CHINESE INVESTMENTS IN **BRAZIL**: INVESTMENT DATA, PUBLIC POLICIES FOR INVESTMENT FACILITATION AND THE CASE OF THE MANAUS INDUSTRIAL POLE

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INTRODUCTION

Since the late 1990s, China has been seeking to expand its capital in foreign markets and increase its geopolitical weight in the new world order. For 13 consecutive years, its investments in over 150 countries have grown at an average annual rate of 33.6% (Cariello, 2021). In this phase of accelerated growth and its quest to gain power on the international scene, Chinese non-financial investments abroad hit an all-time record in 2016: a total of US$170.11 billion in projects linked to 7,961 companies in 164 countries and regions (Cariello, 2021). It was the first time the country's total investments abroad exceeded the total foreign investments it received.

China began supporting Chinese foreign direct investments by adopting its so-called "Going Global" strategy in 2001. This strategy aimed to achieve the following objectives: a) obtain access to raw materials (oil, iron, steel and wood) needed to sustain its economic growth; b) guarantee the food supply for a population of over 1.4 billion people; c) enter other countries' consumer markets through joint ventures or by acquiring other companies; d) set up factories in their industrial parks; e) geopolitically influence regions that are traditionally in the shadow of Western superpowers; f) export the surplus capacity of Chinese companies, and g) make profit.

China's strategy became even clearer in 2013, when it launched the Belt and Road Initiative (BRI). Under Beijing's command and with the ambition of involving over 140 countries, this project aims to generate a new global flow of capital, services and communication in which China's economic structure and political influence are at the centre.

China-Brazil relations date to the 1970s. In 1974, the Brazilian military government recognized the People's Republic of China as the sole representative of the Chinese people and severed its ties with Taiwan. The resumption of diplomatic relations between the countries led them to establish an important technological and scientific partnership for joint satellite monitoring of earth resources and climate programme (CBERS) in the late 1980s.

A fundamental milestone in the dialogue between China and Brazil was the visit of Chinese leaders to Brazil in 1993. This was the occasion of the signing of the bilateral agreement called the *Sino-Brazilian Strategic Partnership,* which was to serve their common objective of joining forces to push open the gates of the international political-economic agenda, on one hand, and, on the other, China's interest in securing access to Brazilian agricultural products and raw materials for its rapid expansion. Brazil, for its part, aimed to preserve and strengthen the bilateral space cooperation efforts and use the deficiencies in China's infrastructure as a springboard for Brazilian service exports to that country (Leão, 2011).

During the second phase of the partnership, which lasted until 1999, Brazil's main interest was the *Energy Cooperation Project,* as it attempted to secure important contracts for Brazilian construction companies to build dams in China. However, China was more interested in increasing the supply of iron ore from the Companhia Vale do Rio Doce (Vale) than in hiring Brazilian companies to build hydroelectric dams. It also focused its attention on Brazil's potential to supply food to China, especially soy (Biato Junior, 2010).

The third phase of the strategic partnership has lasted from the early 2000s, the time of China's accession to the World Trade Organization, up until now. During this period, Brazilian exports to China grew over 500%, as it took Japan's place as Brazil's leading trade partner and priority market in the Asian region. In 2000, Brazil exported a total of US$1 billion to China. By 2014, this amount had climbed to US$40 billion and in 2021, to approximately US$70 billion. As a result, China is now the main destination for Brazilian exports, absorbing more than a third of the total. The Joint Action Plan 2010-2014 and the Ten-Year Plan 2012-2021 (signed in 2010 and 2012, respectively), the volume of Chinese capital already invested in Brazil and the announcement of new investments all confirm both countries' interest in pursuing the path of cooperation further.

Also during this recent phase, the flow of Chinese capital into Brazil has increased rapidly. Data indicate that between 2007 and 2020, Chinese companies implemented 176 projects that total US$66.1 billion in investment. Brazil was the recipient of almost 50% of Chinese investments in South America (Cariello, 2021). As we will show in this report, the majority of these investments are channeled into the energy sector (fossil and renewable), followed by mining, manufacturing, agriculture, and financial services. In terms of investment volumes, Chinese investments in Brazil are mainly led by state-owned enterprises (SOEs).

This report is part of the project "The political economy of South-South relations: a comparative analysis of China's investments in Brazil and South Africa", which is based on the collaboration of researchers from the BRICS Policy Center at the Pontifical Catholic University of Rio de Janeiro and the School of Government at the University of the Western Cape, with the support of the Karibu Foundation. We aim to investigate and compare Chinese investments in two other BRICS countries: South Africa and Brazil. The questions that guide this research are: to what extent can South-South investments generate new potential for regional and national development based on fairer and more sustainable social and environmental grounds? Or, on the contrary, to what extent do South-South investments reproduce the traditional international division of labour and practices of natural resource and labour exploitation, while generating new asymmetries? We aim to identify the main characteristics of Chinese investments in the two countries; the specific government public policies and state institutions that sustain and facilitate them, and the socioenvironmental and labour dynamics that were generated in territories where Chinese projects have been or are being implemented.

The focus of this report is Chinese investments in Brazil. We begin by presenting data on the evolution and main characteristics of Chinese investments from 2010 to the present day, followed by our findings on financing, credit and trade. Next, we discuss political-diplomatic relations between China and Brazil and the main public policies designed to facilitate and promote foreign direct investment in the country from the time of the Dilma Rousseff administration (2011-2016) to the governments of Michel Temer (2016-2018) and Jair Bolsonaro (2019-2022). We have crossed information to assess the extent to which, if any, diplomatic visits and public policies have facilitated the entrance of Chinese investors in each sector. Finally, we examine a case study on the factories of Chinese manufacturing companies in the Special Economic Zone of Manaus, specifically in the Manaus Industrial Pole, located in the Amazon region.

The main results are organized as follows.

Section 1 provides quantitative data on investment volumes, number of projects, and the main sectors and companies involved. We mapped out 138 projects[1] that received an approximate total of US$72.253 billion[2] in investments from China between 2010 and 2021. China is one of the biggest investors in Brazil, alternating with the United States in first and second place throughout most of the period analysed. Chinese state-owned enterprises (SOEs) account for a larger share of the total invested than private companies, but support roughly the same number of projects as private firms do. Brownfield investments account for most of the total invested, mainly because of the numerous high-value acquisitions, generally by SOEs. The energy sector received the largest portion of the amount invested and stands out in relation to the scale of assets, especially in the transmission subsector. The manufacturing industry, for its part, had the highest number of projects. Investments in the power generation subsector went almost entirely into hydropower plants and renewable energy sources such as solar and wind power. However, in 2020, investment levels declined considerably. This can be explained by the

1. The set of projects analysed in this paper is the result of a study on Chinese investments in Brazil. More detailed data from this research has been compiled and posted on the China Panel platform. To access more detailed information about each project, consult the platform at: <https://www.bricspolicycenter.org/painelchina/index.php>

2. Only confirmed projects (not those announced or planned) were included in the study in order to rule out "ghost" investments. Projects with no available information on the amount invested were only included in the figures on the number of projects. Repairs, works to modernize infrastructure, service provision and acquisitions of the assets of Brazilian companies outside of Brazil were not taken into consideration. The study is based on information from newspapers and the websites of municipalities, Chinese corporations, regulatory agencies, etc.

uncertainties generated by the Covid-19 pandemic and the fact that the privatization program and infrastructure concessions – of great interest to Chinese investors – were put on hold for several months. However, in 2021, investment flows resumed and the number of projects rose again, mostly in the services sector.

Section 2 analyses Chinese financial flows and loans to Brazil. China's main financial institution is the China Development Bank (CDB), which has been an important source of funding for Brazilian and Chinese corporations over the past 15 years. It has offered credit in the form of project financing, lines of credit to Chinese corporations for the expansion of their operations and loans, mainly for Petrobras. In the mid 2000s, CDB financed projects in the oil and gas and electricity sectors (gas pipelines and coal-fired thermal power), but in the 2010s, it turned to projects in renewable energy and electric mobility tied to the promotion of Chinese technologies (hydroelectric plants and an electric vehicle plant). However, the biggest loans were granted to the Brazilian oil company, Petrobras. Between 2009 and 2017, CDB awarded six loans with a combined value of US$25 billion to Petrobras. These loans were partially based on "loans for oil", as they came with the condition that Petrobras prioritize the supply of oil to certain Chinese companies and, in some cases, use these loans to acquire the goods and services of these companies. CDB loans helped Petrobras finance the exploration of the pre-salt oilfields in the adverse context of the 2008 global financial crisis. Furthermore, these loans were particularly important after the results of the *Lava Jato* anti-corruption investigations revealed the involvement of Petrobras, which led to a drop in its market value and difficulties in obtaining funds from other creditors.

Section 3 focuses on Brazil-China trade relations. Since 2009, the Asian country has been Brazil's main trading partner, accounting for more than 25% of Brazilian exports. Brazil-China trade relations resemble the traditional division of labour: Brazilian exports to China are concentrated in three primary products - iron ore, soy and crude oil – which accounted for 80% of Brazil's annual total exports to China between 2010 and 2022; Brazil, on the other hand, mostly imports a wide range of manufactured products from China. This asymmetric economic interdependence tends to fuel the deindustrialization of the Brazilian economy in the medium term, as China has taken Brazil's place as the main exporter of manufactured goods to other South American countries.

Section 4 discusses political-diplomatic relations that accompanied and, at times, favoured the entry of Chinese investments in Brazil. Since the 1970s, there have been over 90 meetings of heads of state and state representatives from both countries, of which more than 60 have taken place from 2010 onwards. During the Lula da Silva (2002-2010) and the Dilma Rousseff (2011-2016) administrations, relations between Brazil and China intensified significantly. In 2004, the Sino-Brazil High-level Commission for Coordination and Cooperation (COSBAN) was created. The countries also adopted the Brazil-China Joint Action Plan for 2010-2014 and one for the 2015-2021, as well as the Ten-Year Cooperation Plan 2012-2021. In 2012, bilateral relations were raised to the "Global Strategic Partnership" level. At the multilateral level, Brazil and China participate in the G20, the BRICS and the BASIC blocs and regionally, in 2014, the China-CELAC Forum was created. All these initiatives and mutual visits have been accompanied by business interests, resulting in memoranda of understanding (MoUs) for specific sectors (mining, oil, energy, agriculture, etc.) and deals for Chinese and Brazilian companies.

After the parliamentary coup that led to the impeachment of President Rousseff in 2016, the new Michel Temer administration (2016-2018) redirected the focus of Brazil's foreign policy towards building closer ties with its traditional partners, such as the US and the European Union and a more pragmatic relationship with China. Even so, Temer visited China two years in a row, with several Brazilian CEOs and business associations in tow. The outcomes of these visits were the signing of an agreement with State Grid for the licensing of phase 2 of the Belo Monte hydropower plant transmission line and a US$700 million financing contract with CCCC for investment in the construction of a terminal in the Port of São Luis. In 2018, however, the number of agreements between Brazil and China began to decline, as elections in Brazil that year were marked by uncertainties about relations with China, which stemmed mainly from the hostile stances of then-candidate Jair Bolsonaro. Despite the Jair Bolsonaro administration's inimical rhetoric towards China, in his first year in office, in 2019, several high-level visits took place, namely on the occasions of the 5th COSBAN Meeting, the 3rd Global Strategic Dialogue Meeting, and the 11th BRICS Summit. Several cooperation agreements and sectorial MoUs were signed, resulting in the expansion of Chinese business operations in Brazil. In this section, we highlight the operating license agreement authorizing State Grid to operate the Belo Monte-Rio de Janeiro transmission line, as well as financing agreements between Petrobras, CDB, China Eximbank and ICBC Leasing.

Section 5 and the appendix of this report provides an overview of public policies, programs and legislation on foreign investment in Brazil and assess if and to what extent they facilitated the entry of Chinese investments. We took policy measures identified in the Investment Policy Hub platform of the United Nations Conference on Trade and Development (UNCTAD) as a basis and analysed the laws and programs of the Dilma Rousseff (2011-2016), Michel Temer (2016-2018) and Jair Bolsonaro (2019-2022) administrations. We found that Rousseff adopted investment-related public policies and legislation focused on stimulating industrial activities, which ranged from tax cuts and loan programs for car or ethanol production to incentives for the exploration and production of oil in the pre-salt fields. One key policy was the establishment of a production-sharing model that guaranteed a minimum share in the pre-salt operations for Petrobras. The Temer and Bolsonaro governments, on the other hand, both favoured market liberalization and privatization, leading to the denationalization of certain sectors such as oil and infrastructure. We also identified, however, certain continuities throughout the Rousseff, Temer and Bolsonaro administrations, such as the ongoing privatization of airports and the gradual opening of airline companies to foreign capital. Our findings show that some public policies during the Dilma Rousseff and Michel Temer administrations did, in fact, facilitate the entry of Chinese companies, particularly in the health, automotive, airport and oil industries. In the Bolsonaro government, however, policies aimed at promoting privatizations and concessions in the areas of infrastructure and energy, which had been important sectors for Chinese investors, did not end up attracting investments from the Asian country.

Section 6 discusses the dynamics and impacts of Chinese investments in the territories, including labour issues, based on the results of a case study on the Industrial Park of Manaus in the Amazon region. There are two ways in which Chinese interests are played out in the Amazon. One is through China's advances in the areas of infrastructure, food and raw materials: for instance, the implementation of a logistics corridor for grain and mineral exports; mineral prospecting operations, many of which are located in indigenous territories or environmental protection areas, as well as the construction of hydroelectric power plants and dams. Our report focuses on the second way, which has not yet been adequately discussed in Brazil: through investments in the manufacturing sector, which serve the interests of both state-owned and private enterprises that produce durable consumer goods. The city of Manaus has re-emerged as an important space to host a free-trade zone because of its special taxation system and industrial park, where the factories of most of the companies that build motorcycles, televisions, laptops and air conditioners, among other items, in Brazil are located. Manaus is also home to a specialized workforce that has decades of experience in manufacturing these products at a lower cost.

This section shares the results of field research on four Chinese factories in the Manaus Industrial Park: ChinaBoard, TVChina, MotorChina and ArconChina. The methodology consisted of factory visits and interviews with managers, Chinese expatriates, factory workers and administrators, employees of the labour court system and trade union leaders, as well as document analysis and literature review. The main findings are:

- Workers and employees report a decline in work conditions, as Chinese companies offer lower wages and less benefits and incentives than other major global players in the manufacturing sector in Manaus, especially Japanese, South Korean and some European firms. The Chinese offer strictly the legal minimum. The companies' policy is to pay the employees of their subsidiaries a wage that is close to the average amount paid by the parent company in China. Despite this, no data were found to indicate non-compliance with labour laws. In fact, Chinese companies tend to adjust to Brazilian legislation, but they do not offer any more than what the law stipulates.
- Human resources practices or policies of "Chinese enclaves" are fully controlled by headquarters in China; local factory managers in Brazil have no say in human resources (HR) matters. As a "global Chinese territory", the local HR department is part of the way China coordinates and controls production. Placing the decision-making power in the hands of the board of directors in China is one way of avoiding having to deal with local pressure directly. This can be exemplified in the case of labour disputes, as head office in China is the one to make decisions on compliance with the labour agreements negotiated in Manaus.
- Chinese companies give priority to the more technical side of work, which is coordinated by a management team composed of expats. They have generally given preference to workers with experience in the Manaus Industrial Park,

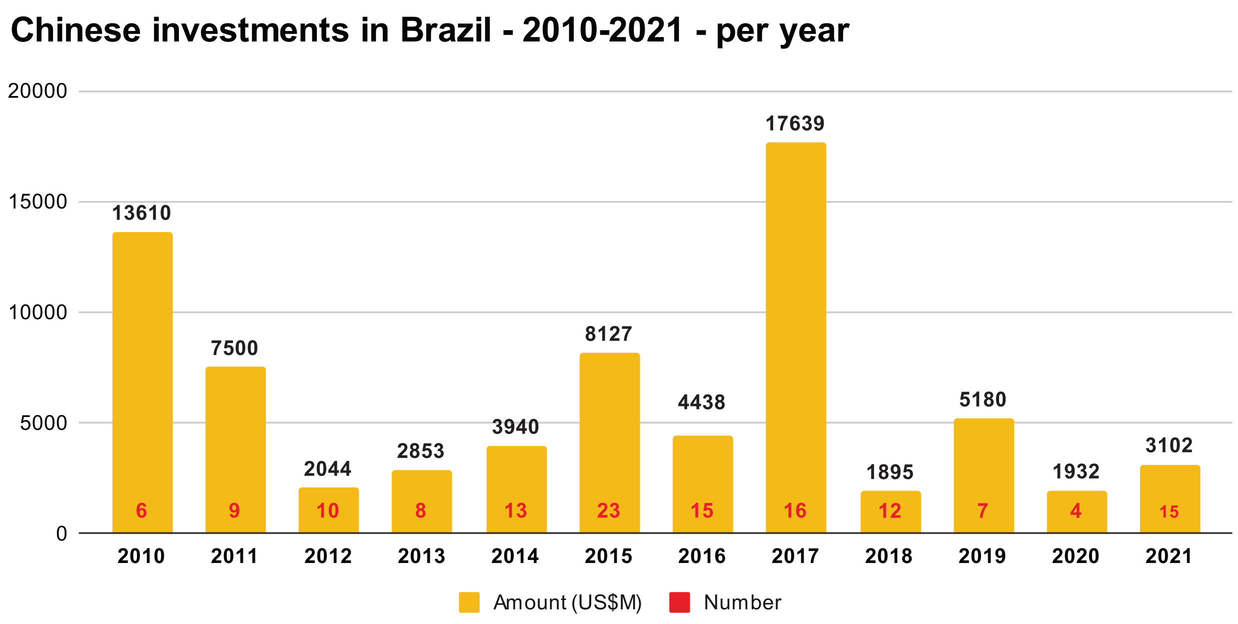
which has to do with the Chinese firms' goal of reducing the cost of training employees. This reveals an attempt to transfer the responsibility for training and "recycling in the market" to workers. In Manaus, both the state and the market evade responsibility for providing training.

- In regards to factory control and supervision, workers have little autonomy to make decisions. Chinese companies are reported to show little appreciation for workers' creative capacity. According to the employees we interviewed, the Chinese do not create space for dialogue in the factory or accept suggestions and they weave a very hierarchical web of relations.
- In the correlation of forces between capital and labour, state public policies have benefitted capital more than the city's entire labour force. Advances of the working population of Manaus are the result of the working class struggle against the forces of capital, and not the actions of the state. Workers in the capital of Amazonas are at the mercy of the comings and goings of manufacturing firms, on one hand, and must overcome the lack of educational courses, housing and sanitation policies and professional/technical training programs on their own, on the other.
- Contrary to the African context, little value is given to political or diplomatic capital or strategic interests linked to the centre of Chinese power. In a place where international companies dominate production and sales, Chinese investors merely go with the flow. They play the game within the possibilities that are offered by cutting costs and adopting strategies that allow them to survive or get ahead of their competitors, such as paying lower wages and benefits to Chinese managers and supervisors working in Brazil than the ones back in China.

1. CHINESE INVESTMENTS IN BRAZIL FROM 2010 TO 2021

1.1 Annual changes: mapping the trends

Figure 1.



The years 2010 and 2011 marked the consolidation of the entry of Chinese foreign direct investment (FDI) in Brazil due to the major acquisitions by Chinese corporations primarily in the extractive industry[3], but also in the power transmission segment[4]. A significant portion of the projects and the volume invested were concentrated in the three-year period from 2015 to 2017. This volume is the result of the intensification of diplomatic relations between Brazil and China in 2014 and 2015, when President Xi Jinping (2014) and Premier Li Keqiang (2015) visited Brazil and the countries signed 35 bilateral agreements for a total of US$53 billion in investment (Matoso, 2015).

In the said three-year period, the energy sector received the highest volume of investments, mainly due to State Grid's acquisition of a majority stake in CPFL in 2017 for a total of US$12.5 billion. This deal marked State Grid's entry into new segments of the Brazilian electricity sector outside the transmission subsector (Barbosa, 2020; Pereira, 2018). Other important projects worth highlighting are the installation of the Xingu-Rio transmission line by State Grid and the acquisition of the Jupiá and Ilha Solteira hydropower plants and the assets of Duke Energy and Triunfo Participações by China Three Gorges (CTG). Numerous projects were also implemented in the manufacturing industry, namely in the technology, automotive and industrial machinery subsectors (Alvarenga, 2015; Gandra, 2017).

