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INSERTION OF BRAZIL IN GLOBAL VALUE CHAINS AFTER LABOR REFORM

Inserção do Brasil nas Cadeias Globais de Valor após a reforma trabalhista

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Abstract

The process of fragmentation of production known as Global Value Chains (GVCs) has extinguished the need to acquire competence in all aspects of the production of a good and has enabled developing countries to join a cross-border cooperation network, sharing production and specializing in only one or a few stages of production activities involved in the production of a final good, making the importance of services for productive activities even more evident. Many studies have emerged to identify the main policies that could lead to greater insertion of countries in GVCs. Besides policies of openness to trade and foreign direct investment, one of the measures presented for cost reduction and greater competitiveness is labor reform. In Brazil there was a labor reform in 2017. The main argument for its implementation was the generation of more jobs, giving the country greater competitiveness to its industry and, consequently, better conditions for insertion in international trade. This paper aims to analyze the insertion of the Brazilian economy in the GVC before and after the labor reform, showing that the indicators and studies point to the fact that there was no upgrade in the insertion of the country in GVC, indicating that in Brazil predominates a strategy of limited insertion in the GVC, as it is based on activities related to the cost of cheap labor and low level of technological intensity, such as the production of food, beverages, textiles and shoes, among others.

Keywords: Global Value Chains. Labor Reform. Brazilian Economy.

Resumo

O processo de fragmentação da produção conhecida como Cadeias Globais de Valor (CGV) extinguiu necessidade de adquirir competência em todos os aspectos da produção de um bem e permitiu que os países em desenvolvimento pudesse se associar a uma rede de cooperação transfronteiriça, partilhando a produção e especializando-se em apenas uma ou algumas etapas das atividades de produção envolvidos na confecção de um bem final, tornando ainda mais evidente a importância dos serviços para as atividades produtivas. Muitos estudos surgiram para identificar quais as principais políticas que poderiam propiciar uma maior inserção dos países nas CGV. Além de políticas de abertura ao comércio e ao investimento estrangeiro direto, uma das medidas apresentadas para a redução de custos e maior competitividade é a reforma trabalhista. No Brasil houve uma reforma trabalhista em 2017, cujo principal argumento para a sua implementação foi a geração de mais empregos, dar ao país maior competitividade à sua indústria e, consequentemente, melhores condições de inserção no comércio internacional. Este paper tem como objetivo analisar a inserção da economia brasileira nas CGV antes e depois da reforma trabalhista, mostrando que os indicadores e estudos apontam para o fato de que não houve um *uprading* na inserção do país na CGV, indicando que no Brasil predomina uma estratégia limitada de inserção nas CGV, pois está fundada em atividades ligadas à custo de mão de obra barata e com baixo nível de intensidade tecnológica, tais como produção de alimentos, bebidas, têxteis e calçados, entre outros.

Palavras-chave: Cadeias Globais de Valor; Reforma Trabalhista; Brazilian Economy.

Introduction

During the 1980s and 1990s, there was a rapid industrialization of several developing countries (mainly in East Asia) and a significant increase in South-South trade, generating a significant growth in the participation of these countries in the export of manufactured products whereas intermediate inputs trade and foreign direct investment flows increase.

Trade agreements, such as the General Agreement on Tariffs and Trade (GATT), the formation of economic blocs, such as the North American Free Trade Agreement, and, more recently, the unilateral liberalization measures of developing countries are essential for the increase in the exports of industrialized products by the newly industrialized economies, for the increase of intra-industry trade, for the emergence of "supertrading" nations and for the fragmentation of the value chain or the breakdown of production into global value chains, as it was called to denominate the process of production fragmentation (BALDWIN and ROBERT-NICOUD, 2004 and 2010).

These changes allowed for a process of production fragmentation, which causes the extinction of the need to acquire competence in all aspects of the production process of a good and allows developing countries to associate with a network of cross-border cooperation, sharing production itself and specializing in only one or a few steps of the production activities involved in the manufacturing of a final good.

This new form of international division of labor around the structuring of the known global value chains (GVC) has made the importance of services much more evident for productive activities, since many of the activities that constitute a value chain are services as design activities, marketing, customer relationships, etc, which have made services an integral and fundamental part of value chains.

Within such a scenario, many studies have emerged to identify the main policies that could lead to greater insertion of countries into GVC. In addition to policies for opening up to trade and foreign direct investment, the measure presented to reduce costs and greater competitiveness is the labor reform, with the aim of making labor laws more flexible. There was a labor reform in Brazil in 2017. The main argument for its implementation was the generation of more jobs, giving the national industry greater competitiveness and, consequently, better conditions of insertion into international trade.

This paper aims to analyze the insertion of the Brazilian economy into global value chains before the labor reform and after it. In addition to this introduction, this paper has four more sections: In the second section we discuss what is global value chain (GVC) and then the relationship of GVC and the factor of labor production, considering some relevant published studies on the subject. The third section presents the participation of Brazil in global value chains before the labor reform. The fourth section brings an analysis the participation of Brazil in GVC after the labor reform. In the fifth section, conclusion, a synthesis of the main ideas of the paper is made.

What is the Global Value Chain (GVC)

The new paradigm refers to a panorama in which the productive sphere has become multi-faceted, characterized by the emergence of new organizational forms where production is flexible and geographically spread so that there is a relative interest in reducing trade barriers, while that production is internalized and evolves towards the functional integration of geographically dispersed activities through the formation of global value chains.

Many industries move from the condition of nationally delimited entities to the condition of globally distributed fragmented networks, leading companies to engage in the production of a good or service from conception to final consumption.

Fragmented production - a production process that was previously carried out in a single location or factory - has now been divided into two or more stages that take place in production sites located in different countries. Activities have become segmented and spread in international production chains resulting in increasing fractions of trade flows that are constituted of intermediate and unfinished goods, transferred from one country to another for processing.

