BILATERAL INVESTMENT MAP BRAZIL/USA

Brazil-U.S. Business Council

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BILATERAL INVESTMENT MAP **BRAZIL/USA**

INDEX

INTRODUCTION **4**

EXECUTIVE SUMMARY **6**

1. UNITED STATES FOREIGN DIRECT INVESTMENT IN BRAZIL **8**

1.1. THE U.S. FOREIGN DIRECT INVESTMENT ABROAD 8

1.1.1. SECTORAL COMPOSITION OF US FDI WORLDWIDE AND IN BRAZIL 13

1.1.2. DATA FOR AMERICAN MULTINATIONAL ENTERPRISES ABROAD 15

1.2. ANNOUNCEMENTS OF GREENFIELD INVESTMENT FROM THE UNITED STATES IN BRAZIL 20

1.3. CASE STUDIES OF U.S. COMPANIES IN BRAZIL 30

2. BRAZILIAN FOREIGN DIRECT INVESTMENT IN THE UNITED STATES **32**

2.1. BRAZILIAN FOREIGN DIRECT INVESTMENT ABROAD 32

2.1.1. SECTORAL COMPOSITION OF GLOBAL AND BRAZILIAN FDI IN THE UNITED STATE 37

2.1.2. DATA ON FOREIGN MULTINATIONAL COMPANIES IN THE UNITED STATES 38

2.2. ANNOUNCEMENTS OF GREENFIELD INVESTMENT FROM BRAZIL IN THE UNITED STATES 42

2.3. CASE STUDIES OF BRAZILIAN COMPANIES IN THE UNITED STATES 51

INTRODUCTION

The launch of the **Brazil-U.S. Bilateral Investment Map** brings a new perspective for the expansion of relations between the two most significant economies in the Americas.

This is an original publication, developed by the Brazilian Trade and Investment Promotion Agency (Apex-Brasil), in partnership with the Brazil-U.S. Business Council and Amcham Brasil, with the objective of presenting updated data to be used as a tool in understanding the business environment of the two countries.

The Investment Map aims to promote investment flows between Brazil and the United States, which stimulates increased trade, job creation, transfer of skills and technologies, access to international market networks and the insertion of Brazil in Global Value Chains (GVC), in addition to spurring the increase of productivity, the improvement of domestic infrastructure, among other positive outcomes.

In this publication, investment flows between the two countries were studied for the period of 2008-2017, and the results in the following pages indicate a mature exchange, based on reciprocal interests between Brazil and the United States, in a variety of sectors, from labor intensive to those focused on the knowledge industry.

Apex-Brasil currently supports projects in 42 industries that recognize the U.S. market as a priority. In the area of investments, the United States is a prominent player in the promotion of activities conducted by the Agency, with emphasis on the following sectors: Agribusiness, Automotive, Renewable Energies, Health, R & D, Infrastructure, Oil and Gas, and Private Equity and Venture Capital.

Apex has been consolidating year after year its one-stop-business-shop position to serve global investors interested in opportunities offered in Brazil, having used extensive technical expertise to assist in the construction of this publication.

It is worth noting that, in recent years, Apex-Brasil, together with Brazilian industrial associations and other entities, has held numerous trade promotion and investment events in the United States, some of them together with the partners gathered for this publication.

The Brazil-U.S. Business Council of the U.S. Chamber of Commerce ("Council"), based in Washington D.C., is a long-term partner of Apex. The Council is the premier business advocacy organization for Brazilian and U.S. companies with interests in the economic relationship and in conducting business in both markets. The Council represents a variety of industries, including consumer goods, defense, energy, healthcare, logistics and tourism. The Council aims to advance and promote investment through free trade, free market and free enterprise.

BILATERAL INVESTMENT MAP **BRAZIL/USA**

Amcham Brazil is a centennial entity and it´s the biggest binational association in Latin America and the major Chamber of Commerce outside the United States. Over than 5,000 companies, with multiple sizes and representing multiple economic sectors are associated to Amcham that has its mission in the promotion of the competitiveness of the companies with business in Brazil and of a better business environment. Amcham also considers as its mission all the efforts in the strengthening of the relationship between Brazil and the United States with bigger commercial and investments flow. And for this goal, the MOU held with APEX is essential

For these reasons, this study is of significant value for an alignment of U.S. and Brazilian strategies and the optimization of opportunities, revealing an important focus of Apex on the bilateral relation. It is also an effective contribution to businesses and their decisions that may result in economic growth of both countries.

