

## **Brazil at Crossroads: A Critical Assessment of Developmentalist Policies in PT Governments**

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**Abstract:** Brazil with its policies of combining growth with income redistribution gained high attention especially since the Global Financial Crisis. These policies often have been labelled as developmentalist. Now, with a deep economic crisis, the question arises how far developmentalist policies were responsible for this downturn and what sort of developmentalist policies were implemented. To address these questions, we first deliver a more precise definition of different variants of developmentalism. Second, based on stylized facts of the Brazilian economy in the period of three successive leftist governments between 2003 and 2016, we classify relevant macroeconomic, social and industrial policies. Thus, we can see that different types of developmentalist policies came to application to a certain degree, with the dominance of re-distributional policies fostering domestic consumption. However, there were also orthodox policy elements to be found especially within macroeconomic policies and to a highly varying degree over time. Most remarkably, we found the later part of the period under analysis characterized by permanent changes in the policy mix, and a final and frustrated orthodox attempt to revert the crisis. We thus conclude that not only has developmentalism per se been a fallacy, but rather its lack of conceptual clarity at the theoretical level, and incoherent policy coordination at the policy level in the case of Brazil.

**Key words:** developmentalism; Brazilian economy; economic policy

**JEL Classification:** E61; E65; 010

**Resumo:** O Brasil, com políticas que resultaram em crescimento econômico com redistribuição de renda, se tornou uma referência internacional após ter se recuperado rapidamente do contágio da crise financeira global. Essas políticas são frequentemente caracterizadas como desenvolvimentistas. Com a profunda crise econômica, a questão que emerge é se as políticas desenvolvimentistas foram responsáveis por esta crise e que tipos de políticas desenvolvimentistas foram implementadas. Para responder essas perguntas, primeiro são apresentadas definições das diferentes variantes do desenvolvimentismo. Em seguida, baseadas em fatos estilizados, as políticas econômicas (macroeconômica, social e industrial) são classificadas no período de quatro governos do PT (2003/2016). Diferentes tipos de políticas desenvolvimentistas foram aplicadas, mas em graus diferenciados e com predomínio de políticas redistributivas que fomentaram o consumo interno. No entanto, também estiveram presentes políticas ortodoxas, especialmente no plano macroeconômico. Conclui-se que não somente o desenvolvimentismo em si foi uma falácia, mas também que houve falta de clareza conceitual em âmbito teórico e coordenação deficiente nas políticas adotadas.

**Palavras-chave:** desenvolvimentismo; economia brasileira; política econômica

### **Área 2 - Economia Política**

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## 1. Introduction

Within few years, Brazil went through extreme ups and downs. At the beginning of the 2010s, the country had become an international reference not only for weathering rather well the effects of the Global Financial Crisis (GFC). The country also gained special attention for being able to recover the path of economic growth with income distribution recorded over 2004-2007. This combination was so remarkable because it was going against the global trend especially in terms of income concentration. A few years later, the country found itself in its worst economic crisis for decades. Its per capita GDP was more than 10% smaller by the end of 2016 than in 2013 and both the share of industrial production at the national level and its participation in exports fell significantly. Beyond the political upheaval that ended with the impeachment of the president Dilma Roussef in August 2016 amid an extensive corruption scandal, there is a heated debate about the economic reasons of the crisis.

This debate encompasses supporters and opponents of the strategy followed by successive Brazilian governments over more than a decade, which many have labelled, even if with different prefixes, as ‘developmentalist’ (Ban, 2012; Bielschowsky, 2015). Following Fonseca (2014), developmentalism is a rather ambiguous term by definition, nurtured both by theoretical concepts and economic policy experiences. Yet, a common denominator, shared by academics as well as explicitly expressed by the Brazilian governments in this period (Ministério de Planejamento, 2003) has been the aim to combine sustained economic growth with productive restructuring and income distribution by giving the State an active role.

In this paper, we evaluate the recent experience of developmentalism in Brazil since the GFC based on a Keynesian-structuralist theoretical approach. According to this approach, the interplay of monetary and financial asymmetries results in a key influence of the dynamics of the international economy on the performance of peripheral emerging economies such as Brazil, mainly through the boom-bust cycles of capital flows. Consequently, these asymmetries also constrain the policy space in these economies, shaping the degree of autonomy of economic and social policies. Yet, the specific mix of policies adopted depends on domestic factors, specifically the institutional framework and political power relations.

As there has been, in political terms, a continuum of four successive governments led by the *Partido dos Trabalhadores* (PT, Workers’ Party) since 2003, we also include the years before the outbreak of the GFC. Our analysis covers the period from 2003 to mid-2016, i.e. four terms led by the PT, the first two by the well-known Luis Inácio Lula da Silva and the others by Dilma Rousseff, whose second government lasted only one year and a half due to her impeachment.

We ask *if* and *how* a developmentalist approach can be blamed for the dramatic downturn at the end of this period. Hence, we address a lacuna in the current literature on the Brazilian case, which tries to explain this downturn at analyzing the economic outcome in terms of the complex interdependence among income redistribution, demand and changes of production patterns. Conversely, we look into the policies applied and ask how they can be classified in terms of their paradigmatic background.

To address our research question, we derive three main hypotheses. First, we assume that a wide range of policies were applied, of which some can be labelled as developmentalist, but it is needed further specification in terms of the type of developmentalist approach applied by policy makers. Our second hypothesis is that not all policies adopted during this period can be labelled as developmentalist. Third, the significant and repeated changes of the policy mix over time were conditioned by the external context, but also shaped by domestic factors.

Then, the main contribution of this paper is to assess the economic policies during PT governments, analyzing if these policies can be considered developmentalist and, if they can, what type of developmentalist policies were implemented. A second contribution is to introduce a differentiation of developmentalist approaches from a macroeconomic point of view.

The following section presents the different variants of the concept of developmentalism. The third section, firstly, presents stylized facts of the external context and details of our theoretical approach; and, secondly, summarizes the macroeconomic outcomes of the Brazilian economy in the period under review. The fourth section sums up the economic and social policies applied from 2003 to mid-2016 while the fifth proposes a periodization for the time span analyzed and a typology of policies during PT governments along the different developmentalist and non-developmental variants. Finally, the sixth section concludes. It is worth to mention that we deviate from the standard structure of first introducing empirical evidence and subsequently the theoretical framework, because we present highly selective empirical evidence in terms of policy outcomes, based on the concepts of developmentalism, in order to then come to our main contribution of policy analysis.

## **2. Concepts of developmentalism**

The concept of developmentalism is a rather ambiguous term per definition. It involves two perspectives, which are intertwined, but are not the same neither from an epistemological viewpoint nor in daily practice: i) a phenomenon of the ‘material world’, i.e. a set of practices of economic policies proposed and/or executed by policy makers; and ii) a phenomenon of the ‘world of ideas’, i.e. a set of ideas proposed to express theories, concepts or visions of the world. The former expresses itself also as political discourse, while the second seeks to form a school of thought (Fonseca, 2014, p.30).

The origin of developmentalism is related both to studies of development in the 1950s and the Latin American structuralist approach, which sought to understand the specificities of underdevelopment and how to overcome it. Classic developmentalism departed from the idea that the typical division of labor between developed and developing economies created a structural balance of payments constraint and impaired domestic growth. As a phenomenon of the ‘material world’, developmentalism translated to national-developmental strategies supporting that industrial development was the most efficient way to achieve an increase in productivity and in national income; thereby retaining the ‘fruits’ of technical progress in peripheral economies. Latin American structuralism, also known nowadays as ‘classic developmentalism’, used the metaphor ‘center-periphery’ to translate the productive and technological asymmetries of the international order and saw industrialization as the only way for the peripheral economies to gain access to part of the technical progress from the developed economies, allowing them at the same time to progressively raise the living standard of the population (Prebisch, 1950; see also Ocampo, 2001).