With the fragmentation, the production of intermediate goods rises and changes the hierarchies of the countries involved in this trade according to the content of their exports. Countries whose exports contain relatively little imported intermediate goods, are considered "headquarters", and those whose exports contain large participation of imported

intermediaries are considered "factories" (BALDWIN, 2010), (BALDONE, SDOGATI and TAJOLI, 2007).

As a result, countries no longer have the need to have technical competence in all the production chains of a good being able to specialize in sectors considered strategic where it can have competitive advantages (ESTEVADEORDAL, BLYDE and SUOMINEN, 2012).

The logic of global value chains in world trade has enabled many developing countries to join a network of international cooperation in world production, where some countries win and others lose.

That type of specialization, according to the authors, enables developing countries to participate in a new strategy of international division of labor. However, many studies show that the distribution of GVC has been asymmetrical, where some regions advance substantially in their insertion in world trade via CGV, e.g. the countries of Asia, Europe and North America. On the other hand, countries in Africa and Latin America have been excluded from this process, such as Brazil.

According to OECD indicators (2013), so far the winning countries in this process were mainly Asian countries. The Asian countries have increased their investments in the world economy, becoming the countries with the greatest attraction of investments in the international economy, with their companies in a broad process of internationalization. China and Korea are examples of that.

Global value chains and their relationship to the production factor labor

As already stated in the previous section, with the breakdown of production, companies from developed countries moved labor-intensive segments from their chain to developing countries with abundance of that factor, geographically separating production stages. As a result, developed countries increased gains by combining domestic high technology with the low wages of external labor from poor countries (BALDWIN, 2011).

Those movements have completely altered the industrialization process in developing countries that have received those fragmented stages of production as they industrialize as part of an international supply chain. With fragmentation, a number of companies based in developed countries seek to produce certain parts or complete certain manufacturing steps

more cheaply by moving part of their production facilities abroad. As a result, industries in developing countries that have received these stages of production emerge extremely rapidly, as there is no need to create an industrial base or invest in a diversity of technical skills. That way, foreign direct investment started to settle quickly and production started in a short time through multinationals (BALDWIN, 2006, 2011).

Krugman, Cooper and Srinivasan (1995, p.338), analyze productive fragmentation and elaborate a stylized general equilibrium model for world trade, wages and employment, with the aim of assessing the growth of international trade and its unintended effects, not only in wages and jobs in developed countries but also in newly industrialized economies. For the authors, slicing the supply chain means producing goods at various stages in various locations adding a little value at each stage which, according to the authors, considerably increases the potential volume of international trade, allowing the emergence of supertrading economies.

In this context, the ability of producers to slice the value chain, breaking a production process into many geographically separate stages enables the emergence of countries with extremely high rates of trade and GDP, as well as the emergence of large exports of manufactured goods by Low-wage countries that, given the abundance of labor, become part of the production chain by receiving semi-finished products that require labor intensive operations to be re-exported (KRUGMAN, COOPER AND SRINIVASAN, 1995).

According to the authors, the value chain slicing phenomenon has allowed a rapid growth in manufactured exports from countries in newly industrialized low-income economies (NIEs). With the growth of these exports and the fragmentation of production, greater opportunities for reallocating production to low-wage countries were created.

The authors argue that this facility made labor costs such a low share of total production costs that low wages were not a competitive advantage for labor-abundant countries. Labor costs have not declined as part of value added, but with the increase of industry vertical disintegration, labor value added has become only a small fraction of the value in input costs, given the ease of sliced intermediary production. Thus, the value of exports came to depend substantially on the use of intermediate inputs and their costs in production (Krugman, Cooper and Srinivasan, 1995).

Authors such as Arndt (1997a, 1997b) and Leamer (1996) also analyze the effects of productive fragmentation through the construction of general equilibrium models and intra-product specialization. The aim of these authors is to analyze the effects of production fragmentation on wages, employment and income.

Within a defensive perspective that production fragmentation has positive effects on employment and income generation, Sven Arndt (1997a, 1997b) introduces the terms offshore and intra-product specialization as definitions for analyzing productive fragmentation. In his studies, the author seeks to demonstrate how the intra-product specialization given by the presence of intermediate products and the fragmentation of production through outsourcing activities can have impacts on employment, production, factor return and well-being in the countries involved in the fragmentation productive process. The author's objective is to show that offshore supply - meaning outsourcing - from labor-intensive industries to capital-abundant industries, raises employment and wages in industry, so that offshore supply increases producers ability to deal with foreign competition.

For the author, in the current trade model factor intensities is measured during the component level of production, not by the end product. Within this fragmented production chain, offshore can help industries that struggle with foreign competition to their end products survive. For Arndt (1997a), when there is the possibility of production fragmentation, industries can abandon the complete production of a good, focusing on the production of components and stages of production in which they have comparative advantage, improving resource efficiency and ensuring survival against foreign competition.

To validate these results, Arndt (1997b) considers the implications of offshore in both the importing and exporting countries. By applying his methodology to Mexico and the USA, the results obtained by the author point out that the intra-product specialization by both countries increases wages, the number of jobs and welfare, suggesting that higher levels of trade integration are capable of increasing the standard of living of workers for both countries.

Unlike the results found and presented by Arndt (1997b), authors such as Leamer (1996) believe that "production relocation" coupled with technological and educational factors have significant negative effects on relative wages and employment. The author builds a model that establishes a connection between external product markets and the

internal labor market through the Heckscher-Ohlin-Samuelson (HOS) general equilibrium model that uses two factors: capital and labor, and three tradable goods: machines, textiles and clothing.

For the author, there are diversified high-wage economies that produce an intensive mix of tradable capital goods (machinery and textiles) and diversified low-income countries that produce a labor-intensive mix (textiles and clothing). In diversified economies, marginal demand for labor is external and wages are fully defined by the conditions of external competitiveness.

Based on this model, Leamer (1996) conceives that globalization, economic liberalization and "relocation of production" movements that occurred in Asia, Europe and Latin America have had repercussions on the US and European labor markets in the form of declining labor-intensive goods prices so much as to result in changes in the labor demand curve that lead to reductions in real wages for unskilled workers residing in abundant locations of unskilled labor. Therefore, the more the product mix includes labor-intensive goods, the more exposed the country is to the negative effects of productive fragmentation.