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EXECUTIVE SUMMARY

The Brazil-United States Bilateral Investment Map, a project of Apex-Brasil in partnership with AmCham Brasil and the Brazil-U.S. Business Council, highlights the important role that investment plays in this bilateral relationship through an analysis of investments over the past ten years. The map documents U.S. and Brazilian foreign direct investment flows and positions by sector, location, and the impact on jobs. It serves as a tool for policy makers to support the development of trade and investment strategies and provides a comprehensive overview designed to help guide economic agents.

Recently, Brazilian exports to the United States reached US$ 27.1 billion in 2017, up 16.5% over the previous year. That same year, the United States was the second main destination for Brazilian exports and the first considering only for exports of manufactured and semi-manufactured products. On the other hand, the United States was is the second main source of Brazilian imports, totaling US$ 25.1 billion in 2017. From the U.S. standpoint, Brazil was ranked 12th main among its exports destination markets, with 2.08% of the total, and was the 17th largest source of imports in 2017, with 1.20% of the total.

According to the United Nations Conference on Trade and Development (UNCTAD), the United States was the leading destination for global foreign direct investment (FDI) inflows in 2017, while Brazil was third, only behind China (including Hong Kong). In addition, the United States ranks first among sources of foreign direct investment in Brazil when measured by position, while Brazil is the sixteenth largest foreign investor in the United States.

In 2017, the U.S. FDI position in Brazil reached US$ 68.2 billion, equivalent to nearly 3.3% of Brazil's Gross Domestic Product (GDP). The ratio of U.S. FDI position to GDP in Brazil was almost twice of that in India and more than three times the amount received by Russia and China in 2017. U.S. FDI encompassed various sectors of the Brazilian economy, with the largest concentrations in finance and insurance, and mining. Furthermore, in 2015, U.S. affiliates employed 654,800 Brazilians, sold US$ 171.3 billion internally, and generated US$ 37.2 billion in value added to the Brazilian gross domestic product (GDP). From 2009-2015, U.S. affiliates assets in Brazil increased by 29.8% while sales increased by 20.6%. In 2015 alone, U.S. affiliates in Brazil exported abroad US$8.5 billion.

Based on a review of U.S. greenfield investment announcements during 2008-2017, Brazil ranked 10th among the top destinations. For U.S. investors, the state of São Paulo was the preferred destination of greenfield investment, most notably in the automotive OEM, communications, financial services, and alternative/renewable energy sectors. New York was the state of origin with the highest value of greenfield investment in Brazil during the 2008-2017 period.

Brazilian FDI position in the United States grew 356% between 2008 and 2017, reaching US$ 42.8 billion in 2017 compared to US$ 9.3 billion in 2008. These investments comprised several sectors, such as metals, wholesale trade and depository institutions. In 2015, Brazilian affiliates employed 74,200 people in the United States. From 2009 and 2015, Brazilian companies in the United States sold significantly more domestically and generated more value added in the United States compared to other economies like India, China, Russia, and Mexico. Brazil was the second nation, among those analyzed, that generated the most employment, only behind Mexico. In 2015, Brazilian companies held US$ 102.2 billion in assets in the United States, double the amount from 2009. The value sold domestically and the value added by Brazilian subsidiaries to the U.S. gross product in 2015 were US$ 48.3 billion and US$ 7.9 billion, respectively.

Brazilian greenfield investment in the United States is concentrated in the manufacturing activity, with 64% of the total value of announcements of the 2008-2017 period. Within the United States, Texas was the leading destination for Brazilian greenfield investment, especially in the plastics, chemicals and textiles sectors. São Paulo was the state of origin with the highest value of greenfield investment in the United States during the 2008-2017 period.

In conclusion, bilateral investment benefits both Brazil and the United States and helps drive economic growth and job creation in both countries. Our goal is that the Brazil – U.S. Bilateral Investment Map serves as a tool for strengthening the bilateral relationship, in particular, as the two governments explore opportunities to bolster economic ties through trade and investment agreements.

