v. 3, n. 21, 2023

Scientific Journal of
Applied Social and Clinical Science

POSSIBILITY OF INNOVATION: THE BRAZILIAN INDUSTRIAL SECTOR (2010-2019)

Regina Maria A. Fonseca Gadelha
Full Professor at the Department of Economics-FEA-PUC-SP; Researcher at the `` Centro Internacional de Análise de Conjuntura`` -NACI-PEPGE-PUC-SP

José Guilherme Shiraishi Abrão
Bachelor of Economic Sciences-FEA-PUC-SP; Member of NACI-PEPGE-PUC-SP

Abstract: This article aims to analyze the deindustrialization process that took place in the last two decades, observing the main macroeconomic measures of the period, which affected the sector. As a methodological basis for this research, a survey was made of magazines and works by authors who contributed to the qualitative and quantitative study of this process, in particular data and studies by IEDI-Institute of Studies for Industrial Development and analyzes of indicators by IBGE - Instituto Brazilian Institute of Geography and Statistics, in addition to articles and publications listed in the bibliographic references. As an objective, the article intends to verify what happened during the periods of the Lula I and II governments, and Dilma Rousseff until the end of the Michel Temer government, from macroeconomic decisions adopted and that had an impact on the sectors of the economy, observing the indicators of industrial activity of action plans such as the PAC and other policies. The research led to the conclusion that Brazil lacks a genuinely national industrial base, depending on exports of intermediate goods, mainly due to the policies practiced, causing an accelerated phenomenon of reprimarization of the economy to occur.

Keywords: Macroeconomics – Industrialization – Deindustrialization -. Reprimarization of the economy – Crisis - Recession.

INTRODUCTION

Brazil has been undergoing several institutional transformations, mainly after the impeachment of Dilma Rousseff that led Michel Temer to power. The impeachment aimed to meet the demands of the market, imposing neoliberal reforms such as labor and social security and PEC 55/241, of 2016, called "PEC do Teto", which limits public spending to the volume of spending from the previous year, corrected by the accumulated inflation of the period. However, some of these transformations come from before the government of Michel Temer, the president who carried out more profound neoliberal reforms, allowing the government of his successor, Jair Messias Bolsonaro, to make pro-market changes to the detriment of the country.

The period of the Lula I Government (2003-2007) and the measures adopted to stimulate the resumption of the reindustrialization process (the ambitious first project PAC – Growth Acceleration Program), only partially carried out as a result of the deepening of the economy's reprimarization, period in which Brazil practically became an agro-export country. Despite the incentives coming via BNDES, these were ineffective, as they tried to stimulate, above all, private sector investments.

Wilson Cano (2012) brings an analysis of the industrial period of the Lula I and II and Dilma I governments, showing how much the country deindustrialized at that time, prioritizing agribusiness. Likewise, Bresser-Pereira and Nelson Marconi (2008) already spoke of the country suffering a true "Dutch disease", and the danger of dependence on a list of agro-export *commodities*. Within this scenario, the possibilities of Brazilian reindustrialization are questioned. From the data analyzed so far, no. Because there is a true pro-market culture rooted in Brazil, reducing the State's role to 'caritas' attempts to help the most excluded needy population, leaving aside more structuring reforms such as effective employment and wage policies, which consume, and encouragement to necessary productive sectors that make the country's economy turn. In this regard, since the 1950s, authors such as Raúl Prebisch (2000) and Celso Furtado (1967), in the past, have asserted that an agro-exporting and nonindustrialized economy only accentuates the trends of income concentration in peripheral economies with low added value, on the contrary than occurs in central countries, which develop research sectors aimed at industrial production, with higher relative wages.

LULA GOVERNMENT

The period of the two governments of Fernando Henrique Cardoso (1995-2003) was marked by the adoption of the Real Plan to combat inflation and an intense privatization project for mixed economy companies, which allowed for the renegotiation of the country's external debt.

This policy was marked by the opening of the economy to foreign capital, accelerating the denationalization that occurred since the beginning of the nineties. The period was also marked by a significant number of bankruptcy filings already that Brazilian companies were not prepared for this scenario. The change was accentuated after the international exchange rate crisis of 1998, which led Brazil to devalue the Real currency, despite of increase of exports. (Jardim; Silva. 2015. P. 35).

As the article by Maria demonstrates Keys Garden It is Marcio Rogerio Silva, the governments in Luiz Inácio Lula da Silva and Dilma Rousseff practiced a more heterodox economic policy, departing from orthodox practices. The Lula government sought balance through growth economic and macroeconomic stability of a heterodox nature, aiming that the evolution of a public deficit could not be subject to long-term goals or monetarist orthodox conceptions, aiming at a balanced budget as a value permanent absolute. (Idem. p. 39). In the view of the authors, investments and pension funds represented an alternative to the government to attract private foreign investment, showing against the orthodoxy that condemns state intervention in the economy, along with a strategy that legitimized these investments, as long as they are associated with the private sectors. (Idem, idem, P. 43).

Table 1 presents the investment portfolios of the three largest pension funds that were essential for the success of PAC I in the energy sector, showing as these investments they were profitable It is diversified with relationship to sponsors.

From an institutional point of view, the government insisted on a series of changes to increase the power of control by the executive branch over public institutions, related to tenders and PPPs (Public-Private Partnerships). It was partly thanks to these partnerships that some PAC projects could be made viable. However, remember that the resources came from the BNDES and the entrepreneurs participating in the PPPs depended on them to make their projects viable. What in fact shows that there was little capital originating from invested private sectors.

