

# NOTES ON ECONOMIC DEVELOPMENT IN A DUAL ECONOMY: THE RISE AND FALL OF BRAZILIAN MANUFACTURING INDUSTRY

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## ABSTRACT

Since the second half of 2010, the Brazilian economy is stagnant with negative consequences on productivity and employment growth. We will argue that the loss in economic dynamism is rooted in significant structural changes since the economic opening in the 1990s, resulting in fast deindustrialization and deterioration in the labour market. Our theoretical hypothesis is that of endogenous technical progress. Assuming that it is incorporated in the new machines and equipment, capital accumulation is the key variable to explain. Following early works by Kaldor and Kaldor Mirrlees, we assume that capital accumulation and the incorporation of technical progress are fundamental to promoting structural transformation. However, the presence of a dual labour market may impair the process. Also, as explained by the new developmentalist theory, financial integration of developing economies (a strategy to grow with external savings) in a hierarchical international monetary-financial system imply that real interest rates tend to be high, and the real exchange rate is appreciated, which does not induce accumulation in productive capital. In this case, the economy tends to specialize in its comparative advantages. Early deindustrialization deepens economic heterogeneity and operates as a barrier to increasing aggregate productivity. This is the case of Brazilian economy that failed to develop an endogenous core of technical progress during the fast industrialization process and did not succeed after economic opening either. Duality in the labour market and productivity heterogeneity have been deepened since the 1990s and the Brazilian economy is stagnant.

**KEYWORDS:** Structural Change; Dual Economy; New Developmentalism; Brazilian Economy.

## 1. INTRODUCTION

Once one of the fastest-growing economies globally, the Brazilian economy has stagnated since the 1980s. Per capita income grew less than 1% py from 1981 to 2019, contrasting with 4.5% py during 1961-1980.<sup>1</sup> Since the second half of 2010, the Brazilian economy is regressing. In 2019, the year before the pandemic crisis, the Brazilian GDP had not reached the GDP of 2014, the last year of growth before the recession of 2015 and 2016. In 2019, the GDP per capita was 2.9% below<sup>2</sup> the 2014 level. In this scenario, the debate on how to redeem the Brazilian growth trajectory is of utmost relevance, as the prospects are that the 2020s might follow the 2010s as another 'lost decade'.

This paper explores the reasons why the Brazilian economy is stagnant, with negative consequences on productivity and employment growth. We will argue that the loss in economic dynamism is rooted in significant structural changes since the economic opening in the 1990s, resulting in fast deindustrialization and deterioration in the labour market. Based on descriptive statistics, the paper shows that the Brazilian economy has presented a lower rhythm of capital accumulation due to the financial integration in an asymmetrical international financial system. Financial integration means to deepen the strategy to grow with foreign savings, and therefore, we will claim that economic liberalization has worsened the historical labour market heterogeneity, and has reduced policy space to implement pro-growth policies. As we will see, the long-term trend towards exchange rate appreciation, which has been observed in most developing economies financially integrated and dependent on foreign savings, also plays a decisive role in explaining deindustrialization, economic stagnation, and the deepening of labour market heterogeneity.

Our theoretical starting point is to consider the hypothesis of endogenous technical progress to develop our arguments. Assuming that it is incorporated in the new machines and equipment, capital accumulation is the key variable to explain the rhythm that technical progress is introduced in an economy. Early growth models by Kaldor(1957) and Kaldor and Mirrlees (1962) established a theoretical connection between functional income distribution and the introduction of technical progress. Later developments in the new developmentalism literature show that the incorporation of technological progress might be delayed or do not occur in peripheral economies that adopted a growth strategy with foreign savings. Paradoxically, such a strategy narrows their policy space and does not stimulate capital accumulation.

<sup>1</sup> According to World Bank, World Development Indicators.

<sup>2</sup> According to Brazilian Central Bank. GDP per capita in US\$ PPC.

This paper is organized as follows. The next section will deal with the theoretical references that will guide our empirical analysis. We will start with the classical structuralism that shows that economic development implies structural change towards more technologically sophisticated sectors. Then, developing economies should seek to industrialize to reduce productivity heterogeneity and gain competitiveness in more dynamic international markets. Early work by Kaldor (1957) and Kaldor and Mirrlees (1962) and later on by Kaldor (1966) set the theoretical basis for understanding the incentives to introduce technical progress and the role of aggregate demand in expanding productivity. New developmentalism theory contributes to the understanding that economies with non-convertible currencies that adopt a strategy of growth with foreign savings have their policy space narrowed in a financially integrated world. The next section discusses the evolution of the industrialization process of the Brazilian economy in the last four decades. Since the economic opening, the deindustrialization process has been advancing, and the dependence on foreign capital following the strategy of growth with foreign savings leaves little room for manoeuvre to developmental policies. The result is that the economy is stagnant and heterogeneity is deepened. Concluding remarks are in the last section.

## **2. THE THEORETICAL REFERENCE<sup>3</sup>**

The classical structuralist literature on development economics has long ago explained that the development process is one in which labour productivity growth is the main driver of economic progress and linked to structural change over time. Structural change means that resources are reallocated from the lower to higher labour productivity sector. Also, developing economies are dual economies, where formal and informal sectors coexist, portraying a highly heterogeneous productive structure. The peripheral insertion in the world trade and international financial markets reinforces productive heterogeneity, that means to say the specialization in low technological goods and high dependence on imported technology.

To discuss why structural change might not lead developing economies to become developed ones with high productivity growth, we will initially refer to two stylized facts to introduce the idea of premature deindustrialization. Next, we will refer to the earlier Kaldorian growth models of late 1950s and the 1970s that offer arguments to understand the economic forces that stimulate structural change through capital accumulation and the incorporation of technical progress. In the sequence, we shall discuss the limits of growth of these economies when, before

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<sup>3</sup> See, Feijó and Lamonica (2013), Feijó and Lamonica (2019), Nassif *et. al* (2020).

reaching a mature, productive structure, open their economy and adopt a strategy of growth with foreign savings (current account deficits). This is the theoretical contribution of the new developmentalism.

## **2.1 Two stylized facts to explain structural change**

Kaldorian growth models developed along the 1970s and onwards were based on stylized facts. We highlight two of them. The first stylized fact describes the beginning of the industrialization process, and refers to the movement through which productive resources, especially labour, are gradually reallocated from the low-productivity agrarian sector to the modern industrial sector, which presents higher capital endowment per worker and with greater backward and forward linkages with other sectors of the economy. Thus, the industrialization process occurs through a structural change towards higher productivity and technological sophisticated economic segments.

