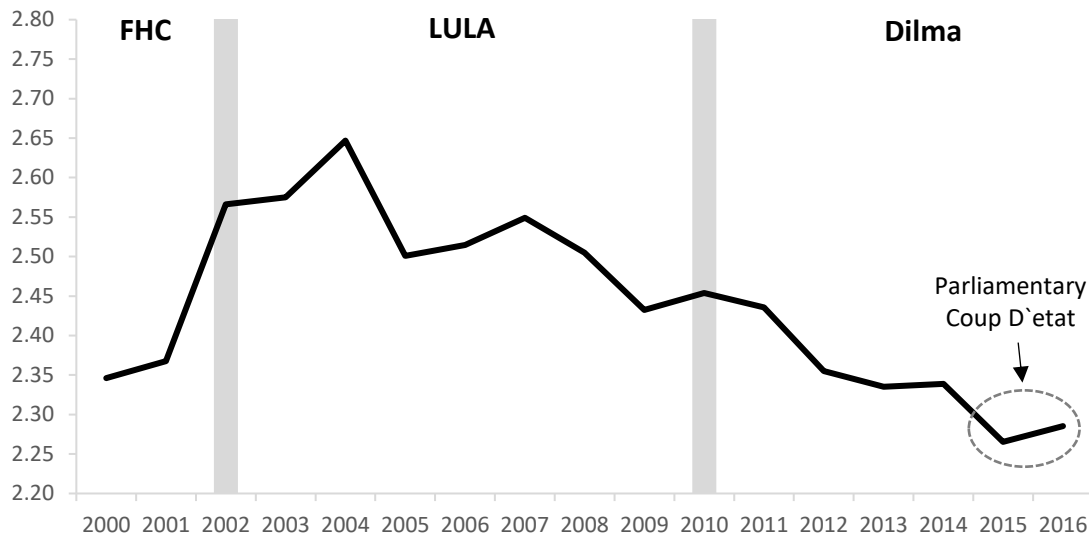


Figure 5 – Rate of Surplus Value, Brazilian economy, 2000-2016

Source: Author`s own elaboration

However, as it is also possible to infer from the 2018 WIR, the richest 1 percent in Brazil (in terms of total income) have held a greater percentage of total income relative to that of their international counterparts. This is so because within the power structures and class struggle of Brazilian society, the working class, when compared to its counterpart in advanced countries, is still very much underrepresented in the Brazilian National State. Besides paying high interest rates to holders of public debt, to tax much more consumption rather than income and wealth, and to tolerate tax evasion, and avoidance, of private companies, the Brazilian State yet pays super salaries to a fraction of its unproductive workers (mostly, in the Judicial branch).

The fact that the coup d'état occurred in Brazil in 2016 even in the absence of consistent policies led by the state, which would have sought to eliminate (or at least reduce substantially) the income and wealth concentration factors mentioned above, shows unequivocally therefore that the ruling class in Brazil has an extremely low loss tolerance and has never forgotten the center-left origin of the PT governments.

6. FINAL REMARKS

This article parsed out the Brazilian economy's last two decades (1996-2016) through an estimate of the rate of surplus value and its determinants, that is, labor productivity and wage rate – all key variables in the Marxian and Classical economic literature.

Throughout the period under scrutiny, the rate of surplus value presented different phases. Notably, the rate of surplus value grew between 1996 and 2004, and from then on it declined until 2015. Between 2015-2016, however, it increased again. Thus, an important element for future research will be to investigate to what extent this increase in the rate of exploitation can be sustained in the long run. Regardless of the answer however, it is worth mentioning that this inflection point exposes the Brazilian economy's contradictions, its tensions within the State and Power blocs, as well as its capital-labor struggle.

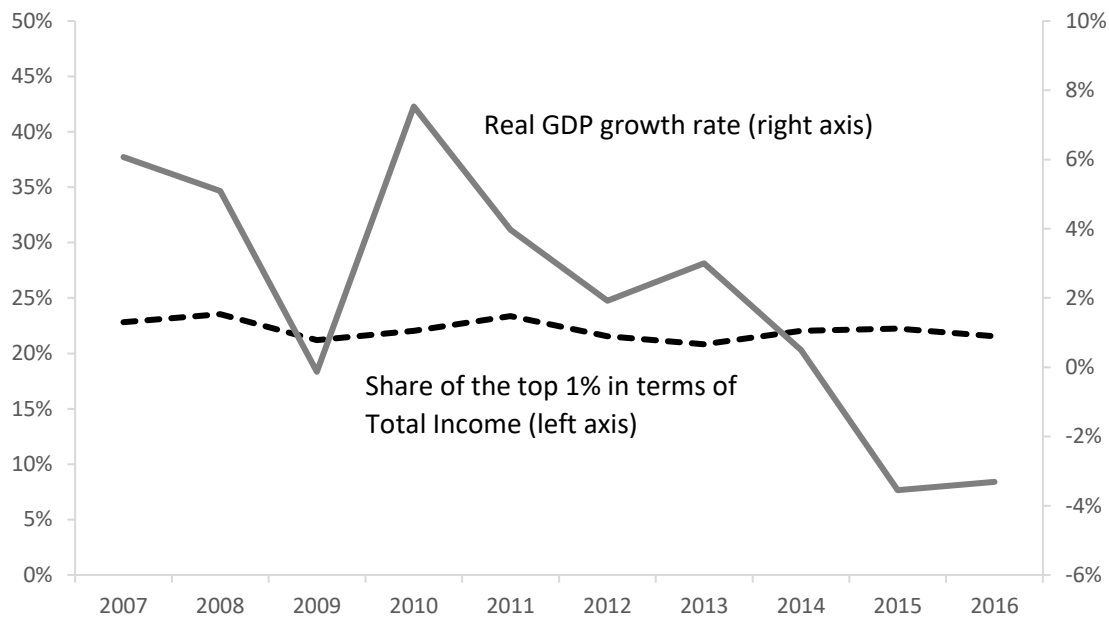


Figure 6 – Share of the top 1% richest in Total Income, and Real GDP growth rate
 Source: Author’s elaboration based on IBGE and Internal Revenue Service