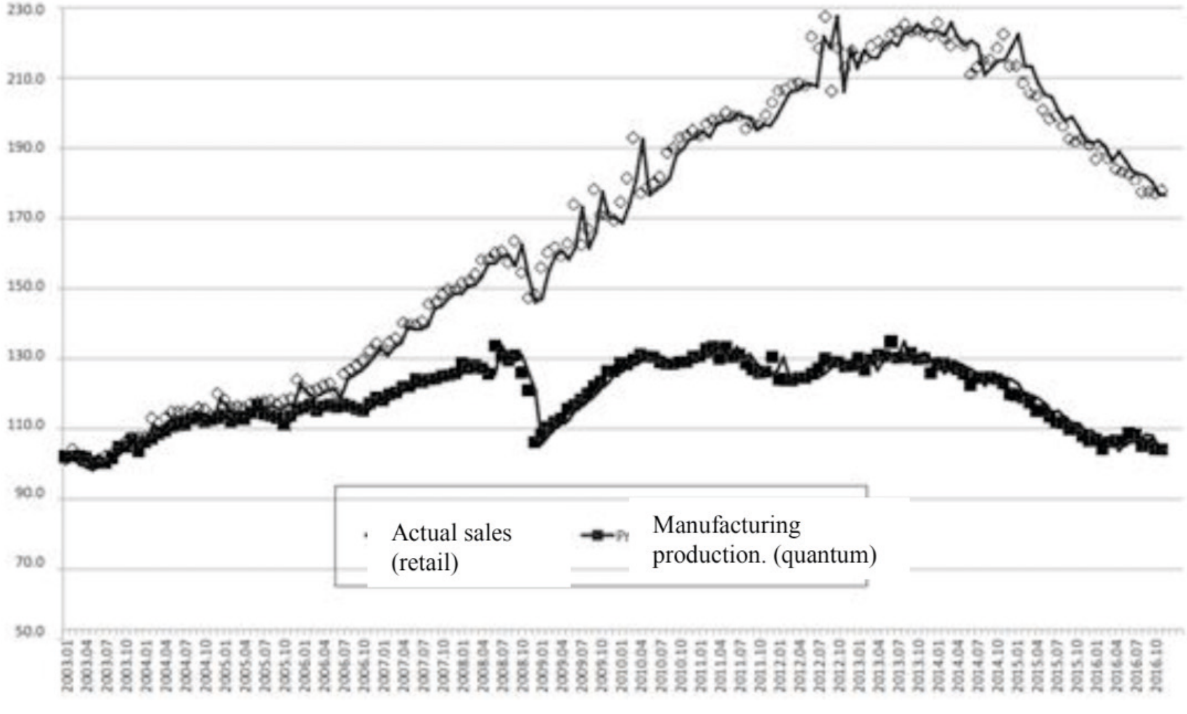
The State coordinated market investors during the Lula government, producing goods and services through state-owned joint ventures and partnerships with little private capital, establishing projects based on resources from financial markets - especially pension funds for workers and BNDES, via issuance of public bonds, in addition to direct investments in companies. At the same time, it tried to coordinate certain regulations through attempts to "domesticate" and/or "moralize" the financial market. (Idem. Idem, p. 55).

Reinaldo Gonçalves, in the article "Macroeconomic performance in historical perspective: Lula's government (2003-2010)" (2010, p. 161), starts from the observation that "the 'negative legacy' of the FHC government created serious restrictions, while the 'inheritance positive' of the latter

Type of investment	PREVI (% invested/ %of profitability)	FUNCEF (%invested/ %profitability)*	PETROS (%invested/ %profitability)
Fixed income	30,79$ /13,84%	48,03% / 14,13%	50,61% / 14,78%
Variable income	61,49% / 12,43%	33,26% /4,55%	37,03% / 6,25%
Structured investments	0,38% / 10,66%	8,04% / 7,35%	6,39% / 8,96%
Property investments	3,96% / 24,98%	8,37% /24,46%	3,27% / 26.52%
Loans and financing	3,38%/11,59%	**/15,5%	** / 15,48%
Consolidated investment	Not Reported	Not Reported	** /11,76%
Actuarial result/actuarial target	14,85%/11,85%	10,69% / 11,91%	12,89% / 11,76%

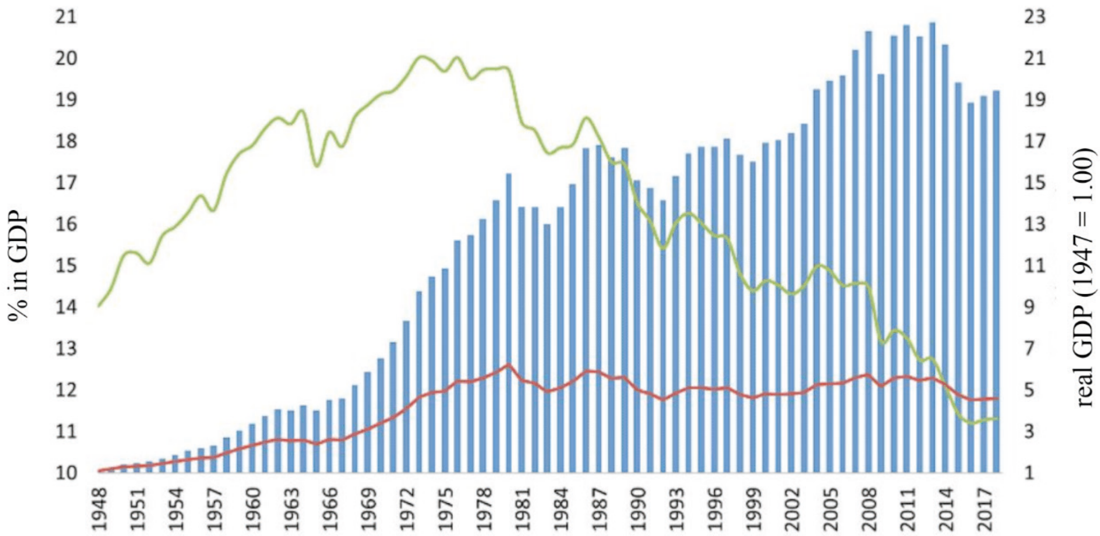
Table 1 – Return on Norte Energia's investments by pension fund segment.

Source: Report Yearly 2011 – PREVI, FUNCEF It is PETROS. *Apud.* Garden; Silva. Same, p. 43.



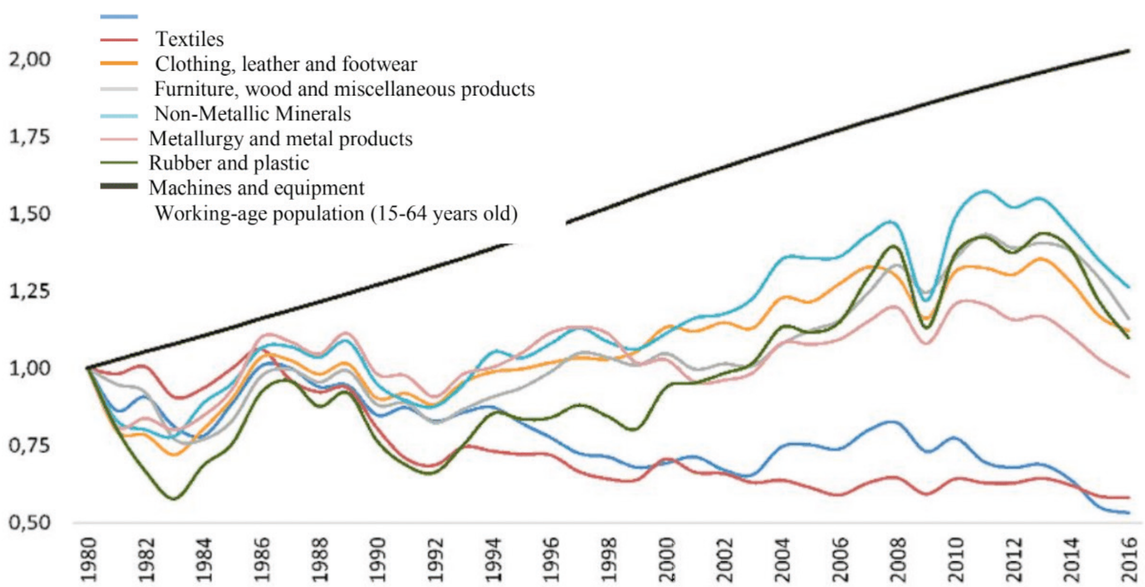
Graph 1: Sales and Manufacturing Production

Source: Ipeadata (2015). *Apud* Paula; Saucer. Ibid. 2017.