The period that followed was marred by the anti-China rhetoric adopted by Jair Bolsonaro during his election campaign in 2018. Although this did not affect bilateral trade relations, it did put a chill on political ties between Brazil and China. The growing diplomatic tension between the two countries could be one of the factors that led to the decrease in the volume of investments in 2018. In 2019, however, pragmatism prevailed and major projects in the energy, extractive (oil) and infrastructure sectors began moving forward again.

In 2020, very few projects were implemented due to the Covid-19 pandemic. Investment resumed in 2021, mainly in the service sector, especially those linked to information technology.

1.2 Sectoral analysis

In relation to the number of projects, the manufacturing industry[5] emerges as the leading sector, accounting for 54 of the 138 projects, primarily in the technology[6] and automotive subsectors. The electricity sector comes in second, responsible for 30 projects, followed by the extractive industry, with 17 projects, including several high-value projects in 2010 and 2011.

3. Includes investments in mining and its subsectors, oil and gas.

4. This sector includes the segments of generation, transmission, distribution and commercialization as subsectors.

5. Generally, the activities in this category are carried out in industrial plants or factories. It includes subsectors such as technology, industrial machinery, automotive, home appliances, etc.

6. Includes investment in telecommunications, information technology and also ones related to the energy transition, such as smart meters, parts and batteries for electric vehicles, solar panels, etc.

Figure 2.

Chinese investments by sector (number)

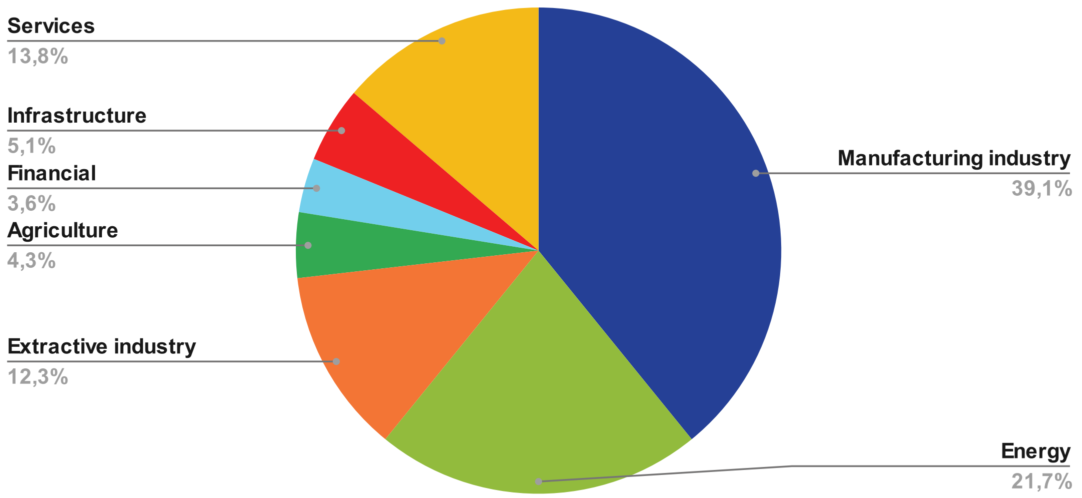


Figure 3.

Chinese investments by sector (amount)

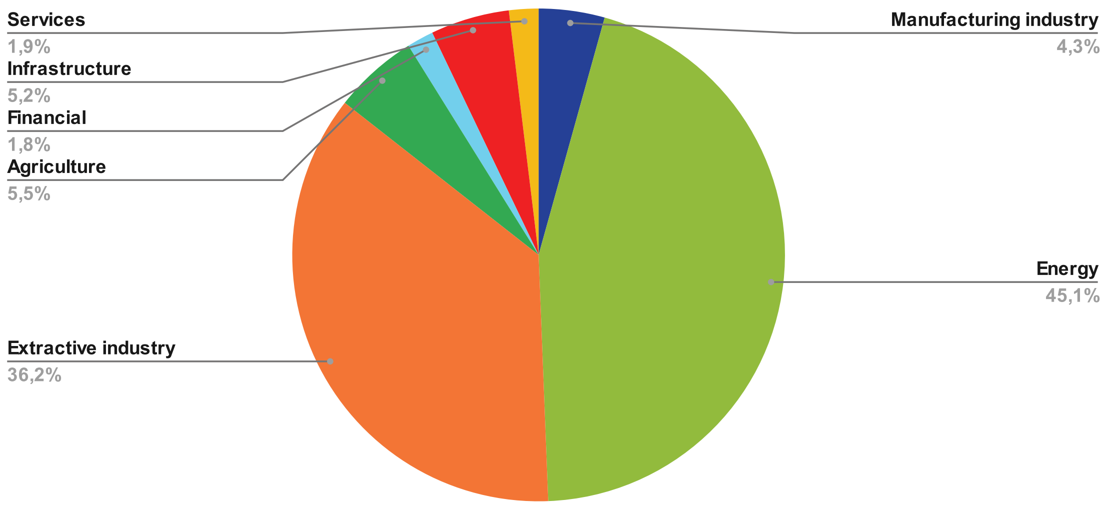
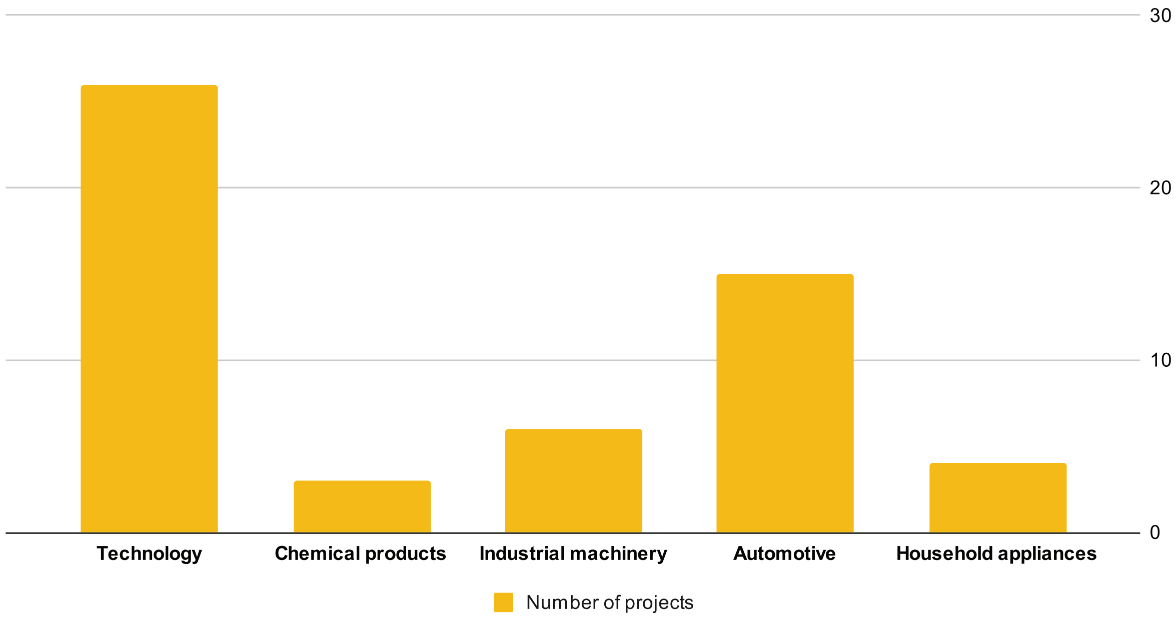


Figure 4.

Manufacturing industry: investments by subsector

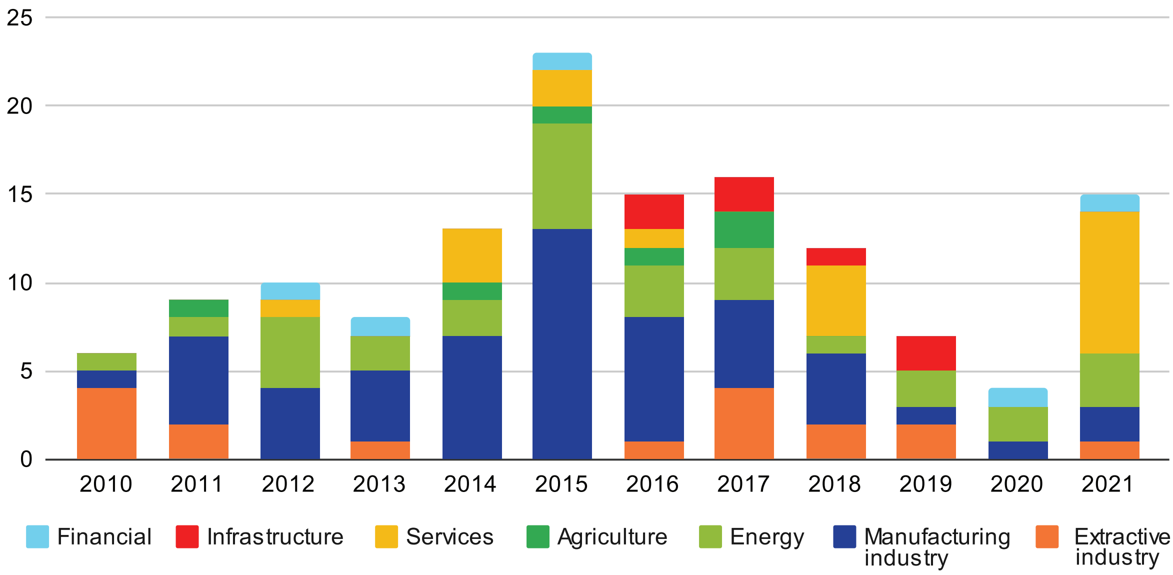


In terms of the amount invested, the energy sector came in first, capturing 45.1% of the funds invested, which together totalled US$32.3 billion. In addition to the acquisition of CPFL mentioned earlier, the biggest investments were the acquisition of the Jupiá and Ilha Solteira hydropower dams by China Three Gorges, the construction of the Xingu-Rio transmission line by State Grid and the acquisition of the São Simão hydropower plant (Ribeiro, 2018) by the Chinese consortium led by the State Power Investment Company (SPIC)[7]. The extractive industry comes in second, with a total US$25.98 billion in investments, representing 36.2% of the total. Here, we highlight the three acquisitions of the operations of European corporations Repsol, Statoil and Petrogal (Cardoso, 2011) in 2010 and 2011 by SINOPEC and Sinochem, for a total of approximately US$15 billion. It is also worth noting the stakes that Chinese consortium formed by CNPC and CNODC won the bid for the Búzios oil field (Cardoso, 2010; 2011; Petrobrás, 2020; Veja, 2010).

7. Besides the State Power Investment Company (SPIC), the consortium includes Zhejiang Energy International Limited and the Chinese funds ZLCFB- Hong Kong and CPD Energy.

Figure 5.

Evolution of investments by sector: number of projects



When we analyse the evolution of annual investments by sector, we see that the extractive industry stands out because of the acquisitions in 2010 and 2011 in the oil sector and in iron ore (Reuters, 2010) and niobium (Baosteel, 2011) mining. In 2013, Chinese companies began participating in and winning the bids for the pre-salt and post-salt blocks organized by the National Oil, Natural Gas and Biofuels Agency (ANP). As for the electricity sector, State Grid was responsible for all investments between 2010 and 2012, which were concentrated in the transmission segment. Between 2010 and 2017, yearly investments were made in the transmission segment; a total of 14 projects were implemented in this period. Investments in the power generation segment started a little later, in 2013, with CTG's investments in hydropower plants. CTG was responsible for all investments in power generation until 2016, which is when the entry of new companies and investments in renewable energy sources led to the diversification of this segment (CTG Brasil, 2021)[8].

The manufacturing industry, for its part, received multiple projects every year up until 2018, most of which were between 2013 and 2017. The number of projects peaked in 2015. Investments in the industry's infrastructure began later, in 2016, but have been constant since; projects were executed in 2017, 2018 and 2019.

8. There was an increase in investments in renewable energy, especially wind power.

1.3 Types of companies and projects

Of the total 138 projects identified in the mapping process, 64 were implemented by Chinese SOEs and 74, by private corporations. Even though Chinese SOEs implemented fewer projects than private firms, the volume of investments from the SOEs was greater, on average. Some SOEs, such as State Grid, CTG, Sinopec and others, are the biggest companies in their segment at the global level.

Figure 6.

Type of Chinese firm: State-owned X Private (Number)

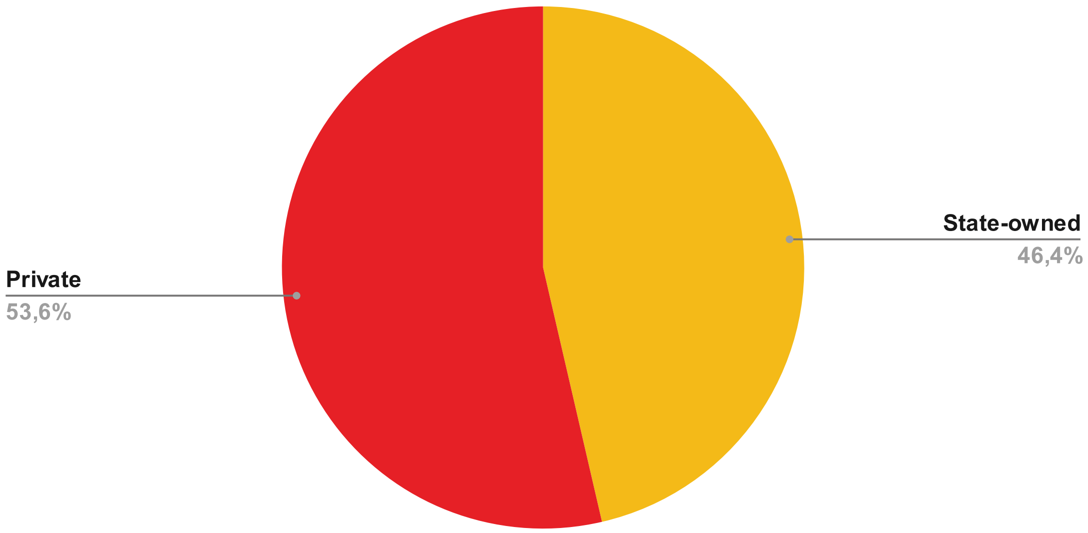


Figure 7.

Type of Chinese firm: State-owned X Private (Amount)

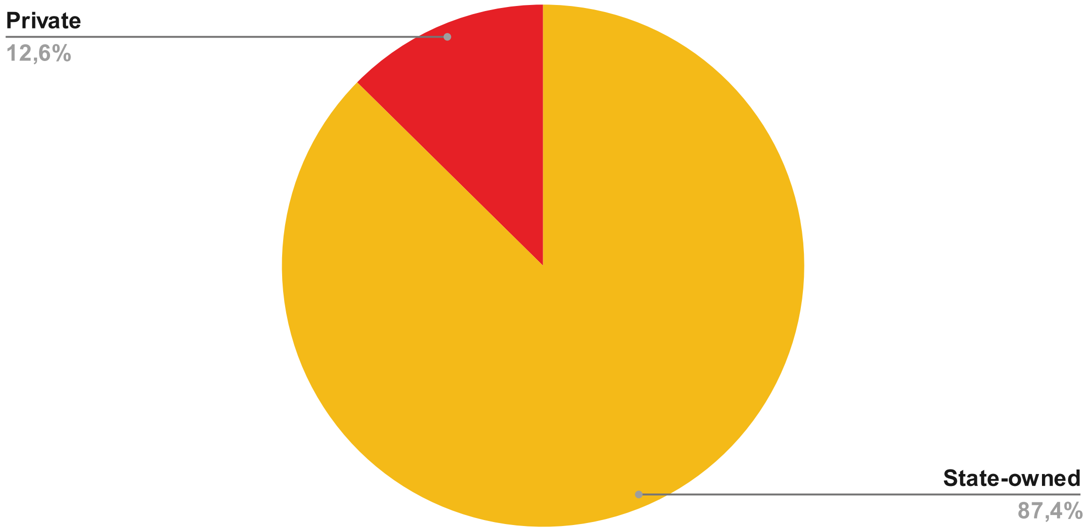


Figure 8.

Type of investment: Greenfield X Brownfield (Number)

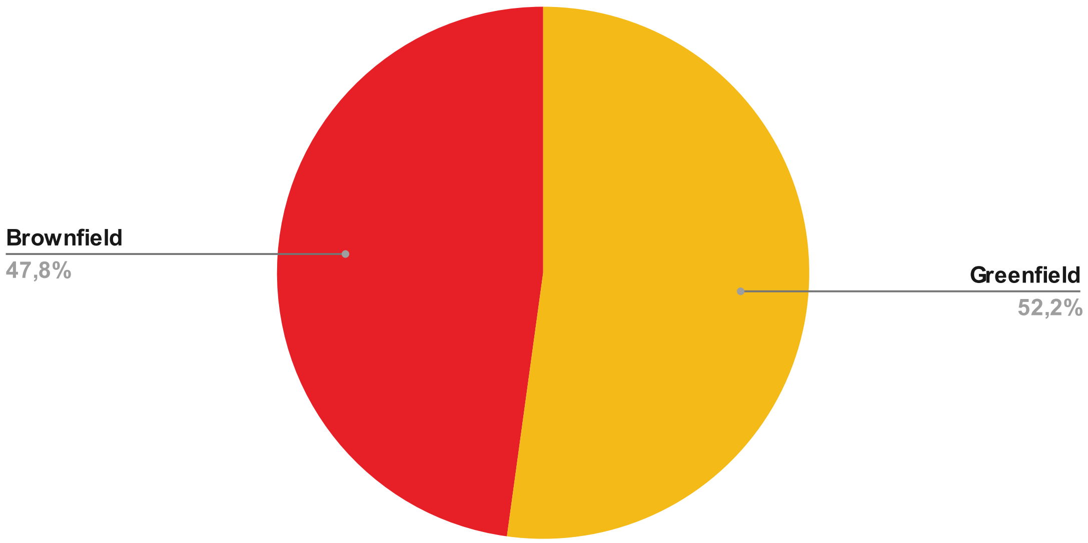
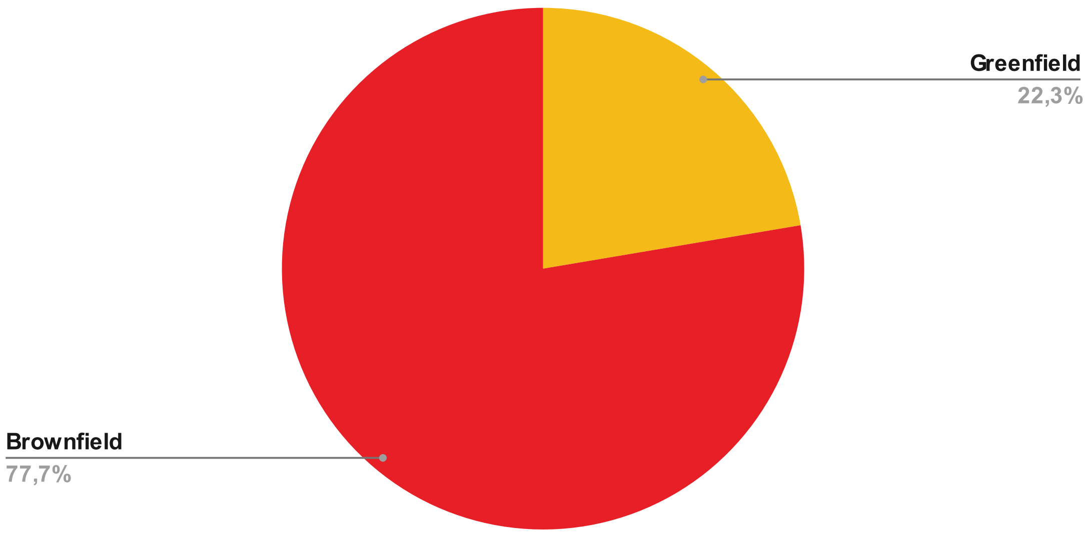


Figure 9.