The current debate is intensively nurtured and intertwined with the economic policy discourse and policy making, especially in Latin American countries where leftist parties dominated governments in many countries until recently. Updated concepts of developmentalism gained space in semi-mature economies of the continent, which are featured by a more diversified productive structure and the risk of premature de-industrialization. This also resulted from profound discontentment with policies based on the economic orthodoxy, also dubbed as ‘Washington Consensus’. Indeed, the region that has the highest degree of economic inequality in the world experienced a stagnation or even further worsening of inequality though the period of liberalization. Within the critical assessment of the orthodox agenda of domestic market

liberalization, trade and financial openness and reduction of the role of the State, income distribution emerged at the center of public debate.

Within this renewed debate, we identify two major new concepts: social developmentalism (SD) and new developmentalism (ND). These have updated classic developmentalism and added new dimensions. Both clearly reject the neoclassical idea of welfare maximization by specializing on comparative advantages at the global level, similar to classic developmentalism, at seeing structural external constraints caused by integration of peripheral economies in the global market as the cause of lacking economic dynamism at the domestic level. Thus, they support a national strategy of economic development with an active role of the state to achieve structural change towards (re-) industrialization, resulting in social transformation (Fonseca, 2014, p. 41; Bielschowsky, 2015).

To facilitate the analysis of policy coordination, we analytically disaggregate the concepts into three different layers of policy aims, targets and tools.<sup>1</sup> When comparing SD and ND, they are rather similar in their policy aims as both seek to achieve productive change with income redistribution. But, they clearly differ regarding the targets and tools to achieve these aims.

SD is closer to the classic developmentalist approach, as it continues focusing on the shortage of domestic demand to push investment into productive diversification. Yet, while the former sees income redistribution more as an outcome of structural change pushed by State action, SD gives the aim of a more equal income distribution a prominent role<sup>2</sup> for increasing domestic mass consumption, which would push economic growth and productive change (Lavinás, 2017). The structural balance of payments' constraint would be mitigated by export growth induced by scale effects and industrialization as well as fostered by domestic demand, given the complementarity between domestic and foreign markets. It also could be supplemented, at least temporarily, by the expansion of the natural resource-intensive sector and its supply chains (Bielschowsky, 2012; Biancarelli, 2015).

Differently, ND has a predominantly macroeconomic perspective and is more inspired by the development path of Asian emerging markets with their marked strategy of export surplus. It sees two hindering factors for development: first, the tendency towards currency overvaluation as a result, mainly, of the specialization in commodity exports;<sup>3</sup> second the net flows of foreign capital, stimulated by the policy of growth-cum-foreign savings. Also, the tendency of wages to increase below productivity due to the availability of an unlimited supply of labor. Here, the aim of (re-) industrialization is directly linked to the target of an export surplus of manufactured goods, pushing for further investment in this sector. With this, the country should be enabled to avoid incurring into external debt. In this view, the exchange rate plays the key role to influence both imports and exports. An improvement in the income redistribution basically would result from (formal) job creation in the manufacturing sector and from wages increasing along productivity gains (Bresser-Pereira, 2011).

Regarding the policy tools attached to each of these approaches, Carneiro (2012) notes that the reflections regarding SD are rather fragmented. This holds especially for the first generation of papers (Bastos, 2012; Bielschowsky, 2012; Carneiro, 2012), where the focus is exclusively on policies oriented towards redistribution and shifting production patterns, as follows:

- Wage policies, being the minimum wage a powerful policy instrument to foster wage increases especially in the lower income range;
- Social transfers targeted towards the poorer part of the population;

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<sup>1</sup> For an extended comparative analysis to the two recent developmentalist concepts see Fritz et al. (2017).

<sup>2</sup> This should be reflected rather quickly in a significant reduction of the Gini index.

<sup>3</sup> This is also discussed as the phenomenon of Dutch disease.

- Stimulus to consumer credit;
- Public investment especially in (physical and social) infrastructure, seen as crucial for directly creating demand, but especially for giving incentives for private investment;
- Industrial policies and subsidized financing by public banks, designed to further stimulate private investment.

Macroeconomic considerations are mainly included in a second wave on publications on SD. Rossi (2014) makes an explicit attempt to include monetary, fiscal and exchange rate policy tools, but this remains rather imprecise.

Within ND, Bresser-Pereira (2011) offers a well-developed theoretical approach and clearly deduces the policy tools necessary for this strategy of export-led growth:

- Priority is given to currency devaluation and subsequent maintenance of the exchange rate at a level where domestic industry becomes internationally competitive. If necessary, this undervalued currency should be supported by capital controls.
- Other macroeconomic instruments, such as monetary and fiscal policies, are thought to support this nominal and exchange rate level, at maintaining price stability.
- Industrial policy is a secondary policy tool and should be targeted exclusively towards exports, as only these are seen as the engine for investment and growth at the domestic level, until catching up with advanced economies.
- Wages, at the short term, might lose in terms of purchasing power as a consequence of the currency devaluation. In the medium term, however, wages should grow along productivity gains to prevent spurring inflation and to maintain the functional distribution between wages and profits. Income redistribution is expected to stem from additional job creation in the manufacturing sector.
- Redistributive policies are included as an addendum in later publications (Bresser-Pereira et al. 2015), reacting to the heated debate around re-distributional issues, which, however, are not vital to the ND strategy of export-led growth.

### **3. Empirical assessment of outcomes based on stylized facts**

Before analysing the policies adopted in Brazil from 2003 to mid-2016 in section 4, this section summarizes the changes in the external context overtime as well as the economic outcomes of the Brazilian economy during this period through stylized facts regarding the most relevant goals targeted by developmentalist approaches.

#### **3a. External context**

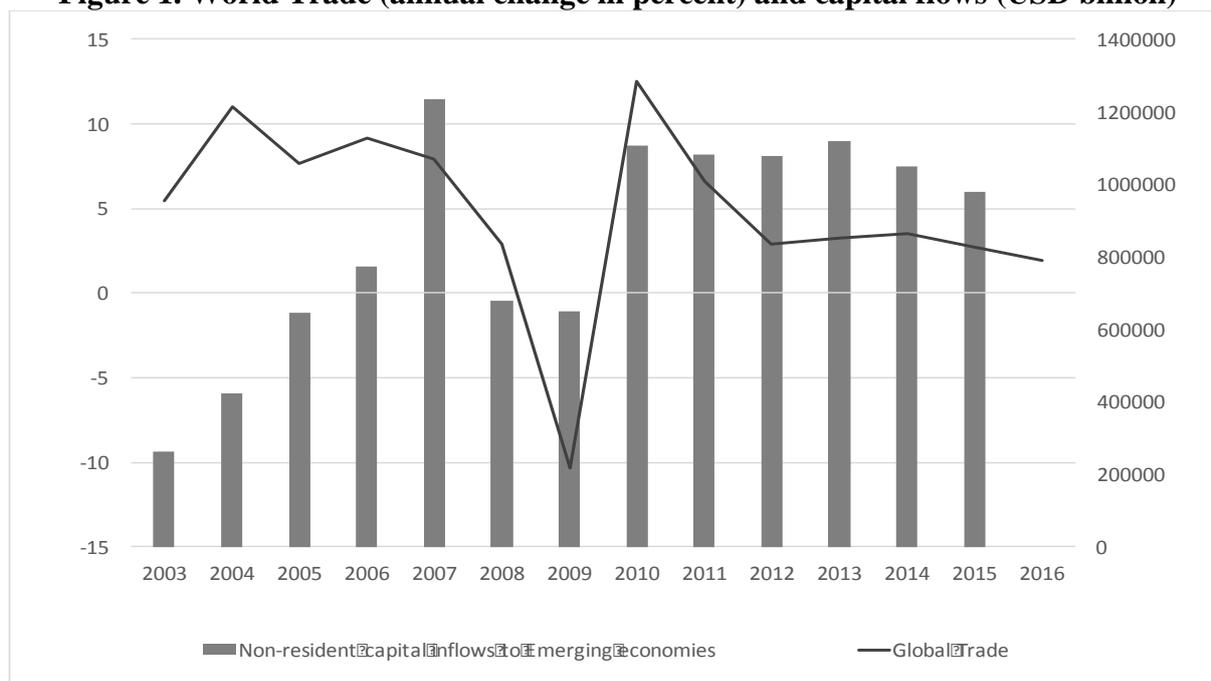
Over the period under consideration, the external context underwent important changes. From 2003 to the threshold of the GFC, the international economy was characterised by a very favourable scenario in terms of trade (high commodity prices and external demand) and capital flows. Yet, after the double speed recovery and the new ‘twin boom’ of commodity prices and capital flows from mid-2009 to 2010, the international setting deteriorated. The global trade volume increased at a much lower rate in comparison to the pre-crisis setting, commodity prices begun to fall in 2012 and capital flows to emerging economies lost momentum from 2011 (Figure 1 and Table 1 in Appendix).