A second stylized fact identifies that the manufacturing sector, by the stronger presence of static and dynamic economies of scale, pushes and sustain the rise in average productivity rates in the economy as a whole. As long as the productive structure evolves towards becoming more complex and diversified, productivity gains in more dynamic sectors, (the manufacturing industry and the services associated with it) will spread to other sectors, increasing the growth potential of the economy.<sup>4</sup> An increase in average wages should be observed, following the increase in overall productivity. Thus, a complex and diversified economy must have higher average real wages and higher productivity growth rates than economies with less complex productive structures specialized in the production of goods and services with low technological content and with high employment in these sectors.

These two stylized facts allow us to identify a situation of premature deindustrialization, when a regressive change in the productive structure may lead to a decline in the importance of the manufacturing sector to drive the growth of the economy's productivity. In this case, labour migration to lower productivity sectors must be observed with a negative impact on labour informality and the economy loses its structural traction to continue growing with positive and sustainable productivity gains in the long run. The forward and backward links weaken.

<sup>4</sup> This is the Kaldor-Verdoorn law, according to which the higher the growth rate of industrial output, the higher the growth rate of industrial productivity. Since productivity growth in the non-industrial sectors depends on productivity growth in the industrial sector, this is, in the end, the main determinant of the rate of change of the average productivity of the economy as a whole. See Kaldor (1966) and McCombie and Thirlwall (1994, chapter 2), Feijó and Lamonica (2012).

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The identity below<sup>5</sup> enables us to illustrate some different combinations of output and employment growth on productive growth, that imply different economic dynamism:

$$\text{Employment growth} = \text{Output growth} - \text{Labour Productivity growth.}$$

One possibility is that positive growth rates in productivity are observed with positive growth rates in employment and higher growth rates in total output. This possibility indicates a virtuous growth cycle where more dynamic and capital intensive sectors are growing faster and absorbing skilled workers. This also indicates that external competitiveness might be improving and therefore contributing to pushing aggregate demand.

Positive productivity growth might also be observed when employment growth rates are decreasing or become negative and output growth is positive. In this case, the growth in aggregate productivity is associated with outsourcing. Structural change, in this case, will point out to a 'natural' deindustrialization, meaning that labour intensive and low skilled activities are exported to countries with relatively cheaper labour. This might be a possible outcome for a mature economy, with low heterogeneity in the labour market and high external competitiveness as it is specialized in the production of high technological goods and services.

Another possibility is a combination of employment and output increasing at close rates. Productivity growth will be relatively low and can be stagnant (or may even be negative). This might describe a situation of 'premature' desindustrialization when the relative loss of importance of the manufacturing sector in value-added terms occurs before the economy has reached the stage of fully exploiting the scale gains provided by the dynamics of the industrial sector. In this case, employment will be concentrated in low skill activities, the economy will be losing external competitiveness and will enter a vicious cycle of semi-stagnation. Economic stagnation results from a regress in the structural change and the deepening of heterogeneity in the labour market.

This is the case of the Brazilian economy since economic opening as we shall see latter. Moreover, a country may not overcome underdevelopment, and can be locked-in at low developing stage conditions for many decades if it adopts inconsistent economic policies, associated with the strategy of growth with foreign savings, as argued by the new developmentalist theory.

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5 See Ocampo *et al* (2009, p. 124).

## **2.2 The dynamics of structural change according Kaldor's capital accumulation model**

Once capital accumulation and the incorporation of the technical progress are central in the discussion about long-term development, ie, on structural change, this section will recall Kaldor and Mirrlees (1962) early model on capital accumulation in a competitive economy. The model assumes endogenous technical progress, as it is incorporated in the machines, so the rhythm introduced in an economy depends on capital accumulation. Capitalist firms will innovate to sustain profits and keep market share in a competitive environment. The dependence of profits on investments arises from the Kaldorian theory of income distribution.

Extending the Kaldor-Mirrlees model of growth and income distribution, we can assume that the presence of a heterogeneous productive structure, observed, among other things, through a high number of informal workers, may turn the accumulation process less dynamic, and structural change may not evolve in the direction of more complex productive activities.<sup>6</sup>

Technical progress is treated explicitly as a rate of modernization of the machines, that is to say, introducing a new 'vintage' of machines. How fast is a new vintage of machines introduced? There are two answers to this question. First, a machine can be retired before it reaches the end of its useful life due to 'technological obsolescence', that is to say when the machine's profitability becomes zero. In this context, profit is the stimulus for the entrepreneur to invest in new and more modern machines, replace unprofitable ones and boost productivity, and consequently, aggregate output. This process throughout the economy represents an investment in the modernization of capital that increases labour productivity. We can add that it can stimulate the development of sectors intensive in technology. In this sense, the rate of productivity growth and technical progress are endogenous to the growth rate of the investment per worker.

Second, in developed technologically mature economies, less productive machines should be replaced because the model considers that the average wage will tend to rise due to the assumption of increasing marginal productivity of labour. In contrast, the efficiency of the machine is assumed to be constant along its lifetime. Therefore, in both cases, the process of replacing machines is profit-driven, and the modernization of the stock of capital can speed up when either (i) the real wage increases faster than productivity; this can happen when wage goods become relatively more expensive than capital goods and, in an open economy, when the local currency appreciates and

<sup>6</sup> See, for instance, Targetti (1992, chapter 5), for a discussion about technical progress in Kaldor's growth models.

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producers lose a foreign market, or (ii) the ‘technology incorporation rate’ accelerates, i.e., more new machines appear in the market in a shorter period of time because of faster incorporation of the latest technical innovations.

In sum, for the Kaldor-Mirrlees model, the introduction of machinery and equipment of the latest generation is fundamental to determine the pace of economic growth. On the one hand, these investments expand productive capacity and increase aggregate productivity; on the other hand, they boost demand for capital goods. They so can accelerate the incorporation of innovations in the machines the capital goods sector produces. In this way, the capital goods sector, by its dynamic nature, plays an important role in determining economic growth and the country’s international insertion. Hence, industrialization towards more dynamic sectors can also permit technological progress to be reflected in an increase in wages, instead of just a reduction in prices, and a reduction in the degree of informality in the labour market.

Developing economies characterized by an immature productive structure will present a longer economic life of their domestic stock of machines. This can result from a large informal labour market, where the wage pressure is not strong enough to push the capitalist sector to replace capital stock through investment in new machines. Because of that, the economy will lose competitiveness in more sophisticated goods and services and will get specialized in activities with endowed comparative advantages. Put in other words, the coexistence of a formal and a large informal labour market increases disparities between the remunerations paid in both sectors of the economy. This is translated into lower aggregate productivity and increased dependence on imported technology.