REAL MANUFACTURING GDP Manufacturing (% of GDP) at 2018 prices Real manufacturing GDP per capita Note: GDP at basic prices. Real variations by sector were used for the series at constant prices and for the evolution of real GDP.
Source: IBGE. Morceiro and Guilhoto calculations and elaboration

Graph 2 – Real GDP of the manufacturing industry and degree of industrialization, 1947-2018.



Graph 3 – Real Added Value of the sectors that grew below the industry. (1980-2016, 1980 = 1).

loosened the restrictions for the performance of the Brazilian economy". (Idem, p. 176). Therefore, it would have been quite difficult for his successor not to continue the directives assumed by the previous government. This way, the macroeconomic policy adopted by the Lula government could be modified little and was extended, with few marginal modifications, throughout the second term (2008-2011). Which would explain the weak performance of the eight years of this government. The analysis of the microdata performance of this period (change in real income, growth gap between the annual real change in Brazilian GDP and the annual real change in world GDP, investment, inflation, financial fragility and external vulnerability), demonstrates poor performance both by the standards past national and international histories. According to the author, although the indicators were lower than the averages and medians for the analyzed period as a whole, there are some exceptions, that is, the investment rate is higher than the country's average, but lower than the median; of the same inflation rate, lower both in the mean and in the median and the indicator of external vulnerability lower in the mean and median. (Idem, Idem. p. 177).

On the foreign front, the Lula government benefited from an extraordinarily favorable situation in the 2003-2008 period. So, a significant part of the merit regarding the reduction of external vulnerability indicators derives from the ascending phase of the international cycle. And, for this reason, the 2009 crisis had a relatively negative impact on the Brazilian economy, with a 0.2% drop in GDP in 2009., by the combination of backward strategies, mistaken policies, dominant interests and management errors". (Ditto, Ditto).

GOVERNMENT DILMA ROUSSEFF

The Dilma Rousseff Government inherited a high interest rate (10.5%), together with an exchange rate of R$ 1.85 x US$ 1, but cannot count on the increase in commodity prices that benefited the Lula government.

Dilma and her developmental minister, Guido Mantega, were forced to review the policy of the macroeconomic tripod, in order to "equate the three constraints of the country: high interest rates, exchange rates and high taxes". (Bresser Pereira, 2013a. p. 9). According to Bresser Pereira, it was only at the beginning of the second term, when Alexandre Tombini took over the Central Bank, that the bank returned to identify itself with national interests, ceasing to have friction with the Ministry of Finance commanded by Guido Mantega. (Ibid., Ibid. p. 9).

According to Bresser Pereira, although Dilma Rousseff's objective had been to implement the developmental tripod, she was unable to get rid of the previous one already established, which kept the country in a trap of high interest rates and an overvalued currency. In its first year, efforts were made to break with this situation, albeit in a limited way. Thus, Brazil's economy would remain characterized by a "stagnation macroeconomics". It must be noted that in the first two years of his government, the results were modest in terms of GDP growth: 4% in 2011, 1.9% in 2012. (Bresser Pereira, 2013b. p. 10).

In the Dilma government, there ended up being an innovation that tended to be hyperactive, partly as a result of the global context and partly as a result of her management. Thus, parts of macroeconomic policy were changed very frequently. In her first term, Dilma sought to reduce the risks present in the economy, as well as the signs that brought the government closer to neoliberalism, such as the presence of Henrique Meirelles in the Central Bank

 DOI 10.22533/at.ed.2163212330088

(predecessor of Alexandre Tombini). Therefore, it seemed freer to act. (Carleial, 2015. p. 206). This explains the successive changes in the rules for foreign capital flows, tax regime applied in certain sectors, without the authorities showing much concern about the effects that these changes could have on the degree of uncertainty and the business environment. (Mesquita et al. 2014, p. 3).

Between 2011 and 2014, the government invested in changing the economic policy mix, with the reduction of the Selic rate and the exchange rate devaluation, in what was called the New Economic Matrix, changes that sought a positive reaction from the country's economy. Adding these changes to tax breaks, it was hoped, would be enough to boost aggregate supply and demand for goods. As this bet was not successful, efforts were made to implement measures aimed at stimulating growth, extending payroll exemptions to more productive sectors. Such action, however, does not seem to have been well coordinated. According to Luiz Fernando de Paula and Manuel Pires (2017), the adoption of a countercyclical fiscal policy was justified in view of the low performance of the economy, but it came late, favored tax exemptions instead of public investments and was poorly communicated to agents. (Ibid., Ibid. p. 132). Faced with the difficulties that arose, the government tried to increase the incentives for private investments, which were already being stimulated by the BNDES, trying to give greater consistency to the economic policy through the increase of private investments. This scenario took place through tax exemptions, which would help to maintain jobs and increase investments, continuing the Lula period. (Carleial. Ibid. p. 206).

Certainly, the Dilma government bet excessively on payroll exemptions (payroll) by withdrawing the employer's social security quota (20%) referring to work remuneration. This quota was replaced by a contribution on gross revenue, of 2.5% and 1.5%, depending on the sector or product, rates that were later reduced to 2.0% and 1.0%. The explicit objectives were to increase the generation of jobs and avoid unemployment and also improve the competitiveness of companies, encouraging them to increase their investments. This expectation was not fulfilled and it is likely that these measures simply increased the companies' profit margins. (Ibid., Ibid. p. 206-7). The government hoped that lowering the cost of labor would stimulate job creation. However, it is known that the demand for work depends on the behavior of the goods market, which in turn depends on the expectation of future profits of entrepreneurs, and both were falling, and may also depend on the income of workers. In addition, it was expected that there would be an improvement in competitiveness that would come from the reduction of production costs associated with the reduction of payroll charges, without affecting remuneration or workers' rights. (Ibid., Ibid. p. 207). On the other hand, it is known that the primary sector does not have the capacity to absorb the labor coming from Brazilian industries. So, in the words of Bresser Pereira, who absorbs this workforce is the service sector, thus having a paradoxical situation of low growth and full employment: "There is simply an absurd orthodox economic policy for which there is no difference for the country between produce "potato chips" and "digital chips". (Bresser Pereira. Ibid. 2013a, p. 7-8).