Supporters and opponents of developmentalist policies agree on the positive influence of the benign external environment before the GFC on the Brazilian economy. However, they

definitely diverge on the role of its deterioration since 2011 on the recent crisis: while orthodox authors put the blame on these policies (Barbosa Filho and Pessoa, 2014); social developmentalist authors (Bastos, 2015) stress the dominance of external shocks.

We follow herein a Keynesian-structuralist approach<sup>4</sup>, which emphasizes the center-periphery asymmetries of the international economy (Prebisch, 1950) and the resulting higher vulnerability of peripheral economies to external shocks. Yet, in the post-Bretton Woods era, although current account (specially, terms-of-trade) shocks have remained relevant, particularly in commodity dependent economies, financial shocks have assumed the leading influence due to monetary and financial asymmetries.

**Figure 1. World Trade (annual change in percent) and capital flows (USD billion)**



Source: IMF (2017). Authors' elaboration.

The monetary asymmetry is a consequence of the so-called currency hierarchy, namely, currencies are hierarchically positioned according to their degree of liquidity, which relates to their ability to perform the three functions of money internationally. The key currency (currently, the US dollar) is placed at the top of the hierarchy; the currencies of other center countries or regions (such as the yen and the euro) are in intermediate positions and at the bottom are the currencies issued by peripheral economies that are incapable of fulfilling these functions. Yet, this asymmetry has revealed itself more deleterious due to financial asymmetries, which refer to the patterns and magnitude of capital flows to peripheral countries that joined financial globalization, becoming 'emerging economies'. Firstly, capital flows towards these economies depend mainly on exogenous sources, rendering them permanently vulnerable to their reversal by virtue of changes in the monetary conditions in the center as well as by the rise in the liquidity preference of global investors. Secondly, despite the residual nature of capital flows directed to those economies, their potentially destabilizing effects on local financial markets and exchange rates are significant, since the volume allocated by global investors is not marginal in relation to the size of these markets.

Therefore, according to this approach, the interplay of the monetary and financial asymmetries results in a key influence of the international economy dynamics on the performance of

<sup>4</sup> For more details, see Fritz et al. (2017) and Paula et al (2017).

peripheral emerging economies such as Brazil, mainly through the boom-bust cycles of capital flows. Consequently, these asymmetries also constrain the policy space in these economies, shaping the degree of autonomy of economic and social policies (Paula et al, 2017). Yet, the specific mix of policies adopted depends on domestic factors, among which the institutional framework and political power relations.

### **3b Stylized facts of outcomes**

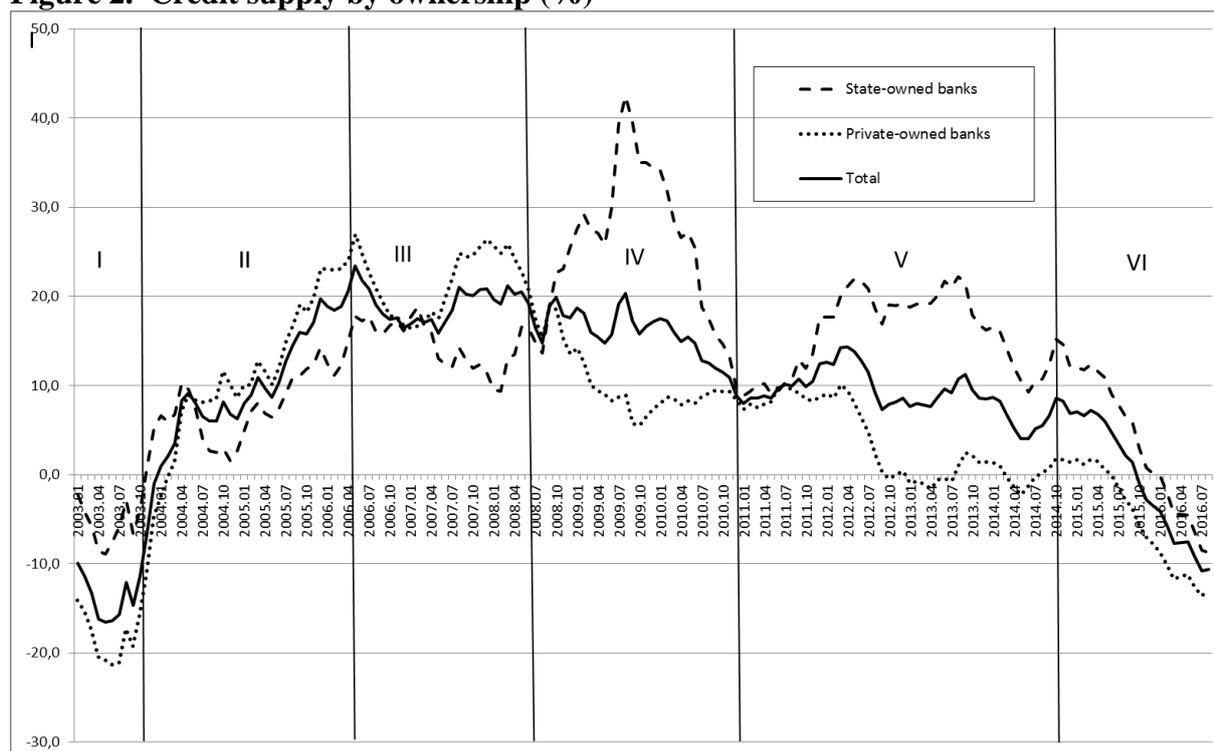
#### ***3b.1 Growth performance***

The Brazilian economy had an unprecedented performance from 2004 to mid-2008 compared to the 1980s and 1990s, with an average growth rate of 4.8% per year. During the pre-crisis boom, the main engine of growth was household consumption (which responds to the biggest share of the Brazilian GDP, around 60%). Another novelty of this period was the continuous credit growth to households and enterprises.

In line with other emerging economies (Canuto and Leipziger, 2012), the recession caused by the contagion effect of the GFC was brief. In contrast, due to its distinct cyclical behaviour, investment recorded an abrupt reduction in face of the contagion effect of the GFC, being the main responsible factor along with exports for the recession in the first half of 2009; while household consumption mitigated the decline in aggregate expenditure. The economy recovered quickly and in 2010 the GDP recorded a growth rate of 7.5%; investment and consumption contributed to that healthy economic recovery.

Growth, however, began to slow down in late 2010. The deceleration intensified in 2012, turning into the worst economic recession since at least the Great Recession of the 1930s (Table 1 in Appendix). After the GDP growth of 3.9% in 2011, economic growth dropped to 1.7% p.a. on average in 2012-2014 (2.0% p.a in the case of industrial output) and declined sharply to -3.6% over 2015-2016. A set of shocks that reached the economy over those two last years contributed to the crisis, among which a deterioration in the terms of trade, accelerated inflation due to a de-freezing of monitored service prices and strong currency devaluation, and a hydric crisis. The recession, which was further fuelled by a tightening of monetary and fiscal policies, produced declining wages and profits. This also caused a huge slowdown in credit supply that occasionally resulted in a credit crunch, further delaying the recovery of the economy (Figure 2).

Finally, economic growth in 2003-2013 was followed by a sharp reduction in unemployment rate, from 12.4% in 2003 to 5.1% in 2013 (this rate increased to 8% in 2015 due to the recession). The combination between low employment and increase in real wages contributed to the improvement in social indicators, as we will see in the next subsection.

**Figure 2. Credit supply by ownership (%)\***

Source: Central Bank of Brazil (2016). Authors' elaboration.