This recent turning point happened because as of 2010 there was a combination of a fall in the profit rate, a fall in the rate of surplus value, and stagnation in capital accumulation. Such factors resulted in the absence of output growth and surplus value. In a scenario where there is surplus, and all social classes have absolute gains, class struggle is softened, even though relative gains of lower income brackets may be greater. When the engine of growth stops though, the “game” turns into zero-sum (what one gains is what the other loses). And, then, promptly the implicit social pact established is broken. The period 2015-2016, therefore, denotes the end of any possibility of continuity of a coalition government formed by a clientelist center and a social democracy led by PT.

Associated with the end of foreign bonanza, which allowed fiscal room in much of Lula’s government, President Dilma’s government mistakenly bet on the increase of private investment through numerous subsidies and tax breaks in a period of declining profit rate and surplus value rate.

The parliamentary coup d’état on President Dilma, in turn, symbolized the victory of the defeated agenda at the polls in 2014, the rise in the rate of surplus value being the full manifestation of this phenomenon. Albeit at the time of the coup d’état the ousted government was already far from effectively representing Brazilian workers, the impeachment untied the knot in favor of capital policies, concentrating the costs of the economic crisis on the working class.

The PMDB, the party of Vice President Michel Temer, was the historical player responsible for offering what the Brazilian bourgeoisie demanded. Not coincidentally, in the short government of Michael Temer a series of neoliberal measures aimed at expanding profitability and controlling the fiscal deficit was presented, such as the reduction of labor costs, the change in the minimum-wage indexation rule, the reform of labor laws, the social security reform, the elimination of constitutional rules on spending on education and health, besides privatization and trade openness.

From a more structural point of view, it is interesting to note that President Dilma’s impeachment came at a time when the cycle of center-left governments in South America came to an end. In Brazil, in particular, the coalition that then gained prominence has combined conservative features from the moral standpoint, religious fundamentalism, growing military eminence, and neoliberal aspects from the economic point of view. These characteristics are seen not only in Parliament, but also in institutions (and above all in the narrative of their members) such as the Judiciary Power, the Federal Police, fractions of

the middle class, and the mainstream and mass media. And yet it is still too early to determine whether this conservative wave will persist in South America during the third decade of the twenty-first century, there is no doubt that the working class remains to resist. As Frederick Douglas wisely highlighted as early as 1857, *“If there is no struggle there is no progress. [...] This struggle may be a moral one, or it may be a physical one, and it may be both moral and physical, but it must be a struggle. Power concedes nothing without a demand. It never did, and it never will”*.

METHODOLOGICAL APPENDIX

In addition to the SNA, the main sources used in this research also come from: The Annual Survey of the Construction Industry (PAIC); the Annual Industrial Survey (PIA), besides statistics from the Central Register of Companies (CEMPRE).

The necessary data were provided by the Supply-Use Tables (TRU) of the Brazilian System of National Accounts. The royalties paid by the productive sectors (*RYp*) as interests and so on, however, were not added to the gross Marxian Value Added. The only type of royalties considered were those in which the SNA classifies as Value Added disbursements (interests and dividends paid to families, non-residents and government, besides indirect taxes), which are not discriminated separately though, precisely because they are already included in the value added (Shaikh & Tonak, 1994, p.54).

Regarding the construction of an estimate for the Variable Capital, it can be said that ideally this should be based only on the remuneration of workers who effectively contribute to surplus value production. Within the availability of data provided by the Brazilian Accounting System, the following procedures were adopted:

- (i) Among the sectors considered productive, for mining, manufacturing and construction industries the use of auxiliary surveys, which hold information about the remuneration of workers connected only to production, were available. These surveys, PIA and PAIC, come from the automatic recovery system (SIDRA) of IBGE. The ratio of the remuneration of workers connected to production to the remuneration of all workers, offered by SIDRA, therefore, was multiplied by the value of the remuneration of their respective sectors (in this case values coming from the SNA), thus arriving at the estimate of the Variable Capital of these sectors.
- (ii) For the rest of sectors considered productive, due to the absence of specific surveys, we used the ratio of productive labor to total labor (values originated from SIDRA or CEMPRE). This ratio, therefore, was multiplied by the value of the remuneration of the respective sector coming from the SNA, arriving this way at an estimate for the Variable Capital of these sectors⁸.

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⁸ Two additional aspects related to the elaboration of the Variable Capital estimate should be mentioned. First, we consider remunerations (which includes not only wages but also Social Security – *FGTS* and private pensions). This is due to the fact that we are concerned about having a proxy for labor costs from capital’s point of view, rather than a proxy for consumption from workers’ point of view. Secondly, regarding the gross mixed income we adopted Gollin’s Adjustment II. For additional information about this procedure, refer to Gollin (2002, p.468).

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