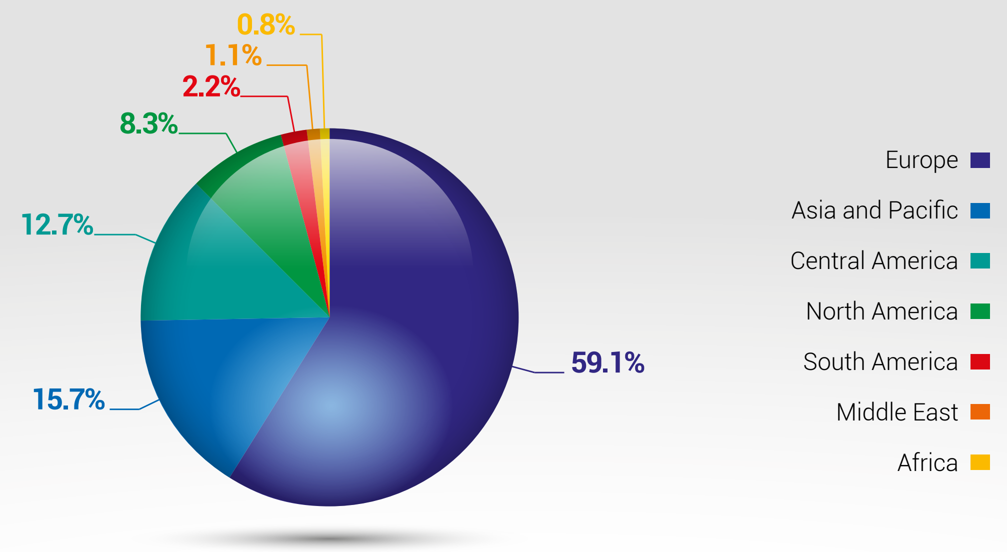
1. UNITED STATES FOREIGN DIRECT INVESTMENT IN BRAZIL

1.1. The U.S. foreign direct investment abroad[1]

According to the Bureau of Economic Analysis[2] (BEA), the U.S. foreign direct investment position abroad was more than US$ 6 trillion in 2017. Between 2008 and 2017, this position grew by US$ 2.78 trillion, representing an increase of 86%. Comparing to United Nations Conference on Trade and Development (UNCTAD) data, the change of U.S. outward FDI position was slightly less than global outward foreign direct investment position, which grew by 92% during the same period, with global FDI position reaching US$ 30.8 trillion in 2017.

The geographical distribution of the U.S. outward FDI position in 2017 is presented in Figure 1, which shows the U.S. FDI position by region as a percentage of the total.

FIGURE 1 – The U.S. FDI Position abroad in 2017, by region (%)



Source: BEA (2018)

[1] Foreign investment can occur in the form of foreign direct investment (FDI) or portfolio investment. According to definition of the OECD (Organization for Economic Cooperation and Development), FDI is characterized by lasting interest of investors in the country of destination, that is, when they hold 10% or more of the common stock or voting power in a company. In addition, values of less than 10% are considered Portfolio Investment.

[2] The BEA is an agency of the Government of the United States that provides the main official economic statistics of the country. All data presented in this study were collected during the month of August 2018, so they can undergo revisions/updates after this period.

BILATERAL INVESTMENT MAP **BRAZIL/USA**

There is a major concentration in Europe, where 59% of the U.S. FDI position is invested. In addition, Central America has a relatively high concentration, which is due to countries in this sub region that are known as offshore financial centers, with an FDI position that is incompatible with the size of their economies. With regard to the relatively low concentration of U.S. FDI in Latin America, it is worth noting that Brazil represents approximately 50% of the U.S. FDI position in South America.

Table 1 presents the top 20 destinations for U.S. FDI position in 2017 based on share of the global total of U.S. FDI position. The table also shows the total change in the U.S. FDI position between 2008 and 2017 and the average annual growth rate for two separate periods, 2008-2012 and 2013-2017.