(\*) Growth rate compared to 12 months before with data in real values (deflated by IPCA)

### ***3b.2 Income distribution: functional and personal***

An important and unique feature of the Brazilian economy performance over the period under consideration was the reduction in inequality, a trend also observed in other Latin America countries (Fritz and Lavinias, 2015). In the case of Brazil, the process of income redistribution encompassed both the personal dimension, with a reduction of the Gini index, and the functional one, with an increase of the wage share in total income. On the other hand, poverty rate fell down sharply from 35.8% of the population in 2003 to 13.3% in 2014<sup>5</sup> (Table 1 in Appendix).

However, analysing the dynamic of top incomes based on income tax data between 2007 and 2013, Gobetti and Orair (2015) conclude that the Gini index of household survey data overestimates improvements in the personal income distribution. In other words, the level of inequality and concentration of income in Brazil is significantly higher than what has been estimated by this type of data. Upon their estimation, income concentrated by the 0.1% and the 10% richest households comes to 10.9% and 54.1% of disposable income of households, respectively.

### ***3b.3 Productive re-structuration and external vulnerability***

The third aim of developmentalism is the so called structural change or re-industrialization that refers to the reallocation of productive resources from the traditional sector (especially agriculture) to the manufacturing sector (mainly those segments of higher technological sophistication). Yet, over the period of 2008-2015, the fall of this sector's share in the GDP that had started in the 1990s gained momentum.

<sup>5</sup> Poverty index is the percentage of the population with household income lower than poverty line.

Moreover, since 2008, this descending trajectory has been accompanied by increasing deficits in manufacturing goods trade balance along with surplus in non-manufacturing goods, certainly fostered by the appreciation of the domestic currency in real terms until 2012 (see section 4). Even with a subsequent reverse in the appreciation trend, however, profitability of exports increased only slightly. In this setting, industrial output firstly stagnated and, from 2013, begun to fall. Meanwhile, retail sales and the import coefficient of industry inputs kept growing, indicating a substitution of domestic production by imports both in final and intermediary manufacturing goods (Paula et al., 2015).

In terms of external vulnerability, results are mixed. Considering external liquidity, the situation improved thanks not only to the policy of foreign exchange (FX) reserves accumulation (see section 4), but also to the reduction in the currency mismatch associated with a change in the composition of the short-term gross external liability. This change stemmed from two simultaneous trends: a decrease in external debt and a rise in foreign portfolio investment in the domestic market. Further, the increasing current account deficit (CAD) between 2009 and 2014 was financed almost fully by foreign direct investment (FDI). In 2015 and 2016, the FDI was higher than the CAD by 0.8 and 3.0 percent. Thus, in the short term, Brazil did not face an external constraint, what explains, along with the dirty floating regime, why a balance of payment crisis did not break out despite the huge outflow of foreign portfolio investments amid a deep economic crisis (Table 1 in Appendix).

On the other hand, external solvency deteriorated, as the growth rate of the total net external liability was greater than the one of exports. The situation rather worsened when considering only the exports of manufactured products, characterized by lower price volatility and higher income-elasticity than commodities. From this perspective, the country's capacity of generating autonomously foreign currency to serve its external liability decreased during the period covered (Table 1 in Appendix).

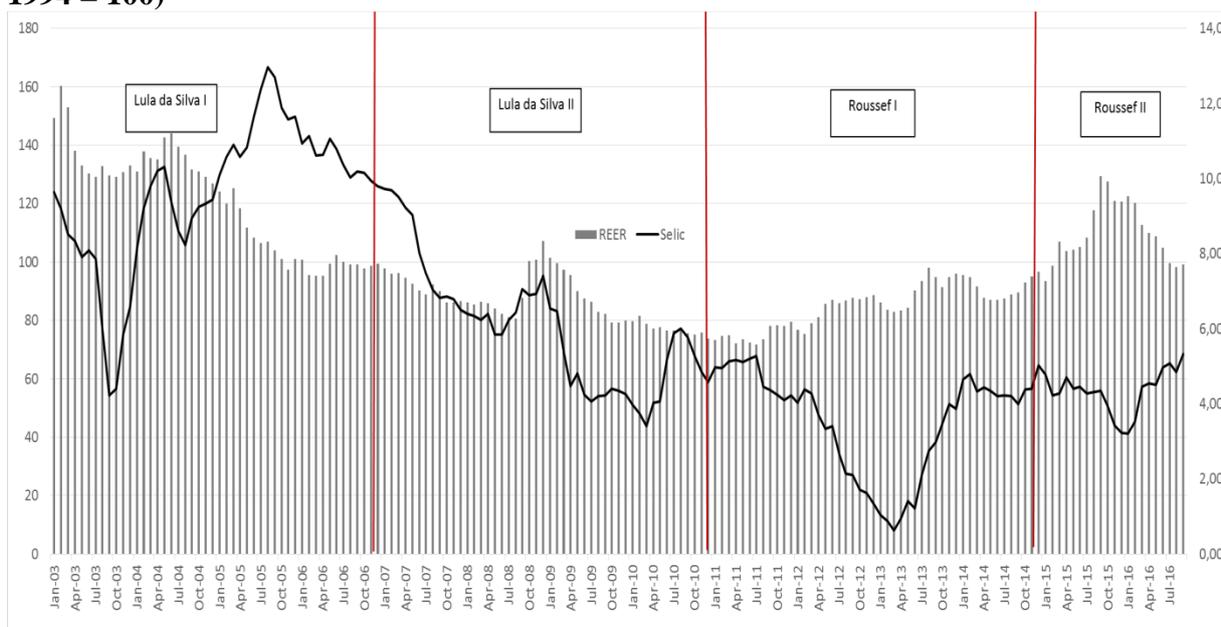
#### **4. Public policies over 2003-2016**

In this section, we analyze public policies implemented during Lula da Silva's and Dilma Rousseff's terms. Based on this assessment, we will elaborate in section 5 a typology of these policies along the different developmentalist and non-developmental strategies. This typology, in turn, will enable us to answer our research question and confirm (or not) the hypothesis presented in the introduction.

##### **4a. Macroeconomic policies**

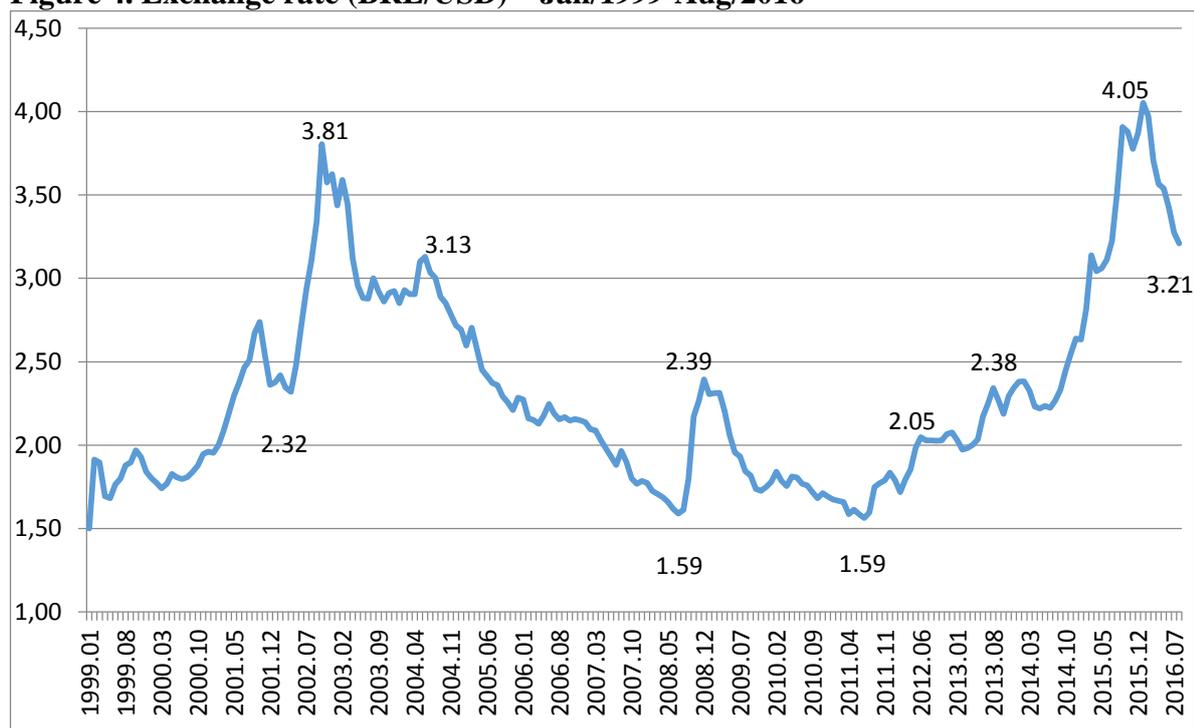
The first term of Lula da Silva's government (2003-2006), following a confidence crisis in 2002 with a massive speculative attack against the Brazilian currency, was characterized by the continuity of the combined macroeconomic policy adopted after the 1999 currency crisis, namely, inflation targeting, primary surplus targets and a dirty floating exchange rate regime. Under this framework, both fiscal and monetary policies were kept mostly orthodox, featured by a wide primary surplus and the maintenance of a high real interest rate (albeit with a decreasing path), while the currency appreciated gradually (Figures 3 and 4).