So, the existence of structural heterogeneity explained by the persistence of the informal labour market delays the incorporation of technical progress and, in this sense, works against the increase of long-term growth rates in developing economies. According to the structuralist tradition, the presence of a large informal labour market in developing economies contributes to keep wages at a low level in the formal sector. Rodriguez (2009, p.80) explains that as a result, high profit margins are sustained as the productivity gains of technological improvements are appropriated by firms.

The Latin American industrialization model based on import substitution until the 1970s can be seen as an example of an incomplete industrialization process because of an incipient development of an endogenous nucleus of technological development (Fanjzylber, 2000). Economic opening in the 1980s and 1990s deepened technological dependence and most Latin American economies deindustrialized. As Cimoli and Porcile (2013, p. 7) argue, investing in illiquid assets is

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essential to make the economic structure more dense, complete, diversified and homogeneous, characteristic of a developed economy.

### **2.3 Current account deficits and policy space: the theoretical contribution of the new developmentalism<sup>7</sup>**

One of the main contributions of the new developmentalism theory to explain growth dynamics of developing economies is to argue that short-term macroeconomic policies supporting long-term growth should keep the main macroeconomic prices at the 'correct' level<sup>8</sup> to stimulate capital accumulation. This is the way to favour capital accumulation and the incorporation of technical progress and the structural change towards more technological sectors and activities.

Developing economies are net importers of technologies, and consequently, among the main macroeconomic prices, the most important is the real exchange rate. This assumption leads the new developmentalists theorists to advocate that developing economies in a catching-up process should operate with a positive current account balance and aim at a real exchange rate level that would not restrain exports of competitive producers of non-commodities tradables. (Bresser-Pereira, 2019). That is to say, developing economies should avoid the overvaluation trend of their real exchange rate. However, when the economy operates with permanent deficits in the current account (i.e., adopting a growth strategy with foreign savings), the real exchange rate is appreciated, as the economy needs to permanently attract foreign capital.

In the 1980s and 1990s, highly indebted Latin American economies were induced to deepen the strategy of growth with foreign savings, through the opening of the capital and financial accounts. This strategy has been strongly supported by McKinnon (1973) and Shaw (1973) contributions in the early 1970s. The authors interpreted that the poor performance of investment and growth in developing countries would be due to the extensive use of interest rate controls and other instruments aiming at directing private credit to selected sectors. A 'financial repression' would explain low savings rate, credit rationing and low investment, leading to low growth and eventually to economic stagnation. Capital account liberalization and liberal reforms of the financial system would, then, provide the alternative to increase domestic saving and investment, allowing greater

<sup>7</sup> On the new-developmentalism, see, for instance Bresser-Pereira, and Nakano. (2003); Bresser-Pereira and Gala (2007 and 2010), Bresser-Pereira (2012), among others.

<sup>8</sup> The main macroeconomic prices and their 'correct' level are: the level of the interest rate which should be low; the level of the exchange rate which should be competitive; the rate of wages that should rise with productivity and the rate of inflation that should be low, in order to guarantee a satisfactory rate of profit for competitive industrial companies.



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capital flow through loans to domestic banks, foreign direct investment and portfolio. In more general terms, financial liberalization would enable the global allocation of savings and help channel resources to the productive sector, increasing the economic long-term growth rate of developing countries.<sup>9</sup>

Nevertheless, capital flows are pro-cyclical, and the economies that liberalized their capital and financial accounts faced more volatility in their growth rate and exchange rate.<sup>10</sup> In a word, they lose policy space to implement long-term developmental policies, either because of the overvaluation trend of their currency and because of the increased volatility in the real exchange rate.

Also, because their currency is in the lower range of the international currency hierarchy, their liquidity premium is low (Paula et al, 2017), and therefore peripheral economies are condemned to operate with higher real interest rates. An open peripheral economy that sustains high real interest rates and a trend of overvaluation of the real exchange rate for extended periods strengthens financial gains to the detriment of profits from investment in physical assets. It is interesting to notice that while the Kaldor-Mirrlees model shows that capitalist competition is the root of the introduction of technical progress, in a peripheral open economy, the macroeconomic context favours short-term financial gains to the detriment of long-term returns on capital accumulation. This macroeconomic context works against the development and introduction of productive innovations and perpetuates productive duality. As we will see in the Brazilian case, financial opening leads to premature deindustrialization.<sup>11</sup> Moreover, besides high volatility in the real exchange rate, the overvaluation trend is reinforced if the economy suffers the Dutch disease, which allows domestic producers of commodities to support long periods of real exchange rate appreciation. On the other hand, an overvaluation trend of the real exchange rate does not stimulate capital allocation in more technological sectors. It reinforces specialization in the production of low-technical goods. This is a significant cause of premature deindustrialization and, consequently, of the deepening of labour market heterogeneity. (Bresser-Pereira et al, 2014). Botta (2021) confirms this process, analyzing the connection between the Dutch disease and the flow of capital in developing economies.

<sup>9</sup> For a discussion on policy space in open developing economies, see Feijó and Lamonica (2019).

<sup>10</sup> See, for instance, Ocampo and Stiglitz (2008).

<sup>11</sup> Bresser-Pereira et al. (2020) and Oreiro et al. (2021) argue that in Brazil, the financial opening had led to the advance of the financialization process, which is sustained by a class coalition between workers and rentiers that, in the short and medium run, take profit from the trend of real exchange rate overvaluation. As far as investment in capital accumulation (increase in the capital stock and the introduction of technical progress) is disincentivized, deindustrialization advances, and the working class will be in a worse position in the long-term. The authors conclude that the advance of the financialization process of the Brazilian economy can only be supported by a class coalition of rentiers and wage-earners.

To sum up, the strategy to grow with permanent deficits in the current account, that is to say, with foreign savings, does not deliver more dynamism to the domestic economy. On the opposite, it leads to an overvaluation real exchange rate trend, reduces policy space, and is inconsistent with the structural transformation towards a more complex and diversified productive structure. According to the new developmentalism, it introduces distortions in the macroeconomic prices, which are responsible for the misallocation of resources that move away from promoting a structural change that increases growth potential. On the other hand, it tends to accentuate economic duality and low insertion in the world trade due to the presence of the Dutch disease.