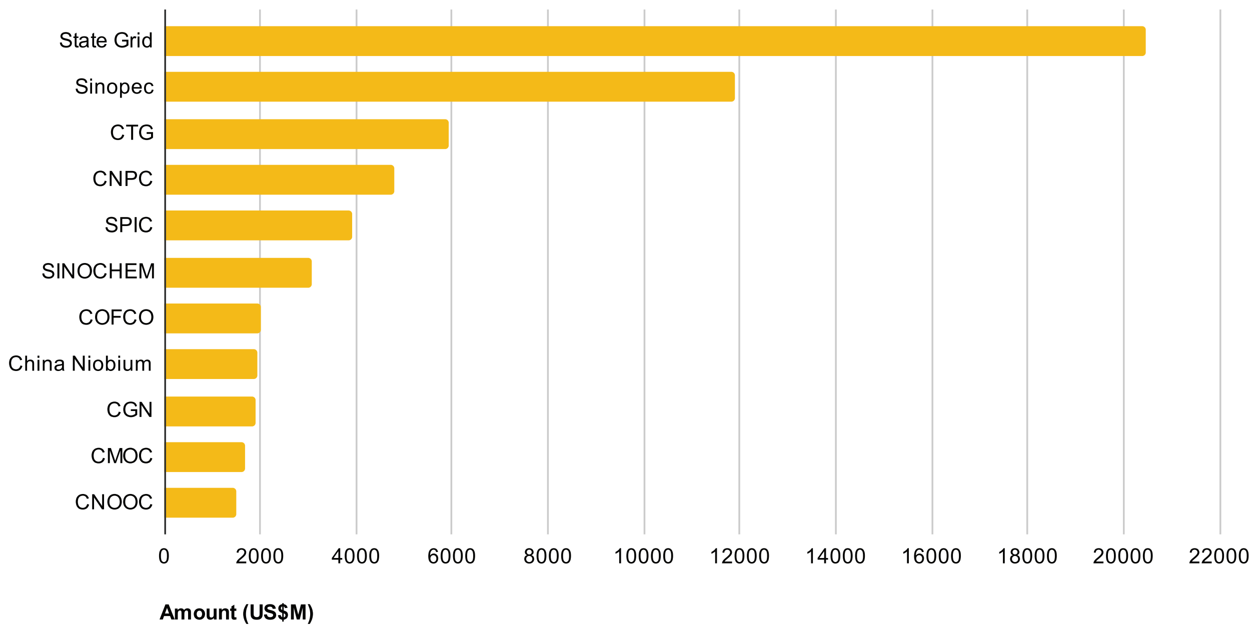
Type of investment: Greenfield X Brownfield (Amount)



Of the 138 projects identified in the mapping, 72 are greenfield investments and 66, brownfield[9]. In terms of the amount invested, brownfield investments account for a much larger share of the total. The five biggest projects were acquisitions by large SOEs in the oil and gas and the electricity sectors. Of the 10 biggest greenfield investments, 9 were made by SOEs.

Figure 10.

Value of accumulated investments 2010-2021



The main Chinese corporations in terms of cumulative value were state enterprises from the energy and extractive sectors. Cofco is the only company from the agricultural sector.

2. THE FLOW OF CREDIT FROM CHINA TO BRAZIL

Another way Chinese capital enters Brazil is through the loans and financing provided by Chinese banks to projects and companies in Brazil. China's main financial institution is the China Development Bank (CDB), which has been an important source of funding for Brazilian and Chinese corporations over the past 15 years. It has offered credit in the form of project finance, lines of credit to Chinese corporations for the expansion of their operations and loans, mainly for Petrobras.

9. Greenfield projects involve the construction of new structures and facilities. Brownfield projects do not involve the construction of new structures; they are generally acquisitions.

CDB initiated its operations in Brazil in 2007 by granting a loan to the Brazilian Development Bank (BNDES) for the construction of the GASCAC gas pipeline[10] – the longest stretch of the GASENE pipeline – and providing most of the financing for the Candiota III coal-fired thermal power plant. Both projects were mentioned in the Brazil-China agreement signed in June 2006 (Brasil, 2007), which aimed to promote bilateral cooperation in the oil and gas and electricity sectors, including the implementation of infrastructure works in these sectors[11].

The bank later began offering credit for renewable energy and electric mobility. In 2012, it granted Desenvix a US$56 million loan for the construction of the Barra dos Coqueiros wind farm, the first wind plant in the state of Sergipe (Barbosa, 2020). Then, in 2016, it authorized a US$294 million line of credit to Build Your Dreams (BYD) to expand its production of electric buses in Brazil (MacauHub, 2016). Both loans are tied to the promotion of Chinese renewable energy and electric mobility technologies[12] in Brazil. In addition, it granted a completion guarantee – a kind of insurance – for the São Manoel hydropower plant. China Three Gorges is a member of the consortium that is building the dam, which is located at the Pará-Mato Grosso border.

While the loans for the projects above were quite large, the biggest ones were those granted to Petrobras between 2009 and 2017. CDB awarded six loans with a combined value of US$25 billion; all are linked to the bilateral cooperation agreements signed between China and Brazil. Some loans included provisions stipulating that Petrobras is to prioritize the supply of oil to certain Chinese companies and, in some cases, the condition that part of the financing had to be used to acquire the goods and services of these Chinese companies.

These loans helped Petrobras finance the exploration of the pre-salt oilfields in an adverse international context, right after the 2008 global economic crisis, when oil prices were plummeting. In 2009, CDB granted a US$7 billion loan (Petrobrás, 2009)[13], which was of strategic importance for China, as it was backed by oil: the loan agreement required Petrobras to supply 150,000 to 200,000 barrels per day to Sinopec over a 10-year period[14].

Two other loans[15] backed by oil were granted in 2016 and 2017 for US$5 billion each and involved the preferential supply of 100,000 barrels per day (Reuters, 2017). These loans were important, especially since they came at the time of the *Lava Jato* Operation[16], when Petrobras's market value dropped significantly and it was having difficulty obtaining funds from international creditors.

10. The gas pipeline contributed to energy integration in the country by connecting two sets of regional pipeline networks that had been separate until then, thus increasing energy security in the north-eastern region.
11. These projects were also included in the Growth Acceleration Programme (PAC for its acronym in Portuguese), whose main goal was to accelerate the implementation of the infrastructure necessary for the sustainable development of Brazil.
12. The wind turbines of the Barra dos Coqueiros Wind Farm were produced by the Chinese company Sinovel.
13. The loan was originally for the amount of US$10 billion, of which US$3 billion were to be used to purchase oil equipment from Chinese companies. Petrobras decided not to use this part of the loan.
14. Libor rate + 2.80.
15. This financing is the result of the Term of Commitment signed between the parties announced on 26 February 2016 by Petrobras; both loans are part of the same agreement.
16. The "Lava Jato Operation' was a major corruption scandal involving several of the biggest Brazilian corporations – including Petrobras – which served as the arena for corruption.

It is important to note that CDB has not granted new loans to Brazil since 2017 and to Latin America and the Caribbean in general since 2020. The Covid-19 pandemic and the deterioration of these countries' financial conditions contributed to this situation, as they made China more cautious and less willing to offer loans in the region.

In addition to CDB, another important financial player is China Eximbank (CHEXIM). We identified only one loan granted in 2018 for the amount of US$1 billion to Petrobras, which was to finance the state enterprise's acquisition of Chinese oil equipment (Petrobrás, 2016a). This operation is part of Petrobras's financial strategy to diversify its sources of financing.

Table 1.

Flow of credit from China to Brazil – 2009-2022

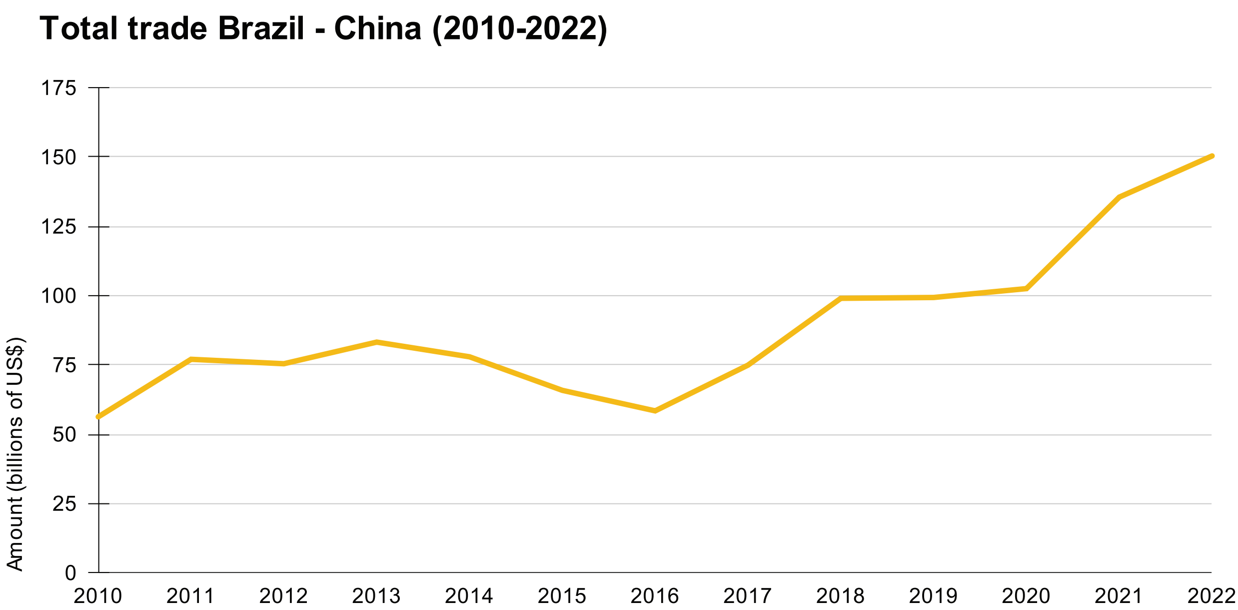
Year	Recipient	Chinese bank	Sector	Amount in millions of US$	Oil-backed loan?	Purpose
2009	PETROBRAS	CDB	OIL AND GAS	7,000	YES	10-year plan to supply oil to SINOPEC (150,000 barrels per day in the first year and 200,000 barrels per day in the following 9 years).
2014	PETROBRAS	CDB	OIL AND GAS	3,000	NO	Bilateral Cooperation Agreement - First Tranche. The funds were used for the direct and indirect procurement of goods and services acquired in China.
2015	PETROBRAS	CDB	OIL AND GAS	3,500	NO	Petrobras Global Trading BV (PGT), an indirect subsidiary of Petrobras, signed an agreement for a 10-year US$3.5 billion line of credit with CDB. Includes clauses stipulating that 60% of the amount must be spent on Chinese products and services.
2015	PETROBRAS	CDB	OIL AND GAS	1,500	NO	Oil exploration not specifically mentioned; debt financing; Bilateral Cooperation Agreement - Second Tranche; includes a clause stipulating that 60% of the amount must be spent on Chinese products and services.
2016	PETROBRAS	CDB	OIL AND GAS	5,000	YES	Loan secured by an agreement to supply China National United Oil Corp., China Zhenhua Oil Co LTD and CHEMCHINA Petrochemical CO LTD with 100,000 barrels of oil per day.
2017	PETROBRAS	CDB	OIL AND GAS	5,000	YES	Loan secured by agreement with UNIPEC Asia Company for preferential supply of 100,000 barrels of oil per day.
2018	PETROBRAS	CHEXIM	OIL AND GAS	1,000	NO	This operation is part of Petrobras's strategy to diversify its sources of financing and is related to the purchase of Chinese products and services.

Source: Elaborated by authors based on information from Petrobras's website and the Boston University Global Development Policy Center's databases.

3. BRAZIL-CHINA BILATERAL TRADE

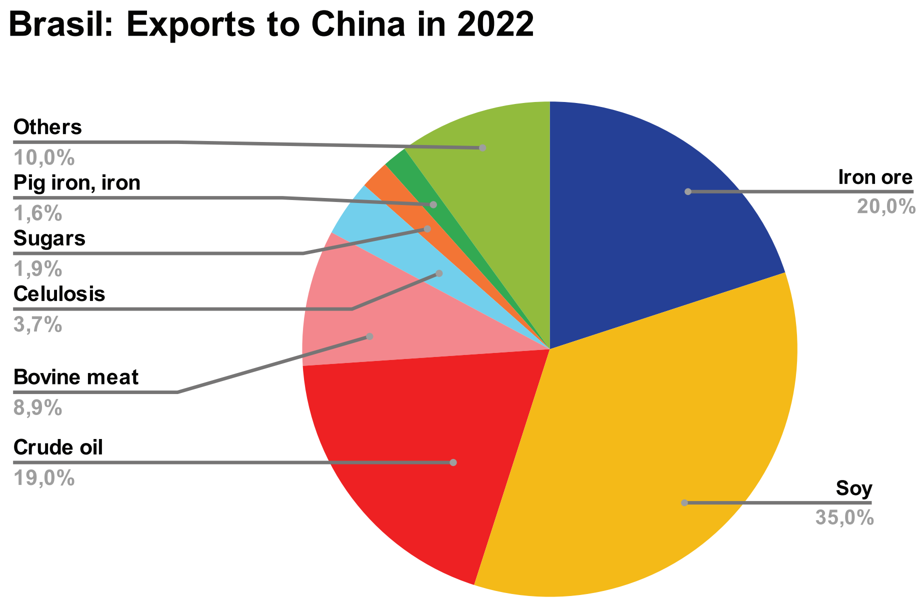
Another important area of Brazil-China economic relations is trade. Since China's accession to the World Trade Organization (WTO) in 2001, its trade with the rest of the world has grown significantly. South America has accompanied this trend, as reflected in the bilateral trade relations between Brazil and China. Since 2009, the Asian country has been Brazil's main trading partner, accounting for 26.8% of Brazilian exports, 22.25% of Brazilian imports and 22.3% of Brazil's total trade with the world in 2022 (Ministério da Indústria, Comércio Exterior e Serviços, 2022). These figures reveal Brazil's strong dependence on China for foreign trade. In comparison, Brazil's total trade with the United States and Argentina – its second and third largest trading partners – represented 14.6% and 4.7% in 2022, respectively (Ministério da Indústria, Comércio Exterior e Serviços, 2023).

Figure 11.



Between January 2010 and December 2022, despite a few fluctuations, bilateral trade was on an upward trend. The bulk of Brazilian exports to China are commodities, concentrated in three products: iron ore, soy and crude oil. While these products account for a large percentage of Brazilian exports in general, their share of the total is even greater when we examine Brazil's exports to China separately. In 2022, for example, 62.9% of Brazil's iron ore exports, 68.3% of its soy exports and 39.3% of its crude oil products went to China. For the rest of the world, these numbers are 8.6%, 14% and 13%, respectively (Ministério da Indústria, Comércio Exterior e Serviços, 2023). These three items combined ranged from 75% to 80% of Brazil's total exports to China annually between 2010 and 2022.

Figure 12.



The revenues from the export of these products oscillate according to their prices on international stock exchanges, which are influenced by demand from China. From 2017 on, we have observed sustained growth of Brazilian exports to China overall.

Figure 13.

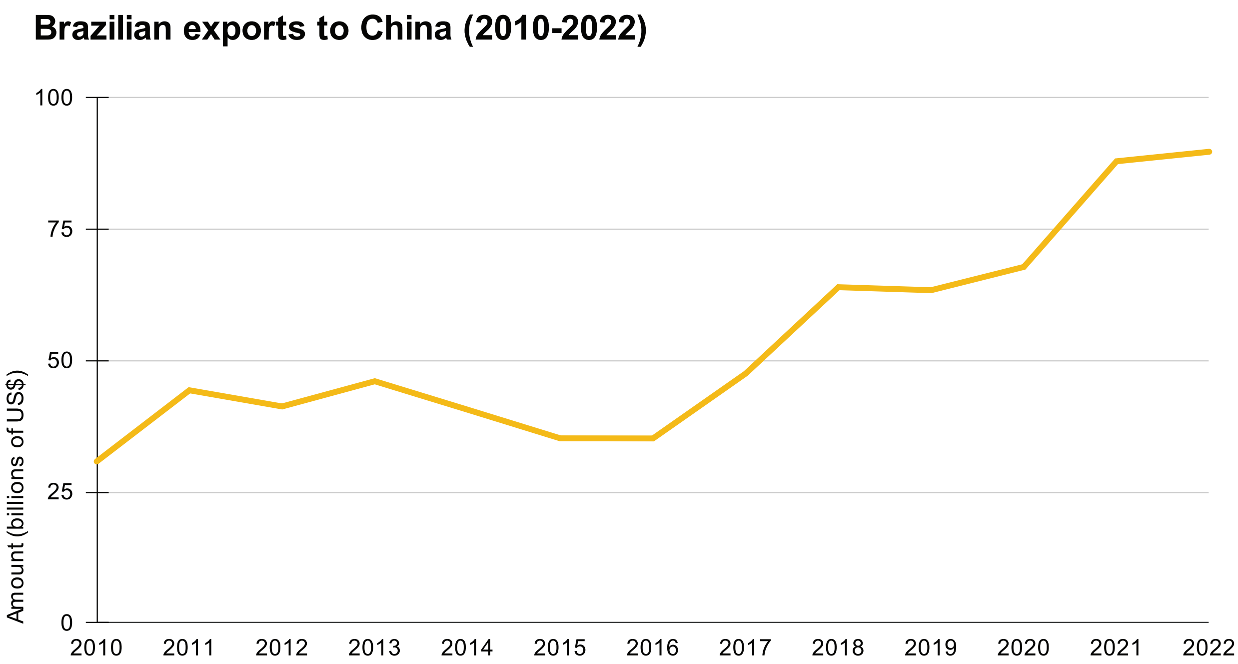
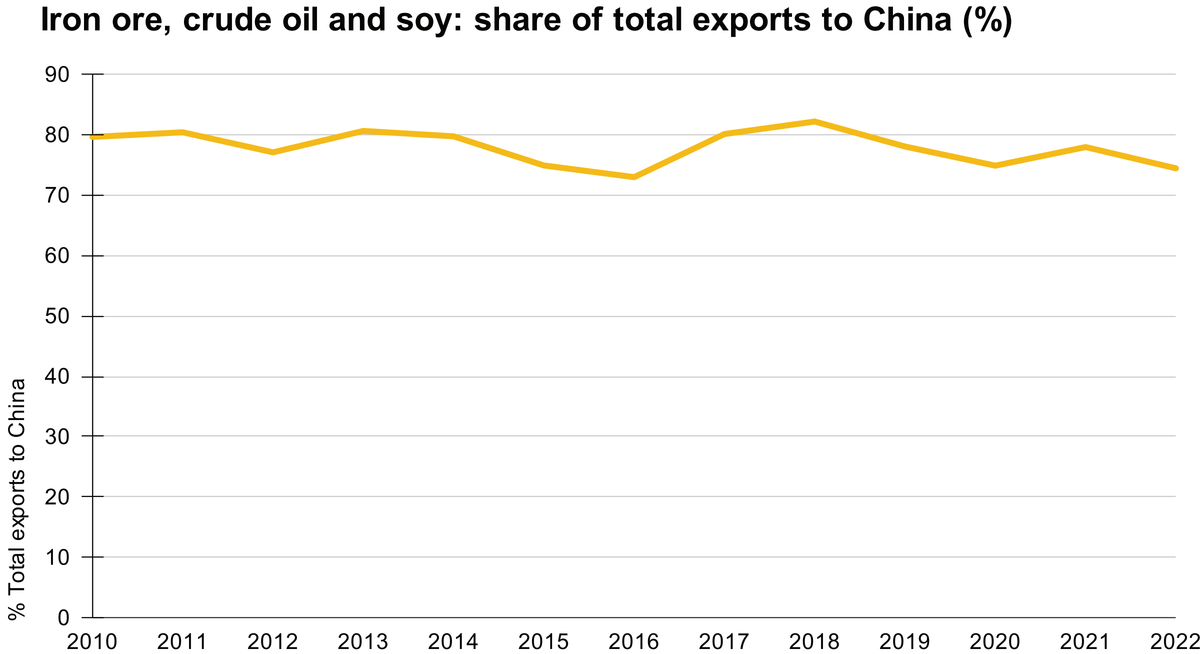


Figure 14.