**Figure 3. Policy rate (SELIC interest rate - % p.a.) and real effective exchange rate (June 1994 = 100)**



Source: Central Bank of Brazil (2017). Authors' elaboration.

**Figure 4. Exchange rate (BRL/USD) – Jan/1999-Aug/2016**



Source: Central Bank of Brazil (2017).

Amid a positive external environment in terms of trade and capital flows, the high interest rate stimulated speculative operations through portfolio investment and FX derivatives. These operations along with the current account surplus resulted in a significant currency appreciation. The interventions of the monetary authority in the FX market in 2005 did not curb this appreciation, but came out with the buildup of FX reserves. The so called precautionary demand for reserves contributed to the decrease of net public external debt (Table 1 in Appendix) and the improvement in the country's external liquidity (see subsection 3b). Moreover, in this period bank credit to the private sector recorded a significant growth,

stimulated, among other factors, by the implementation of payroll-deductible credit operations, which reduced bank risk and, consequently, the cost of loans to households.

Yet, both the currency appreciation trend and the credit boom were reversed in September 2008, when the contagion effect of the global financial crisis resulted in huge capital outflows. This marked the beginning of the second phase under analysis here.

The Brazilian authorities responded to the financial crisis by adopting a number of countercyclical measures (Barbosa, 2010; Paula et al., 2015): (i) to avoid the spread of the credit crunch, the Central Bank of Brazil adopted a series of liquidity-enhancing measures; (ii) the BCB intervened in the FX markets; (iii) the state-owned banks were encouraged to expand their credit operations to compensate for the deceleration in the credit supply by private banks (Figure 2); and (iv) the Ministry of Finance undertook fiscal measures to stimulate aggregate demand.

Such countercyclical reaction was possible, to a large extent, due to the policy space created by the shift towards a net creditor position in foreign currency of the Brazilian government. Consequently, the currency devaluation favored public finance. In the context of quick recovery of the economy and a new surge of capital flows to emerging economies from the middle of 2009, Brazil faced again huge short-term inflows boosted by a still high differential between the internal and external interest rates. As the BCB resumed the exchange rate policy adopted before the crisis, Brazil's currency recorded a huge appreciation in 2009 (Figure 4).

In this setting, the Ministry of Finance started imposing regulations on capital flows, starting with a tiny financial transaction tax on foreign portfolio investments in October 2009. One year later, these regulations were strengthened with the first measure targeting FX derivatives operations and administrative controls. Moreover, the Central Bank of Brazil adopted macro prudential regulations to curb the domestic credit boom, fostered by countercyclical policies.

In mid-2011, during Rousseff's first term, a gradual change was introduced for what the government itself called the 'New Macroeconomic Matrix', to boost growth. The regulatory toolkit on spot and derivatives' FX markets had been further broadened as the previous measures had only mitigated the currency appreciation trend underlying the deterioration in competitiveness of Brazil's manufacturing sector in both external and domestic markets (Prates and Fritz, 2016; Paula and Prates, 2015). It was completed by a progressive reduction both in the policy rate and the primary fiscal surplus. The interplay of the new FX regulations, the monetary policy loosening and the increase in the risk aversion of global investors due to the worsening of the euro crisis eventually came out with the intended depreciation of the Brazilian currency (Figure 4).

Additionally, the government used a wide range of instruments: a nominal freeze of relevant public tariffs (energy and gasoline) for price stabilization purposes, the use of state-owned banks to reduce bank spreads, etc. Furthermore, due to the economy's positive fiscal performance in the first half of 2011, the Ministry of Finance adopted several fiscal stimulus measures, especially tax exemptions that mainly favored the domestic manufacturing sector. These exemptions were gradually extended, aimed at increasing the international competitiveness of this sector, damaged by both currency appreciation and greater competition in the external markets (see subsection 4b). It is worth mentioning that in the first year these measures did not change the overall fiscal policy stance.

Yet, in April 2013, due to an increasing inflation rate, the BCB restarted to rise gradual and continuously the policy rate (Figure 3), and removed regulations on FX operations due to signaling by the Federal Reserve that its quantitative easing policy would be withdrawn soon ('tapering'). At the same time, the Brazilian government further enlarged tax exemptions, and tried to intensify investment in infra-structure. Moreover, affected by the decline of oil prices

and the first effects of ‘Lava-jato’<sup>6</sup> operation, Petrobras reduced its investments, with a strong impact on overall investment (Afonso and Fajardo, 2015).

Compared with the policies launched to counter the GFC contagion effect, the countercyclical fiscal policies implemented in 2012-2014, with the use of tax exemptions instead of public expenditures, were very limited, with small aggregate impact on production and employment. The same holds for public investment, which was significantly higher over 2006-2010.

In 2015, after the re-election of Dilma Roussef, the government shifted its economic policy somehow radically towards a more orthodox policy stance. The main aim of the economic policy was to implement fiscal adjustment mainly by the side of public expenditures, understood as fundamental for retaking the agents’ confidence as a pre-condition for economic recovery. For this purpose, the Brazilian government committed itself to a primary fiscal surplus of 1.2% of GDP, implementing a set of measures to reduce public expenditures (mainly by the budget contingency), re-adjusted monitored prices (energy and oil), while the BCB further increased its policy rate from 10.92% p.a. in October 2014 to 14.14% p.a. in August 2015. Due to strong devaluation in 2015, the BCB had to intervene in the FX market to reduce exchange rate volatility and to offer exchange rate hedging to private agents, with the use of swap operations.

The efforts of fiscal adjustment failed as fiscal revenues dropped dramatically in 2015, so that the Ministry of Finance had to revise its fiscal targets. Due to the recession and increasing interest payments, the public nominal deficit increased even more in 2015. Net public debt over GDP, which had recorded its lowest level during the period under analysis in 2013 with 30.5%, again grew steeply (to 46% of GDP in 2016). Gross debt over GDP increased even more, from 51.5% to 69.6% in the same period. This means that government’s assets (mainly, foreign reserves and loans to public banks) shrunk in relative terms, contrary to the period 2010-2014, when they rose significantly (Table 1 in Appendix).

At the beginning of 2016, Nelson Barbosa, the new Finance Minister, announced his agenda of measures for the year: establishing a limit for the growth of government’s current and personnel expenses, untying of part of tax revenue, simplification of the tax system, and a pension reform, the proposal of which was not presented to the public. Its great challenge was to establish a strategy of fiscal consolidation, which, among other things, would be able to reverse the upward trend of public spending that contradictorily compromised the capacity of the Brazilian State to implement public policies in the long term. As for 2016, the spread of political crisis virtually paralyzed the government’s actions, making impossible the adoption of any economic policy agenda until the impeachment of President Roussef in 2016.