### **3. THE BRAZILIAN ECONOMY**

The Brazilian economy has been stagnant for over 40 years. The foreign debt shock in the early 1980s interrupted the strategy of rapid industrialization, based on national development plans, absorption of foreign savings and import substitution. The oil shocks in the 1970s and the sharp increase in the interest rate in the United States in 1979 brought to an end a period of accelerated growth observed since the post-war. From 1962 to 1980 GDP growth was 7.4% p y.

External and domestic imbalances compromised growth dynamism in the 1980s. The Brady Plan at the beginning of 1990 was the solution to the external debt and allowed the return of the economy to the international financial market. The Real Plan (1994) ended up with a high inflation regime establishing the exchange rate as an inflationary anchor.

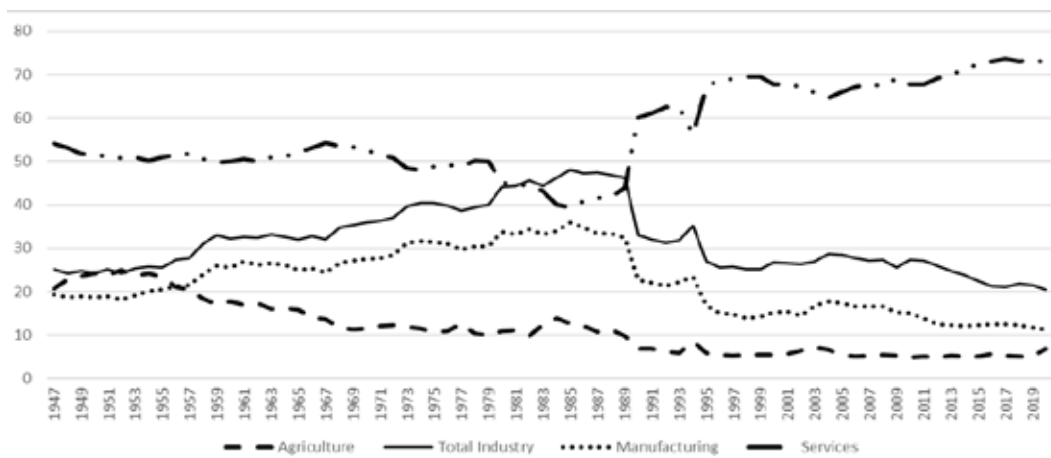
Both well succeeded policy measures had a significant impact, but not a positive one, on the productive structure of the Brazilian economy. Economic opening, one of the main recommendations of the Brady Plan, implied both the gradual removal of import barriers to increase domestic competition and the opening of the capital account. The adoption of the fixed exchange rate regime as the main anchor of price control, in its turn, implied an overvaluation of the domestic currency, which continued even when the fixed exchange rate regime was substituted in 1999. The combination of higher competition and an overvalued exchange rate favoured the modernization of the productive structure via the imports of relatively cheaper inputs and modern machinery. Therefore, the domestic substitution of intermediate and capital goods by imports had, at first, a positive impact on labour productivity. However, by the end of the 1990s, labour productivity decelerated. As

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Bértola and Ocampo (2012) argue, economic opening in Latin America led most to the destruction of many pre-existing productive chains. For them, the Schumpeterian creative destruction process, made possible by the renewal of the productive park with the economic opening, proved to be more destructive than creative. The result of the productive restructuring was to promote a structural change that is characterized by premature deindustrialization.<sup>12</sup>

### 3.1 The deindustrialization of the Brazilian economy

The share of the value-added of manufacturing industry is reducing since mid-1980s.<sup>13</sup> Graph 1 shows the evolution of the share of the main sectors of activities in GDP since the war. In 1947, the first year of the series, agriculture represented 20.7% of total GDP and manufacturing industry 19.3%. Manufacturing took pace in the mid-1950s when the share of the agriculture sector started to decline. In 1985 manufacturing was responsible for 35.9% of GDP, reaching the highest level in the series. Since then, it started to decline and in 2020 it contributed 11.3% of GDP. While the share of manufacturing declined, so did the share of the agriculture sector.



Graph 1 – Percentage share of the Value- Added (current prices) on GDP main sectors of activities - 1947-2020

Source: Brazilian Statistical Office, National Accounts. From 1947 to 1989, National Consolidated Accounts; from 1990 onwards Quarterly National Accounts.

<sup>12</sup> See, also, Palma (2005); Oreiro and Feijó (2010).

<sup>13</sup> For a methodological discussion about estimates of manufacturing value-added in total value-added, see Morceiro (2021)

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Table 1 shows the evolution of the share of employment of sectors of activities in 1990 and 2018. The evolution of the composition of the employment, shows that share of manufacturing employment reduces from 1990 (first year of the National Accounts series) to 2000, but it stabilizes from the 2000s onwards. From 2000 to 2018, the employment share in agriculture reduced 8.4 percentage points, almost the same increase in the services sector. As discussed above, structuralist literature defines that in a well-succeeded process of industrialization, labour should move from lower-productivity to higher-productivity sectors in a virtuous development cycle. This movement would lower labour productivity differentials among the sectors and turn the productive structure less heterogeneous. Wage share should increase in pace with labour productivity and expand domestic market and improve competitiveness of exports. However, Table 1 shows that in Brazil, the labour reallocation, mainly after 2000, occurred by displacing employment from agriculture to the services sector.<sup>14</sup> The share of the manufacturing employment was kept practically unchanged. This evidence points out the poor performance of the manufacturing productivity since the beginning of the decline in manufacturing share in GDP in mid 1980s.

Table 1 – Percentage share of sectoral labour in total employment 1990-2018, selected years

	1990	2000	2005	2010	2018
Agriculture	25.5	21.2	19.9	15.8	12.8
Total Industry	23.4	18.5	19.1	20.8	18.7
Manufacturing	15.5	10.5	11.4	11.8	10.5
Services	51.1	60.2	61.0	63.4	68.5

Source: Brazilian Statistical Office, Annual National Accounts.