According to the author, the fragmentation of production exposes the labor industries of developed countries to international competition from labor-abundant countries through the relocation of production and with such competition, the wages of unskilled workers in the rich countries are determined. Additionally, factors such as education failures and immigration can directly reduce compensation rates for unskilled workers as well as interact with international trade, pushing a community below the labor demand curve in the region undergoing downward change in globalization (LEAMER, 1996).

Feenstra (1998) also considers the implications of globalization on the employment and wages of low-skilled US workers in his study, but does not use general equilibrium models for that. The author seeks to demonstrate how the disintegration of production, through what he called outsourcing, was as important for the rise of international trade as technological advances, the reduction of transport costs and the proximity of economies.

According to the author, the process of disintegration of production itself leads to increased trade, given that with dispersed production, the trade of intermediate inputs that cross the borders several times during the manufacturing process. This dynamic becomes

possible because the process of outsourcing by multinationals, or outsourcing, includes all imported intermediate or final products that are used in the production of a company or sold under its brand (FEENSTRA, 1998).

Thus, Feenstra (1998) attributes to the process of disintegration as important a role in increasing trade as the roles played by technological advances and globalization. For the author, the increasing integration of world markets triggered the disintegration of the production process and with that the activities or services that were previously performed entirely in the country of origin began to be combined with those produced abroad. This made it more profitable for companies to outsource increasing quantities of production processes abroad, vertically disrupting the integrated mode of production and having major impacts on employment and wages.

The disintegration of production via outsourcing was only possible given the process of globalization, which allowed the trade of intermediate inputs increasing production efficiency through liberalization and reduction of trade boundaries. These movements had a direct impact on employment and wages in both intermediate importing and exporting economies (FEENSTRA, 1998).

Outsourcing allowed companies established in developed countries that faced higher relative wages for unskilled labor than found abroad to outsource labor-intensive activities to countries where the workforce was plentiful, reducing relative demand for unskilled labor in the developed countries, while replacing the labor of these workers with automated production (FEENSTRA, 1998).

According to the author, this means that outsourcing has a qualitatively similar effect to technological advances in reducing the demand for unskilled labor within an industry. This shows that both outsourcing and technology use are complementary reasons for changes in employment and wages, as well as the growth of international trade, making it clear that low-skilled workers in countries Industrialized countries are aggravated by the complementary combination of globalization, outsourcing and new technology (FEENSTRA, 1998).

Feenstra (1998)[1] also includes in the discussion a concern not only with the change in factor income in industrialized countries due to increased trade, globalization and outsourcing, but also changes in developing countries that have been outsourced, since outsourcing can lead to a work factor price equalization. The author also includes in the discussion the possibility of trade policy having some function in protecting the interests of foreign labor, that is, if it is possible to redistribute income to low-skilled workers through the political instrument.

Authors such as Krugman and Venables (1995) and Markusen and Venables (2000) also discuss how globalization can negatively impact wages, employment and income levels, i.e. how globalization can affect allocation of factories and the gains from international trade. Krugman and Venables (1995) developed a model to measure the effects of globalization on real national incomes, in which they assume that there are no inherent differences between national economies that are organized into a core-periphery pattern, which purpose is to understand how the integration of world markets affects the real incomes of core and peripheral nations.

Krugman and Venables (1995) seek, through their monopolistic competition model, to describe how the process in which underdeveloped southern economies began to integrate international trade while developed economies witnessed deindustrialization movements in the North. The model predicts that the core-periphery pattern formed spontaneously between nations from the moment transport costs fell to a certain level that produced decreases in the real income of peripheral countries and income divergence between nations. After that moment, transportation costs continued to fall and a convergence movement abounded with the real incomes of the peripheral nations beginning to rise.

According to these authors, the interaction between transportation costs and trade in intermediate goods created country-specific external economies, providing a scenario of agglomeration of industrial activity. The innovation of this model is anchored in the fact that

[1] The discussion approached by Feenstra (1998) revolves around his analyzes of the added value of production organized in input-output tables. This method of analysis underlies the genesis of the microeconomic perspective of economists studies on GVC.

it is designed to be applicable to both international and interregional approaches. Nevertheless, similar to the models presented earlier, the authors described that in the final phase of the globalization process, the breakdown of industry to the South reduced the relative and perhaps absolute wages of the North.

Baldone, Sdogati, and Tajoli (2007) also made measurements in their study by measuring the international propensity to fragment through the internationally fragmented propensity index of production based on Balassa's (1965) revealed comparative advantage index. The aim of the authors was to assess the importance of international fragmentation for international trade and for final trade flows. For the authors, the international fragmentation of production that resulted in trade of intermediate goods changed the notion of comparative advantage in international trade, diminishing its explanatory power over the concept of absolute cost advantage. In their view, comparative advantages are inherently misleading if they do not represent differences in the ratio of trade.

To achieve this goal, the authors use European Union (EU) trade data generated by trade processing, that is, trade data for goods exported (or imported) for processing abroad and subsequently reimported (or re-exported) because such country data makes it possible to describe the origins and destinations of fragmented production activities. The main results by the authors demonstrate that with the fragmentation of production, trade flows do not constitute reliable indicators of comparative advantage in the traditional sense, making the concept of absolute (cost) advantages more relevant.

Baldone, Sdogati and Tajoli (2007) assume that the fragmentation of international production between the EU and the US (developed nations) is not led by the search for low-cost labor sites, but by technological complementarities. This statement differs from the results shown by the other studies presented so far in this paper, which point to the work factor as a fundamental element for the relationship of fragmentation between developed and developing nations. According to the authors, the reasons for fragmentation differ depending on the level of development of the nations participating in the process. The authors argue that the fragmentation of production significantly affects a country's level of economic activity beyond the effects of more traditional forms of international economic integration and may constitute a relevant mechanism for GDP growth.