The appreciated real, along with high interest rates, in an industrial policy that reversed external vulnerability, was reflected in the deepening reprimarization of the Brazilian economy. As also analyzed by Wilson Cano, the combination of interest and exchange significantly pressured current transactions in the balance of payments: "in 2000, the share of manufactured goods was 60% and, in 2013, this share dropped to 39.3% %. The change also occurs in the import basket and the import of durable consumer goods grows 8.9 times between 2002 and 2013." (Cano. Apud Carleial Ibid. p. 207) On the other hand, the international situation, after the 2008 crisis, deteriorated again in 2011, due to the bad recovery of the American economy and which was aggravated by the euro crisis. As a result, rich countries had low growth in 2012, which led to a decrease in goods exported by Brazil.

Allied to the implemented fiscal policy and with the spirit of encouraging private investment through public support, the attempt to create concession programs for infrastructure areas (roads, railways, ports, etc.) stood out. The objective, in addition to generating investment and jobs, would be to reduce the logistical cost, popularly known as "Brazil cost", in order to improve the competitiveness of Brazilian products, a fact that did not materialize. In 2012, a first Investment Program in Logistics (PIL) was created, with a forecast of generating R$ 133 billion in investment in areas of roads and railways (PAC II). In addition to this package, concessions were made for ports, airports and the electrical area, which could have led to an investment in infrastructure of up to R$500 billion. There were, however, problems in defining contract formats, the rate of return of projects and financing mechanisms and guarantees, which delayed several concession auctions, which led to delays/delays in the start of investments and their due multiplier effects. These frictions regarding the rates of return on public concessions are pointed out as the main points of the loss of support from the Brazilian political and business class during the Dilma Government, due to the fear of the growing intervention of the State in the margins of profitability. On the other hand, public investments proved to be erratic, with retraction and expansion in alternate years, resulting in a brutal drop in the average growth rate: 0.7% (2011); 3.2% (2012); 7.8% (2013); 6.3% (2014). (Gentil; Hermann. 2017, p. 800). At the same time, the Government maintained as a guiding principle the fulfillment of primary surplus targets, with the specific objective of controlling the country's external debt, a conflicting objective in view of the increase in social spending and the weak tax base affecting the middle classes and workers.

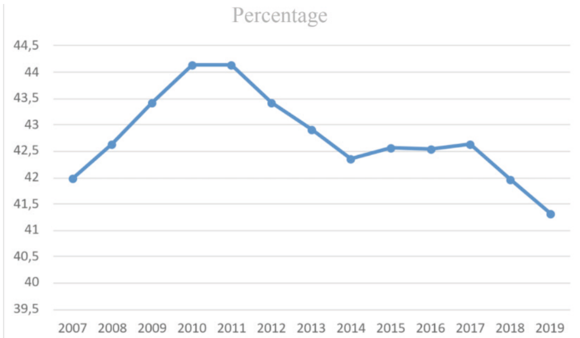
At the end of 2014, there was a reduction in sales in the retail market (Graph 1), which caused a reversal in the trajectory of the economy, strengthening the analysis that the policies of Dilma Rousseff's first term had not been enough to make the industry competitive, having remained stagnant and reducing its production.

Graph 2 reinforces the data in Graph 1, demonstrating that in 2014 the real manufacturing GDP began to decline (% of GDP at 2018 prices in relation to national GDP).

Graph 3 follows the same line, showing that in 2014 the sharpest drop in the real added value of the Brazilian manufacturing sectors begins.

Although the analysis does not dwell on the effects of the long external crisis, it must be noted that during the first term of the Dilma government, the industrial sector practically remained stable. It was from the end of the period that there was a drastic fall in industrial production. This continued until the *impeachment* that deposed the president, probably these results also being an accelerating factor for this event.

Wilson Cano in the article "A deindustrialization at the Brazil" (2012), he does a test analysis from the industry in transformation, demonstrated on the chart 4.



Graphic 4 – Total of VTI/VBPI of industries in transformation

Source: IBGE – Annual industrial survey – company. *In:* Cano. Ibid., p. 9.

According to the graph, from 2007, the year of creation of the PAC, the value of the ratio of the VTI (value of industrial transformation) over the VBPI (gross value of industrial production) starts to rise, having its peak in 2011, despite the crisis de 2009. However, the growth of the VTI over the VBPI was mainly due to the fact that commodities were included in the VTI calculations. However, the manufacturing industry does not follow the growth of the trade balance: between 2005 and 2008 there was a large increase in imports, making up for the fact that the industry was unable to keep up with the growth of the country's domestic demand, as shown in graph 5.

The Brazilian industry in not manufactured products, it was capable of keep up with household consumption, making it necessary to import of these goods to supply the internal demand. The data presented for the GDP demonstrate that fact:

YEAR	%	YEAR	%
2007	**5.7**	2012	1.9%
2008	5.1%	2013	3.0%
2009	- 0.2%	2014	3.1%
2010	7.5%	2015	- 3.5%
2011	4.0%		

Table 2 - GDP Brazilian (%).

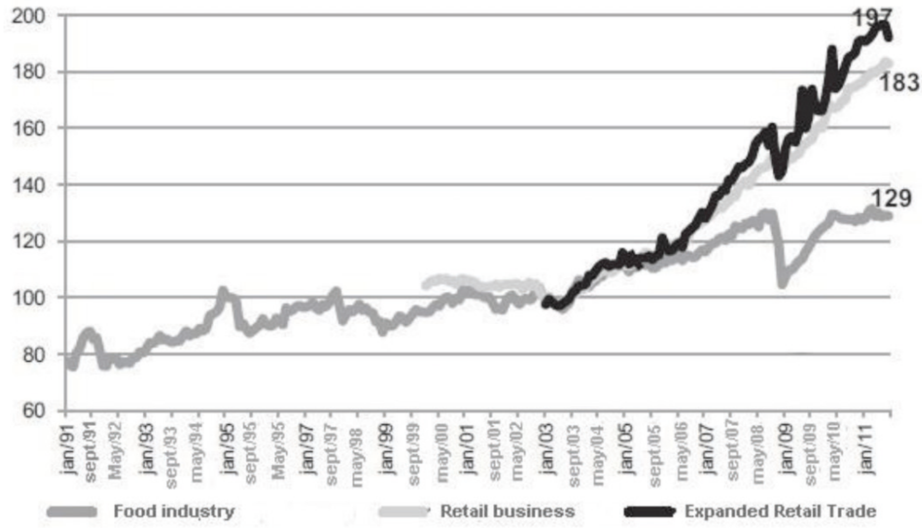
Source: IBGE/IPEA/BB – Series historical.