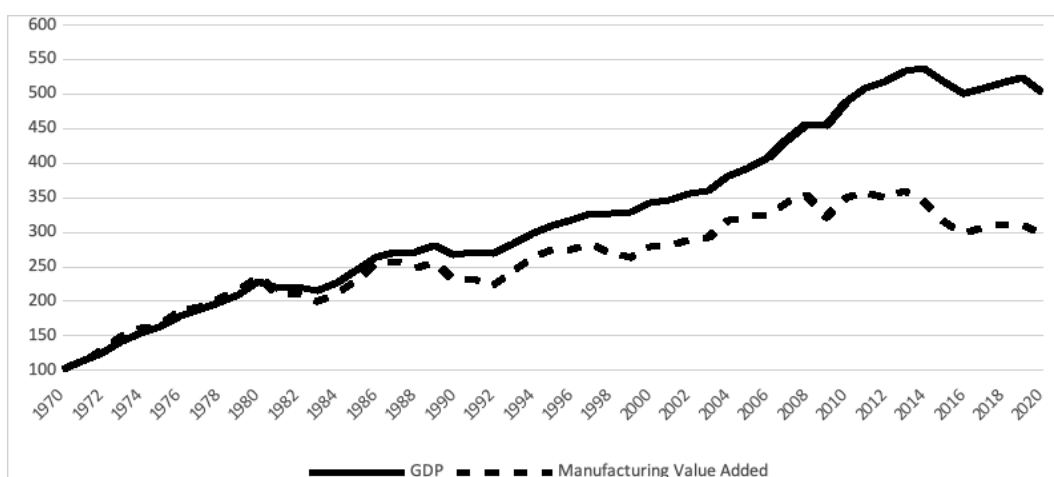
The stability of the employment share of the manufacturing sector combine with a decline in the share of value-added from the mid-1980s on characterizes a process of premature deindustrialization. The most meaningful consequence is that the average labour productivity growth becomes stagnant for a long time, and the manufacturing sector loses traction to push aggregate output. In this case, a vicious development cycle unfolds and one of the negative consequences is high informality in the labour market. As an illustration, in 2014, the rate of unemployment was relatively low, 6.8%, according to the household survey by the Brazilian Statistical Office (IBGE). The Institute of Applied Economic Research (IPEA) estimated that

<sup>14</sup> Catela, Cimoli and Porcile (2012), when discussing the trend of productivity and structural heterogeneity in the Brazilian manufacturing industry in the 2000s, found that structural heterogeneity did not fall, despite the increasing returns found due to innovation and learning.

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47.3% of the employed labour force was of informal work that year.<sup>15</sup> The unemployment rate increased steadily following the 2015-2016 recession and the low growth in the following years. In 2019, before the pandemic crisis, it reached 11.9% of the workforce. Recent estimates by IBGE about informal work point out that, in the first quarter of 2021, the unemployment rate reached 14.7% and the sum of informal works (39.6%) and those discouraged in searching for work (5.6%) reached 45.2% of the workforce.

Graph 2 shows that since 1980 the distance between GDP growth and manufacturing growth is increasing, pointing out that the manufacturing sector is not the main driver of GDP growth. Besides, as the Brazilian industrialization process has absorbed little of the labour force released by the modernization of the agricultural sector, the advancement of the deindustrialization process in the last three decades has fuelled high informality in the labour market in the services sector.



Graph 2 – Index of real growth of GDP and Manufacturing Industry Value Added - 1970=100 1970-2020

Source: Brazilian Statistical Office, National Accounts.

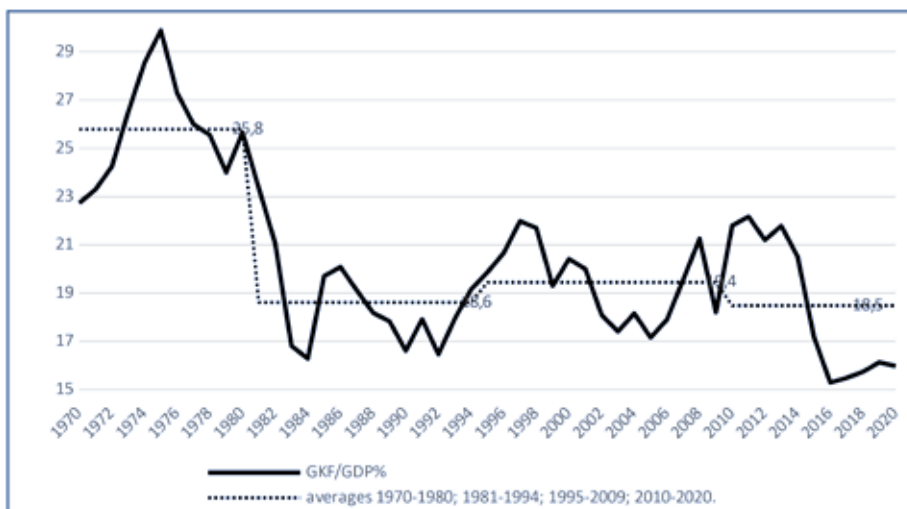
The relatively lower growth rates of GDP from the 1980s onwards and the relative loss of weight of the manufacturing sector in total value added is followed by a decrease in the aggregate rate of investment (Graph 3). The average investment rate was 25.8% in 1970-1980 (GDP growth rate was 8.8% py in the same period), and it decreases to below 20% in the following decades (GDP growth rate was 2.2% py 1981-2019). With economic opening and price stabilization (1995) until 2009, the average rate of investment showed a little recovery (19.4%) to 1980-

<sup>15</sup> This percentage was calculated as (workers without protection+ self-employed)/(protected workers + workers without protection + self-employed).

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1994 (18.6%). Starting 2010s until 2020, the average investment rate was close to the period encompassing the first 'lost decade'.<sup>16</sup>

Graph 3: Gross Capital Formation as a share of GDP (%) - 1970-2020



Source: Ipeadata.

### 3.2 Economic opening and the Macroeconomic policy

From the perspective of macroeconomic policy, the economic opening and the price stabilization policy narrowed policy space for the implementation of policies to stimulate capital accumulation and investment in technical progress. According to the new developmentalism, macroeconomic policies to developing economies should create an environment favourable to capital accumulation, innovation and structural change-oriented narrowing the technological gap with developed economies. However, macroeconomic policy in Brazil since price stability in mid-1990s has relied on the real exchange rate as an anchor to fight inflation. Since January 1999, macroeconomic policy arrangement is centered on the so-called macroeconomic tripod - a combination of the inflation-targeting regime, floating exchange rate regime and targets for primary fiscal surpluses.<sup>17</sup>

Such policy arrangement has been relatively successful at providing short-term price stability, but not for putting the economy in sustainable long-term growth.