Other analyses for more complex products were performed by Baldwin (2009) who focused on car production and by Grossman and Rossi-Hansberg (2006) for aircraft production. Overall, studies from a microeconomic perspective show a pattern of specialization in which developed countries specialize in capital-intensive products, skilled labor, and other intangibles, capturing the largest share of value added, while Developing countries perform tangible assembly-related and low-skilled activities, adding little value to GVC.

UNCTAD (2013), as in the aforementioned works, promulgates the idea that today's new international trade pattern refers to GVC production and trading and that chain participation can generate benefits for countries with integration. Thus, UNCTAD (2013) states in a published document entitled *"World investment report - Global Value Chains: investment and trade for development"* that insertion in GVC results in direct economic impacts in terms of added value, employment, income and It can also contribute to long-term economic development through the absorption of technologies, skills and industrial upgrading disseminated within chain links.

Participation of Brazil in Global Value Chains before the labor reforms

In a recent study published by the Organization for Economic Co-operation and Development (OECD) (2013), it is indicated that Brazil and Latin America were practically excluded from this process of restructuring the global value chain. These countries, in addition to having little weight in the global value chains, also present little regional productive integration, unlike the countries of North America, Europe and Asia.

According to the OECD (2013), Brazil was one of the economies with the lowest foreign added value in its exports, of the order of 10% - a backward participation. The study states that the possible main reasons for this low dynamism of the Brazilian economy are: 1) the Brazilian economy is closed; 2) As Brazil exports low value-added products and the country is strong in domestic production of raw materials and intermediate goods, the share of inputs from other countries in goods exported by Brazil is very low; 3) because it produces relatively few goods that demand components from abroad; 4) the country has still a very protected economy.

On the other hand, the Brazilian contribution as an added value in the exports of the other countries was 20% - forward participation. It is the second highest percentage among developing countries. However, contrary to being a positive and good indicator for the Brazilian economy, this indicator is the result of Brazil being a country that benefits from international trade because it is an exporter of inputs and raw materials of low technological intensity.

These indicators are the result of Brazil's integration process with the globalized international economy since the 1990s when the country began to implement a broad process of structural reforms such as import tariff reductions aiming a greater insertion of Brazil in the world trade. In addition, there was also a process of financial liberalization focused on providing the country with a greater integration of the national financial market into the movement of international financial markets. According to the proponents of the productive and financial opening of the Brazilian economy, the result would be greater insertion of Brazil into the global value chains.

However, the indicators presented by the OECD study (2013) make clear that although the country has implemented structural reforms to open up the economy to trade and the world financial market, the Brazilian economy has remained outside the process of restructuring of the GVC presenting low integration of their productive chain into it.

Given these results, several studies have been conducted in Brazil trying to identify what went wrong, resulting in a bad insertion into global trade especially in GVC.

On the one hand, studies of heterodox authors claim that the policies implemented for the process of opening up the Brazilian economy were mistaken, resulting in a pattern of growth marked by the low differentiation of the productive structure and a fragile linkage with other manufacturing and services activities leading the Brazilian industry to a specialization in natural resource intensive sectors with low dynamism and low income elasticity of demand, thus provoking greater vulnerability and fragility of the national industry.

These adjustments led to the abandonment of product lines with greater aggregation of technology with the replacement of locally produced parts for imported parts and components, leading to a downgrade of domestic production. This has resulted in an external

insertion of Brazil exporting products heavily based on low technological intensity, labor intensive and natural resources, which makes the country very vulnerable to the international scenario - with export performances too far from the world standards, which is marked by an increasing tendency of concentration of the commerce in products of greater technological intensity.

On the other hand, studies by orthodox authors, such as the OECD (2013), claim that the main reasons for Brazil's fragility in this process are associated with a set of forces acting simultaneously, such as the need for greater specialization, lower transport and communications costs, lower transaction costs, insufficient research and development investments, low efficiency in production scales, and the need for a more liberalized goods and services market without excessive protectionism. Those issues evidence the structural weaknesses of the Brazilian economy and that weakness does not contribute to the competitiveness gain.

According to studies by orthodox authors, Brazil would need to implement more structural reforms - such as privatization, increasing the degree of economic openness, and more cost-cutting measures to attract foreign investment into the country. Among the main measures for cost reduction, the labor reform was one of the most defended proposals by the orthodox. The argument of the defenders of the labor reform was that this reform would contribute to attracting more national and international investment for the country, recovering economic growth, generating more employment, modernizing national industry, increasing and improving the quality of Brazil's GVC.

In 2017, Brazil implemented a thorough labor reform by easing labor market laws benefiting mainly the employers with the promise of generating more investments, growth and employment.

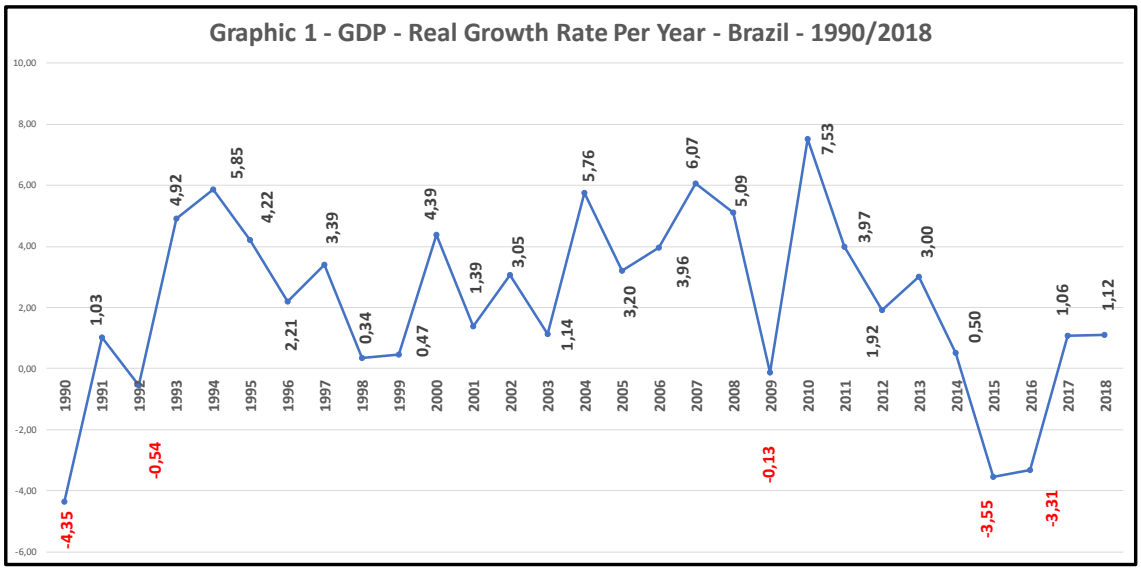
Analysis of the participation of Brazil in Global Value Chains after the labor reforms