Factors that may explain the increase in household consumption during the period are: (1) maintenance of growth in employment and wages; (2) real wage increases Minimum what raised O power in purchase of the workers, specially, the lower income; (3) increased credit supply; (4) better financing conditions; (5) interest rate reduction (although higher compared to foreign rates); (6) income transfer policies (Bolsa Família); (7) the overvalued exchange rate; (8) the cheapening of goods in international trade (largely due to demand from China).

GOVERNMENT MICHEL TEMER

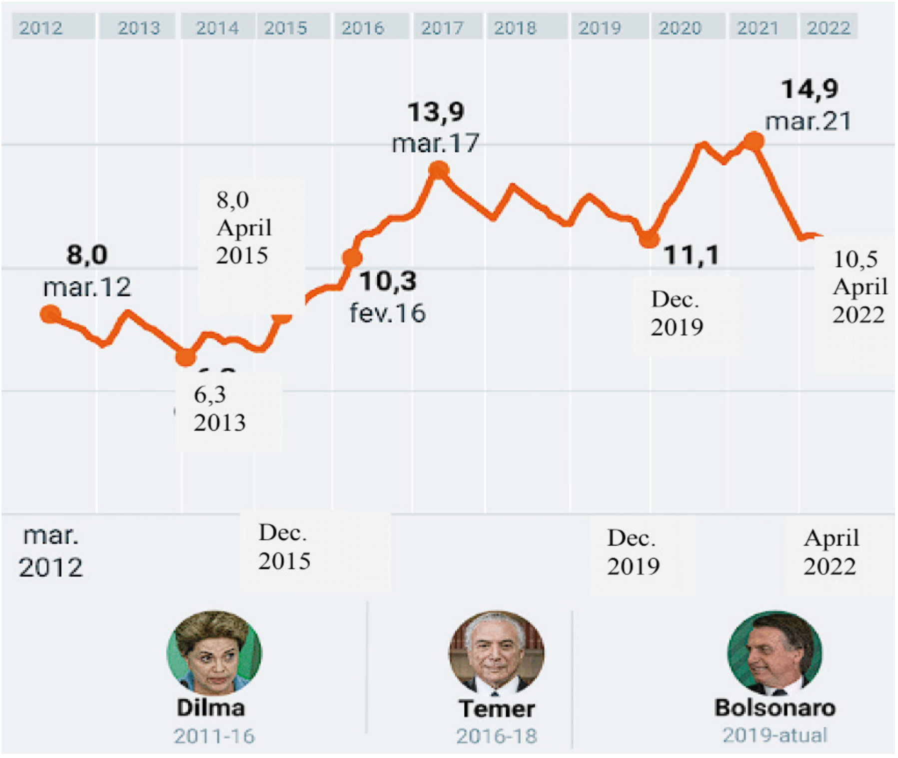
The erratic macroeconomic policy of Dilma Rousseff's second term led to a loss of confidence in the government, paving the way for the impeachment coup, with Vice President Michel Temer assuming the presidency of the republic in August 2016. Her policy, however, it did not prioritize an immediate economic recovery in the sense of growth, employment and public accounts, putting into practice a physiological policy with the aim of serving the right-wing and center-right parliamentarians, who had supported the coup. This opened up an "easier" way to meet the goals of the proposed labor and social security reforms, of a neoliberal nature, deregulating the economy and social commitments inscribed in the 1988 Constitution, within the orthodox macroeconomic tripod model. (Biancareli, 2017). Ernesto Lozardo, at the time president of IPEA, in an interview with the newspaper *Valor Econômico,* claims that Temer's proposal for the economy is a return to the market, with little interference from the government, that is, it aimed to reduce the role of the State, creating a business-friendly environment and structural reforms that must increase the country's productivity. (Lozardo. *Apud* Biancareli. Ibid.).

The thesis defended by the Temer



Graphic 5 – Growth from the production industrial and of business retailer: in 1991 The 2011 - (seasonally adjusted series; average 2003 = 100).

Source: Search Industrial Monthly – Production Physical (PIM-PM) It is Search Monthly in Business (PMC) of IBGE. *In:* Morceiro. 2012, p. 156.



Graph 6: Unemployment Rate in Brazil in percentage 2012-2022

Source: IBGE; elaboration: Power 360.

government disregarded that the highest public expenditure in the country and the one that grew the most was interest on the domestic debt. Comparatively speaking, the Social Security deficit in 2015 was R$85 billion, while the interest paid by the country was R$502 billion. That is, six times greater, would denounce Almir Khair. (Khair, 2020. p. 55). Among the reforms made during the Temer government, two that had the greatest impact on the economy are worth mentioning: PEC 55/241, of 2016, which froze public expenditure for the next 20 years, popularly known as "PEC do Ceiling", freezing the level of expenditure primary expenses at R$ 1,280 billion, in values at the time, 40% for Social Security, 20% for personnel, 20% for other mandatory expenses and 20% for non-mandatory expenses. This PEC showed that the government did not intend any countercyclical fiscal policy, but represented serious restrictions for the public assistance, health and education systems.

The PEC caused a large cut in social spending, reaching the middle and poor classes, with the idea of improving the country's fiscal situation. However, it also had fiscal waste, which could be eliminated in the short term, namely: an excess of US$ 200 billion in international reserves which, according to the IMF, had an annual cost of R$ 100 billion. There was, therefore, an excess of BRL 500 billion in the deposit of BRL 1 trillion from the National Treasury, at the Central Bank, yielding nothing, but which, according to Amir Khair, could have been used to reduce the external debt, which had an annual cost of R$70 billion; in addition to a R$512 billion subsidy from the BNDE, popularly known as the "business grant", with an annual cost of R$35 billion. (KHAIR, Id., p. 52).

The other reform was that of labor legislation. This met the wishes of businessmen for a more flexible labor market and reversed a large part of the CLT, allowing for a broad growth in outsourcing. It is worth the curiosity that at that time the president of the chamber of deputies took the opportunity to talk about the need to have a Ministry of Labor. The objective of this reform would be to reduce the cost of labor, which was reinforced by the high and growing unemployment rate at the time, as shown in graph 6 below.