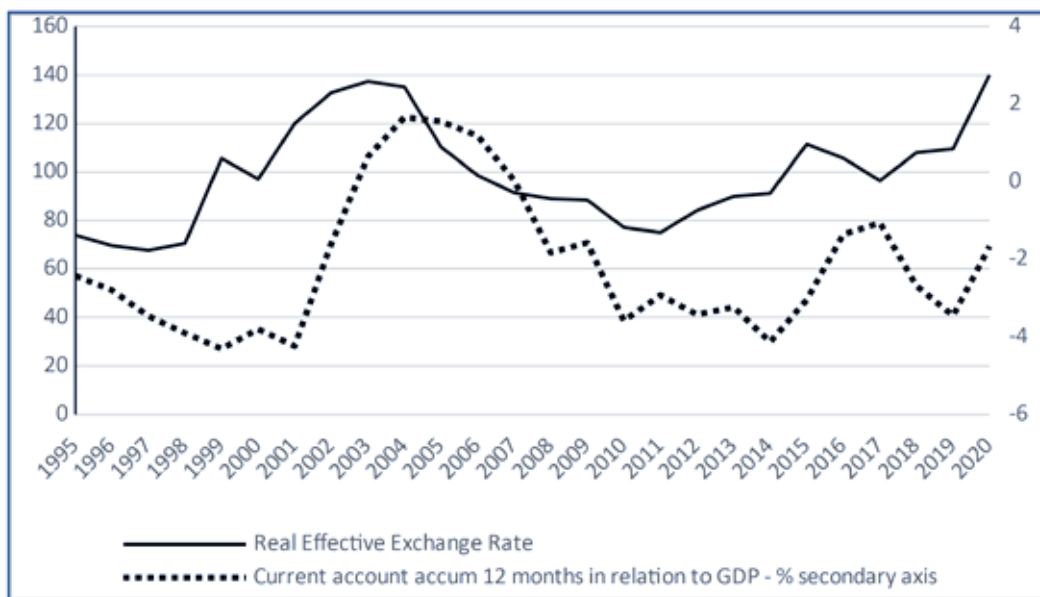
<sup>16</sup> Ferrari Filho et al. (2015, p 102) adds that policymakers should pursue an investment rate of 25% of GDP to generate the necessary growth to put us on a catching up path. Additionally, Saboia (2014) observes that the increase in employment in 2004-2013 was of low qualification and remuneration, resulting in low productivity.

<sup>17</sup> In 2017 new fiscal rules have been added to the macroeconomic arrangement, implying basically the cut of public investment and reduction in the size of the government.

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Specifically, as the inflation targeting regime has been managed in a very orthodox way — e.g., a strong focus on the goal of keeping inflation expectations close to the inflation target within the calendar year, it has not been able to free the Brazilian economy from low growth with high real interest rates and cyclically appreciated real exchange rate traps. Such trends have been aggravated by the country’s high degree of openness to capital flows, which has reduced the autonomy of monetary policy and put the Brazilian economy in a vicious cycle of low growth.

Graph 4 illustrates the evolution of Brazil’s current account balances and real effective exchange rate between 1995 and 2020. In periods of real exchange rate appreciation of the Brazilian currency, current account deficits increase dramatically. In periods of currency depreciation, the current account tends to show balanced or surplus balances, as happened in 2003-2007.<sup>18</sup> Graph 4 also shows a marked trend of real appreciation of the Brazilian currency between the end of 2005 and the beginning of 2015.



Graph 4 – Current Account Balance as a percentage of GDP and real effective exchange rate (June 1994 = 100) - 1995-2020  
Source: Brazilian Central Bank (23839 and 11752 serie)

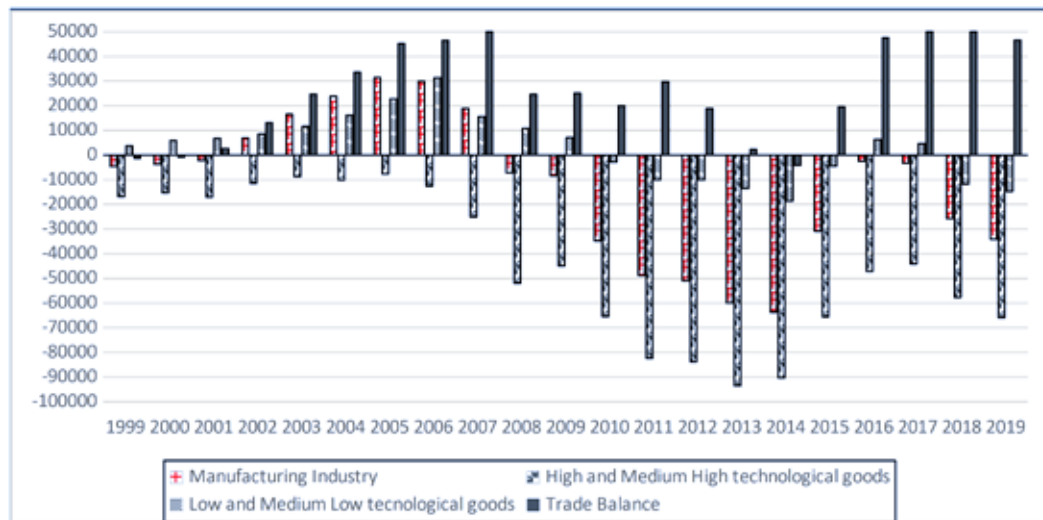
The most damaging consequences of the overvaluation trend of the Brazilian currency throughout the 2000s were not only the intensification of Brazil’s premature deindustrialization (Nassif et al, 2015; Nassif et al, 2018), a phenomenon that had begun in the mid-1980s (Nassif, 2008), but also a sharp reprimarization of the country’s export basket.

<sup>18</sup> As shown by Nassif, et al (2017), this misalignment has only been corrected by the sharp depreciations observed in the aftermath of domestic or international shocks.

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Graph 5 shows that until 2008, the country's trade balance and manufacturing industry's trade balance were both positive. Surpluses were only interrupted in the years of the currency crisis, between 1997-1999, and in 2001 due to an energy crisis. After 2008, the manufacturing trade balance showed a deficit. Despite that, the country's trade balance showed surpluses. Manufacturing trade deficits decreased between 2010 and 2014, then grew again. One of the reasons for the change between the evolution of the country's trade balance and the manufacturing trade balance is the strong increase in the deficit of high and medium technological intensity goods, products in which the Brazilian manufacturing industry has been chronically deficient since the 1980s. The deepening in deindustrialization from 2010 onwards implied a sharp increase in trade deficits in high technological goods and trade deficits in medium-low products and low technological intensity. From the 1990s onwards, the continuous surpluses in the country's trade balance were guaranteed by the evolution of net exports of goods intense in natural resources (agriculture and mining).