It is important to consider some indicators to analyze the changes in the Brazilian economy after the labor reform, especially considering the contributions that the labor reform might have had over the number and quality of the Brazilian insertion into GVC. While recognizing it is necessary to use a greater number of indicators for such analysis, I consider

that four indicators contribute to a brief discussion: 1) economic growth; 2) domestic and foreign investment; 3) dynamics of the country's productive structure, analyzing the growth rate of the industry and its share in GDP; 4) and external insertion, analyzing exports and imports.

As we can see in Graph 1, since 2014 the Brazilian economy has been experiencing a strong economic crisis, with negative growth rates in 2015 (-3.55%) and 2016 (-3.31%). Even with the labor reform in 2017, the Brazilian economy shows low growth - 1.06% in 2017 and 1.12% in 2018. According to the latest publication of the Central Bank of Brazil, in the first quarter of 2019, Brazilian GDP had a retraction of - 0.2%. This indicator contributed to a reduction on the projection of growth according to analysts and the market in 2019 from 2.0% to 0.9%[2].

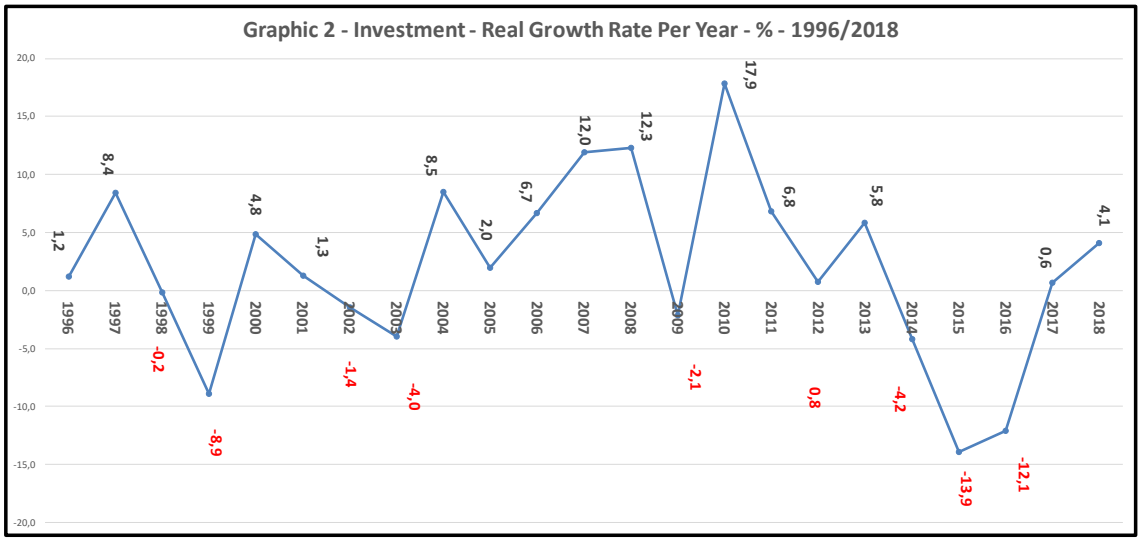
It is the longest economic crisis Brazil has been through history, with negative growth rates and a very slow recovery. As can be seen, the labor reform did not result in the recovery of the country's economic growth. It is important to be clear that the negligible growth in recent years only happened because of commodity exports, without the dynamics of that sector it is very likely that economic growth rates would be negative.



[2] See: https://economia.estadao.com.br/noticias/geral,mercado-reduz-projecao-de-crescimento-do-pib-de-2019-de-1-para-0-93,70002877006

Source: Central Bank of Brazil (CBB)

The strong economic recession of the country has, as one of its main reasons, the low rate of investment. In graphic 2, the investment rate in Brazil shows a downward trend since 2013, with negative rates in 2014 (-4.2%), in 2015 (-13.9%) and in 2016 (-12.1%). In 2017 and 2018 we had small recoveries, but much lower than expected and insufficient to boost the productive structures of the country. In addition, investment growth in 2018 was influenced by an accounting change from Petrobras in the form of calculation of its tax regime, artificially inflating the investment in the third quarter of 2018.[3]