#### **4b. Industrial policies**

After a long time span of almost complete absence of industrial policies, three programs of industrial policy were launched during the period analyzed here, each of them containing a different focus. Industrial policy in this period oscillated between two types of strategies: to prioritize high-tech sectors and to select national champions in industries with comparative international advantages, such as agribusiness, steel and mining, as well as to favor sectors damaged by strong foreign competition (Almeida and Novais, 2014, p.211).

The first program called PICTE (*‘Política Industrial, Tecnológica e de Comércio Exterior’* – ‘Industrial, Technology and Foreign Trade Policy’) was launched in 2004 aimed to address Brazil’s external vulnerability, emphasizing an active policy of adding value to exports based

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<sup>6</sup> ‘Car Wash operation is an investigation being carried out by the Federal Police of Brazil and the Court since March 17, 2014. Initially a money laundering investigation, it has expanded to cover allegations of corruption at the state-controlled oil company Petrobras.

on innovation. To this end, three areas were defined: (i) incentives for strategic sectors (capital goods, software, semiconductors, pharmaceuticals and medicines), through specific programs; (ii) horizontal actions to stimulate innovation and technological development, international integration via exports and modernization of institutional environment; and (iii) priority to three areas considered relevant for national technological development: biotechnology, nanotechnology and renewable energy.

With the rapid and intensive improvement of Brazilian terms of trade from 2004, which resulted in substantial surpluses in the trade balance, priorities for industrial policy changed (Kupfer, 2013). The ‘Productive Development Policy’ (PDP) was launched in May 2008, in a context where, according to the underlying diagnosis, Brazil had received the investment grade due to its sound economic fundamentals (low inflation, fiscal surplus, etc.). The main policy objective was then set to foster growth and productive investment in the domestic market. For this purpose, the PDP set ambitious investment goals (from 17.6% of GDP in 2007 to 21.0% in 2010) and a increased participation of Brazilian exports in world trade.<sup>7</sup> The changing global scenario led to the launch of a third program, called ‘Plano Brasil Maior’ (PBM – Plan Bigger Brazil), in August 2011, with continuous modifications in the following years in view of worsening global economic conditions. The initial objectives of the PBM were creating capabilities aiming at the productive and technological consolidation of value chains, but the intensification of international competition in domestic and foreign markets forced the plan to be directed to the defense of the domestic market and the recovery of systemic competitiveness conditions (Kupfer, 2013). Given the speed of the penetration of imported goods in Brazil, the government adopted compensatory measures to minimize the impact on domestic manufacturing output. The measures included the expansion of subsidized credit by BNDES and further tax and social security payment exemptions, causing significant fiscal costs with limited effects on industrial production.

Kupfer (2013), in doing a balance of industrial policies in the period analyzed here, concludes that they remained an auxiliary line of macroeconomic policies, but often in conflict with these. Their effectiveness was reduced by different systemic determinants that were outside their scope, the most important being the strong currency appreciation until 2011 and very high interest rates.

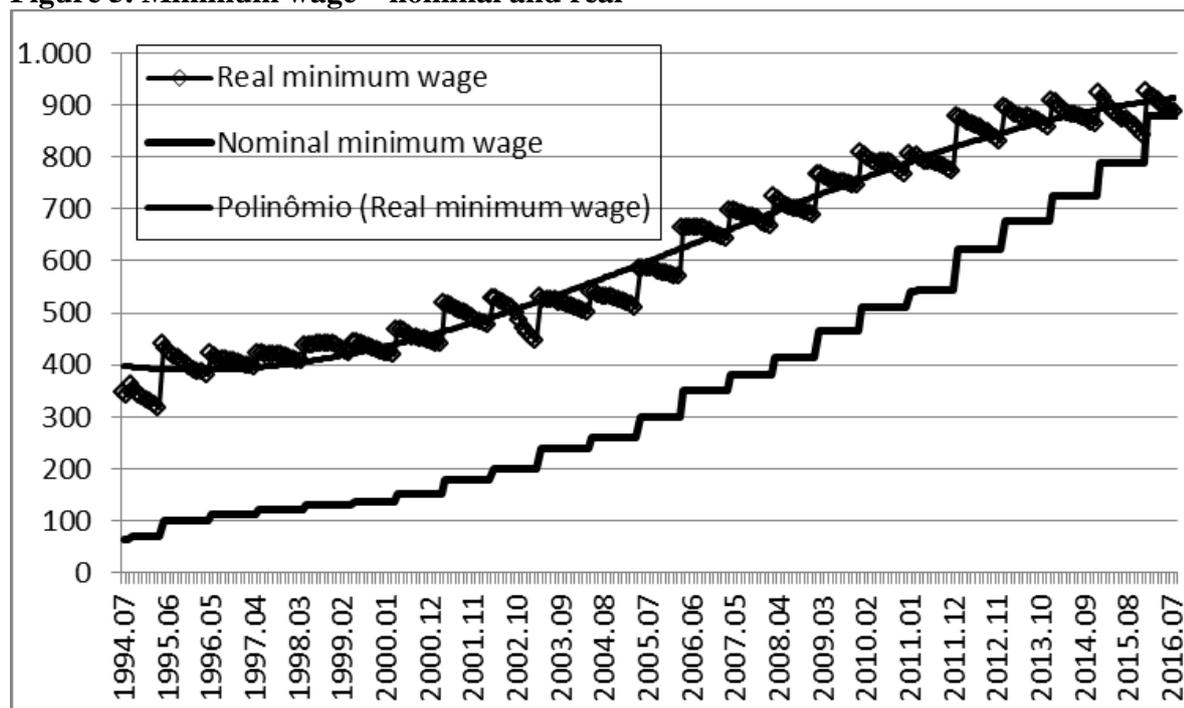
#### **4c. Social policies**

Highly active social policies were one of the major traits of policy orientation during the period examined in this paper. These policies were crucial for attaining the aim of income redistribution, which would foster domestic consumption. The two main factors that contributed to improve income distribution was the huge increase in the minimum wage (66.9% in real terms from December 2003 to December 2014) and the policy of income transference due to both increase of the pension benefits and ‘bolsa familia’ program.

The most important instrument certainly was the increase of the minimum wage (Figure 5). The rule for adjusting such wage adopted over this period was to add the inflation of the previous year and the GDP growth rate of the second year before the relevant one. In this way, high economic growth resulted in high real wage increases as in Brazil wages of low qualified workers in the public and in the private formal and informal sector, as much as public pension payments, are all linked to the minimum wage. Within this institutional setting, minimum wage policy turned a powerful re-distributional instrument.

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<sup>7</sup> Almeida and Novais (2014) criticized PDP for its absence of reciprocity mechanisms along the lines adopted in South Korea. According to Kupfer (2013) the PDP had a more countercyclical role and less than the expected function of providing stimulus to the investment pattern of the economy.

**Figure 5. Minimum wage – nominal and real\***

Source: IPEADATA (2017). Authors' elaboration

(\*) Deflated by the National Index of Consumer Prices (INPC)

Another social policy instrument that gained high national and international visibility was the conditional cash transfer program *Bolsa Família*. It was designed to combat extreme poverty, and achieved an almost complete coverage of very poor families with kids in school age in the country. Its costs for public spending together with other anti-poverty programs remained very low.

Finally, fiscal policy was completely absent in the area of redistribution policies. While in OECD countries taxes are responsible for the bulk of public re-distribution, in Brazil the tax system even has a slightly regressive effect, as Lustig et al. (2014) show.

## 5. An assessment of public policies in the PT governments

When we assess the policies adopted during the four PT governments, we find significant and repeated changes in the policies over time. Even if for some aspects exact and uniform periodization is rather difficult, we also find that these changes were largely associated to the external context. As pointed out in section 3, it is possible to identify three different phases in the relevant period, which defined the limits and possibilities of the domestic economic and social policies: the first one before the GFC, benign in terms of trade and financial flows to emerging economies; the second one, from September 2008 to 2010, featured by the GFC, the double speed recovery and the new 'twin boom'; the third one, from 2011, with the deterioration of external conditions due to the slowdown of both world trade volume and capital inflows and the boost in commodity prices (Figure 1 and Table 1 in Appendix).