Graph 5: Trade Balance of goods (US\$ million): total, manufacturing industry and groups by technological content -1999-2019



Graph 5 – Trade Balance of goods (US\$ million): total, manufacturing industry and groups by technological content -1999-2019  
Source: Institute for the Industrial Development (IEDI).

In sum, the recent evolution of the Brazilian trade balance confirms that economic opening in the 1990s and the tripod of macroeconomic policies did not deliver the productive transformation needed to complete the industrialization process via the development of more technological sectors. On the opposite, economic opening and the asymmetrical insertion of the economy in the international finan-



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cial markets has narrowed policy space and perpetuated a high real interest rate and an appreciated real exchange rate, impairing long-term investment and inducing the specialization in producing low technological goods and services.

To conclude this section, we add Graph 6 and Table 2. The graph shows the evolution of the unit labour cost in dollars and the real effective exchange rate since 1999. The increase in the unit labour cost is linked to the appreciation trend of the real exchange rate which greatly explains the loss of competitiveness of the Brazilian exports of non-commodities goods.

Table 2 shows the average growth rate of labour productivity in total economy (0.8% py) and in the main sectors for 2001-2017. The manufacturing industry, the one with the presence of important static and dynamic economies of scale, performed negatively (-0.7% py). Therefore, when corrected by labour productivity, the very low wage-exchange rate ratio is a revealing indicator of the reduced competitive capacity of the Brazilian economy.

Graph 6: Index of Unit Labour Cost and Real Effective Exchange Rate



Graph 6 – Index of Unit Labour Cost and Real Effective Exchange Rate  
Source: Brazilian Central Bank (11777 and 11752 serie)

Table 2 – Annual average growth rate of labour productivity – main sectors of activity (%)

	2001-2017
Total	0.8
Agriculture	5.4
Mining	3.0
<i>Manufacturing</i>	-0.7
Public Utilities	0.8
Real State	-0.8
Services	0.3

Source: Correa (2021, Table 9, p. 89). Primary source: Brazilian Statistical Office, National Accounts.

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As we have argued along with this paper, the key to restoring the average competitiveness of the Brazilian productive sectors lies in efforts aimed at considerably increasing productivity growth rates.<sup>19</sup> This implies, on the one hand, on resuming investments in physical and human capital consistently and promoting the structural change towards technological sectors and, on the other hand, on the substitution of macroeconomic policies for those that sustain positive growth rates keeping the macroeconomic prices at the ‘correct’ level.

#### **4. FINAL REMARKS**

The seminal work by Kaldor in late fifties and Kaldor and Mirrlees in early sixties theoretically explained that the search for higher profits induces capitalist firms to accumulate capital in the form of new and more efficient machinery. Dual economies with a large informal market would have less stimulus to innovate as abundant labour would keep wages low. Therefore, they would face the challenge of widening policy space to promote structural change towards more technologically sophisticated sectors and increase their economies’ technical complexity. The structuralist literature stresses the importance of a dynamic and diversified manufacturing sector to boost the development process. The new developmentalism, in its turn, has shown also the importance of short-term economic policy consistent with long-term pro-development policies to drive the economy in the direction of increasing capital accumulation in more dynamic sectors and gain competitiveness. New developmentalism is critical to the strategy of growth with foreign savings, that favours financial gains in detriment of gains in capital accumulation in physical assets. This strategy increases dependence on foreign capital flows and does not allow for the endogeneization of technical progress; that is to say, it also deepens technological dependence.

In the last forty years, the Brazilian development process is an example of premature deindustrialization heavily caused by low aggregate demand dynamism (that is to say, low incentives from the macroeconomic policy which had been focused on price stabilization) and real exchange rate misalignment, resulting from a strategy of growth with foreign savings. This strategy was reinforced in the early 1990s when the country adhered to the neoliberal model that induced economic opening and financial integration in the international financial markets. A structural change towards developing an ‘endogenous nucleus of technological dynamization’ (Fajnzylber, 2000) did not follow.

<sup>19</sup> Maia and Menezes (2014, p. 2016), for instance, observe that: “Overall, the revised literature on productivity, labor market and wages points to a persisting low productivity and low-quality employment in last decades, regardless the better performance of Brazilian economy and income in the 2000s. “

While developmental policy would have failed to develop an endogenous core of technical progress (or a National Innovation System in the Schumpeterian terminology) during the period of rapid industrialization, the neoliberal policy of the 1990s onwards failed because opening the economy to foreign capital attracted more speculative capital than productive capital and technological transfer. Speculative capital is attracted by the high-interest rate differential, which in its turn contributes to appreciate the real exchange rate. Therefore, this macroeconomic price, turning less competitive domestic production, induces specialization in sectors with comparative advantage, and as a result it induces the premature deindustrialization and deepens heterogeneity. Duality in the labour market and productivity heterogeneity have been deepened since the 1990s, and the Brazilian economy is stagnant.

## REFERENCES

- Bértola, L; Ocampo, J. A. (2012). *The economic development of Latin America since independence*, Oxford University Press.
- Botta, A. 2021. Financial liberalisation, exchange rate dynamics and the financial Dutch disease in developing and emerging economies, in Bruno Bonizzi, Annina Kaltenbrunner, Raquel A. Ramos (eds.) *Emerging Economies and the Global Financial System: Post Keynesian Analysis*, Routledge, DOI: 10.4324/9780429025037-17
- Bresser-Pereira, L. C. (2019). Novo Desenvolvimentismo, 2018, in Feijo C; Araújo, E (orgs), *Macroeconomia Moderna: as lições de Keynes para economias em desenvolvimento*, Elsevier, Rio de Janeiro.
- Bresser-Pereira, L.C. (2012). A taxa de câmbio no centro da teoria do desenvolvimento. *Estudos Avançados*, vol 26(75).
- Bresser-Pereira, L.C., Gala, P. (2007). Por que a poupança externa não promove crescimento. *Revista de Economia Política*, vol 27 no 1(105).
- Bresser-Pereira, L.C. Gala, P. (2010). Macroeconomia estruturalista do desenvolvimento. *Revista de Economia Política*, vol 30, no 4 (120).
- Bresser-Pereira, L.C., Nakano, Y. (2003). Crescimento econômico com poupança externa?, *Revista de Economia Política*, vol 23, no 2 (90).
- Bresser-Pereira, L. C., Oreiro, J. L; Marconi, N. (2014). *Developmental macroeconomics: new developmentalism as a growth strategy*. London: Routledge.