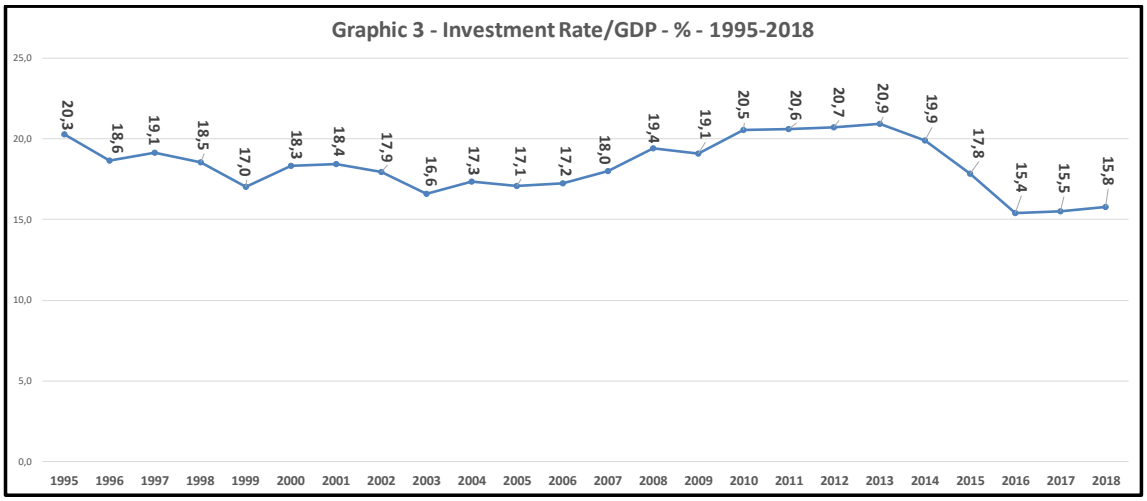
Source: Brazilian Institute of Geography and Statistics (BIGS)

The decrease on investments in Brazil in recent years and the low GDP recovery in the recent period has resulted in a low ratio between investment rate as a proportion of GDP. In graphic 3, the investment rate as a proportion of GDP decreased to very low levels, reaching 15%.

This is very serious because the low investment does not contribute to a greater productive diversification of the country and greater competitiveness. According to the

[3] See: https://www.correiobraziliense.com.br/app/noticia/economia/2019/03/01/internas_economia,740539/pib-baixo-de-2018-reduz-expectativa-de-crescimento-para-este-ano.shtml

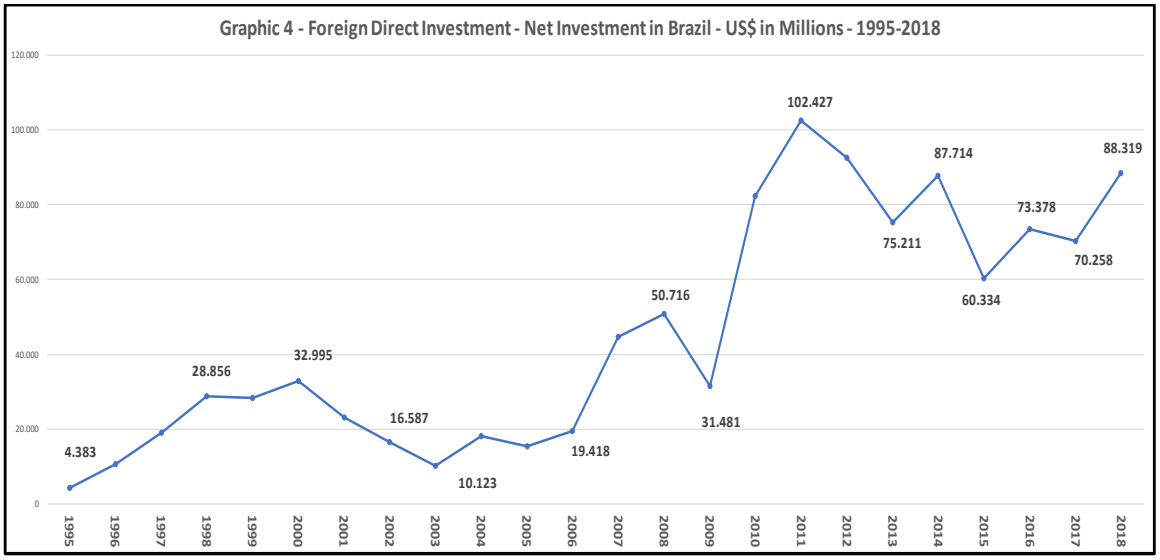
Brazilian Central Bank, for the Brazilian economy to have an average growth rate of 5% per year in the long term, it would be required an investment rate as a proportion of GDP of 25% per year, an unlikely scenario, since Brazil has faced an economic crisis in recent years.



Source: Brazilian Institute of Geography and Statistics (BIGS)

If domestic investment is very low and it has not recovered even after the labor reform, foreign direct investment also faces the same situation. As shown in graphic 4, after 2014, there was a sharp drop in foreign investment in Brazil, falling from US$ 87 billion to US$ 60 billion in 2015. The slight recovery that has taken place in recent years is not greenfield investment, but rather an investment as the main result of Petrobras assets sales process [4].

[4] See: https://www1.folha.uol.com.br/mercado/2015/06/1649139-plano-de-negocios-da-petrobras-tem-corte-de-37.shtml
https://oglobo.globo.com/economia/petrobras-eleva-meta-de-venda-de-ativos-para-us-269-bi-ate-2023-23282011



Source: Central Bank of Brazil (CBB)

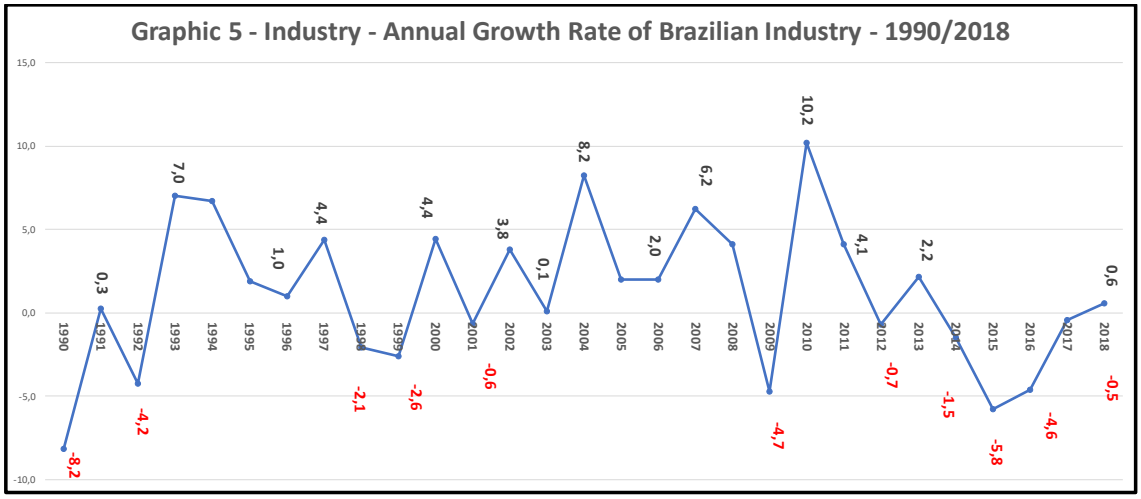
To make the situation even more delicate, for the first time Brazil did not appear in the list of the best countries to invest in, according to the opinion of foreign investors. The survey is made by consulting agency A.T. Kearney[5].