TABLE 1 - Main destinations of the U.S. FDI position abroad (2008-2017)

Rank	Countries	Position (US$ Millions)		Share		Change	Average Anual Growth	
2017		2008	2017	2008	2017	2008-2017	2008-2012	2013-2017
1º	Netherlands	423,059	936,728	13.1%	15.6%	121.4%	↑ 11.2%	↓ 6.0%
2º	United Kingdom	448,412	747,571	13.9%	12.4%	66.7%	↓ 4.6%	↑ 8.6%
3º	Luxemburg	172,251	676,418	5.3%	11.2%	292.7%	↑ 24.1%	↑ 10.1%
4º	Ireland	150,131	446,383	4.6%	7.4%	197.3%	↑ 9.1%	↑ 19.3%
5º	Canada	246,483	391,208	7.6%	6.5%	58.7%	↑ 10.4%	↓ 1.4%
6º	Bermuda	207,547	346,804	6.4%	5.8%	67.1%	↓ 7.7%	↑ 7.8%
7º	United Kingdom Islands*	134,298	331,391	4.2%	5.5%	146.8%	↑ 13.0%	↑ 11.0%
8º	Singapore	83,169	274,260	2.6%	4.6%	229.8%	↑ 15.0%	↑ 10.8%
9º	Switzerland	133,222	249,968	4.1%	4.2%	87.6%	↓ -2.1%	↑ 18.1%
10º	Australia	92,668	168,855	2.9%	2.8%	82.2%	↑ 15.5%	↓ 0.1%
11º	Germany	107,833	136,128	3.3%	2.3%	26.2%	↓ 2.9%	↓ 5.1%
12º	Japan	99,803	129,064	3.1%	2.1%	29.3%	↓ 5.8%	↓ 2.4%
13º	Mexico	87,443	109,671	2.7%	1.8%	25.4%	↓ 4.5%	↓ 6.1%
14º	Chin	53,927	107,556	1.7%	1.8%	99.4%	↓ 0.3%	↑ 15.5%
15º	France	84,409	85,572	2.6%	1.4%	1.4%	↓ -2.9%	↓ 2.1%
16º	Hong Kong	40,042	81,234	1.2%	1.4%	102.9%	↑ 8.8%	↑ 9.4%
17º	**Brazil**	**43,953**	**68,272**	**1.4%**	**1.1%**	**55.3%**	↑ **15.0%**	↓ **-0.5%**
18º	Belgium	65,279	54,954	2.0%	0.9%	-15.8%	↓ -6.9%	↓ 1.4%
19º	India	18,354	44,458	0.6%	0.7%	142.2%	↑ 8.5%	↑ 15.7%
20º	Korea. Republic of	22,426	41,602	0.7%	0.7%	85.5%	↑ 9.5%	↓ 6.7%
	Total (20 countries)	**2,714,709**	**5,428,097**	**84.0%**	**90.3%**	**100.0%**	**8.9%**	**8.1%**
	Total Abroad	**3,232,493**	**6,013,335**	**100.0%**	**100.0%**	**86.0%**	**8.1%**	**7.0%**

Source: BEA (2018)
Notes: * United Kingdom Islands in the Caribbean.
The up arrows (green) indicate that the average annual growth rate of the country is higher than the average of total growth. that is. it shows if the country of destination of American FDI was more dynamic than the FDI of the United States in the world. which would. consequently. result in gains in share. On the other hand. the down arrows (red) indicate that the average annual growth rate of the country is lower than the average annual growth rate for all countries. therefore. it suggests that these countries lost share in the period considered.

The 20 countries listed in Table 1 represented more than 90% of the U.S. FDI position worldwide in 2017, while comprising 84% of the total in 2008. Thus, a concentration of the U.S. FDI in these countries can be observed during the 10 years analyzed (2008-2017). It should be noted that this ranking features several countries that are generally considered to be offshore financial centers, including Luxembourg, Bermuda, United Kingdom Islands in the Caribbean, and Switzerland, which together represented more than 26.7% of the total of U.S. outward FDI position in 2017.

Between 2008 and 2017 the five countries that underwent the greatest growth in U.S. FDI were Luxembourg (292.7%), Singapore (229.8%), Ireland (197.3%), the United Kingdom Islands in the Caribbean (146.8%), and India (142.2%). On the other hand, considering the same variable and the same period, the five lowest changes observed were: Belgium (-15.8%), France (1.4%), Mexico (25.4%), Germany (26.2%), and Japan (29.3%).

Given the potential for investment trends to be reversed during the 10 year period, it is also useful to calculate average annual growth rates for shorter periods of time. In this case, it should be noted that there was a slight slowdown in American investment in the world since 2013, since the average annual growth rate in the period 2013-2017 was 1.1 percentage point lower than the rate in 2008-2012, when it reached 8.1%. The countries that presented the highest average annual growth rates in the period from 2008 to 2012, disregarding financial centers, were Australia, Brazil, and Singapore with, respectively, 15.5%, 15%, and 15%. On the other hand, between 2013 and 2017, the three most dynamic countries were Ireland, India, and China, with 19.3%, 15.7% and, 15.5%, respectively.