Brazil mostly imports a wide range of manufactured products from China. The main items are: valves and tubes; organic-inorganic compounds, telecommunications equipment and a series of other products for the manufacturing industry (Ministério da Indústria, Comércio Exterior e Serviços, 2023).

Figure 15

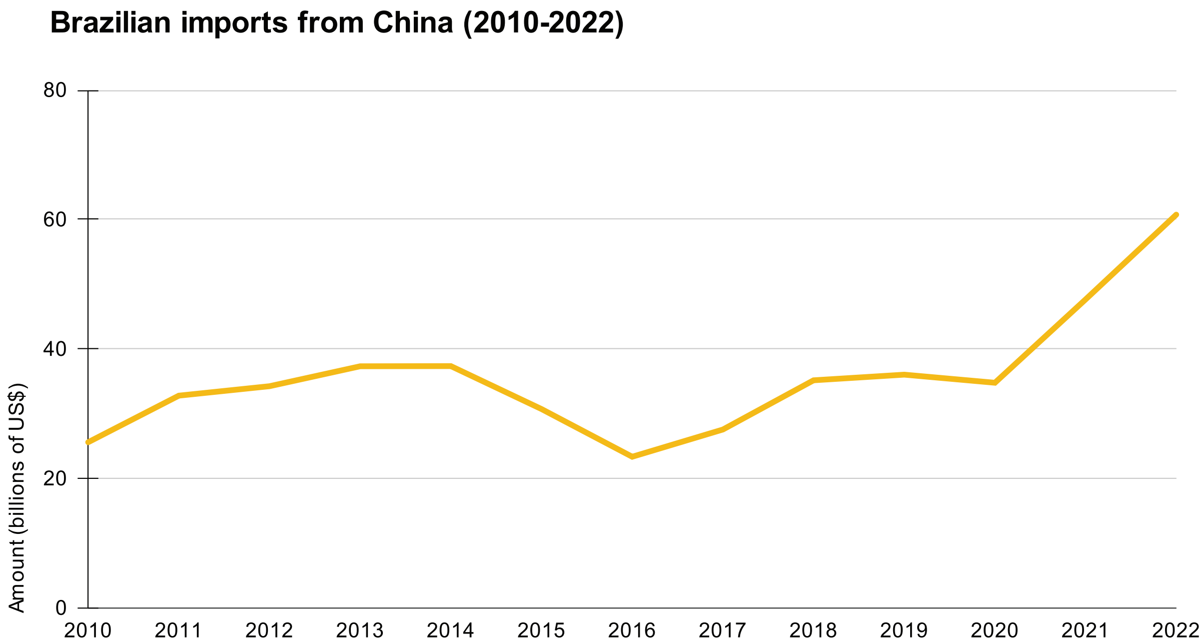


Figure 16

Iron ore: exports to China (2010-2022)

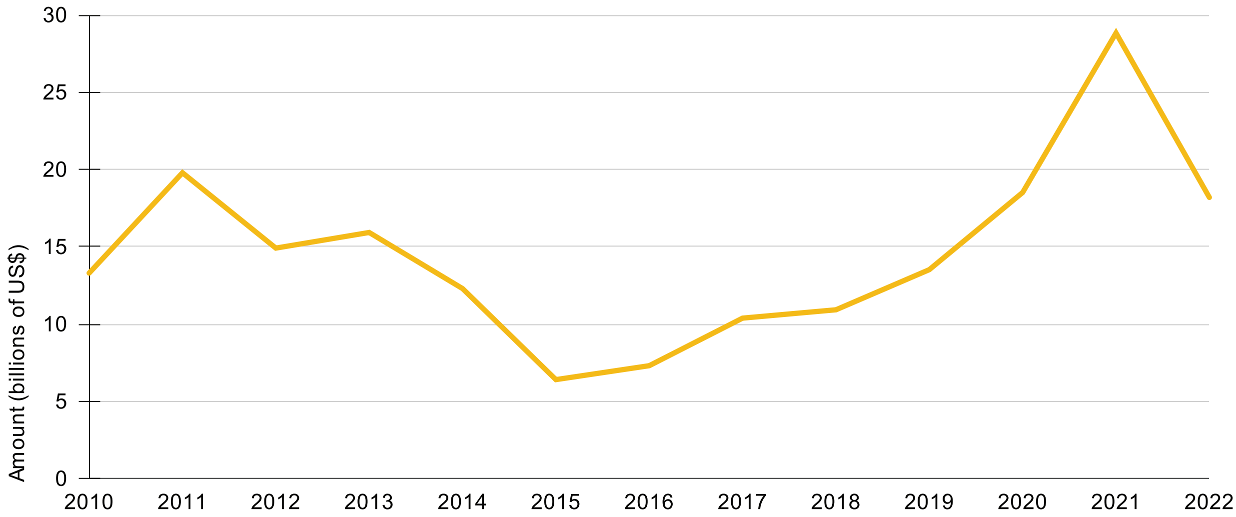


Figure 17

Soy: exports to China (2010-2022)

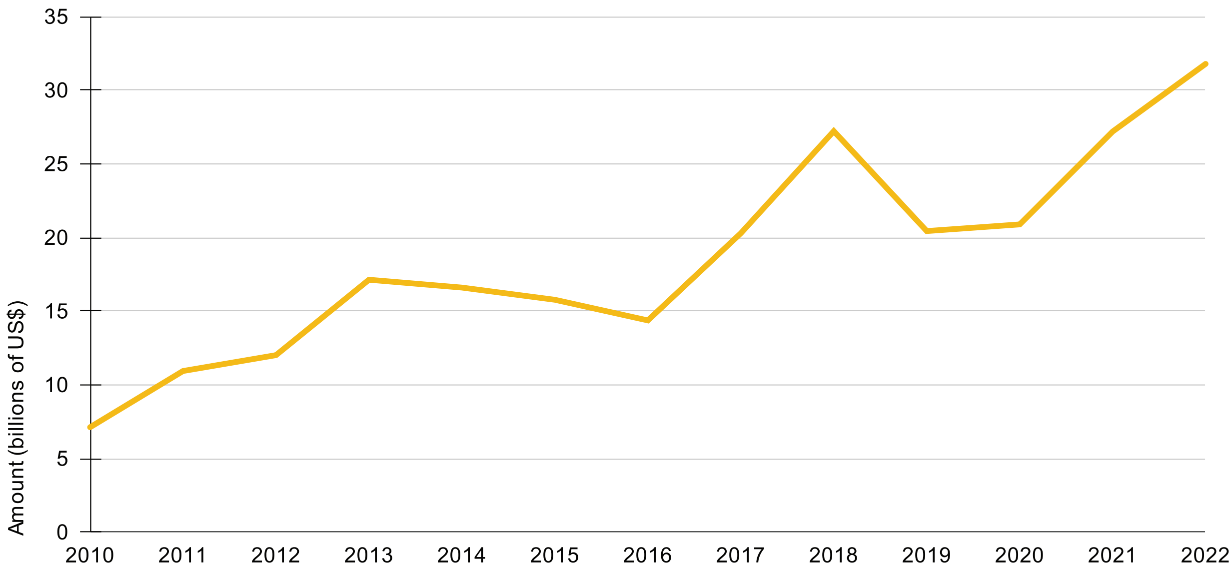
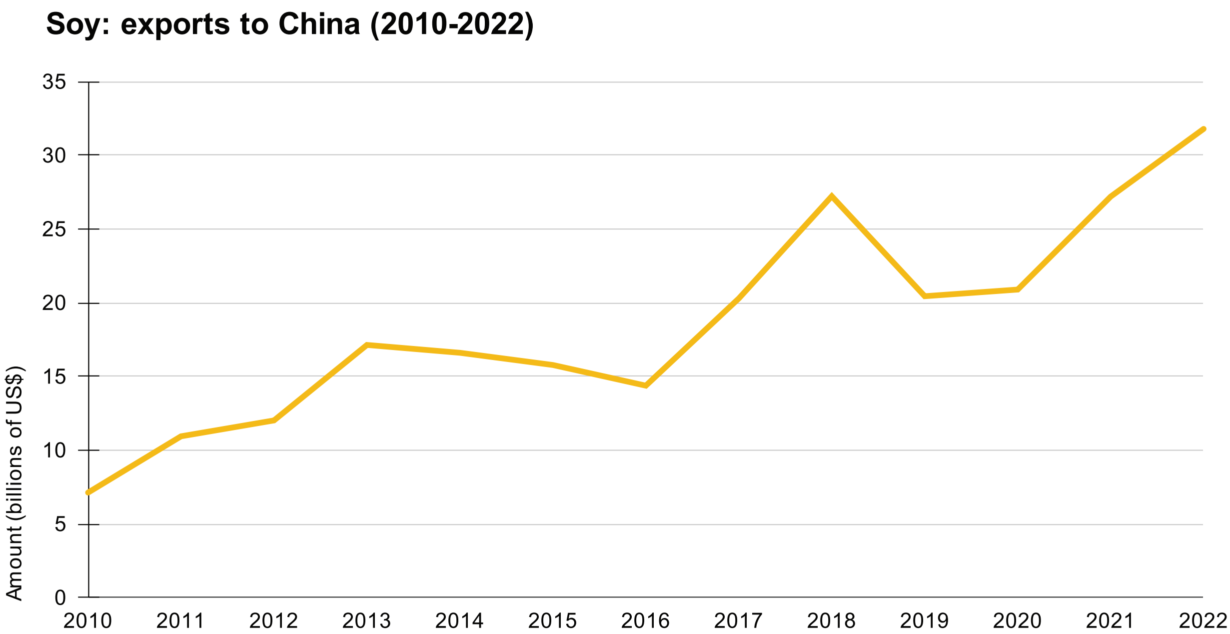


Figure 18



In general, China is currently the main market for Latin American and Caribbean commodities and the leading exporter of manufactured goods to South America, meaning that it is now found at both ends. This situation tends to maintain South American countries, especially the less industrialized countries, in the position of exporters of raw materials. At the same time, the manufactured goods exports of more industrialized countries in the region, such as Brazil, are losing their share of the interregional market due to growing competition from China (Severo, 2021). This asymmetric economic interdependence tends to lead to the reprimarization and deindustrialization of the Brazilian economy in the medium and long term.

4. DIPLOMATIC RELATIONS AND AGREEMENTS SIGNED BETWEEN BRAZIL AND CHINA: AN OVERVIEW

After presenting quantitative data on economic relations between Brazil and China, we now delve into the political-diplomatic relations that accompanied and, at times, favoured the entry of Chinese investments in Brazil during the period of this study, as we will show below. We will discuss state visits, their contexts and the agreements signed since 2010, while seeking to identify, whenever possible, when diplomatic relations facilitated the entry of Chinese investments in specific sectors.

Diplomatic relations between Brazil and China were established in 1974 when the Ernesto Geisel and Mao Zedong governments opened embassies in Beijing and Brasília, respectively. Since then, over 90 meetings of heads of state and state representatives from both countries have been held, of which more than 60 have taken place from 2010 onwards (Brasil, 2014a). In 1988, under the José Sarney administration (1985-1990) in Brazil, the bilateral partnership between the countries led to the agreement on the China–Brazil Earth Resources Satellite programme (CBERS), a technological cooperation programme for the production of Earth observation satellites (Brasil, 2014a). Then, in 1993, during the Itamar Franco administration (1992-1995), a "Strategic Partnership" agreement between both countries was signed. However, it was during the first mandate of the Lula da Silva administration (2002-2006) that relations between Brazil and China intensified significantly. In 2004, the Sino-Brazil High-level Commission for Coordination and Cooperation (COSBAN) was created (Brasil, 2014a). Its first meeting was held in 2006. In 2009, China became Brazil's main trading partner. In addition to the bilateral sphere, Brazil and China also sustain ties in spaces of multilateral cooperation, such as the WTO, G20, BRICS and BASIC – a bloc formed by Brazil, South Africa, India and China for joint coordination efforts on environmental issues (Brasil, 2014a).

In 2010, the two countries strengthened their ties by signing the Brazil-China Joint Action Plan 2010-2014. Drawn up under the aegis of the COSBAN, the five-year plan defined strategic guidelines and goals and promoted dialogue between specific sectors in order to develop a "bilateral strategic partnership and cooperation in key areas" (Brasil, 2010, pp. 1). The following year, in 2011, after Minister of Foreign Relations Antônio Patriota's trip to China, President Dilma Rousseff made a state visit to the Asian country to attend the 3rd BRICS Summit, among other events. On the occasion, the Brazilian and Chinese governments signed six documents, including five memoranda of understanding for cooperation in several sectors, such as water resources, science and technology and defence (Brasil, 2011a). They also decided to draft a Brazil-China Ten-year Cooperation Plan (Brasil, 2012), which, together with the Joint Action Plan, aimed to identify priority areas and key projects to be explored bilaterally. Also that year, as part of the efforts to take Brazil and China's strategic partnership further, the Minister of Commerce of the People's Republic of China Chen Deming visited Brazil to chair the meeting of the COSBAN Commercial-Economic Subcommittee and participate in the China-Brazil Business Seminar. During his visit, Deming was accompanied by a sizeable delegation of businesspeople made up of representatives from various sectors, such as infrastructure, agriculture, energy, automotive and railway, among others (Brasil, 2011b).

In 2012, the 2nd COSBAN Meeting was held in Brasília, the first one since 2006. It was the first of four meetings held in the 2010s, a sign of the growing importance of relations between Brazil and China. In his speech, then-Vice President Michel Temer revealed plans to diversify trade and investment flows (Temer, 2012). Also that year, Chinese Premier Wen Jiabao visited Brazil for the Rio+20 Conference. In a meeting with President Dilma Rousseff, the leaders signed agreements in the science and technology, energy, mining, infrastructure and transport sectors, among others, on the occasion of the celebration of the Ten-Year Cooperation Plan 2012-2021 (ABC, 2012). Furthermore, the leaders announced that bilateral relations would be raised to the “Global Strategic Partnership” level and the creation of the “Foreign Ministers Global Strategic Dialogue”. In 2013, no new agreements were signed. Even so, Brazilian and Chinese heads of state met twice at the 5th BRICS Summit and the 8th G20 Summit. Brazilian officials also paid a formal visit to China to discuss partnerships in the infrastructure sector, mainly railways (Brasil, 2013), and the 3rd COSBAN Meeting was held in Guangzhou.

The following two years were marked by the resumption of efforts to build closer ties between China and the countries of Latin America and the Caribbean. In 2014, the First Global Strategic Dialogue was held in Brazil in which Chinese Foreign Minister Wang Yi participated. Later that year, President Xi Jinping visited Brazil for the first time for the 6th BRICS Summit. On this occasion, 32 agreements were signed in several areas such as, for example, cooperation agreements in the Brazilian railway and electricity sectors, which included State Grid’s participation in the construction of the high-voltage transmission line for the Belo Monte hydroelectric dam; agreements between the BNDES, China Eximbank, CDB and the China Investment Corp on the expansion of credit for exporters and investors, and one with Build Your Dreams (BYD) for the production of rechargeable batteries and energy storage systems in Brazil (Jubé and Peres, 2014; Uol, 2014). Moreover, an agreement on the creation of the New Development Bank (NDB), also known as the BRICS Bank, was signed (Brasil, 2014b). In addition, the creation of the China-CELAC Forum was announced to celebrate the increasingly close ties and cooperation between the countries involved. This new space of dialogue was inaugurated in 2015 during the 1st Ministerial Meeting of the China-CELAC Forum in Beijing. There, leaders signed documents related to the forum’s institutionalization, as well as a cooperation plan between China and Latin American and Caribbean countries for the 2015-2019 period (Brasil, 2015a). In 2015, the Premier of the People’s Republic of China, Li Keqiang, also visited Brazil to make the signing of a new Joint Action Plan for the 2015-2021 period official (Brasil, 2015b). Another 35 bilateral agreements were also signed, including a memorandum of understanding on cooperation and the promotion of trade and investment between the Brazilian Trade and Investment Promotion Agency (ApexBrasil) and BYD; and cooperation agreements between Petrobras and three Chinese banks – the China Development Bank (CDB), China Eximbank and ICBC Leasing – on financing (Brasil, 2015c). As a result of these agreements, in 2016, Petrobras and CDB signed terms of commitment on US$10 billion in financing (Petrobrás, 2016b) and Petrobras and Eximbank signed another one for a US$1 billion loan (Petrobrás, 2016a). In 2015, the 4th COSBAN Meeting and the 7th BRICS Summit were held.

Table 2.

Key initiatives during the Lula and Rousseff administrations (2010-2015)

2010	2012	2014	2015
Signing of the Brazil-China Joint Action Plan 2010-2014	Signing of the 10-Year Co-operation Plan 2012-2021	Agreement on State Grid's participation in the Belo Monte transmission line	Signing of the Joint Action Plan 2015-2021
		Signing of the agreement on the creation of the New Development Bank	Financing agreements between Petrobras, CDB, China Eximbank and ICBC Leasing

The year 2016 was marked by a change in government in Brazil brought on by the impeachment of President Dilma Rousseff (2011-2016) and Michel Temer assuming the presidency in her place (2016-2018). The new administration redirected the focus of Brazil's foreign policy towards building closer ties with its traditional partners, such as the US and the European Union, and a more pragmatic relationship with China. As a result, few agreements were signed that year. Finance Minister Nelson Barbosa visited China to participate in the G20 Finance Ministers Meeting. Then, Michel Temer also visited the Asian country, this time as the president, to participate in the Brazil-China High-level Business Seminar promoted by ApexBrasil and the Ministry of Foreign Affairs, held prior to the 11th G20 leaders' summit in Hangzhou. The business seminar was attended by the ministers of foreign relations; transport, ports and civil aviation; agriculture, livestock and food supply, and finances, as well as representatives of 30 companies and organizations, such as the Associação Brasileira de Proteína Animal (Brazilian Animal Protein Association), BRF, BBM Bank, Confederação Nacional dos Transportes (National Confederation of Transport), Marfrig, Minerva Foods, Seara and Vale (Apex-Brasil, 2016; Brasil, 2016a). The 8th BRICS Summit also took place that year in Goa, India, during which countries signed memoranda of understanding on agriculture and on cooperation between ministries of foreign affairs and between national development banks and the NDB (Brasil, 2016b).

In 2017, President Michel Temer paid another visit to China to attend the 9th BRICS Summit, during which he signed 22 agreements in a range of sectors. These include one between the Ministry of Mines and Energy and State Grid regarding the licensing of phase 2 of the high-voltage transmission line for the Belo Monte hydropower plant; a financing contract with the China Communication and Construction Company (CCCC), which was to invest US$700 million in the construction of a private terminal in the Port of São Luís, and an agreement between the BNDES and CDB defining the parameters for the establishment of a US$3 billion line of credit (Brasil, 2017).

Starting in 2018, the number of agreements signed between Brazil and China began to decline. The 2018 elections in Brazil were marked by uncertainties about relations with China stemming mainly from the hostile positions of then-candidate Jair Bolsonaro, who had aligned himself with the Donald Trump administration in the US. Early that year, Brazilian Ambassador Marcos Galvão participated in the 2nd Ministerial Meeting of the China-CELAC Forum during which the inclusion of Latin American and Caribbean countries in the Belt and Road Initiative (BRI) was discussed (Neves, 2018). During the 10th BRICS Summit also held that year, the countries agreed to set up a NDB regional office in São Paulo (Agência Brasil, 2018).