It is the first time the country has been left out of the top 25 since 1998 - year of the ranking creation. Brazil has been following a downward trend in recent years. In 2016, it ranked 12th, falling to 16th and 25th in the following two years, until it was off the list in 2019. By then, the worst position had been the 17th position in 2004.

As a result of the low economic growth and the low investment rate, the Brazilian industry is experiencing one of the biggest crises in its history. As it is shown in graphic 5, since 2014 the Brazilian industry has negative growth rates. The low growth rate of the industry in 2018 is considered irrelevant, given the serious situation of the industry with the crisis that has persisted since 2014.

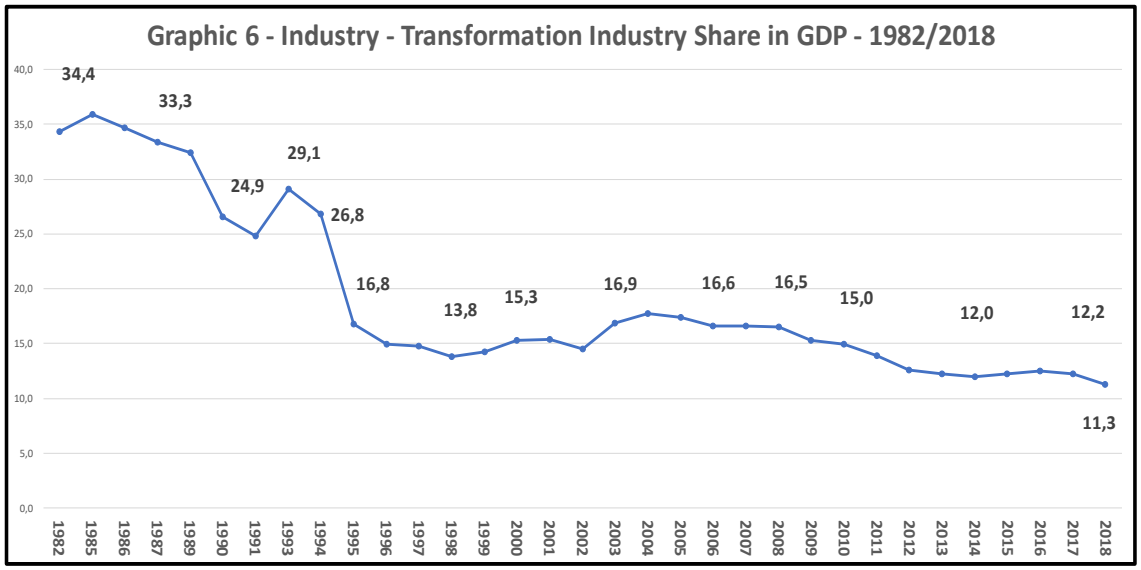
This becomes more serious when we see that the world is undergoing a new industrial revolution, Industry 4.0. While the world has advanced in new technological frontiers, the Brazilian industry is stagnant and technologically behind.

[5] See: https://www.atkearney.com/foreign-direct-investment-confidence-index



Source: Brazilian Institute of Geography and Statistics (BIGS)

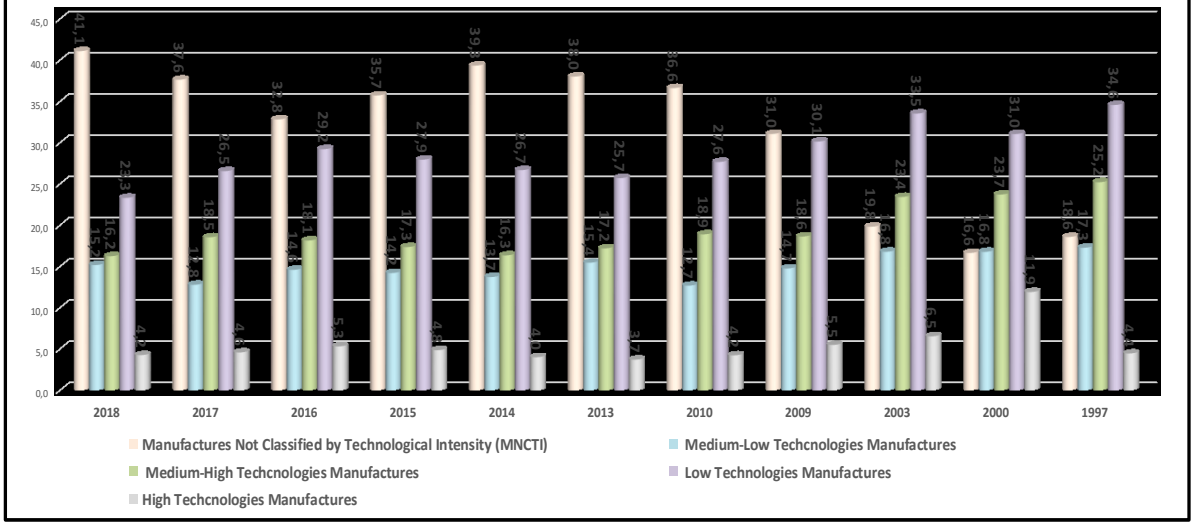
With the low investment rate and industrial stagnation, graphic 6 shows that the share of manufacturing industry in GDP shows a steady decline over time, worsening even more in recent years. In 2018, graphic 6, the share of industry in GDP is only 11.3%. It is important to consider that this is not a natural process of de-industrialization because in the case of the Brazilian economy it has not been more dynamic since the 1980s, particularly since it was not included in the technological frontier of the 3rd industrial revolution, nor in the new wave of industry 4.0.