- Bresser-Pereira, L.C. ; Paula, L. F. R. ; Bruno, M. 2020. Financialization, coalition of interests and interest rate in Brazil. *Revue de la Regulation: capitalisme, institutions, pouvoirs*, v. 27, p. 1-24, spring.
- Catela, E.Y. Cimoli, M. Porcile, G. (2012). Productivity and structural heterogeneity in the Brazilian manufacturing sector: trends and determinants. LEM Working Paper Series No 2012/20. Sant'Anna School of Advanced Studies.
- Cimoli, M.; Porcile, G. (2013) Tecnología, heterogeneidad y crecimiento: una caja de herramientas estructuralistas. CEPAL – Serie Desarrollo Productivo no 194.
- Correa, M. F. (2021) Financeirização e mudança estrutural: uma análise para a economia brasileira, PhD thesis presented at Fluminense Federal University, Niterói.
- Fajnzylber, F.(2000) Industrialização na América Latina: da 'caixa preta' ao 'conjunto vazio', in Bielschowsky, R (org.), *Cinquenta anos de pensamento na Cepal*, volume 2, Record.
- Feijó, C; Lamonica, M. T.(2012).Importancia del sector industrial para el desarrollo de la economía brasileña, *Revista de la Cepal*, vol 107, Agosto, pp. 212-136
- \_\_\_\_\_. (2013) A Kaldorian approach to catch up and structural change in economies with high degree of heterogeneity. *PSL Quarterly Review*, vol 66 no 265: 107-135.
- \_\_\_\_\_. (2019). Policy space in a financially integrated world: the Brazilian case in the 2000s, *Panaeconomicus*, vol. 66, issue 1: 51-67; Doi:10.2298/PAN160502002F.
- Ferrari Filho, F.; Fonseca, P.C.D. (2015). Which developmentalism? A Keynesian-institutionalist proposal, *Review of Keynesian Economics*, vol 3, n 1: 90-107.
- Kaldor, N. (1957). A Model of Economic Growth. *Economic Journal*, vol 67, no. 268: 591-624.
- Kaldor, N; Mirrlees, J.A. (1962). A New Model of Economic Growth. *Review of Economic Studies*, vol. 29, no. 3:174-192.
- Kaldor, N. (1966). Causes of the Slow Rate of Economic Growth of The United Kingdom; *Collected Economic Essays, Further Essays on Economic Theory* (1978), vol. 5, Duckworth.
- Maia, A.G; Menezes, E. (2014). Economic growth, labor and productivity in Brazil and the United States: a comparative analysis, *Brazilian Journal of Political Economy*, vol. 34, nº 2 (135), pp. 212-229.

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THE RISE AND FALL OF BRAZILIAN MANUFACTURING INDUSTRY

---

- McCombie, J.S.L.; Thirlwall, A.P (1994). *Economic Growth and the Balance-of-Payments Constraint*. St Martin's Press.
- McKinnon, R.I. (1973), *Money and Capital in Economic Development*, Washington, DC: Brookings Institution.
- Morceiro, P. Methodological influence on Brazilian deindustrialization, *Brazilian Journal of Political Economy*, vol. 41 (4), Oct-Dec 2021, DOI:/10.1590/0101-31572021-3195
- Nassif, A. (2008). Há evidências de desindustrialização no Brasil? *Brazilian Journal of Political Economy*, vol. 28, n.1.
- Nassif, A; Feijo, C; Araujo, E. (2015). Structural Change and Economic Development: is Brazil catching up or falling behind? *Cambridge Journal of Economics*, vol. 39: 1307-1332.
- \_\_\_\_\_. (2017). Un modelo estructuralista-keynesiano de determinación del tipo cambio real “óptimo” para el desarrollo económico brasileño: 1999-2015; *Revista de la CEPAL (ONLINE)*, vol. 123: 201-223.
- \_\_\_\_\_. (2020). Macroeconomic policies in Brazil before and after the 2008 Global Financial Crisis: Brazilian Policy-Makers Still Trapped in the New Macroeconomic Consensus Guidelines, *Cambridge Journal of Economics*, 1-31, DOI: 1093/cje/beaa014.
- Nassif, A; Bresser-Pereira, L. C; Feijo, C. (2018). The Case for Reindustrialisation in Developing Countries: Towards the Connection between the Macroeconomic Regime and the Industrial Policy in Brazil, *Cambridge Journal of Economics*, 42: 355-381.
- Nassif, A; Morandi, L, Araújo, E; Feijo. C. (2020). Structural change and productivity growth in Brazil: where do we stand?; *Brazilian Journal of Political Economy*, vol. 40, 2: 243-263.
- Ocampo, J.A; Stiglitz, J.(eds) (2008). *Capital Market Liberalization and Development*, The Initiative for Policy Dialogues Series, Oxford University Press.
- Ocampo, J.A. Rada, C. Taylor, L. (2009). *Growth and Policy in Developing Countries*. Columbia University Press, NY.
- Oreiro, J.L.; Feijo, C. Punzo, L.; Machado, J.P. (2021). Peripheral financialization and premature deindustrialization: a theory and the case of Brazil (2003-2015), PKES working paper 2027, February, available at: <http://www.postkeynesian.net/downloads/working-papers/PKWP2027.pdf>.
- Oreiro, J. L.; Feijo, C. (2010). Desindustrialização: Conceituação, Causas, Efeitos e o Caso Brasileiro. *Brazilian Journal of Political Economy*, Vol. 30, no. 2: 100-115.

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- Palma, G. 2005. Four sources of de-industrialisation and a new concept of the Dutch disease. In Ocampo, J. A. (ed.), *Beyond Reforms*. Palo Alto: Stanford University Press: 71–116.
- Paula, L. F; Fritz, B.; Prates, D. (2017). Keynes at the periphery: currency hierarchy and challenges for economic policy in emerging economies, *Journal of Post Keynesian Economics*, 40:2, pp 183-203, DOI: 10.1080/01603477.2016.1252267
- Saboia, J. (2014). Baixo crescimento econômico e melhora do Mercado de trabalho – Como entender a aparente contradição? *Estudos Avançados*, 28 (81).
- Shaw, E.S. (1973), *Financial Deepening in Economic Development*, New York: Oxford University Press.
- Rodriguez, O. (2009). *O Estruturalismo Latino-Americano*. Civilização Brasileira: Rio de Janeiro.
- Targetti, F. (1992). *Nicholas Kaldor: the Economics and Politics of Capitalism as a Dynamic System*, Claredon Press, Oxford.