Despite the belligerent rhetoric towards China, in 2019, Jair Bolsonaro's first year in office, several high-level mutual visits were made. That year, Brazilian Vice President Hamilton Mourão went to China for the 5th COSBAN Meeting. This was followed by China's Foreign Affairs Minister Wang Yi's trip to Brazil for the 3rd Global Strategic Dialogue Meeting. Also in 2019, at the invitation of President Xi Jinping, President Jair Bolsonaro made his first visit to China, during which eight agreements in the infrastructure, agriculture, education and energy sectors were signed, including ones on research and development on clean energy and the operating licence agreement that authorizes the State Grid corporation to begin operating the transmission line between the Xingu hydropower plant and Rio de Janeiro (Verdélio, 2019a). President Xi Jinping then travelled to Brazil for the 11th BRICS Summit, which led to the signing of nine cooperation agreements, including a memorandum of understanding on strengthening cooperation on investment-related matters (Verdélio, 2019b). That was also when the State Power Investment Corporation, Prumo Logística Global and Siemens signed a memorandum of understanding on cooperation on investments in and the development, construction, ownership and operation of natural gas power plants in Brazil (Siemens, 2019).

Since the outbreak of the Covid-19 pandemic in 2020, few meetings have been held between Brazilian and Chinese government officials, and the ones that did take place were organized online. The 12th BRICS Summit and the 15th G20 Summit, held in 2020, and the 13th BRICS Summit and the 16th G20 Summit, in 2021, did not lead to the signing of new cooperation agreements between Brazil and China. The Joint Action Plan 2015-2021 and the Ten-Year Cooperation Plan 2012-2021 also ended that year. In 2022, the 6th COSBAN Meeting was held online, the first one since 2019. On this occasion, the Brazilian and Chinese governments announced that they had concluded the negotiations for the 2022-2031 Strategic Plan, which contained long-term guidelines for bilateral relations, and the 2022-2026 Executive Plan, which specified concrete objectives to be achieved during the said period. In 2022, the 16th BRICS Summit was held online and no new agreements were signed.

Table 3.

Key initiatives of the Temer and Bolsonaro administrations (2016-2022)

2017	2019	2022
Agreement with State Grid on the licensing of phase 2 of the Belo Monte hydropower plant transmission line	Operating license agreement, which authorizes State Grid to operate the Belo Monte-Rio de Janeiro transmission line	Strategic Plan 2022-2031
A US$700 million financing contract signed with CCCC for investment in the construction of a terminal in the Port of São Luis		Executive Plan 2022-2026

5. PUBLIC POLICIES AND LAWS ON FOREIGN INVESTMENT IN BRAZIL: WHAT IMPACT HAVE THEY HAD ON INVESTMENT FROM CHINA?

We analysed above the visits between heads of state and the main diplomatic initiatives between Brazil and China, some of which helped stimulate Chinese investments in Brazil. In this section, we will present the most important public policies, programmes and legislation on foreign investment in Brazil and assess if and to what extent they facilitated the entry of Chinese investments. We will use the policy measures identified in the Investment Policy Hub platform of the United Nations Conference on Trade and Development (UNCTAD)[17] as a basis and analyse the laws and programmes of the Dilma Rousseff (2011-2016), Michel Temer (2016-2018) and Jair Bolsonaro (2019-2022) administrations. The information is summarized in **tables 4, 5 and 6** in the appendix.

The data show that during President Lula's second term in office (2010) and the Rousseff government, the government adopted investment-related public policies and legislation focused on stimulating industrial activities: these ranged from tax cuts or exemptions and loan programmes for car or ethanol production to incentives for the exploration and production of oil in the pre-salt fields. In the case of oil, the government established a production-sharing model in which state enterprise Petrobras was guaranteed a minimum share in the operation. These measures differ from those adopted during the Michel Temer and Jair Bolsonaro governments, which both favoured market liberalization and privatization, leading to the denationalization of certain sectors such as oil and infrastructure. There are, however, initiatives showing a certain continuity throughout the Rousseff, Temer and Bolsonaro administrations, such as the ongoing

17. https://investmentpolicy.unctad.org/investment-policy-monitor/30/brazil. Accessed March 2023.

privatization of airports and the gradual opening of airline companies to foreign capital. Some public policies during the Dilma Rousseff and Michel Temer administrations did, in fact, facilitate the entry of Chinese companies, particularly in the health, automotive, airport and oil industries. In the Bolsonaro government, however, policies aimed at promoting privatizations and concessions in the areas of infrastructure and energy, which had been important sectors for Chinese investors, did not end up attracting investments from the Asian country. For example, in the case of the "Infra Week" programme, in which the government auctioned off a series of concessions for roads, ports and airports, the absence of Chinese investors, who had previously announced their interest in investing in the West-East Integration Railway, was notable. Executives of CREC and CCCC, Chinese companies that formed a consortium with Bahia Mineração (Bamin), had declared their interest in this project during a visit in 2018 (Rittner, 2021), but because of Brazilian authorities' growing hostility towards China during the pandemic, their interest waned and the Chinese did not attend the event.

We would like to highlight a few public policies, programmes and laws that facilitated the entry of Chinese investments in Brazil. In the **oil sector**, after the enactment of the law that created the production sharing model for the exploration and production of oil in the pre-salt region in 2010, a consortium formed by Chinese SOEs China National Petroleum Corporation (CNPC) and China National Offshore Oil Corporation (CNOOC) won the bid for the Libra oil field in 2012. Then, in 2015, Brazil signed cooperation agreements between Brazil and China that involved US$7 billion in financing for Petrobras from the China Development Bank (Chagas and Branco, 2015). After the political crisis that led to the impeachment of Dilma Rousseff, one of President Michel Temer's first measures was to alter the pre-salt law to open up the offshore oil fields to foreign investors. His amendment eliminated the mandatory participation of Petrobras in oil exploration and production consortia for this region, but this did not prevent Petrobras from taking part in several auctions. In 2019, Chinese SOEs CNODC and CNOOC won the auction for the Buzios block, in consortium with Petrobras, which had expressed interest in participating (Reuters, 2019a). In 2021, the National Oil, Natural Gas and Biofuels Agency (ANP) held an auction for the Sépia and Atapu oil fields, in which Petrobras exercised its preference right to participate. The Sépia contract went to the consortium formed by the French corporation TotalEnergies, the Malaysian state-owned enterprise Petronas and Qatar Petroleum Brazil, and Atapu went to Shell and TotalEnergies, both in consortium with Petrobras (Malar, 2021).

Other oil auctions, held after the new legislation had been passed, were won by different Chinese companies, in some cases in partnership with Petrobras. Chinese-owned CNOOC, together with QPI and Shell, won the bid for the Alto Cabo Frio Oeste field in 2017 (Souza, 2017a) and the ES-M-592 Block in sector SES-AP2 of the Espírito Santo basin (Souza, 2017b). CNODC partnered with Petrobras and BP to win the auction for the Peroba field (CEBC, 2018). The REC-T-126 and REC-T-127 Blocks in the Recôncavo basin, in Bahia, were acquired by the joint venture between Chinese HLJW and Brazilian TEK Óleo e Gás (Fraiha, 2017). CNOOC in partnership with BP and Ecopetrol are operating the Pau-Brasil Block (Estado de Minas, 2018). Finally, CNOOC won 20% of the Aram field in consortium with Petrobras in the 6th auction held by the ANP; Petrobras owns 80% (Jornal do Brasil, 2019).

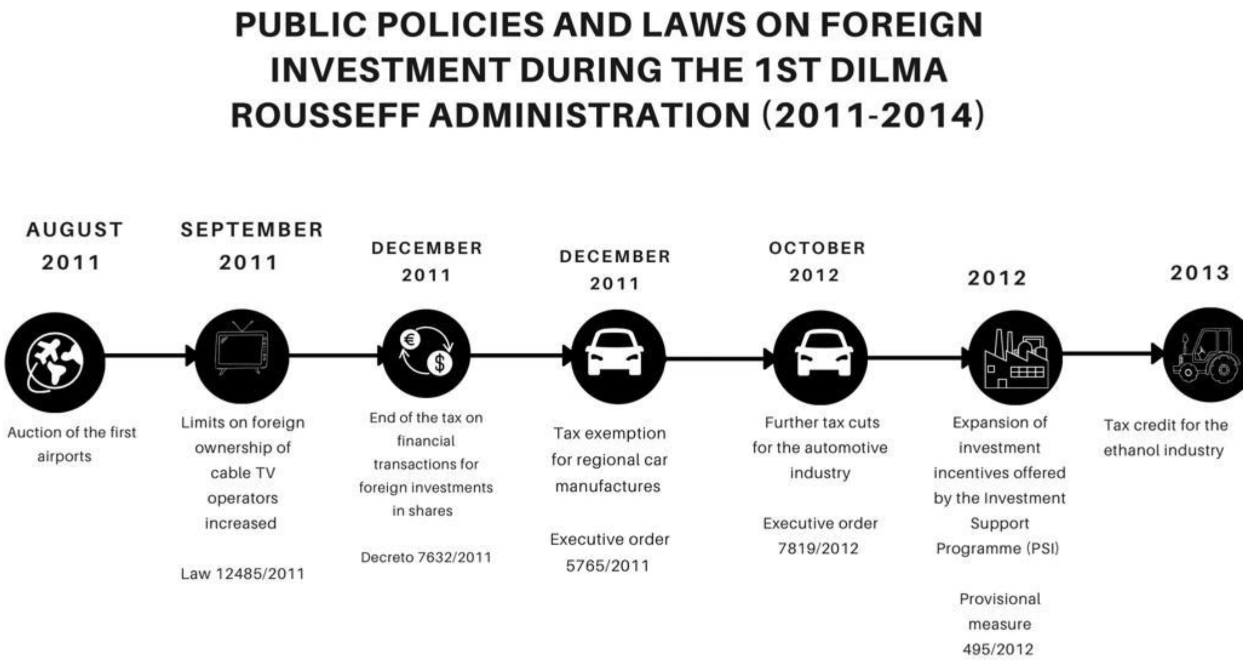
As for the **automotive sector,** it benefitted from tax reductions and exemptions in 2011 and 2012 and has attracted several investments from China. In 2013, Lifan Motors built a parts distribution centre in Salto, São Paulo, and Foton Aumark opened a truck factory (Reis, 2020). In 2014, Chery announced the inauguration of a factory in Jacareí, São Paulo and an assembly plant in Anápolis, Goiás (O Globo: G1, 2014), and China Automotive Systems began to build an auto-parts factory in São Paulo (Extra, 2014). In 2015, BYD Motors established an electric bus factory in Campinas (BYD Servopa, 2023). The Chongqing Shineray motorcycle manufacturer joined the Suape Port Industrial Complex (Automotive Business, 2015a), and Metro-Shacman and Shaanxi Automobile Group formed a joint venture to build trucks in Brazil (Automotive Business, 2015b). Finally, in 2016, ChemChina acquired 26.2% of the Pirelli Group, which has factories in Santo André (SP), Campinas (SP), Feira de Santana (BA) and Gravataí (RS) (Munhoz, 2016). In the following years, several projects were announced but never implemented[18]. In 2022, the Chinese company Great Wall Motors stated it would start production in the interior of the state of São Paulo (Moreno, 2022).

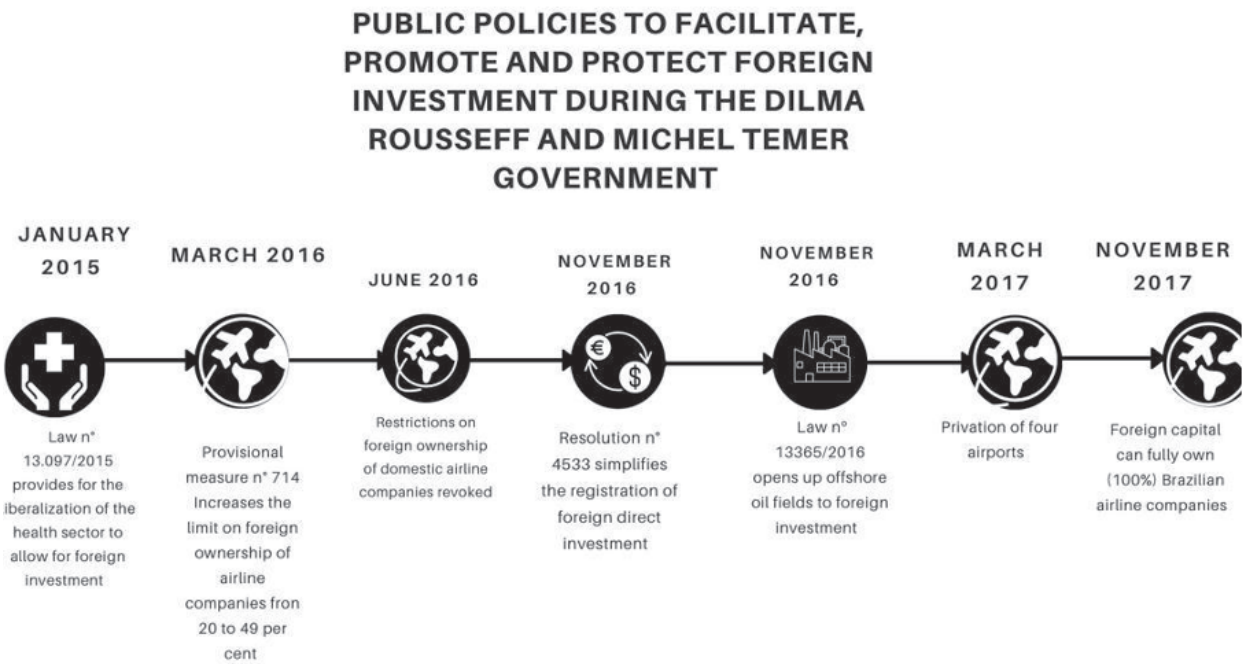
The privatization of **airports** facilitated the entry of Chinese investors – at first. In 2011, China's Hainan HNA Infrastructure took over as the main shareholder of the International Airport of Rio de Janeiro (Riogaleão) – a position previously held by Odebrecht – by acquiring 51% of the consortium's private shares (CNT, 2017). Later auctions held in 2012, 2017 and 2021 attracted investors of European origin and other nationalities, but not from China. The opening of other sectors raised Chinese investors' expectations, but they did not come to fruition. In the **healthcare** sector, in 2015, the government authorized foreign companies to operate services that are complementary to the public health system. This led several Chinese groups to visit Brazil: the government of the state of Ceará and the China Meheco Corporation signed a memorandum of understanding with the China Development Bank (CDB) in 2017 to raise US$4 billion for the healthcare sector. Later, in 2019, the governor of Ceará visited China and signed an agreement on the supply of equipment and the establishment of facilities by Chinese corporations (OPovo, 2019). In 2017, then State of São Paulo Governor Geraldo Alckmin received a delegation of medical experts sent by the Chinese government to discuss plans for the first Chinese hospital in Latin America (Governo de São Paulo, 2017). Also that year, the privately owned Chinese group Fusan initiated a round of negotiations with hospital networks in São Paulo, Bahia, Paraná and Pernambuco (Exame, 2017).

Although the **agribusiness** sector is at the centre of trade relations between Brazil and China, credit measures and tax incentives offered in the ethanol sector proved ineffective. Despite announcements of intentions to invest – such as China National Heavy Machinery Corporation's disclosure of its plan to set up a corn-based ethanol plant in Mato Grosso in 2013 – no investments were made (Alves, 2013). Similarly, in 2015, the BBCA Group reported that it would invest in a corn and soy processing plant in Mato Grosso do Sul (Maracaju), with financing from CDB, but the project has still not been completed (Oliveira, 2017).

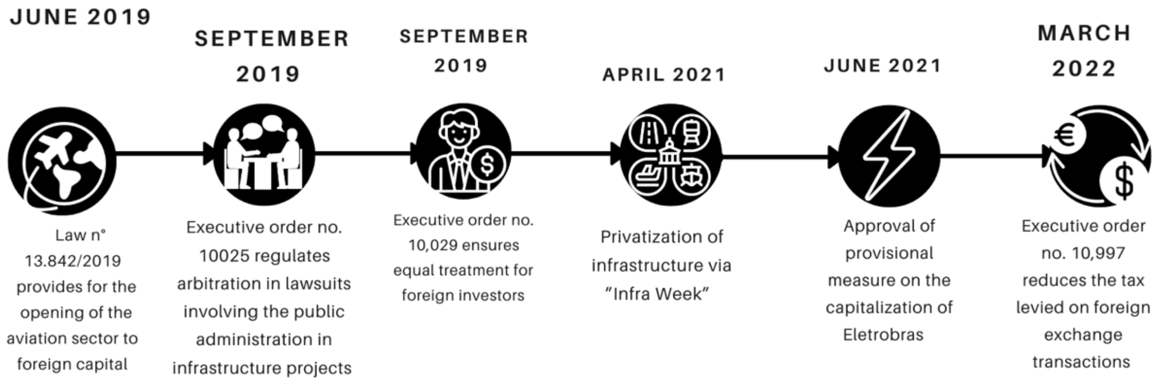
18. For example, in 2017, Jac Motors announced its plans to build a factory in the state of Goiás, starting in 2019, but it has never confirmed the investment (Estadão, 2017).

Finally, the opening of **airline companies** to foreign capital, initiated during the Dilma Rousseff administration and finalized in 2019 by the Jair Bolsonaro government, has led a number of transnational corporations to enter the aviation sector in Brazil. Air China announced its intention to operate in Brazil (Bouças, 2019). Also, the Jair Bolsonaro government's announcement of the privatization of the state-owned energy company Eletrobras – which has yet to go to auction – raised the expectations of Chinese groups, such as State Grid, CTG, Power China and CGGC, which are the main investors in the electricity sector in Brazil (Reuters, 2019b).





PUBLIC POLICIES TO FACILITATE, PROMOTE AND PROTECT INVESTMENT DURING THE BOLSONARO GOVERNMENT



6. THE DYNAMICS AND IMPACTS OF CHINESE INVESTMENTS IN THE TERRITORIES: THE CASE OF THE INDUSTRIAL PARK OF MANAUS

We have thus far discussed the evolution of Chinese investments in Brazil while observing trends in credit and trade flows and the political and diplomatic relations that accompany and sometimes support economic relations between the two countries. We then examined the public policies on foreign investment in Brazil adopted during the Dilma Rousseff (2011-2016), Michel Temer (2016-2018) and Jair Bolsonaro (2019-2022) administrations to assess to what extent these policies facilitated Chinese investors' entry in Brazil. Our analysis sought to provide a general overview from the "upper floor": capital flows, transnational corporations, intergovernmental institutions and national public policies. But what happens when the projects, investments and public policies are implemented in the territories? What dynamics, impacts and consequences do they generate?

While mapping these investments, we came across projects that can be classified in four broad categories. The first one refers to projects in which a Chinese company obtained the right to engage in an economic activity by winning an auction. This is very often the case for electricity transmission and oil and gas projects. In regards to the former, since State Grid entered the Brazilian electricity sector in 2010, it has been accumulating investments in the subsector and with them, a growing amount of strategic assets.

The second category includes the major acquisitions by Chinese state-owned enterprises in the electricity sector (the generation, transmission and distribution subsectors), the extractive industry (oil and gas and mining) and agriculture. These were some of the biggest investments registered during the period analyzed.

In the third category, we find investments in the manufacturing industry. There are many of them, albeit with a low average value, and they are concentrated in southeastern Brazil, namely the state of São Paulo, but also in the Manaus Free Trade Zone. Finally, the fourth category refers to greenfield projects in the power generation and port infrastructure sectors, whose installation caused serious socio-environmental impacts. Three concrete examples of projects backed by investment or financing from China that had socio-environmental impacts are the Port of São Luís, the São Manoel hydroelectric dam and the Barra dos Coqueiros wind farm.

In the case of the São Manoel dam, built by the consortium formed by China Three Gorges and other partners, there were two main kinds of impacts: environmental and socio-cultural. In relation to the first, water quality deteriorated and biological diversity was lost, as reflected by the decline in the number of fish. This had a direct impact on the autonomy, food security and health of the indigenous peoples of the affected region (ISA, 2018). As for the second, the installation of the dam resulted in the destruction of sacred sites of the Munduruku people, such as the Morro dos Macacos ("Dekoka'a"). To this, one should add the displacement of urns and archaeological artifacts, which affected the mental health of the Munduruku people, as it caused them severe anguish and anxiety (Fórum Teles Pires, 2017).