Source: Brazilian Institute of Geography and Statistics (BIGS)

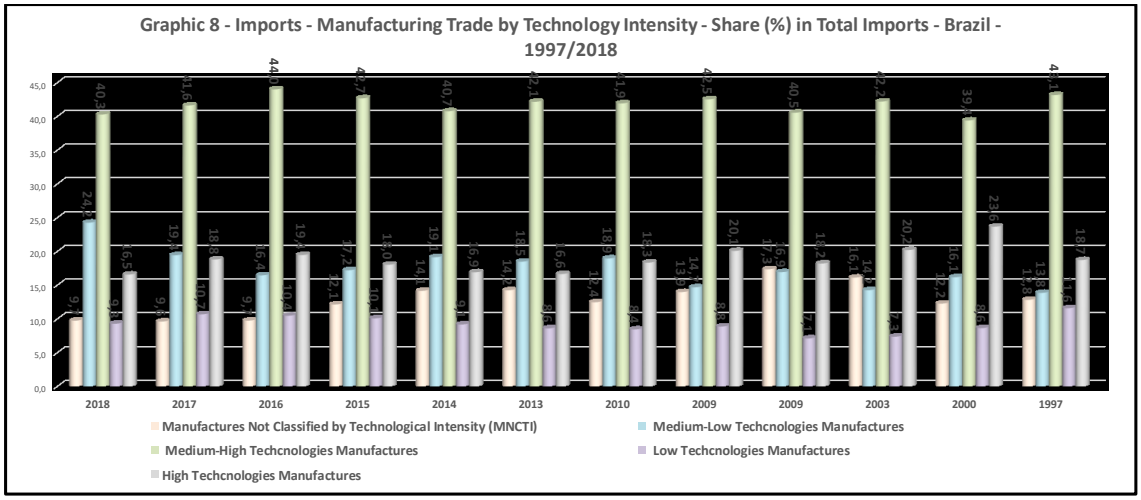
The result of the fragility of the Brazilian productive structure is reflected in its international insertion. As can be seen in graphic 7, the products with the highest technological intensity have only 4% participation, and the medium high technology intensity only 17%. On the other hand, non-classified products of low technological intensity dominate as the most exported products in Brazil. Adding the unclassified products to the products of low technological intensity they correspond to approximately 65% of what Brazil exports to the world. The growth of the share of products with a low technological intensity showed a growth in its share of total Brazilian exports over the years 1990 and 2000, showing that this dynamic is a structural phenomenon and not a conjunctural one, with no prospect of change.

Graphic 7 - Exports - Manufacturing Trade by Technology Intensity - Share (%) in Total Exports - Brazil - 1997/2018



Source: Ministry of Industry, Foreign Trade and Services - Brazil

The situation of the Brazilian international insertion becomes clearer when we analyze the main products imported by Brazil, graphic 8. On the one hand, if Brazil mostly exports to the world economy products of low technological intensity, on the other hand when we consider imports from Brazil, we basically verified that Brazil imports products of high technological intensity. The products of medium high, medium low and high technology occupy approximately 80% of Brazilian imports.



Source: Ministry of Industry, Foreign Trade and Services - Brazil

In addition to the indicators presented, two other studies corroborate the fact that the labor reform did not provide gains for the Brazilian economy in its insertion in global value chains.

The first study is from the National Confederation of Industry (NCI)[6]: Competitiveness Brazil 2018-2019. According to the study, among 18 countries selected for the research, Brazil remains the penultimate one in terms of competitiveness, only ahead of Argentina. Among the main indicators used to obtain the level of competitiveness, the biggest advance was in the availability and labor cost, where Brazil moved from 10th place in 2017 to 6th place in 2018. The study shows that the recession, the austerity policy and the labor reform resulted in an increase in the supply of labor and a significant drop in its cost.

Therefore, contrary to what was expected by businessmen and the Brazilian government, this specific reduction did not increase the country's competitiveness in more technology-intensive products. Competitiveness in low labor cost does not contribute to the Brazilian economy having a position of strong productive structure and more technological intensive export of products. On the contrary, it levels the country with Mexico, Turkey and

[6] See: https://www.portaldaindustria.com.br/estatisticas/competitividade-brasil-comparacao-com-paises-selecionados/

Indonesia, countries with fragile productive structures and exporters of products of low technological intensity.

The second study is from the OECD[7]. The OECD published the report of insertion of the countries in the Global Value Chains in 2018. The main characteristics of Brazil are:

In 2016, the foreing value-add content of Brazil gross exports decreased to 10.2%. This is considerably lower than G20 average of 16.5%.

Between 2005 and 2015, the share of imported intermediate inputs subsequently embodied in exports fell from 23.5% to 19.3%, significantly below the OECD average of 45.5%.

These data are consequences of Brazil basically exporting products of low technological intensity, i.e. commodities. They are products that Brazil has competitiveness and does not need imported inputs to be able to produce and export.

Conclusion

The indicators and studies presented in this paper show that competitiveness at low labor costs - achieved through labor reform - instead of restoring the Brazilian economy the honorable position occupied decades ago of a more competitive industry, levels the Country with Mexico, Turkey and Indonesia, that is, countries that have fragile industrial structure and weak international insertion, as shown in the NCI study.

This indicates a limited strategy of insertion in the GVC, since it is based on activities related to the cost of cheap labor and with a low level of technological intensity, such as food, beverage, textile and shoe production, among others. This means it is a priority for the Brazilian government to participate in the global competition process in less dynamic and more labor-intensive sectors of the economy, while established and strong competitors worldwide focus in more technology-intensive products.

[7] https://www.wto.org/english/res_e/statis_e/miwi_e/countryprofiles_e.htm

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