In 2008, the U.S. FDI position in Brazil reached US$ 43.9 billion. During the period from 2008-2017 U.S. FDI in Brazil grew by 55.3% to US$ 68.2 billion[3]. Despite this growth, the Brazilian share of total U.S. FDI in the world fell from 1.4% in 2008 to 1.1% in 2017. However, in the period between 2008 and 2012, this position showed an average annual growth rate of 15%, quite higher than that observed for the total U.S. FDI abroad. Indeed, Brazilian economic growth and the rise in international commodities prices benefited FDI inflows during this period.

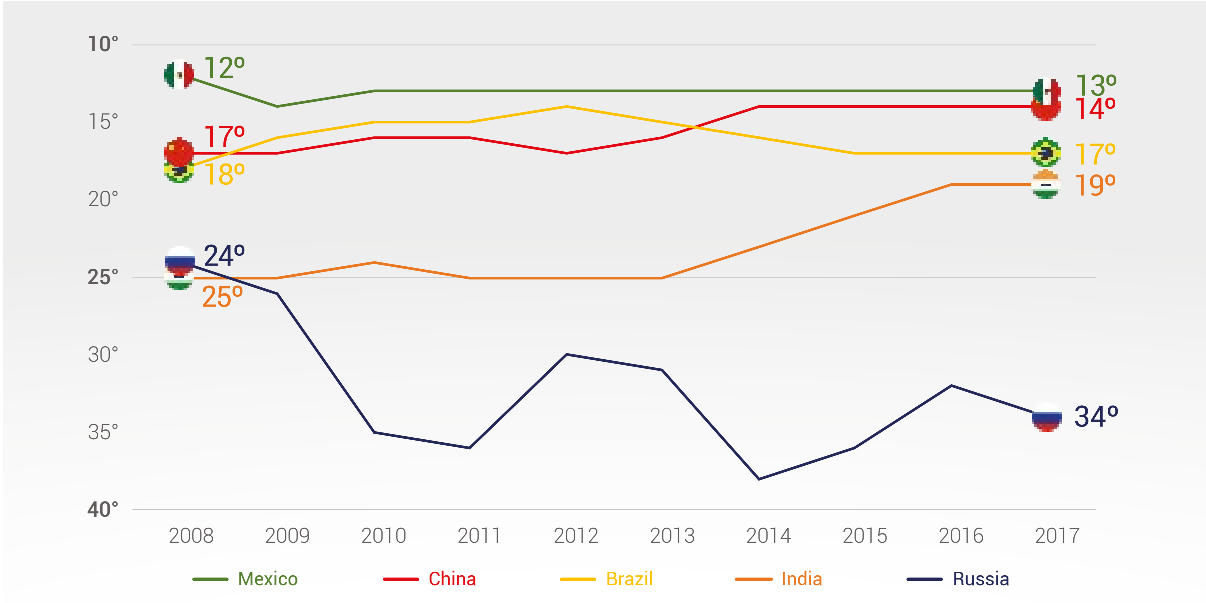
Between 2013 and 2017, the U.S. FDI position in Brazil declined at an average annual rate of -0.5%. This slowdown was not unexpected, given the severe economic and political crises the country faced during this period. After the impeachment of President Dilma Rousseff and with the Brazilian economy recovering from recession, the U.S. direct investment position in the country grew once again, from US$ 56.8 billion in 2015 to 68.2 billion in 2017.

[3] Data released by the Central Bank of Brazil state that Americans held a FDI position of US$ 122.9 billion, that is, a different value from that informed by the BEA. This difference can be explained, among other things, by the fact that the Brazil Central Bank statistics consider the ultimate investing country, not to mention that the institutions may be using different methodologies for measuring FDI position.

BILATERAL INVESTMENT MAP **BRAZIL/USA**

In addition to this comparison of the top destinations for U.S. FDI, it is useful to compare Brazil's performance with other emerging economies, specifically, Mexico, China, India, and Russia. To that end, Figure 2 demonstrates how these economies have evolved in the ranking of main destinations of American direct investment in the world during the period 2008-2017.