Financed by the China Development Bank, the Barra dos Coqueiros wind farm was established in an area where the local context was complex and marked by several problems. There, quilombola communities, artisanal fisherfolk and family farmers have been suffering from the impacts of the installation of the Ignacio Barbosa Sea Terminal in Sergipe on their way of life (O Globo: G1, 2015; Mapa de Conflitos, 2022). Furthermore, the wind farm was built in an area of fixed dunes located in a permanent protection zone. During construction, the dune system typical of the zone was deforested, having major impacts on the local fauna and flora.

The development of the Port of São Luís, in which the China Communications Construction Company owns shares, was part of the Plano Arco Norte (Northern Arch Plan) implemented in 2016 (Toyama, 2022). The general objective of this plan was to make the transport of Brazilian commodities to China more efficient by building port infrastructure in northern Brazil to reduce the cost of logistics. This project has been directly affecting the Cajueiro community whose origin dates to the 19th century. Despite evidence of irregular land ownership, possibly involving land grabbing practices, the community has been suffering from forced evictions to make way for the construction of the port. These works have also been fueling deforestation in the area (Bourscheit, 2019; Toyama, 2022).

6.1. The Chinese production model in the Amazon: labour rights in the Industrial Park of Manaus

In the case of the Amazon, there are two areas of Chinese interests that indicate that China is attempting to implement part of its Belt and Road Initiative in one of the most coveted regions of the planet. The first one is related to China's advances in the areas of infrastructure, food and raw materials. The main projects in this process are: the creation of the *Tapajós River Logistics Corridor* to establish a grain route between Brazil and China with lower operating costs, which involves the construction of railway lines, highways and port infrastructure; works to directly link the city of Manaus to Suriname (where almost 10% of the population is of Chinese origin); mineral prospecting in the Amazon, primarily gold, tin, aluminum, iron, copper and manganese, many of which are located in indigenous territories or environmental protection areas; the construction of hydroelectric power plants and dams, headed by the Chinese state-owned giant China Three Gorges, and the acquisition of land by Chinese companies[19].

Another area in which Chinese companies have advanced is the manufacturing sector, where the initiatives serve the interests of both state-owned and private enterprises, which produce durable consumer goods. These business ventures seek to achieve two of China's goals: to position its SOEs so they can better compete with traditional electrical and electronics companies and to open up production and market space to a capitalist class that wants to take part in the boom in China's expansion. This is the reason for the current race to capture part of Brazil's domestic market sales and to export to neighbouring countries. The Chinese also intend to control the export of inputs used by the Brazilian industry, which is fundamental for competing on the global manufacturing market.

Therefore, the Amazon re-emerges as an important space to host a free-trade zone, especially the city of Manaus because of its special taxation system and industrial park, which is where the factories of most of the companies that build motorcycles, televisions, laptops, smartphones, air conditioners and watches, among other items, in Brazil are located. Manaus is also home to a specialized workforce that has decades of experience in manufacturing these products at a lower cost. There is also the fact that China wants to enter a market that has been dominated by its competitors from the West, such as Europe and the United States, and its Asian neighbours, namely Japan and South Korea.

19. There has been a great deal of local opposition to these projects, especially from the indigenous and riverine peoples who have already been affected or who will suffer material and cultural damages because of these works, as studies by Moreno (2015) and Aguiar (2017) have shown.

The Manaus Free Trade Zone: contexts, its creation and limits

Manaus is the capital of the state of Amazonas and one of Brazil's biggest cities in terms of both its population (2.1 million inhabitants) and economy (of all Brazilian capitals, it has the 8th largest gross domestic product). It is also known for being located in the region with the greatest biodiversity on the planet: the Amazon. An example of this is the emergence in Manaus of an industrial region **– Manaus Free Trade Zone (MFTZ)[20] –** as the result of the transformation of capitalism in Brazil**.**

History of the Manaus Free Trade Zone

Created on 28 February 1967 by the industrial policy of the Brazilian military dictatorship, the MFTZ was one of the first free trade zones implemented in the world. It was the result of a combination of various interests at both the national and international level. At the international level, it catered to the capitalist need to create markets and new consumers at a time when several countries were pursuing protectionist policies. It was also meant to mobilize and accommodate capital by freeing it from union pressure and labour costs in developed countries. At the national level, a key factor was the partial conversion of the state to liberalism, which sought to attract foreign investment, on one hand, while continuing to pursue an industrialization process based on an import substitution policy, on the other hand (Valle, 2007; Seráfico, 2011). In this context, the Brazilian state bureaucracy was in favour of opening up part of the national territory to global capital, while keeping other regions "closed" (Silva, 2013). This went hand-in-hand with the debate about what to do with the Amazon, which the Brazilian military saw as the target of international greed.

Regionally, the Amazonian economy was stagnant at the time, as it was based on the extraction of forest products. In parallel to this, the local elite in Manaus felt abandoned. This can be explained by the fact that the region had experienced national and even international prominence in the late 19th - early 20th century, a time when rubber extracted from rubber trees accounted for approximately 50% of Brazil's total exports. For the elite, then, the creation of the MFTZ was to be the "domestication of the forest" (Silva, 2013) and bring local political and economic "redemption" (Seráfico, 2011).

Amazonas became home to the MFTZ. Its main "competitive advantage" was a different tax policy from the one applied in the rest of the country, as it offered tax and non-tax incentives to companies implementing projects in this special economic zone: for instance, up to 88% reduction of the import tax on inputs for industrialization processes; exemptions from the industrialized products tax; 75% reduction of corporate income taxes, and land for the

20. https://www.gov.br/suframa/pt-br/zfm. Accessed March 2023.

instalment of operations offered at a symbolic price. This served the interests of global capital, which sought to avoid both labour costs and taxes. For the local elite, the justification was a reduction in the "Amazonian costs"[21].

According to the original plans for the MFTZ, it was to be developed as a commercial, an agricultural and livestock and an industrial hub. However, in practice, only the commercial/industrial hubs got off the ground, especially the latter, which became known as the **Manaus Industrial Park (MIP**)[22]. Since then, in the MIP, there has been a proliferation of factories from a wide variety of industrial sectors from all over the world.

However, the military government's industrial policy did not lead to public policies that generated more benefits for workers. As we will see below, the main benefits won by the working population of the capital of Amazonas are the result of the social class struggle against the forces of capitalism, and not the actions of the federal government. As such, workers are at the mercy of the comings and goings of manufacturing companies, on one hand, and suffer from the lack of educational programs, housing and sanitation policies and professional or technical training opportunities, on the other.

Changes to work in the Manaus Industrial Park

The type of labour and the relationship between companies and workers have undergone important changes throughout the existence of the MFTZ and its industrial park. These changes are due to the type of capital that has arrived in Manaus over the last few decades.

In the 1970s and 1980s, capital from the United States, Europe and Japan dominated the MIP and as a result, work tended to be highly Taylorist – meaning strict hierarchy, little employee training and the simplification of tasks required to assembly the equipment. It was around this time that the unions appeared and organized major protests against capital (Spindel, 1987; Valle, 2007).

In the mid-1990s, the "Asian tigers" arrived, led by South Korean companies. This marked the beginning of a new cycle of investments. During this period, the Japanese management model was implemented in the MIP. Its main pillars were "participatory management", "*just-in-time*", the "culture of quality", "collaboration", "workers' skills" and "multi-skilled and multi-functional workers" (Scherer, 2005; Valle, 2007).

At the end of that decade and the dawn of the new millennium, as a result of strong union pressure, workers obtained more benefits and a share in company profits and results. In relation to management style, the Japanese model was consolidated through the adoption of worker participation policies, bonuses and forms of worker "recognition" by companies as a way of alienating their employees from the unions and raising productivity.

21. Lack of roads and railway lines connecting the region to the rest of Brazil and the distance from the biggest consumer market: the south-eastern region of the country.

22. https://www.gov.br/suframa/pt-br/assuntos/polo-industrial-de-manaus. Accessed March 2023.

Starting in the early 2000s, a new investment matrix emerged in Manaus from China. Over 20 state-owned, semi-state and private factories arrived in the area. By 2017, they were responsible for around 10% of all jobs in the MIP.

China's presence in Manaus and the "New Tropical Silk Road"

China's presence in the Industrial Park of the Manaus Free Trade Zone began even before the factories themselves arrived. Two specific moments marked this process. The first one is linked to the role China has played in the MFTZ since the 1990s as an exporter of inputs to the factories in the Amazon. In view of the new directions in globalization and the changes in the international division of labour, these factories began to turn to the Asian country as a source of inputs produced at large scale, low-cost facilities in China that constantly incorporated technology in production processes (Pires, 2009).

Responsible for over 90% of Amazonas' imports, the Manaus Industrial Park (MIP) was strongly influenced by Chinese production and significantly increased the total amount of inputs that it imported from China in the 1990s and 2000s. In 2004, China assumed the first-place position and was the source of more than 28% of all inputs purchased by Amazonas abroad. In 2015, its share rose to 47%, making Amazonas one of the Brazilian states with the highest average imports from China.

The second moment was the arrival of Chinese investments in the MIP. As MFTZ's model is dependent on foreign investments, government bodies and business associations from Amazonas have made efforts to attract Chinese capital. State representatives have been participating in trade fairs in China by sending missions to the Asian country in an attempt to "advertise" the region's potential and opportunities.

An example of this was their participation in the electronics trade show in Guangdong and Hong Kong, and the hosting of Chinese delegates who came to Manaus to explore local opportunities. In the vision of the then-Secretary of Planning of Amazonas, these government and business initiatives have been fundamental because "for the Chinese, the Amazon is the new frontier for exploration. And when they identify these opportunities, they really do come and set up operations"[23]

As a result of Amazonas' attempts to attract foreign investors and in the context of China's ongoing expansion into several parts of the world, China's stake in the MIP has gradually increased since the late 1990s and become more visible in the post-2008 crisis period. China's average share in the MIP jumped from a little over 2% to about 10% from 2008 to 2017, thus surpassing countries such as Germany, France, Finland and Canada. This increase was the result of a series of acquisition of companies previously owned by these countries, such as Lenovo's purchase of IBM, Motorola and CCE; TPV Technology's acquisition of Philips (video

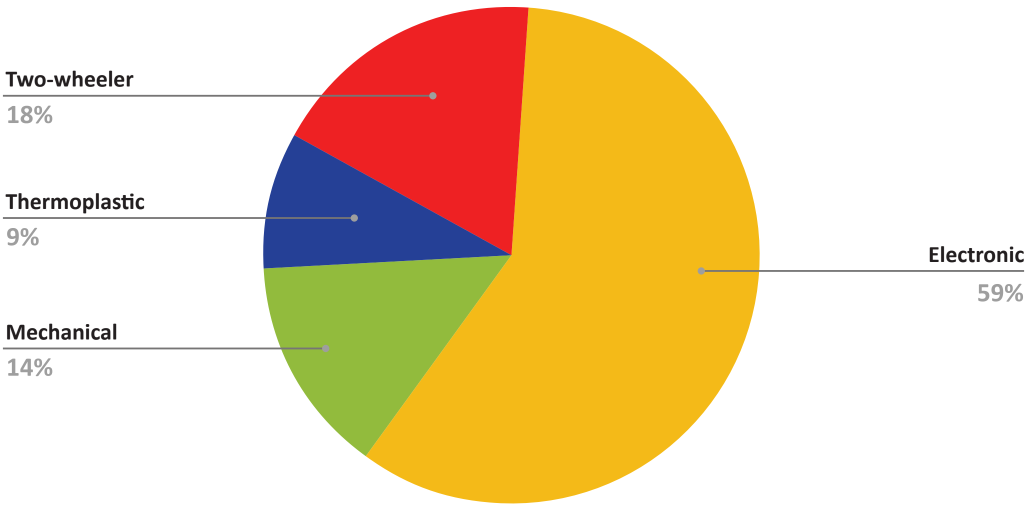
23. Former secretary. Interviewed by the author.

sector) and the joint venture between the Chinese-based Midea and the US firm Carrier, which together began manufacturing the Toshiba and Springer brands, to mention only a few of the more recent examples.

By 2017[24], Chinese investors owned a total of 22 factories in Manaus, of which 13 were in the electronics subsector (televisions, laptops, smartphones), three in the mechanical subsector (air conditioning, watches, home appliances), two in the thermoplastic subsector (packaging, auto parts, adhesive tape) and four in the two-wheeler subsector (motorcycles, bicycles).

Figure 19

Factories by subsectors



This shows how Chinese investments are spread across several subsectors in the MIP. In relation to the workforce, in 2017, these Chinese companies employed around 10,000 workers, which represented approximately 10% of the entire labour force in the industrial park[25].

The arrival of Chinese capital is still seen, even today, as a kind of ghost that haunts the region. At the global level, the literature refers to the Chinese presence as the deployment of “bloody Taylorism”, “managerial despotism”, a “Trojan horse” and “Chinese enclaves”. At the national level, reports claim that 42% of the employees of Chinese companies in Brazil quit their jobs within their first year of employment. Regionally, leaders and managers used to say that “the Chinese dictatorship was coming”, “the Chinese wanted to enslave people in Manaus” and “the Chinese would not adapt to the MFTZ”.

24. The most recent data are from 2017. In its attempt to reduce costs, the Brazilian agency responsible for these specific data stopped publishing them.

25. Direct employees, excluding temporary workers or employees of outsourcing companies.

Below we present the results of a field research on four Chinese factories in the MIP: ChinaBoard (private), TVChina (private), MotorChina (partially state-owned) and ArconChina (central state-owned). The methodology used consisted of factory visits and interviews with managers, Chinese expatriates, factory workers and administrators, employees of the labour court system and trade union leaders, as well as document analysis and literature review This part of the report has benefited from Cleiton Brito's doctoral research carried out from 2013 to 2016[26]. The interviews and discussions have been revisited for the purposes of this report and to compare the Manaus Free Trade Zone with Chinese Special Economic Zones in Africa, particularly in South Africa.

The trade unions' view of Chinese factories

In the Metalworkers' Union of the State of Amazonas, which represents the employees of the companies studied, opinions on the presence of Chinese factories in the MFTZ vary. According to the union president,

> the Chinese are the worst. They are the worst to work for. They abuse people psychologically, yell at people. There's a cultural problem – major culture shock. Then, when they don't adapt to our culture, they're sent back. They have very serious problems[27].

The union president spoke about the difficulties that union leaders have in getting Chinese companies to comply with labour standards and the collective bargaining agreement:

> It was decided in the agreement that something or the other would be done; a collective bargaining agreement was signed here. They have to go to China to get approval to be able to follow it. So, as they bring this culture of theirs with them, it's complicated for us to make them comply with Brazilian laws. You have to resort to confrontation because when the court fines them, they don't care about the fine. In fact, we are going to bring these companies to a halt.

However, in another union leader's opinion[28], the arrival of Chinese companies was something new and the union was watching to see how they would behave in relation to the labour laws, since contrary to what the union president had suggested, nothing had happened yet that would justify occupying the factory.

26. Cleiton Brito's work was recently published in *China and Globalization in the Amazon: Workers, Expatriates, and the Chinese Production Model*. London: Routledge, 2022.

27. Union leader. Interviewed by the author.

28. Union leader. Interviewed by the author.

As for a third union leader interviewed[29], right after the Chinese companies arrived in Manaus, non-compliance with labour agreements was a constant issue, and many firms preferred to pay a fine than comply with a labour court ruling. However, according to this leader, this relationship has been slowly changing and the Chinese have become more adapted to the country's context now.

Data gathered in the field go more in the direction of confirming the Chinese's adaptation than the claims of "Chinese savagery". Even though the union president reported physical abuse, the non-payment of wages and non-compliance with Brazilian laws, no data from the period confirms this. In addition, the information obtained from the labour courts did not indicate a higher number of complaints against Chinese firms than other companies in the MIP.

Chinese enclaves: the companies' human resources policy

In the companies studied, it was interesting to note that the human resources (HR) department was directly linked and subordinate to headquarters in China. Human resource personnel first have to report activities involving hiring, dismissals, training policies, skills, workers' wages and benefits to head office in China, wait for a decision from China and only then can they implement or suspend them.

Studies by Lee (2017) on Chinese corporations in Africa and by Čaněk (2016), Smith and Zheng (2016) and Sacchetto and Andrijasevic (2016) on ones in Europe found that the companies in those regions set up similar processes as a way of controlling the local labour force.

In the case of Manaus, we call it *human resources practices/policies of Chinese enclaves,* which influence the companies' factory structure, organizational hierarchy and the assignment of functions. Local factory managers have no say in HR matters, which are fully controlled by HR in China. This is how a manager of the ArconChina company views this issue:

> We are in direct contact with head office in China. The human resources sector here does not report to the Manaus manager. It is, in fact, an independent office, an organization bound to headquarters. So, I am in no way subordinate to the local manager. Obviously, in a practical way, I am; I have to answer him as a service provider. But my manager – the one who makes decisions about my life, increases, promotions, etc. – he's in China; he's the global human resources director. This is to give the department more autonomy and make it easier to negotiate human resource issues with the company's management (...). Here, there are other departments that work like this too. Information technology is like that; it's directly linked to headquarters[30].

29. Union leader. Interviewed by the author.

30. ArconChina HR manager. Interviewed by the author.

In practice, as a Chinese enclave, HR makes decisions globally about the local. This makes not only production but also the companies' institutional and mediation systems more *Made in China,* and less *Produced in Manaus.* As a "global Chinese territory", the local HR department is part of the way China coordinates and controls production in its current phase.

Besides hiring workers and making payments, the role of the HR department is to give China power over decisions on both basic and highly complex local issues by reporting them to headquarters so that the decisions can be made on the other side of the world. Placing the matter under the decision-making power of the board of directors in China is a way to avoid dealing with local pressure directly.

This can be exemplified in the case of labour disputes, as head office in China is the one to decide whether or not the company should comply with the labour agreements negotiated in Manaus or if it is better off paying a fine. To operationalize this process, head office requests that the documents be sent to China and then, it designates and chooses the Chinese nationals in Manaus who are to stand as witnesses in labour lawsuits and maps out the lawsuits underway or that could potentially be filed with labour tribunals.

For a RH manager, this level of control is "because the Chinese are unable to understand the number of Brazilian labour laws, nor how the company is supposed to deal with the situation"[31]. According to him, once a Chinese production manager wanted him to call a worker who was away on vacation. He told the Chinese manager that the law does not allow him to do so, but the manager "wouldn't accept it and wanted to call the employee to order him to come back from his holidays and go to work".

For a manager of TVChina,

> The Chinese don't fully understand the level of requirements imposed by Brazilian labour laws – that is, the amount of social security contributions there are, controls on overtime, government quotas for hiring people with physical disabilities. The Chinese don't understand any of it[32].

Similarly, a ChinaBoard manager stated that,

> One of the Chinese's biggest difficulties in adjusting is the difference between labour laws in China and in Brazil. This makes it difficult for those who manage the company to get the Chinese managers to understand all the obligations that there are and that failure to comply with them will make their business unviable in Brazil[33].

31. ArconChina HR manager. Interviewed by the author.
32. TVChina HR manager. Interviewed by the author.
33. ChinaBoard HR manager. Interviewed by the author.

According to an administrative assistant, what is striking about the Chinese's relationship with HR is the level of control and the bureaucratic procedures. She shared that

> In my sector, the most obvious thing about the Chinese is control. They implement very strict controls, even if this control means we have to go back in time and use paper for approvals. Everything is very bureaucratic, with stamps, etc.[34]

While the format of the head office-subsidiary relationships and the reasons that lead the HR department in China to run operations as a Chinese territory within the MIP vary, these aspects are clearly common and unique to Chinese management, in both content and scale – something that previously was not part of the culture or standards in global capital's factories in Manaus. This gives us an indication of where Chinese globalization is heading today, as it strategically organizes itself as an economic and bureaucratic bloc in other countries by setting up a centralized system of control and coordination of production, management and HR policy in its factories.

In addition, the relationship between the factories and the unions in Manaus has a history of conflict and attempts at adjustments. According to the managers interviewed, the unions are no longer as "radical" as they were when the Chinese companies arrived in the region. Today, they are more open to dialogue and do not want to shut down the factories for just any reason.