It is worth mentioning the pension reform, which began to be discussed in the Temer government and was re-discussed and approved in the Jair Bolsonaro government.

In addition to these anti-workers reforms, the impeachment provided an environment for other neoliberal reforms, less discussed than the previous ones, but which had a certain weight. One of them is the question of Petrobras giving up parts of the pre-salt exploration in favor of foreign companies and the limitation of the use of induction power that Petrobras had and that had already been reduced due to the opening of its capital since 1993 (Biancarelli. Ibid.). Public banks also suffered, ending up having their roles as financing agents reversed and their influence reduced. As an example of this fact, we have the program to close Banco do Brasil branches and the early return of R$ 100 billion by the BNDES to the National Treasury. (Ibid., Ibid.).

According to Gadelha & Gadelha (2019), the explanation for a stabilization of unemployment in the government of Michel Temer was due to the rate of underutilization of the workforce (which aggregates unemployed, underemployed due to insufficient hours and the potential workforce) and not to the increase in formal jobs, which rose to 24.7%, covering around 27.7 million Brazilians. This figure is the highest in the continuous PNAD historical series, since its inception in 2012. Observing the first quarter of 2018, the Brazilian unemployment rate reached 13.1%, which represents about 13.7 million unemployed people. The reduction of 408 thousand people in the total number of workers in the private sector, with a formal contract, occurred since the first quarter of 2018, showing the severity of the labor reform. And, together with this, the discouragement rate in the first quarter of 2018 was around 4.1%, the highest in history, this contingent represents an increase of 300 thousand people compared to the last quarter of 2017. (Ibid. Ibid, p. 90).

Michel Temer's government project was based on the program of his party, the MDB, and was called "Bridge to the Future", signaling to the market the end of the primary deficit. Temer's economic team, however, failed, not only for not being able to control expenses and stop the growth of the public debt, but also for not resuming the country's growth, shown by the GDP result for the first quarter of 2017, of just 1%, but presenting a drop of 04% (12th worst result in the country) in relation to the previous period. However, the government celebrated this result. Result, however, due exclusively to the good performance of agriculture, having no connection with the economic policies adopted by the government. Finally, the fiscal failure would also occur when erroneously combating expenses in the social area contained in the Social Security budget, in particular the Bolsa Família Programs, in addition to the areas of Education and Health (SUS). Policies that were aimed at the middle class and poor populations. In addition to letting the Central Bank re-adjust the Selic as it saw fit, following the banks' desire to delay the fall in rent as much as possible, even in view of the downturn in economic activity and, consequently, the fall in inflation favored by the decrease in consumption and reduction in food prices. The fact is that the high Selic rate hit interest rates even more and made the country's internal debt skyrocket. (Khair, Id. p. 98).

INDUSTRY IN THE STATE OF SÃO PAULO

As for the State of São Paulo, a study by the PIA (Annual Industrial Survey) of the IBGE, between 2003 and 2016, the participation of the São Paulo industry in the Value of Industrial Transformation (VTI), fell from 43.8% to 37.5%. According to SEADE, although the State government has a significant share in segments that are part of its production chains, the decline in the main sectors was: chemical products (48.6% to 44.6%), rubber and plastics (60.6% % to 17.6%), with the biggest loss in the biofuels sector, which changed from 61.9% to 29.5%. (SEADE, 2019. p. 6-8). In comparison to non-durable consumer goods, the reduction was also different between the sectors of this segment: apparel and accessories reduced from 33.6% to 23.6%; pharmochemicals and pharmaceuticals fell from 73.2% to 70.5%. As for the capital goods segment, it remained practically unchanged, from 52.7% to 52.3%. (Ibid., Ibid. p. 8).

Still, according to SEADE data, between 2003 and 2016 the structure of the industry in São Paulo underwent a significant change, with emphasis on the category of non-durable goods, whose participation in VTI went from 20.2% to 28, 4%, mainly driven by the food sector (12.3% to 18.8%). On the other hand, in relation to the national scenario, there was a general loss in the participation of the State's industrial production: the intermediate goods sector presented a decrease, but it is still the one with the greatest weight, and went from 51.9% to 43.9%. (Ibid., Ibid.).

Observing now the participation of the São Paulo municipalities in the VTI, in this period of 2003 and 2016, it is observed that there was a deconcentration of the industrial activity of the State of São Paulo, with the participation of the 20 main municipalities in the São Paulo VTI decreasing from 63.3% to 50.9%.

This fact is explained by the reduction in the contribution of the municipality of São Paulo (14.8% to 9%). Municipalities that benefited from this movement were Sorocaba (from 13th to 9th place) and the Administrative Region of Campinas, which in 2003 registered five municipalities (Paulínia, Campinas, Jundiaí, Piracicaba and Americana), jumping to seven in 2016 (Paulínia, Campinas, Jundiaí, Piracicaba, Sumaré, Indaiatuba, Hortolândia). (Ibid., Ibid. p. 10).

There is also a tendency for industries to have preference in regions outside the metropolitan areas, causing the participation of urban agglomerations to grow. As a result, the VTI in some municipalities rose, such as Jundiaí (1.7% in 2003, to 2.4% in 2016) and Piracicaba (1.4% in 2003, to 2% in 2016). However, with the exception of the Metropolitan Regions of Sorocaba and Ribeirão Preto, all the other Regions reduced their importance in the VTI, with emphasis on the Metropolitan Region of São Paulo, which had its participation reduced from 40.6% in 2003 to 30.9% in 2016. (Ibid., Ibid. p. 11-12).

It must be noted that the 20 largest municipalities, in 2003, previously represented 63.3% of the VTI in the State of São Paulo, having passed in 2016 to only 50.9%, being associated with the participation of the capital in the added value of industry and Greater ABC region. In the Paulínia region, the drop was due to the negative added value of oil refining, a likely consequence of Lava Jato. (Ibid., Ibid.)

RESTRUCTURING FROM THE SÃO PAULO INDUSTRY

Bresser-Pereira and Nelson Marconi (2008) claim that the phenomenon of deindustrialization in Brazil is due to the so-called "Dutch disease", of which the simultaneous occurrence of an appreciated exchange rate and trade balance would be proof, the Real Plan having reinforced this fact, with the adoption of an open economy and a floating exchange rate. This opening favored imports and exports of commodities, together with the appreciation of the exchange rate policy. These policies, in turn, led to a reduction in the real exchange rate, increasing external demand combined with the increase in commodity prices and the growth of the world economy. This contributed to the increase in Brazilian exports until 2007. On the other hand, the effect of the appreciated exchange rate on industrial production was not good for the Brazilian manufacturing industry. (Bresser-Pereira; Marconi. 2008, p.1).