Hence, these same periods are used herein to elaborate a typology of policies along the different developmentalist and non-developmental strategies. Yet, the last phase (2011 to mid-2016) is split into two sub-phases in view of the changes in economic policies in Dilma's second term that were shaped, largely, by domestic factors, especially the political confidence

crisis triggered by a mix of economic crisis and corruption scandal, which made President Roussef loose political majority (Table 5).

The first phase from 2003 to September 2008 was marked by an orthodox macroeconomic policy. Moreover, following the path of other emerging economies, from 2005 the favorable external context had enabled Brazil to adopt the precautionary strategy of accumulating FX reserves, which had a key role in reducing external vulnerability. This policy stance was mixed with increasing elements of social developmentalism, namely, the formation of a market of mass consumption. That was boosted by increasing the minimum wage in real terms, stimulating private credit, as well as rising households' purchasing power in a setting of lowering prices of imported goods due to the currency appreciation. However, as industrial policy was mostly oriented towards strengthening exports, this policy field can be characterized as new-developmental, even if it has a secondary place in this perspective.

A second phase, from October 2008 to 2010, was the time when 'we were all Keynesians'. In the context of the contagion effect of the GFC, Lula's second term launched a more flexible fiscal policy, including an increase in public investment, promoted a countercyclical role of state-owned banks and boosted social policies, further increasing the real minimum wage and anti-poverty programs<sup>8</sup>. These measures, coherent with social developmentalism, were taken with some pragmatism and departed from what we labelled as orthodox policies before the crisis. In a second stage, when the economy recovered, the government adopted price-based capital controls and macro-prudential regulations on the credit market to curb, respectively, the currency appreciation and the credit boom. Although these two types of financial regulation (Ocampo, 2012) were included to some degree in the conventional toolkit of macroeconomic recommendations after the 2008 global crisis (Blanchard et. al., 2010), they fit within the new developmentalist approach.

The transition period, from the second to the third phase (2011 –2014), is difficult to be set, and classification becomes especially difficult. This phase was characterized by strong oscillation in the macroeconomic policy between orthodoxy and developmentalism. One could interpret the so-called 'New Macroeconomic Matrix' as influenced by new developmentalism prescriptions, due to the currency devaluation and the decreasing policy rate, but other elements of this approach were not present, especially regarding fiscal policy in 2013-2014. This policy was not only increasingly expansive, but also supply side-oriented instead of focusing on the public demand side. Then, they were even criticized by social developmentalists (Bastos, 2015). However, from 2013, a more orthodox approach in terms of monetary and exchange rate policies towards inflation stabilization was resumed. At the same time, in the first Roussef's government, the pillars of social developmentalism of the first two phases were maintained, i.e. minimum wage increases, stimulus to private credit, an active role of public banks and of industrial policies. Yet, public investment decreased in 2010-2014, so it is imprecise to define Roussef's macroeconomic policy in this field as social developmentalist.

As we have already pointed out, the second Roussef's government (2015-2016) was marked by a radical shift, with the implementation of orthodoxy mainly in the field of fiscal and monetary policies. As for the exchange rate policy, Central Bank of Brazil implemented a strategy to reduce volatility and provide a hedge against exchange rate risk, but did not intend to be involved with the determination of the exchange rate. In terms of social policies there were no significant changes. As we have seen in the former section, the rule for minimum wage readjustment remained in place, although high inflation in 2015-2016 and low growth in the years before limited real wage increases.

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<sup>8</sup> Morais and Saad-Filho (2011) points out the hybrid feature of the economic policies implemented since 2006.

As we can conclude from section 4, the ambiguity and lack of coordination of economic policies combined with the worsening in the international scenario can explain the downturn in the Brazilian economy, especially since 2014. On the contrary, orthodox economists assign the downturn to the implementation of developmental policies in Brazil (Barbosa Filho and Pessoa, 2014).

**Table 5. Typology of policies**

	2003 – Aug. 2008	Sept. 2008 - 2010	2011 – mid 2016	
	Lula before GFC	Lula during GFC and double speed recovery	Dilma I (2011 – 2014)	Dilma II (2015 – 8/16)
Macroeconomic policies				
Monetary policy	ORT	ORT; ND; ORT	ND; ORT	ORT
Exchange rate policy	ORT	ORT; ND	ND; ORT	ORT
Fiscal policy	ORT	SD; ORT	ORT; (SD)	ORT
Social policies	SD	SD	SD	SD
Public investment	SD	SD	(SD)	ORT
Financial policies	SD	SD	SD	ORT
Industrial policies	ND	SD	SD	SD

Source: Authors' elaboration.

Notes:

- Strategy in parenthesis: influenced by a certain strategy.
- ORT: orthodoxy policies; SD: social developmentalist policies; ND: new developmentalist policies.
- Classifications separated by “;”: temporal sequence of strategies within one phase.

## 5. Summary and Conclusions

Recent approaches of developmentalism are characterized in general terms by the aim to combine sustained economic growth with productive restructuring and income distribution by giving the State an active role. Our assessment of the experience of policies during the long period of PT-led governments in Brazil from 2003 to mid-2016 with focus on the years after the GFC, shows that, when using this broad definition, we could not label this period as developmentalist inasmuch the macroeconomic policies were, predominantly, orthodox.

When taking a closer look, we can confirm our first hypothesis. We find more than one recent type of developmentalist strategy available at the conceptual level. The two most relevant concepts we identified, social and new developmentalism, show significant differences. On the one hand, within the new developmentalist approach, it is given priority to manage macro prices such as the exchange rate in order to prevent the appreciation of the domestic currency and, thus, to achieve an export surplus in manufactured goods. On the other hand, the social developmentalist approach favored re-distributional policies to foster domestic demand and domestic diversified investment.

So, when asking if developmentalism could be blamed for the recent economic crisis, the question should also consider what type of developmentalist concept we should account for in this context. We support herein that the use of the same label for varied approaches without

clarifying their similarities and differences, and the absence of a broader attempt to bring these views together to a more consistent approach (which might inspire policies in a more coherent manner) is a major weakness of this recent debate.

Regarding the classification of policies applied, it seems that these followed more explicitly the social developmentalist version. Not only social policies, but also sub-fields of economic policies, such as public investment and financial policies regarding credit access of lower income households and the outstanding role given to public banks, can be attributed to this concept. The core of new developmentalist policies, the policy of achieving an undervalued currency, were applied only for a rather limited period of time, which started actually in 2010 and ended rather quickly with the worsening of the external context.

Second, when concretely assessing the macroeconomic policies applied during this period, it is clear that they were highly orthodox or conventional during the first phase. Yet, against widespread interpretation, we cannot find a clear pattern of shifting macroeconomic policies towards a more developmentalist stance in uniform terms after the GFC. Rather, the second phase, of reaction to the spillovers of the financial crisis in center economies, is shaped by anti-cyclical policies that were global standard in this context, but applied rather cautiously in Brazil especially with regards to monetary policy. And the third phase is characterized by a mixture of policies, which changed in an astonishingly quick manner and include all kinds of paradigmatic orientation, including orthodox policies. This, for instance, applies to the monetary policy from the second half of 2012 on, and features especially president Rousseff's second term. In its struggle against a widening and mutually nurturing economic and political crisis, that term was dominated by orthodox policies.

This takes us to conclude that our third hypothesis has higher relevance than expected. To our surprise, we encountered a number of difficulties to find clear criteria both in terms of periodization and classification, as the policy changes especially in the areas of monetary, exchange rate and fiscal policies were highly frequent and irregular. Policies should not be expected to be a pure result of theoretical considerations or a mechanistic reaction to the changing nature and intensity of external constraints, but they are highly dependent on institutional path dependency and concrete circumstances, in interplay with specific interests. However, it is clear that the external context strongly shaped policy options over the period. Regarding the third phase, the swift shifts in the relevant macroeconomic policy fields certainly had to do with necessary adjustments to a volatile international environment, characterized by unstable international capital flows and decreasing commodity prices on the one hand, and the need to reactivate the domestic economy in a context of sharpened international competition, on the other hand. Beyond this, however, they may also reflect accumulating domestic conflicts among economic actors over the re-distributional aims and outcomes of public policies, which grew acute with the enlarging of the political corruption affair involving the governing parties.