FIGURE 2 - Evolution in the ranking of main destinations of the U.S. FDI position



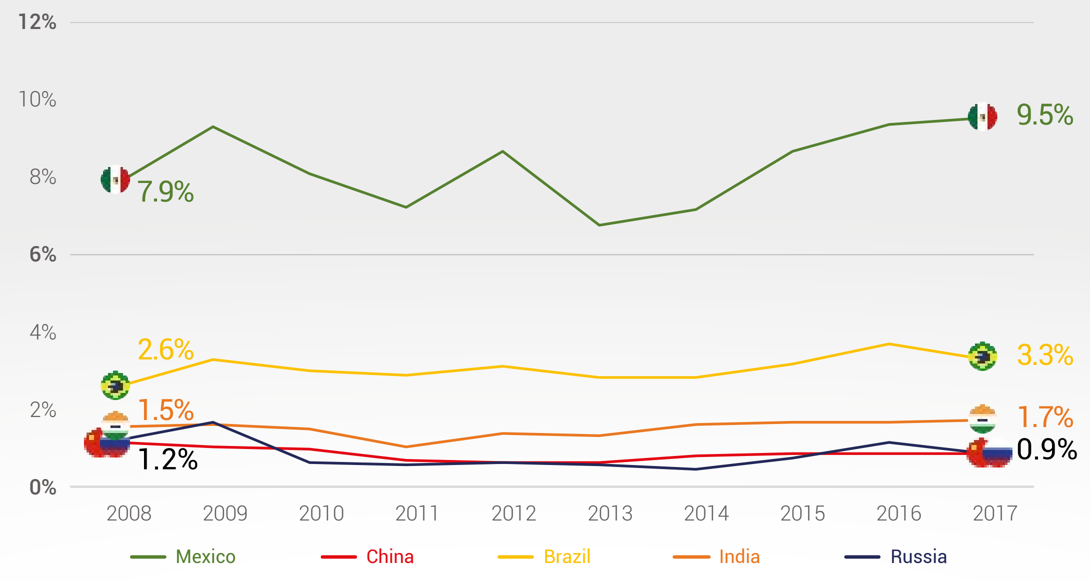
Source: BEA (2018)

Mexico holds a nearly stable position in this ranking, ranging from the 12th position in 2008 to the 13th in 2017. During the same period, China, Brazil, and India climbed positions, from the 17th, 18th, and 25th places respectively in the ranking in 2008 and to 14th, 17th, and 19th respectively in 2017. Of these countries, India was the emerging country that experienced the highest climb in the ranking. On the other hand, Russia plummeted in the ranking, dropping from 24th in 2008 to 34th in 2017.

In addition to considering the absolute value of the U.S. FDI position, it is also useful to examine the U.S. FDI position in these economies as a percentage of their GDP, as shown in Figure 3. The U.S. FDI position in Mexico represented 9.5% of its GDP in 2017, up from 7.9% in 2008 and the highest of the five countries compared in this sample. This result is not surprising due to Mexico's close geographic proximity to the United States and long history of trade relations, as evidenced by the North American Free Trade Agreement (NAFTA)[4]. Brazil has the second highest ratio of U.S. FDI position to GDP among these five countries. In 2008, U.S. FDI position represented 2.6% of Brazil's GDP, while in 2017, this value increased to 3.3%. In 2017, the U.S. FDI position in Brazil as a percentage of GDP was almost twice that of India and more than three times that of Russia and China.

[4] As of November 2018, NAFTA was replaced by the United States-Mexico-Canada Agreement (USMCA).

Figure 3 - Evolution of the U.S. FDI position in emerging economies (% GDP)



Source: BEA (2018)

Another way of analyzing FDI is in terms of flows, and not by position[5]. Figure 4 illustrates the evolution of U.S. direct investment flows in the selected economies. First, an underlying characteristic of this variable emerges: its volatility. In this respect, the lowest volatility of U.S. investment flows, in the period from 2008-2017, occurred in India, while the highest occurred in China. The U.S. investment flow to Brazil, in 2008, totaled US$ 3.8 billion, while in 2017 it was US$ 2.5 billion. However, the peak and valley of this time series were, respectively, in 2011 and 2015, and, in these years U.S. FDI flows reached, respectively, US$ 9.9 billion and US$ 448 million.