There are, in Brazil, a vast amount of spaces that can receive new investments to make the Brazilian industry competitive. IEDI, in one of its 2021 publications, focused on some places where an industrial process could be intensified. Some aspects deserve to be analyzed, with a view to overcoming them, when thinking about developing an industrial policy. The first of them is the fact that multinationals do not focus on innovation in the Brazilian territory, operating with less intelligence and being controlled by centers outside the country. These multinationals already have NAFTA, EU and Asia areas as their investment focus.

On the other hand, according to the IEDI, following the model of those regions, Brazil presents places where it could invest in infrastructure to become competitive. Summary, below, directly the IEDI:

According to the analysis, in sectors controlled by local companies, in which Brazil is an international player, there are conditions for the country to take an active role in the management of supply chains, especially foreign ones, through spillover management. That is, it is necessary to understand how it is possible to exploit this overflow or spillovers of technology and seek the formation of innovation ecosystems. A model would be the structure created by Petrobras on Ilha do Fundão for deep water exploration – it is a very clear ecosystem, but we have several others that guarantee our leadership in these areas, with a certain reduced contribution from foreign multinationals. (IEDI/ CEDEPLAR/ UFMG. Jul. 2021, p. 16).

Still, according to IEDI, Brazilian multinationals can and must invest in production chains, making upgrades for industries to become more competitive, increasing the value aggregator, repatriating knowledge, as the country loses much of its human capital to other countries by the lack of incentives for professionals sent to study abroad (brain drain problem). I cite here the model of China, a country that invested a lot in knowledge and reverse engineering and today is one of the pioneers in advanced technology, with companies like Huawei and Xiaomi in the field of technology, Weibo in the field of social networking, Perfect World and Tencent, in entertainment business in general, making movies by Perfect World and Games, also Tencent, with Tencent owning several companies in this business, spread all over the world. These and many other Chinese industries and companies already outperform American, European and Japanese companies.

Professor Antônio Correia de Lacerda states that reversing the deindustrialization process is a great challenge, but it is also an opportunity to be seized. Brazil starts with two fundamental advantages: the country also has the largest industrial park in Latin America, which places Brazil in a strategic and geopolitically well-positioned position. "... industrialization is not for those who want it, but for those who can. Brazil has an economy of scale and scope for reconstruction," says Lacerda. (Lacerda. 2022. p. 38).

For the restructuring of the industry, however, it is necessary to have an environment of macroeconomic policies and competitiveness capable of promoting the sector, together with the incentives given via public banks such as the BNDES. Rebuilding these institutions, however, is a challenge, as they have been atrophied due to the minimal state policies of the government of Jair Messias Bolsonaro, with repercussions on the mentalities of a large part of the population. However, according to serious studies and institutes, within a developmental policy, banks would have the role of once again financing industries in the long term, with interest rates compatible with the expected profitability of the businesses carried out. (Id. Id.). However, it would also be necessary to align the private sector via leading companies and associations, and from there build a strategic plan for the reconstruction of Brazilian industry. (Id. Id., p. 40).

It must be understood, however, that it is not just a question of investing in industries, but also in the sectors of logistics and infrastructure, including urban ones – housing and mobility policies, aimed at the working class, metropolises endowed with a poorly optimized public transport structure, among other problems. In addition, other structural weaknesses in Brazil must be highlighted, such as educational and digital exclusion, alongside extreme income inequalities, precarious housing conditions, lack of sanitation and even drinking water, day care centers and schools.

CONCLUSION

As the main result of our research, during the analyzed period, in addition to the impacts of the 2008 crisis, Brazil lost a large part of its industrial competitiveness, despite the development policies via BNDES. However, the consulted authors are coeval that the macroeconomic policies practiced after the end of the presidential term of Luiz Inácio Lula da Silva, especially in the second short period of President Dilma Rousseff's government, the country suffered a deepening of the recession, aggravated in the period by Michel Temer, which were disastrous for Brazilian industry. We can see today that the "engine" of the economy is the agroindustry, a sector that under technological modernity generates few jobs nowadays, despite the social policies of income distribution prevalent until 2015 (IBGE data). These policies, however, are not capable of ensuring the internal demand necessary to maintain industrial activities in the country.

The data included in the tables show a decline in the main industrial sectors of DI and DII since 2011, as well as in the sector of consumption of durable goods such as cars, trucks, etc., despite the Lula government's efforts to grant tax benefits. Policies that were maintained and even expanded by Dilma Rousseff, by sustaining for a brief period the internal demand responsible for the slight growth of the sector's GDP and maintenance of industrial jobs. However, the data show that the drop-in unemployment was greater due to hiring in the consumer goods and services sectors, despite the fact that these pay lower wages than the industrial sectors and are very volatile to external crises.

Lula's successor, Dilma Rousseff maintained the tripod, but made some deviations, equating the three pillars: high interest rates, exchange rate and high taxes. His rule was the contradictory result of market forces, state intervention and exchange rate treatment. Successive changes were then made to the rules governing the flow of foreign capital and the tax regime, without the authorities showing much concern about the effects they would have on the middle classes and workers. Analyzing more deeply, one can see a reduction in the Selic rate along with the rates, albeit insufficient in the exchange rate devaluation, in what was called the "New Economic Matrix", added to the tax exemptions.

The expected result must have been enough to boost aggregate supply and demand for goods, but without success. After this failure, the government implemented measures aimed at stimulating growth in the midst of the worsening of the world recessive crisis, acting with payroll exemptions for several sectors and increasing incentives for private investment. Policy that was already being implemented in the previous government, via BNDES. However, once again, what was expected did not happen, as the government hoped that the reduction in the cost of labor would stimulate job creation. It is known, however, that the demand for labor depends on the behavior of the market for capital and intermediate goods, which, in turn, depends on the expectation of future profits of entrepreneurs, and both were in decline. The primary sector, in turn, does not have the capacity to absorb manpower from industries, with the tertiary sector, of goods and services, being the only one to absorb part of this manpower.

Therefore, the conjuncture of the period presents a paradoxical situation of low growth with full employment accompanied by low wages and low demand. Thus, with the real appreciated along with high interest rates and an industrial policy incapable of temporarily reversing external vulnerability, the country was led to a scenario of reprimarization of the economy and a combination of interest and exchange rates that significantly pressured the current transactions of the balance of payments, reinforcing the already outlined reprimarization.

After the impeachment of Dilma Rousseff, Miguel Temer's government was marked by neoliberal reforms, which were not aimed at the necessary recovery of the economy, but rather to serve the parliamentary base that had supported the impeachment and to meet goals within the macroeconomic tripod model of the liberal orthodoxy. However, the Temer government disregarded the fact that the biggest public expense and the one that grows the most are the interest on the external and internal debts, in comparison with the social security budget deficits, as already mentioned. Finally, the deregulating reforms of labor legislation, completed by the social security reform carried out in the Bolsonaro government, completed the scenario of the crisis that hit the country.