Overall, we have to state that the several changes in the policy mix certainly could not increase investors' confidence in public policies in Brazil in this period due to an astonishing lack of clearness regarding its economic strategy. On this, we conclude that it is difficult to interpret developmentalist approaches per se as a fallacy, even if this recent experience in Brazil might not be helpful in further spreading such concepts. We detect the major weaknesses rather the lack of both a conceptual clearness regarding this approach and a coherent policy strategy at the level of policy formulation and execution. As we have pointed out in this paper, the ambiguity and lack of coordination of the economic policies in the analyzed period combined with the worsening in the international scenario can explain the downturn in the Brazilian economy.

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**Appendix. Table 1. Brazil: main economic indicators**

Economic Indicator/Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
<b>ECONOMIC ACTIVITY</b>															
Inflation Rate (IPCA) <sup>1</sup> , %	9.3	7.6	5.7	3.1	4.4	5.9	4.3	5.9	6.5	5.8	5.9	6.4	10.7	6.3	
GDP growth (%) <sup>1</sup>	1.14	5.76	3.2	3.96	6.07	5.09	-0.13	7.53	3.97	1.92	3.0	0.5	-3.77	-3.5	
Agricultural	8.31	2.0	1.12	4.64	3.25	5.77	-3.73	6.7	5.64	-3.08	8.36	2.79	3.61	n.a.	
Industry	0.1	8.21	1.99	2.01	6.21	4.1	-4.7	10.2	4.11	-0.72	2.17	-1.51	-6.33	n.a.	
Services	0.99	5.01	3.66	4.33	5.83	4.82	2.07	5.8	3.46	2.9	2.75	0.99	-2.7	n.a.	
Unemployment rate (%)	12.4	11.0	9.7	9.7	8.6	7.9	8.0	6.2	5.5	5.4	5.1	5.0	8.1	n.a.	
Investment rate (% GDP)	16.6	17.3	17.1	17.2	18.0	19.4	19.1	20.5	20.6	20.7	20.9	19.9	n.a.	n.a.	
Manufacturing sector (% GDP)	26.1	26.8	26.5	26.1	26.2	26.0	24.8	25.6	25.7	25.1	24.9	24.7	23.9	n.a.	
<b>MONETARY AND CREDIT INDICATORS</b>															
Interest rate (Selic), average (%)	16.5	17.75	18.0	13.25	11.25	13.75	8.75	10.75	11.0	7.25	10.0	11.75	14.25	13.75	
Domestic credit (% GDP)	n.a.	n.a.	n.a.	n.a.	34.7	39.68	42.62	44.08	46.48	49.19	50.85	52.21	53.65	49.39	
Household credit (% GDP)	n.a.	n.a.	n.a.	n.a.	15.88	17.18	18.8	19.96	21.06	22.33	23.38	24.44	25.2	24.82	
Corporate credit (% GDP)	n.a.	n.a.	n.a.	n.a.	18.82	22.5	23.82	24.11	25.41	26.86	27.47	27.77	28.45	24.57	
<b>EXTERNAL SECTOR</b>															
Real effective exchange rate <sup>2</sup>	137.4	135.0	110.3	98.5	91.4	88.9	88.4	77.1	75.0	84.1	89.9	91.2	111.4	105.7	
Commodity price index (% growth p.a.)	10.2	4.8	13.7	26.0	8.2	-23.4	33.0	29.0	-12.2	4.2	-3.4	-9.3	19.1	13.6	
Brazil's terms of trade (% growth p.a.)	3.1	-2.0	5.1	7.3	-0.9	0.5	7.8	14.9	-3.4	-3.4	-1.8	-6.7	-12.3	16.4	
Trade balance (US\$ billion)	23,75	32,54	43,43	45,12	38,483	23,802	24,958	18,491	27,625	17,42	389	-6,629	17,67	45,037	
Net public external debt (US\$ billion)	65,686	57,744	29,021	-13,015	-112,036	-142,299	-168,083	-215,979	-287,168	-303,206	-305,156	-296,129	-295,124	-295,864	
Manufacturing import coefficient (%) <sup>3</sup>	15.2	15.5	14.5	14.9	15.3	17.0	15.3	16.3	17.4	18.7	19.4	19.2	21.7	19.1	
Current account (% GDP)	0.67	1.70	1.52	1.18	0.03	-1.81	-1.57	-3.43	-2.95	-3.02	-3.04	-4.31	-3.31	-1.30	
Foreign Direct Investment (% GDP)	1.83	2.73	1.71	1.76	2.59	2.84	1.25	4.00	3.87	3.52	2.80	3.95	4.16	4.37	
Foreign reserves (US\$ billion)	46,684	52,411	53,145	84,463	163,526	190,929	228,644	276,148	343,180	362,064	349,029	354,805	348,844	353,851	
<i>External solvency indicators<sup>4</sup></i>															
Net external Liability/Total exports	3.65	2.91	2.52	2.54	3.08	1.23	3.65	4.49	3.20	3.32	3.06	3.44	2.50	3.77	
Net external Liability/Manufacturing exports	4.66	3.71	3.25	3.33	4.17	1.77	5.49	7.27	5.54	5.59	5.07	5.81	3.98	5.73	
<i>External liquidity indicators</i>															
Standard&Poors indicator <sup>5</sup>	2.71	1.52	0.50	0.32	0.34	0.46	0.33	0.53	0.44	0.40	0.41	0.62	0.47	0.36	
Standard&Poors + Portfolio in the country <sup>6</sup>	5.43	4.42	2.92	2.76	2.48	1.37	2.14	2.41	1.75	1.67	1.64	1.76	1.20	1.37	
<b>PUBLIC FINANCE</b>															
Primary fiscal result (% GDP)	3.2	3.7	3.7	3.2	3.2	3.3	1.9	2.6	2.9	2.2	1.7	-0.6	-1.94	-2.5	
Public debt service (% GDP)	-8.4	-6.6	7.3	-6.7	-6.0	-5.3	-5.1	-5.0	-5.4	-4.4	-4.7	-5.4	-8.4	-6.5	
Nominal fiscal result (% GDP)	-5.2	-2.9	-3.5	-3.6	-2.7	-2.0	-3.2	-2.4	-2.5	-2.3	-3.0	-6.0	-10.2	-9.0	
Gross public debt (% GDP) <sup>7</sup>	n.a.	n.a.	n.a.	55.5	56.7	56.0	59.2	51.8	51.3	53.8	51.5	56.3	65.3	69.6	
Net public debt (% GDP)	54.3	50.2	47.9	46.5	44.5	37.6	40.8	37.9	34.5	32.2	30.5	32.6	35.6	46.0	
<b>SOCIAL INDICATORS</b>															
Gini index (%)	0.58	0.57	0.57	0.56	0.56	0.55	0.54	n.a.	0.53	0.53	0.53	0.52	n.a.	n.a.	
Poverty index (% of population)	35.75	33.71	30.83	26.75	25.36	22.6	21.41	n.a.	18.42	15.93	15.09	13.29	n.a.	n.a.	
Wage share <sup>8</sup>	36.55	35.7	36.68	38.15	38.87	39.81	41.53	41.81	42.68	45.28	45.14	n.a.	n.a.	n.a.	

Source: Banco Central do Brasil (2017), except investment rate, Gini index and poverty index (IPEADATA), manufacturing import coefficient and manufacturing sector as share of GDP (CEMACRO), terms of trade (FUNCEX) and Wage share (authors' calculation based on IBGE).

Notes: (1) For 2016, IMF estimates; (2) Yearly average, June 1994 = 100; (3) Ratio "total value of imports of industrial sector" over "total value of domestic output of industrial sector"; (4) "Net external liability" refers to the "Net international investment position"; (5) Ratio "Gross External Financing Needs (GEFN)" over "External Reserves", where GEFN = Current account + short term external debt + long term external debt repayment in the next 12 months; (6) Ratio "GEFN + portfolio investment in the country" over "External Reserves"; (7) Data according to new methodology implemented in 2006; (8) Salary mass (deflated by INPC) divided by GDP (deflated by the implicit deflator).