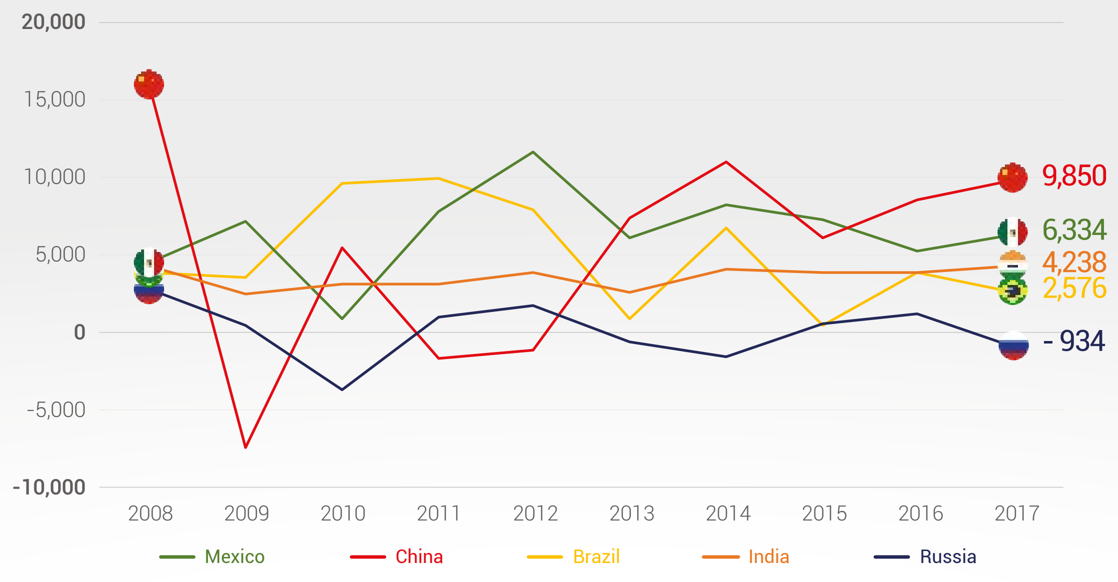
To mitigate this volatility in the analyses, these flows can be evaluated on average terms. Among the selected countries, the one that had the largest average flow of American investment between 2008 and 2017 was Mexico, with an average flow of US$ 6.5 billion. Considering these same criteria, China, Brazil, India, and Russia[6] received an average flow of Direct Investment from the United States of US$ 5.3 billion, US$ 4.9 billion, US$ 3.5 billion and US$ 54 million, respectively.

[5] The FDI position (or stock) to subsidiary companies consists of the value of share of capital and reserves attributable to the parent company (that is, to its assets minus its total liabilities), plus the net indebtedness of the subsidiary to the parent company. For branch offices, it refers to the value of current and noncurrent assets, excluding amounts due from the parent company, minus the obligations to third parties. On the other hand, FDI flow to subsidiary companies consists of net sales of shares and loans (including non-cash acquisitions made against equipment, manufacturing rights, etc.) to the parent company, plus the parent company's share of the subsidiary's reinvested earnings. For branches, this value considers the increase in reinvested earnings plus the net increase in funds received by the parent company.

[6] It is possible that the low value of U.S. FDI in Russia can be explained by the U.S.-imposed sanctions, which began in 2014. Furthermore, the U.S. sanction regimes against Russia have increased in complexity and scope with the promulgation of the 2017 Eurasian Law and the fight against Russian influence in Europe. Specifically, the sanctions against Russia may include blocking Russian assets in the United States; prohibiting American involvement in transactions related to those assets; embargo on certain transactions and a ban on entry into the United States. Source: Bloomberg (2018) and Congressional Research Service - IF10779 (2018): Available, respectively, at: <https://www.bloomberg.com/news/articles/2018-07-11/all-about-the-u-s-sanctions-aimed-at-putin-s-russia-quicktake> and <www.crs.gov>.

BILATERAL INVESTMENT MAP BRAZIL/USA

Figure 4 - U.S. FDI outflows in selected emerging economies (US$ million)



Source: BEA (2018)

1.1.1. Sectoral Composition of US FDI Worldwide and in Brazil

Figure 5 represents U.S. FDI position abroad by sector as a percentage of total FDI. In 2017, the U.S. FDI position by sector[7] was focused on "Holdings"[8] and in "Finance and insurance"[9], which represented 49.8% and 13.7% of total, respectively[10]. The other three leading sectors were "Other industries" (7.3%), "Wholesale trade" (4.2%), and "Other manufacturing"[11] (4.0%). Together, these five sectors received 79% of the total of U.S. FDI position in the world in 2017.