The account of one of the companies' HR managers is illustrative of this,

> Today, the union does not come with impositions or the radicalism that existed in the past some 20 or 30 years ago. Actually, I think we have a very good relationship with the union today because they are open. In fact, some union leaders are company employees. They are free to come here. If there is a complaint from an employee who calls to say that the food in the cafeteria is bad, the union comes here, sits with us, discusses the issue and we go to talk to the cafeteria staff to find out what happened on the specific day of the complaint. We try to deal with the root cause and so on.[35]

Despite the claim that the relationship with the unions has improved, this discourse contrasts with the position of some local union leaders, who emphasized the difficulties that the Chinese companies create for the unions. The union leaders explained that, at first, these companies would prevent union representatives from visiting the factories and handing out pamphlets to workers by barring them at the factory gate. There were also cases where companies fired workers who had close ties with the union. Then, through confrontation and negotiations, this problem was gradually resolved. But for them, the Chinese are still mistrustful of and prejudiced against unions.

34. HR assistant. Interviewed by the author.

35. HR manager. Interviewed by the author.

One way to reduce potential "misunderstandings" between the Chinese and the workers was to offer courses on "good manners" and lectures with labour lawyers for Chinese nationals arriving in Brazil. According to one company manager, the goal of this type of course was to raise awareness on Brazilian laws and how to treat others at work. These activities also aimed to stress the importance of labour courts in Brazil, which, according to the manager, are much more favourable to workers' causes.

The strategy yielded some results, albeit limited ones. On one hand, the Chinese that we interviewed spoke well of Brazilian legislation and unions. They affirmed that unlike unions in China, the local union leadership actually protected Brazilian workers. On the other hand, they continue to think that there are a lot of worker benefits in Brazil, which is good for workers, but bad for the country's development.

The law is the limit: policies on wages and worker benefits

Chinese capital spends less on salaries and benefits in the factories in Manaus than investors from other countries, and the Chinese do not offer anything above the legal minimum. They also offer little training to workers, thus transferring the responsibility for this to individual workers. This is consistent with the observations of other international authors on Chinese companies' resistance to paying better wages in different parts of the globe (Burgoon and Raess, 2014; Sacchetto and Andrijasevic (2016); Smith and Zheng, 2016; Lee, 2017).

There are, however, specific matters that should be put into context. One is that in general, the companies' policy is to pay the employees of their subsidiaries a wage that is close to the average amount paid by the parent company in China. An operator of TVChina in Manaus receives a monthly salary of approximately US$350.00, whereas in China, the salary is US$434.00. In ArconChina, the monthly salary of an operator in Manaus is US$420.00 and US$579.00 for one working for headquarters in China. As for MotorChina, the subsidiary and the parent company pay operators US$470.00 and US$593.00 per month, respectively, as shown in table 7 below.

Table 7.

Monthly salary of operators employed by the parent company and its subsidiaries (US$)

Position	Average monthly wages (US$[36])		
	TVChina	ArconChina	MotorChina
Production operator in Manaus	350.00	420.00	470.00
Production operator in China	434.00	593.00	622.00

Source: Elaborated by the author based on direct research.

36. The Brazilian and Chinese exchange rate at the time of the research were US$1 = R$3.20 and US$1 = CNY 6.90, respectively.

When compared locally, wages in Chinese factories in Manaus have generally been lower than the ones paid by other international companies in the MIP. In our calculation of wages, we included both the average salary and the amount that companies are obliged to pay for taxes and workers' benefits.

In the electronic subsector, we compared TVChina and ChinaBoard. In 2015, at TVChina, the average monthly salary was US$1,032.00. When compared to companies in the same subsector, this Chinese factory's average wage was slightly higher than the wage levels of one Japanese factory and two South Korean factories. However, when we include worker benefits in the analysis, Japanese companies are the ones that spent the most on this type of expense. TVChina has been spending less on worker benefits ever since it initiated its operations in Manaus. ChinaBoard, for its part, paid an average monthly salary of US$597.00 in 2015, which is below the average wage of other companies in this subsector. The amount allocated to workers benefits was also lower than that of other factories, including a Chinese competitor that spent US$271.00 per employee.

In the air conditioner subsector, ArconChina had the lowest average monthly salary: US$805.00. However, it spent the most on workers benefits for each employee, which added up to US$414.00 a month. Its average wage was higher than the general average of the mechanical subsector, which was reported to be around US$773.00.

In the two-wheeler subsector, the average monthly salary at MotorChina was lower than the average of both another Chinese company and a multinational corporation of Japanese origin. While the average wage at MotorChina was approximately US$657.00 a month, the Japanese firm offered almost triple the amount, around US$1,655.00 a month. MotorChina's average wage was also lower than the subsector's average (approximately US$1,215.00). As for the amount allocated to benefits, MotorChina spent US$411.00 and the Japanese company, US$641.00. Data on wages and benefits are summarized below.

Table 8.

Wages and benefits by the companies' country of origin (2015) – (US$)

COMPANY*	ORIGIN	PRODUCT	Monthly salary (US$)*	Social benefits US$
TVChina	China	TVs, monitors and tablets	1032.00	413.00
ChinaBoard	China	Boards	597.00	271.00
iFexx	China	Boards	734.00	348.00
Sunmoong	South Korea	TVs	902.00	862.00
NNG	South Korea	TVs	820.00	384.00
Zonic	Japan	TVs	1043.00	444.00
Hunamo	Japan	TVs	931.00	787.00
Climexx	US/China	Air conditioners	1122.00	339.00
ArconChina	China	Air conditioners	805.00	414.00
Eurogreen	Sweden	Air conditioners	854.00	408.00
FoxKong	China	Motorcycles	996.00	255.00
MotorChina	China	Motorcycles	657.00	411.00
Hamayda	Japan	Motorcycles	1655.00	641.00

SUBSECTOR	Average wage of each subsector (2015) US$
Electronics	782.00
Two-wheelers	1215.00
Mechanics	773.00

Source: Elaborated by the author based on direct research.

This data shows the deepening of a trend that has been developing since the 1990s, where lower salaries began to account for a larger share of all wages in the factories in Manaus. This was more evident in the electronics subsector than in the two-wheeler subsector, where the salaries of most workers have remained, over the years, in the pay scales of 1.5 times the minimum wage and above.

The way Chinese companies in Manaus have been managing wages, benefits and participation have affected the lives of the workers interviewed in several ways. Some reported that the amount they received for many benefits in other companies were lower at the Chinese companies. This is the case of the amount that workers were paid for basic food baskets: Japanese companies paid US$40.00, whereas the Chinese paid US$15.00. Chinese management had cut some of the benefits that they used to have in other companies or would even charge them extra for access. For instance, while European companies had offered free dental plans, Chinese companies started charging US$3.00 per family member and deducted the amount from workers' salaries.

Moreover, wages have also been reduced. One ArconChina production operator reported that while his salary at his previous job was US$443.00, at the Chinese company, the wage for the same position dropped to US$386.00. One worker also stated that her salary was lowered when TVChina bought the Dutch company:

> The salary for my position was US$360.00 but at TVChina, it was US$280.00. A supervisor for the Dutch company made US$750.00 and at TVChina, US$530.00. (...) At the Dutch company, every time an employee completed two years with the company, they got a letter congratulating them (...) and saying that they would get a US$10.00 raise the following month[37].

The case of the acquisition of the Dutch company by TVChina exemplifies well the changes arising from the alteration in global capital and exposes the process of growing job insecurity in Chinese factories in Manaus. In the transition to Chinese ownership, more than 70% of the employees – close to 300 people – who worked for the company while it was still controlled by Dutch capital were dismissed when Chinese capital bought the factory. Months later, the company rehired many of them, but offered much lower salaries than before. It also cut many worker benefits, such as day care, allowances for pregnant or nursing women to buy milk and baby clothes, health insurance and a workers' savings fund.

> There, we had a policy that worked like this: we could deposit money in our account at the company and the company deposited the same amount too. If we left the company, we could withdraw that amount. But the Chinese terminated our rights – they eliminated our recreation area, got rid of the area for women and gave priority to the men. They closed off the part where we could go to rest and watch tv and put in production lines instead. And they fired a lot of people who worked for the Dutch company. They really cleaned house[38].

In addition to this, the interviews revealed that under the previous owners, workers had more job stability, as well as wage increases, bonuses and worker benefits – something that changed when Chinese capital took over. Chinese companies will comply with the law, but nothing else – i.e., the law is the limit. A Brazilian manager described the Chinese philosophy about TVChina's labour costs and identified the changes that occurred after the new investors' arrival:

> [The Chinese] are very careful about the organization's expenses. So, they do not accept any benefits or contributions that are not required by law. The ones required by law, they do, but they question the ones that are not imposed by law and start eliminating them[39].

37. TVChina worker. Interviewed by the author.
38. Idem.
39. Idem.

To this, he added:

> The Dutch company had a culture of providing day care to 100% of the employees who needed to put their children in day care. But if you look at Brazilian law or even the collective bargaining agreement, which complements the law, it does not obligate the company to provide 100%. (...) So, the Chinese go up to this quota. They don't understand that they need to give 100%. The law does not force them to. There is nothing in the collective agreement, no requirement that demands this. So, the Chinese will give what is just, what has been defined. If authorities decide a year later to increase it, they will comply, but as long as that quota is effect, that's what they are going to give. (...) On the management level, there are factories that offer the benefit of receiving a car every three years. For the Chinese, it's like, "Is there a legal requirement to do so?" "No!" "So, cut it. It's not necessary."[40]

In global capital's game of "cutting costs" and reducing expenses, besides the growing job insecurity and losses for the entire labour force, to access the benefits that factories continue to offer, workers must meet a series of conditions. The goal of this is to control their "commitment" to production.

At MotorChina and ArconChina, for example, the condition was that workers could not have any absences or days of sick leave on their monthly record. At TVChina and ChinaBoard, such criteria – associated with not wasting material – were also used to determine workers' access to benefits that had been agreed on with the unions. The consequence of this is a management profile with top-down decision-making and targets and "quotas" defined by the Chinese management group in order to reproduce a more technical and routine work dynamic on the local level.

Professional training and opportunities for growth

In relation to the qualifications required, the Chinese companies' HR departments have generally given preference to workers with experience in the MIP. According to the managers, this criterion is linked to the Chinese firms' goal of reducing the cost of training employees. To achieve this, then, it is essential to hire workers who are already familiar with production lines.

In the case of MotorChina, a minimum of six months of experience in the two-wheeler sector is a "cut-off" point for joining the company. According to management, "workers have already been trained and there is no need for large investments", since the work done in the factory "is very similar to what other companies do".

40. TVChina manager. Interviewed by the author.

It is also worth noting that the factories' HR departments demand that candidates for jobs on the production line have physical skills such as dynamism and speed. According to HR managers:

> The Chinese demand very high speed of execution... It is an environment where there is pressure for speed and dynamism because they bring with them the idea that it's like that in China – very fast. And if it works there, it should work here too[41].

As for workers' education background, the companies' HR teams emphasize that a high school diploma is fundamental for operations on the factory floor. In the ChinaBoard factory, of the close to 400 workers, approximately 70% had a high school diploma, 7% had not completed post-secondary studies and 13% had a post-secondary degree. In addition, a little more than 3% had not finished high school. At TVChina, of the almost 670 workers, 70% had a full high school education, 4.5% had not finished post-secondary studies and 15% had a post-secondary diploma.

In general, a high school diploma has long served as the "cut-off mark" for getting a job in the MIP. Workers without a high school education are a rare find. According to a study by Valle (2007), in 1997, at TVChina's Dutch predecessor, only 7% of workers had a post-secondary education; this rate more than doubled, climbing to 15% in 2016, by then under Chinese management. Furthermore, in the period studied by Valle, 24% had not completed a high school education, whereas in 2017, this education level was found among less than 5% of employees.

In addition to the requirement of a high school diploma, the human resource department has been demanding that workers, especially production leaders and supervisors, have a basic knowledge of English. According to one manager interviewed, this is fundamental because many machines are imported from China or transferred directly to the subsidiaries in Manaus. Since training on operating them is offered by Chinese technicians and given the large number of Chinese nationals in the factories, knowing English facilitates communication in the production process.

Another requirement for employment is the certificate from a Basic Operational Training course (TBO for its acronym in Portuguese). In 2016, the average cost for the course was US$40.00. This HR policy is, by large, a way to extend the rationalization of production beyond the factory. But it is more than that: it reveals an attempt to transfer the responsibility for "training" and "recycling in the market" to workers. Both the state and the market evade responsibility for promoting training.

As a ArconChina manager explained, the course is a must because:

> The TBO course syllabus includes training on the basic operations of a production process, such as the use of power drills, inserting connections, wiring and cabling routing, manual welding, label placement, packaging of products, etc. This is why since 2013, we have included this requirement in the recruitment and selection process.[42]

41. MotorChina HR manager. Interviewed by the author.
42. ArconChina manager. Interviewed by the author.

According to a production manager at TVChina, hiring workers who already have basic training on assembly lines helps accelerate "ramp up" – that is, the learning curve that an assembly line with new operators or new products undergoes until it reaches its maximum performance. "Before introducing this training, it used to take ten days to undergo ramp up. After TBO, it only takes 3 to 4 days to ramp up", the manager explained.

In the interviews held with the production and HR managers of the Chinese companies, it became clear that when Chinese capital first arrived, the companies offered TBO in the factories for free, as they were part of the series of training courses that they provided. In the Chinese's quest to lower costs, HR started demanding that factory workers possess this certificate as a prerequisite in the recruitment process. One interviewed worker, who had been dismissed and was trying to get rehired by the same factory, emphasized this issue:

> I've already been through all the interviews. I've done the test. But now, I have to have this thing called TBO that they only started demanding now. There is going to be a week of lectures and studying electronic components and other things. Then, there's a test to see if you passed.[43]

This process of demanding new courses reveals that the companies began to take advantage of training at the workers' own expense. This also led to a shift in the age at which workers start at the factories. This went from 18-20 years of age in the 1990s to 22-25 years in the 2010s.

While factory workers have to search and pay for training programs on the operational part of factory work themselves, the head office makes Chinese managers train Brazilian engineers to increase their mathematical and reasoning skills. However, even when their qualifications are up-to-date, many workers reported barriers to access higher-paying positions. The main one is that few promotions in the company go to Brazilian workers, since high-level positions are mostly held by Chinese employees, who tend to favour other Chinese workers. Also, according to interviewees, a position higher in the hierarchy means a higher salary, which is of no interest to the head office, since it pays Chinese workers a lower wage than the one a Brazilian employee would receive in the same position.

The "production of operators": factory control and supervision

In regards to factory control and supervision, there is little autonomy in decision-making. According to employees of the administrative department of one factory, all purchases over US$2,000.00 had to be pre-approved by the head office in China.

43. Worker. Interviewed by the author.

Linked to this was the high number of supervisors on the factory floor – something that went against the trend toward putting an end to direct factory supervision in the 1990s and early 2000s. "When a Chinese [worker] sees that something is dirty, he complains to the supervisor and the supervisor complains to us. The Chinese are very demanding. They have a lot of supervisors. I've never seen anything like it"[44].

Workers also reported that supervisors would always go along the production line to see if workers were doing things right. When they would see something that they did not think was right, they did not teach workers how to do it correctly. In fact, "they'd pull us from our position and call another worker to come and take our place"[45]. According to another interviewee, this happened because "(...) the Chinese don't like mistakes and they want us to do everything right. For example, a guy was welding something the wrong way and the Chinese [supervisor] saw it, took the welder away from him and started welding. They do things themselves; they don't teach us"[46].

Another issue directly related to factory control is the fact that the Chinese do not share information with their Brazilian employees. According to the interviewees, Chinese management controls information on nearly everything that goes on in the factory: defects in components, how to fix them, activities to be developed over the year, annual production targets, ideas about how to develop new products and how to operate machines that come from head office in China.

Finally, we also observed macro-level control from China via information technology in the factories. This monitoring from China was organized through a system called the *Global System*, which the head office would use to view the factory floor in Manaus. This allowed them to steer production from China via direct contact with Chinese nationals[47].

"No Feelings": worker participation and (non) involvement

Chinese companies are reported to have little appreciation of workers' creative capacity. According to workers, the Chinese do not create space for dialogue in the factory. They do not accept suggestions and they weave a vertical web of relations in which the managers' ideas are always considered the best ones. One interviewee said, "The Chinese way of doing things is terrible. They're stubborn. We have to do things the way they teach us to. They don't accept it when you say that another way is better"[48].

In the workers' view, the consequence of this process was the loss of motivation, as they do not feel valued by the managers. They affirm that in other companies in the MFTZ – especially

44. Production operator. Interviewed by the author.
45. Assembler. Interviewed by the author.
46. Warehouse keeper. Interviewed by the author.
47. According to interviewees, as soon as they arrived, the Chinese also used camcorders to record who was talking.
48. Production leader. Interviewed by the author.

Japanese (Honda, Yamaha, Showa and Konica, Sony) and European (Siemens, Bic, Nokia[49] and Philips[50]) ones, the leaders welcomed their ideas and many of them were rewarded for them. They even counted as part of the requisites for earning a bigger bonus from the participation in profits and results system (PLR in Portuguese). This does not happen in the Chinese companies. The workers believe that Chinese leadership reconfigured what was considered "normal" management practices in the MIP:

> (...) The Dutch allowed us to give suggestions. The Chinese don't. They don't like it when we give ideas or opinions about changes to our position or to improve something. They say, "you can't change it. That is how we do it in China and it works. It'll work here too". But in the old company, at Kaisen, we could give ideas. There was a suggestion box. And the production line that would come up with a good idea won a free lunch from the restaurant, give-aways, t-shirts, our photos on the wall. But here, there is no box. They don't give anything. This has demotivated us[51].

These references to the management style of other companies in the MFTZ came up constantly in the interviews. In the workers' narratives, they always drew comparisons with their former jobs, indicating that there, they felt more appreciated, respected and part of a "team" that could "collaborate in the management of the company".

> The Chinese relationship with workers is horrible. They don't care if you're a woman, if you're sick. They only want you to work. But they do not value your work. (...) They only value the outcome. It would be nice to receive praise from the company, but they don't do that. At Nokia, I used to get compliments. (...) At Nokia, if you beat the weekly target, each worker on the line will get a bonus gift voucher of three hundred reals. The line with the least flaws and absenteeism each won three hundred reals per month and so, we were motivated and didn't want anyone to miss work[52].

The failure to value workers was reflected in the absence of not only a policy to encourage participation in management, but also mechanisms for workers to evaluate the factory and incentives for skill-building and training. Many interviewees commented that Chinese firms have not invested in training or higher education courses for workers, who end up having to pay for technical or university courses themselves. They viewed this as a step backwards, since earlier, many factories in the MFTZ used to cover 50% of the cost of a university course for their employees or occasionally sent them to technical training institutes.

49. Bought by Microsoft in 2013, but later sold to a subsidiary of Finland's Foxconn.
50. Bought by the Chinese.
51. Production operator. Interviewed by the author.
52. Production operator. Interviewed by the author.

The words of a production leader illustrate how this happened:

> They don't offer training. They don't want our ideas - only for us to meet targets, make profit. Their culture is only about you doing your best. They have a lot of demands and they forget to build teams. I've worked for the company for two years and I haven't had any training. I had to do it on my own because the company offers nothing. But the other company I worked for even gave discounts to whoever went to university[53].

The way forward: make the Manaus Free Trade policy more transparent

By way of conclusion for this part of the report, some elements stand out the most from the case study presented above. First, no data were found to indicate non-compliance with labour laws. In fact, Chinese companies tend to adjust to the Brazilian legislation, but they do not offer any more than what the law stipulates. Secondly, Chinese capital spends less on wages and benefits than other major global players in the manufacturing sector in Manaus, especially Japanese, South Korean and some European firms. Thirdly, a kind of *matrix Taylorism management* is emerging, which emphasizes the more technical side of work under the coordination of a management team composed of expats. Fourthly, it became evident that there is a need to transform the MFTZ and its MIP. This is because in the correlation of forces between capital and labour, capital has received more attention from the state in terms of public policies than the labour force in Manaus as a whole.