To revitalize the industry, therefore, it is crucial to invest in innovation again and create an environment for research recovery in the country, in addition to technological innovations as seen at Petrobras. The few Brazilian multinationals have the opportunity to strengthen production chains, increase added value and repatriate knowledge, taking China as a model, as Brazil has competitive advantages and needs to reformulate a strong State that focuses on macroeconomic policies, competitiveness and investment. Public-private collaboration is already well known in the country, but it must be complemented by education policies capable of helping to overcome the deep social inequalities, fundamental for a possible return to the reconstruction of Brazilian industrialization.

REFERENCES

BIANCARELI, André. O governo Temer na economia: conjuntura, estrutura e "fracasso". [Online]. *Le Monde Diplomatique Brasil.* São Paulo, 1 de agosto de 2017. <https://diplomatique.org.br/o-governo-temer-na-economia-conjuntura-estrutura-e-fracasso/>. Acesso em: 07/06/2022.

BRESSER-PEREIRA, Luiz Carlos. O governo Dilma ao 'tripé macroeconômico' e à direita liberal e dependente. *Novos Estudos Cebrap*, São Paulo: Cebrap, v. 95, p. 4-15. Mar. 2013a

_____. O Tripé, o Trilema e a Política Macroeconômica. *Dossiê da Crise - IV*. Associação Keynesiana Brasileira. p. 10-18. Out. 2013b

_____; MARCONI, Nelson. Existe Doença Holandesa no Brasil?. São Paulo: 2008. 21 p. <http://www.bresserpereira.org.br/papers/2008/08.14.Existe.doen%C3%A7a.holandesa. comNelson.Marconi.5.4.08.pdf>. Acesso em: 26/novembro/2021.

CANO, Wilson. A desindustrialização no Brasil. *Economia e Sociedade.* Campinas: v. 21, Número Especial, p. 831-851, Dez. 2012. 21 p. <https://www.scielo.br/j/ecos/a/n6w4hPXK6zwZ3YJYTmQGjLJ/abstract/?lang=pt>. Acesso em: 26/novembro/2021.

CARLEIAL, Liana Maria da Frota. Politica econômica, mercado de trabalho e democracia: o segundo governo Dilma Rousseff. *Estudos Avançados*. São Paulo: IEA-USP, v. 29, p. 201-14. Out. 2015. <https://www.scielo.br/j/ea/a/DvpPCb3h3xmWLNzLRgXGcJB/?lang=pt>. Acesso em: 11/04/2022.

CEPAL. *Cinquenta anos de pensamento na CEPAL.* Rio de Janeiro: Record/CEPAL, 2000. 2 v.

FURTADO, Celso. *Teoria e Política do Desenvolvimento.* São Paulo: Companhia Editora Nacional 1967.

GADELHA, Nair d'Aquino Fonseca; GADELHA, Regina Maria d'Aquino Fonseca. Desigualdade estrutural, trabalho e gênero: a fronteira das diferenças. *Revista Pesquisa & Debate.* São Paulo: PEPGEP-PUC-SP, v. 31, n. 2 (56), p. 81-98. Dez. 2019.

GENTIL, Denise; HERMANN, Jennifer. A política fiscal do primeiro governo Dilma Rousseff: ortodoxia e retrocesso. *Economia e Sociedade.* Campinas: v. 26, n. 3 (61), p. 793-816. Dez. 2017. <https://www.scielo.br/j/ecos/a/hTt6P75FccxwCBJGnrv3VLF/?format=pdf&lang=pt>. Acesso em ago. 2023.

GONÇALVES, Reinaldo. Desempenho macroeconômico em perspectiva histórica: governo Lula (2003-10). *In:* MAGALHÃES, João Paulo de Almeida *et al. Os anos Lula:* contribuições para um balanço crítico. 2003-2010. Rio de Janeiro: Gramound, 2010. p. 161-79.

IBGE. Sistema de Contas Nacionais. 2021. <https://www.ibge.gov.br/estatisticas/economicas/contas-nacionais/9300-contas-nacionais-trimestrais.html?=&t=series-historicas&utm_source=landing&utm_medium=explica&utm_campaign=pib#evolucao--taxa>, Acesso em: 01/março/2022

IEDI. Instituto de Estudos para o Desenvolvimento Industrial. *Futuro da indústria no Brasil impactos da reestruturação das empresas multinacionais e da dinâmica das cadeias globais.* São Paulo: IEDI, 2021. 25 p. <https://www.iedi.org.br/artigos/top/estudos_industria/202107025_futuro_ind_br.html>. Acesso em: dez. 2021.

JARDIM, Maria Chaves; SILVA, Márcio Rogério. *Programa de Aceleração do Crescimento (PAC).* Neodesenvolvimentismo? São Paulo: EDUNESP/Cultura Acadêmica, 2015. p. 35-55.

KHAIR, Amir. *Direita, Volver!* São Paulo: Editora Vento Forte, 2020.

LACERDA, Antonio Corrêa de; *et al. Reindustrialização:* Para o Desenvolvimento Brasileiro. São Paulo: Editora Contracorrente, 2022.

MESQUITA, Mario *et al.* A política do governo Dilma: a volta do experimentalismo. *In: Coletânea de capítulos da agenda "Sob a Luz do Sol".* São Paulo: Centro de Debate de Políticas Públicas. 2014. p. 3-15. <https://cdpp.org.br/pt/publicacoes/#:~:text=Sob%20a%20Luz%20do%20Sol%3A%20uma%20agenda%20para%20o%20Brasil&text=O%20objetivo%20deste%20trabalho%20%C3%A9,custos%20%C3%A9%20uma%20caracter%C3%ADstica%20central>. Acesso em: 16/04/2022.

MORCEIRO, Paulo César. *Desindustrialização na economia brasileira no período 2000- 2011:* abordagens e indicadores. São Paulo: Cultura Acadêmica, 2012.

PAULA, Luiz Fernando de; PIRES, Manuel. Crise e perspectivas para a economia brasileira. *Estudos Avançados.* São Paulo: IEA-USP, v. 31, n. 89, p. 125-44. 2017.

SEADE-Sistema Estadual de Análise de Dados. Pesquisa Analisa a Indústria Paulista. São Paulo: 2019. 38 p. <https://www.seade.gov.br/wp-content/uploads/2021/09/MapaIndustria_abril2019.pdf/>. Acesso em 07/setembro/2021