As we stated at the beginning of this section and outlined using field data, the main advances of the working population of the capital of Amazonas are the result of the struggle of the working classes against the forces of capital, and not the actions implemented by the national government. This means that workers are at the mercy of the comings and goings of manufacturing firms, on one hand, and must deal with the lack of educational courses, housing and sanitation policies and professional/technical training programs on their own, on the other. Thus, improving their lives becomes their own responsibility, without much support from public authorities, despite the amount of money circulating in the capital city of the free trade zone.

Finally, in contexts such as the one in Manaus, little value is given to political or diplomatic capital or strategic interests linked to the centre of Chinese power. This is the opposite of the China-Zambia context (Lee, 2017) and the South African context described by Thompson et. Al., as part of this project, where these elements are valued. In Manaus, Chinese factories have

53. In relation to the discount, the worker interviewed was referring to the fact that the company had an agreement with the university in which the worker paid half of the monthly tuition fees and the company, the other half. Production leader. Interviewed by the author.

made work more precarious in terms of wages, worker benefits and worker participation. This goes for both private firms and state enterprises from China, which are considered “heavy factories”, whose management style is more technical, bureaucratic, routine, non-participatory and less flexible to change.

In a place that does not have a lot of “bargaining chips” and where international companies dominate production and sales, Chinese investors merely go with the flow. They play the game within the possibilities that exist, cut costs and adopt strategies that allow them to survive or get ahead of their competitors, such as paying lower wages and benefits to Chinese managers and supervisors working in Brazil. While this can be seen as a competitive “advantage”, it makes it difficult for Chinese subsidiaries to form productive ties within the regions that are the target of China’s expansion.

Appendix:

Table 4.

Public policies and legislation on foreign investment during the Dilma Rousseff administration (2011-2016)

YEAR	LEGISLATION OR PROGRAM	SECTOR	MAIN CHANGES	FACILITATED THE ENTRY OF CHINESE INVESTMENTS?
2016	Increase in the limit on foreign ownership of Brazilian airline companies Provisional Measure n° 714/2016	Aviation	The measure raised the limit on foreign ownership of Brazilian airline companies from 20% to 49% and eliminates the requirement that all company directors must be Brazilian. The law was expected to contribute to the capitalization of new companies and permit new companies to enter the sector.	No information available. The Chinese HNA Group made an investment a year earlier, in 2015, to acquire a 23.7% stake in Azul Airlines (Salomão, 2015).
2015	Foreign investment in the healthcare sector Law n° 13,097/2015	Health	- Foreign companies are allowed to offer beds and healthcare services. - The law permits foreign investors to invest in companies that offer services to general or specialized hospitals and clinics, corporate customer services, laboratories, etc. - Private healthcare services were officially recognized as being complementary to the public health system.	Yes. - In 2017, the government of the state of Ceará and the Chinese company Meheco Corporation signed a memorandum of understanding with the China Development Bank (CDB) to raise US$4 billion in funding for the state's healthcare sector (OPovo, 2019). This investment was to be used to build new public hospitals, renovate existing ones and purchase equipment. Later, in 2019, the governor of Ceará visited China and signed an agreement for the supply of equipment and the installation of Chinese companies in the state (Ceara.gov, 2019). - In 2017, State of São Paulo Governor Geraldo Alckmin received a delegation of medical experts sent by the Chinese government to discuss plans for the first Chinese hospital in Latin America and other investments in the state (Governo de São Paulo, 2017). - In 2017, the privately owned Chinese group Fusan initiated a round of negotiations with hospital networks in São Paulo, Bahia, Paraná and Pernambuco (Exame, 2017).
2013	Tax credit for the ethanol industry	Agriculture	- Reduced the PIS/Cofins tax on ethanol from 12% to close to zero as of 1 May 2013. - Increased the mandatory amount of anhydrous ethanol to be blended into gasoline to 25%. - The National Development Bank (BNDES) provided a line of credit for expanding the area used to grow ethanol. The interest rates on these loans fell from 8.5-9.5% in 2012 to 5.5% in 2013. - Credit was also made available to finance the storage of ethanol during the off-season, from December to April, at a rate of 7.7%.	Despite the announcement, no investments have been confirmed. In 2013, the Chinese state-owned enterprise China National Heavy Machinery Corporation was studying the possibility of establishing a corn-based ethanol plant in Mato Grosso (AgroOlhar, 2013). In 2015, it was announced that the BBCA Group was going to invest in a corn and soy processing plant in Mato Grosso do Sul (Maracaju), with financing from the China Development Bank (CDB), but the project was not completed (Oliveira 2017).

2012	Extension of investment incentives of the Investment Support Programme (PSI) Provisional Measure nº. 495/2012	Manufacturing	The measure extended the BNDES PSI programme until 2013. The government committed to providing an additional US$85 billion in funding, bringing the amount allocated to financing expenses up to US$312 billion. The programme was also to support subsidized loans for purchases of machinery, equipment and other capital goods.	No information available.
2012	New tax cuts for the automotive industry Executive order nº. 7819/2012	Manufacturing	Implementation of the Inovar Auto programme, which aims to promote innovation in the automotive sector through research and development. The programme focuses on environmental technologies and offers incentives such as lower taxes on manufactured products. Eligible producers must apply to the Ministry of Industry, Development and Foreign Trade to obtain tax exemptions and other incentives, which are valid for 12 months and are renewable. Tax credits were granted based on a company's spending on research and development and technology and knowledge transfer to suppliers.	Yes. - Lifan Motors built a parts distribution centre in Salto, SP in 2013. - In 2014, Chery announced the inauguration of a factory in Jacareí, São Paulo and an assembly plant in Anápolis, Goiás (G1, 2014). - BYD Motors installed an electric bus factory in the city of Campinas in 2015 (BYD Servopa, 2023). Other investments in the automotive sector include: - a truck factory that Foton Aumark began building in 2013 (Reis, 2020); - a motorcycle assembly plant installed in the Port of Suape Industrial Complex by Chongqing Shineray (Automotive Business, 2015a); - China Automotive Systems began building an auto-parts factory in São Paulo in 2014 (Extra, 2014); - International acquisition of 26.2% of the Pirelli Group, which has factories in Santo André (SP), Campinas (SP), Feira de Santana (BA) and Gravataí (RS), by ChemChina (Munhoz, 2016); - Joint venture established by Metro-Shacman and Shaanxi Automobile Group to build trucks in Brazil (Automotive Business, 2015b).
2012	Privatization of three airports	Infrastructure	The government raised R$24.5 billion (US$14 billion) by auctioning off three licences to operate three of Brazil's busiest airports: the São Paulo-Guarulhos International Airport, the Viracopos airport in Campinas (São Paulo) and the Brasília airport.	No. - Invepar ACSA, the consortium led by Brazilian state enterprise employees' pension funds, and a South African airport operator won the right to operate the Guarulhos airport. - The consortium led by the São Paulo-based Engevix Engenharia construction company won the bid for the Brasília airport. - The consortium formed by Triunfo Participações and Investimentos (TPI) and French airport operator EGIS won the bid for the Viracopos airport.

2011	Tax exemption for regional car manufacturers Executive order nº. 5765/2011	Manufacturing	Faced with a 30% increase in the tax on industrialized products (IPI) imposed on passenger vehicles, the government waived the tax for companies that met local content requirements (65% of parts are from partners in MERCOSUL or Mexico, with which Brazil has an automobile trade agreement) and that invest at least 0.5% of profits after taxes in R&D in Brazil. Companies were given two months to adapt to the new legislation.	Yes. Several Chinese companies (listed above) entered the Brazilian automotive sector from 2013 on, after the 2012 tax exemption was granted.
2011	End of the tax on financial transactions for foreign investment in shares Executive order nº. 7632/2011	Financial	The government reduced to zero the tax on financial transactions for one of two forms of foreign investment: 1) the transfer of funds from abroad to be held in shares on the stock exchange or futures market, in accordance with the regulation of the National Monetary Council (CMN), except for derivative transactions that generate fixed income, and 2) the entry of funds to acquire (or subscribe to) shares in initial public offerings registered or exempt from registration with the Securities and Exchange Commission, provided that, in both cases, the issuing companies are registered to trade shares on stock exchanges.	No information available.
2011	Increase in the limit on foreign ownership of cable TV operators Law nº. 12485/2011	Telecommunications	The government passed a law that increases the limit on foreign ownership of cable TV operators to 49%. The law gives telecommunications operators the right to offer bundled packages that combine voice, broadband and TV services. The government hoped the law would increase competition in the local market. The law allowed Mexican company América Móvil to expand its operations in Brazil. It had already controlled 49% of voting shares and a 92% financial stake in the largest pay-TV operator in Brazil. According to the new law, América América Móvil could assume control of Net's voting shares.	No information available.

2011	First airport auction	Infrastructure	In August 2011, the government auctioned the rights to operate the first major airport to a private company. The growing demand for air travel in Brazil – which had expanded 23% the year before – put a strain on the country's airports. In the lead-up to major sporting events – the 2014 World Cup and the 2016 Olympics – President Dilma Rousseff agreed to hand over some airports to private companies in order to increase capacity.	Yes. The Chinese firm Hainan HNA Infrastructure, known as HNA, became the majority shareholder of the International Airport of Rio de Janeiro (Riogaleão) by acquiring 51% of private shares in the consortium – a position previously held by Odebrecht (CNT, 2017).
2011	Adoption of new rules for reinsurance Resolutions nº. 224/2010 and 225/2010	Financial	According to Resolution 224 issued by the National Private Insurance Council (CNSP), reinsurance companies authorized to operate in Brazil are prohibited from transferring business to an affiliated, intragroup reinsurer that is authorized to operate abroad. According to CNSP Resolution 225, 40% of any reinsurance coverage should be held together with local reinsurers, who can alter the terms and conditions without penalty. Prior to this resolution, local insurers had the right of first refusal, but now, they must assume the first 40% of coverage and can change a policy's terms.	No information available.
2010	Exploration and production of oil, natural gas and other liquid hydrocarbons, under the production sharing regime, in the pre-salt area and strategic areas; creation of the Fundo Social (Social Fund). Law nº 12.351 of December 2010	Oil	- The law makes it mandatory for companies interested in exploiting the pre-salt region to establish a consortium with the state-owned Petrobras. - Production-sharing model, which guarantees Petrobras a minimum share of 30% in the mandatory consortia for the exploration of the bidding blocks - Creation of the Pré-Sal Petróleo S/A company.	Yes. In 2012, a consortium formed by Chinese state-owned China National Petroleum Corporation (CNPC) and China National Offshore Oil Corporation (CNOOC) won the auction for the Libra pre-salt oilfield. In 2015, Brazil signed cooperation agreements between Brazil and China involving US$7 billion in financing for Petrobras projects. By April 2015, the Brazilian state enterprise had already received US$3.5 billion in financing from the China Development Bank (Malar, 2021).

2016	Opening up offshore oilfields to foreign investment Law n° 13365/2016	Oil	The new law revokes the obligation to give Petrobras a share in concessions for the exploration of pre-salt oilfields and replaces Law n° 12351/2010. Petrobras reserved the right to decide whether or not it wants to operate in the exploration of pre-salt oilfield blocks. The state enterprise has first say in the choice of blocks for which it wants to act as the operator, provided it has the approval of the National Council for Energy (CNPE) and is serving national interests.	Yes. CNOOC and CNODC paid R$6.81 billion for a 10% stake in the Búzios field in the pre-salt region of the Santos Basin, in consortium with Petrobras, which holds 90% of the area. The reserves are estimated at 10 billion barrels of oil and gas (Rosa, 2019). In 2021, the ANP auctioned the Sépia and Atapu fields, which was awarded to the consortium formed by French TotalEnergies, the Malaysian state enterprise Petronas and Qatar Petroleum Brasil. Petrobras exercised its preference right and joined the consortium. The Atapu field was awarded to the consortium formed by Petrobras, Shell and TotalEnergies (Exame, 2021). Other auctions won by Chinese companies were: - the Alto Cabo Frio Oeste oil field, in 2017, in partnership with the Chinese state enterprise CNOOC, QPI and Shell (Souza, 2017a) - the Peroba field won by CNODC in partnership with Petrobras and BP (CEBC, 2018). - the ES-M-592 Block in sector SES-AP2 in the Espírito Santo basin won by CNOOC (Souza, 2017b). - the REC-T-126 and REC-T-127 blocks in the Recôncavo Basin, in Bahia, won by a joint venture formed by the Chinese firm HLJW and the Brazilian company TEK Óleo e Gás (Frainha, 2017). - the Pau-Brasil block, in partnership with CNOOC, BP and Ecopetrol (Estado de Minas, 2018). - 20% of the Aram field by CNOOC in consortium with Petrobras, during the 6th bidding round held by ANP (Jornal do Brasil, 2019).

Table 5.

Public policies and legislation on foreign investment in Brazil during the Michel Temer administration (2016-2018)

YEAR	LEGISLATION OR PROGRAM	SECTOR	MAIN CHANGES	FACILITATED THE ENTRY OF CHINESE INVESTMENTS?
2018	Foreign ownership of airline companies Provisional measure n° 862/2018	Aviation	The measure allows foreign investors to acquire up to 100% of voting capital of companies in the Brazilian airline industry. In 2016, President Dilma Rousseff (2011-2016) had signed a provisional measure that raised the limit on foreign capital in airline companies to 49% (PM 714/2016) (Vasco, 2016).	Not identified. The Spanish group Globalia Linhas Aéreas, which controls Air Europa, obtained authorization to operate in the domestic market. In the international flight market, Norwegian from Europe, Sky Airline from Chile and Flybondi from Argentina set up operations in Brazil (CNT, 2019).
2017	Privatization of four airports Executive order n° 9180 of 24/10/2017	Infrastructure and air transport	The privatization programme initiated in the Dilma Rousseff government (2011-2016) granted concessions for six Brazilian airports to the private sector in three different bidding rounds. Private sector airports in Brazil handle 50% of domestic passenger air traffic and nearly 100% of international traffic (Alvarenga and Melo, 2017). The seventh round of bidding for the privatization of Brazilian airports has been recently held. In August 2022, the National Civil Aviation Agency (ANAC) auctioned concessions for 15 public airports.	Not identified. In 2017, German based Fraport AG, the French group Vinci AS and Zurich Airport made a joint offer of US$470 million to operate the airports of Porto Alegre, Fortaleza and Florianópolis (Leahy, 2017). In 2022, the auctions were held in three blocks. The concessions were awarded to the Spanish company Aena, the Sociam consortium and XP Asset.
2016	Simplification of the registration of foreign direct investment Resolution n°. 4533/2016	Various	The Central Bank of Brazil (BCB) authorized new rules that allow the Electronic Declaration Registry of Foreign Direct Investment (RDE-IED) to be filled out online. With the new RDE-IED registration system, financial and other institutions authorized by the BCB can include and alter proxies provided they are duly authorized by the recipient company; non-resident investors can go through their proxies to consult information on a registered investor. In the new system, a CNPJ (identification number with the national legal entities registry) will be used to identify recipient companies and foreign investors.	No information.

Table 6.

Public policies and legislation on foreign investment in Brazil during the Jair Bolsonaro administration (2019-2022)

Year	Legislation or program	Sector	Main changes	Facilitated the entry of Chinese investments?
2022	Exploration of offshore wind power generation Executive order nº 10946/2022	Energy	The executive order authorizes the exploration and production of energy from wind sources and establishes rules for assigning areas that can be explored by investors, either through government-authorized bidding procedures or by responding to investors' individual requests. It also defines a new application procedure and submission requirements and the institutional structure of the regulatory bodies responsible for issuing licences.	Not verified yet.
2022	Reduction of the Tax on Financial Transactions (IOF) Executive order 10997/2022	Financial	The executive order establishes that the Tax on Financial Transactions (IOF) would be gradually reduced. Previously, the rate of the IOF/Foreign Exchange (Forex) tax was defined according to the type of foreign exchange operation (Temóteo, 2022). The IOF/Forex rate charged on most operations was zero, with few exceptions. When the value of the BRL rose against the US$, the rate charged for certain transactions was slowly increased in an attempt to prevent the currency from appreciating. However, the BRL began depreciating over the years and the IOF/Forex remained high, generating revenues for the state (Temóteo, 2022).	No information available.
2021	Privatization of Eletrobras Law nº 14182/2021	Energy	The privatization plan establishes that new shares of Eletrobras are to be issued and sold on the market without the participation of the state. As a result, the federal government will lose its control over voting shares, and the proceeds of the sale will be transferred directly to the company's accounts. Denationalization will dilute the state's stake in the company to approximately 45%. However, the government will retain its *golden share*, which gives it veto power over specific decisions. The plan also stipulates that shareholders will be able to own more than 10% of voting shares, but will not be able to exercise voting power in excess of 10% of voting shares (Agência Senado, 2021).	Yes, potentially. Chinese companies are the biggest investors in the electricity sector in Brazil. Companies such as State Grid, China Three Gorges Corp., Power China and CGGC could be interested in participating in the privatization of Eletrobras. Other potential buyers are: the 3G fund, which already owns preferred shares in Eletrobras; Itaúsa, which owns Itaú Unibanco and Alpargatas; GIC, Singapore's sovereign wealth fund, and the Canadian pension fund CPPIB (Reuters, 2019b)

2021	Infra Week Focused on the privatization of infrastructure	Infrastructure	Investments totalling R$6.1 billion were raised for 22 airports, 1 railway concession and 5 port terminals.	No. - Airports: Brazilian company CCR won the bid for the airports in the southern and central block, which together totalled 15 airports, whereas French corporation Vinci won the bid for the 7 airports in the Northern block (Pereira, 2021). - Railway: The auction for the concession of the West-East Integration Railway (Fiol 1) was won by the Brazilian company Bahia Mineração S/A. - Ports: Santos Brasil Participações won the bid for three of the four terminals of the Port of Itaqui, Maranhão (Santos Brasil, 2021); Terminal Químico de Aratu obtained the concession for the fourth. Finally, CMPC Celulose Riograndense was granted the concession for the Port of Pelota terminal in Rio Grande do Sul (Irajá, Quintino and Purchio, 2021)
2019	Regulation of arbitration for lawsuits involving the public administration and private actors in infrastructure projects Executive order nº. 10025/2019	Infrastructure	The government and its bodies can now resort to arbitration to resolve disputes with infrastructure operators such as concessionaires, commissions, entities leasing public facilities, authorized entities or port operators. Before, these disputes used to be resolved through regular court proceedings (Dla Piper, 2019).	No information available. Specialized arbitration is expected to enhance legal security and the efficiency of the resolution of disputes between companies providing infrastructure services and government bodies, thus making the sector more attractive to foreign investors.
2019	Simplified the registration process for the financial sector Executive order 10029/2019	Financial	The measure facilitates the entry of foreigners into the National Financial System (SFN). The request for authorization to install branches of foreign financial institutions in the country no longer goes through the National Monetary Council and the Chief of Staff Office (Casa Civil). Now, the Central Bank (BCB) performs a technical analysis using a process similar to the one adopted for domestic investors that want to invest in the SFN (Reuters, 2019a). Once analysed, the President of the Republic delegates the task of authorizing foreign capital in financial institutions to the Central Bank.	No information available.

2019	Opening of the domestic airline sector to foreign capital Law nº. 13842/2019	Aviation	In keeping with earlier changes (Provisional Measure 862/2018 passed by the Temer administration and Provisional measure 714/2016, by the Rousseff administration), the new law allows foreign investors to acquire up to 100% of the voting shares of companies in the sector. Furthermore, the law eliminated the following rules: i) concessions or authorizations can only be granted to legal entities constituted under Brazilian law; ii) a minimum of 4/5 of a company's voting capital had to be owned by Brazilians, a limit that applied to subsequent increases in voting shares, and iii) all management positions had to be held by Brazilians only. Furthermore, documents related to the public air services concessions and authorizations, including any amendments thereto, no longer need to be pre-approved by aviation authorities.	Yes. From the time Provisional Measure 863/2018 was approved until President Bolsonaro sanctioned Law 13842, airline companies such as Air Europa, Norwegian, Flybondi, Virgin Atlantic and JetSmart showed interest in operating in Brazil (Melo, 2019). Two other regular airline companies also announced their intention to operate in Brazil: Air China and Gulf Air (Bouças, 2019).

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