[7] The BEA classifies statistics for U.S. direct investment abroad into 17 sectors, namely: "Mining", "Utilities", "Food", "Chemicals", "Metals", "Machinery", "Electronic Products", "Electrical Equipment", "Transportation equipment", "Other Manufacturing", "Wholesale Trade", "Information", "Depository Institutions", "Finance and Insurance", "Professional Services", "Holding companies", and "Other Industries".

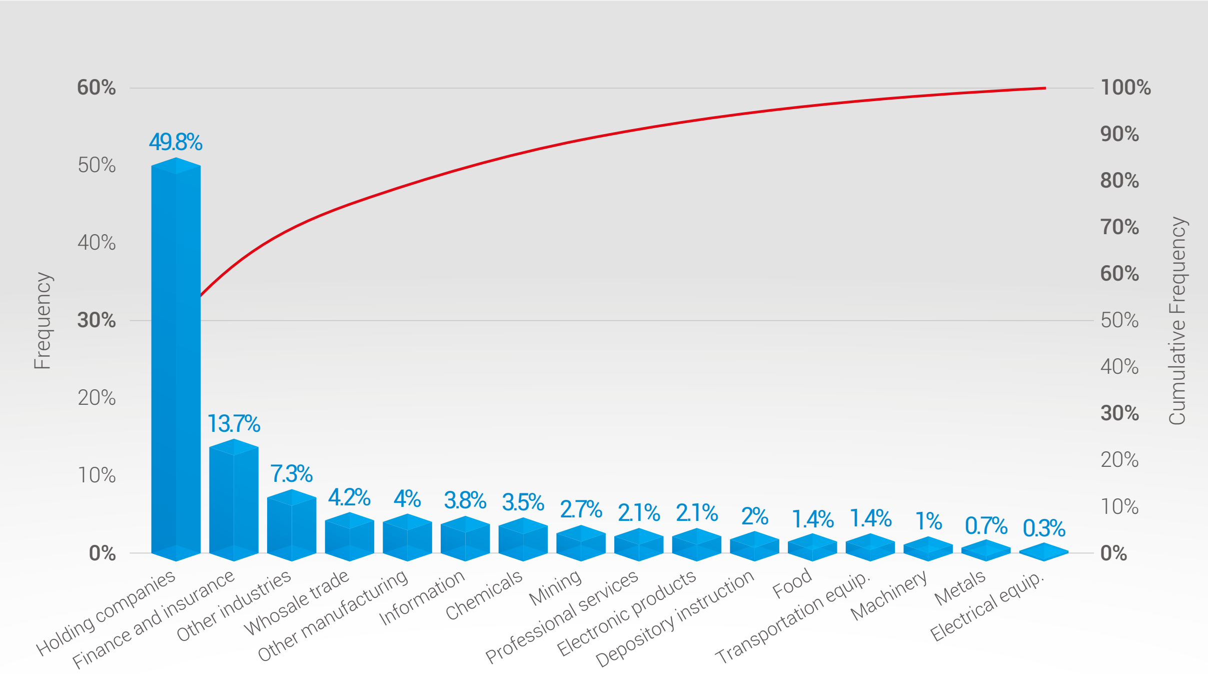
[8] Holding is a holding company incorporated in order to manage a group of companies. A Holding Company owns most of the shares or units of companies of a particular group. This form of business is widely used by medium and large enterprises and, usually, aims to improve capital structure, in addition to being used as part of strategic partnerships between companies.

[9] Neither "Holdings" nor "Finance and insurance" include the banking sector. The BEA defines the banking sector as "Depository institutions".

[10] Figure 5 is known as Pareto chart and is similar to a histogram. Specifically, this is a column chart ordering frequencies in decreasing order (in the primary axis), in addition to presenting a line with the cumulative frequency (on the secondary axis).

[11] According to the BEA, "other manufacturing" comprises all other manufactures that were not classified under "Food", "Chemicals", "Metals", "Machinery", "Electronic Products", "Electrical Equipment", and "Transport Equipment".

Figure 5 - U.S. FDI position abroad by sectors in 2017 (% of total FDI position)



Source: BEA (2018)
Note: The red line shows the percentage of cumulative frequency.

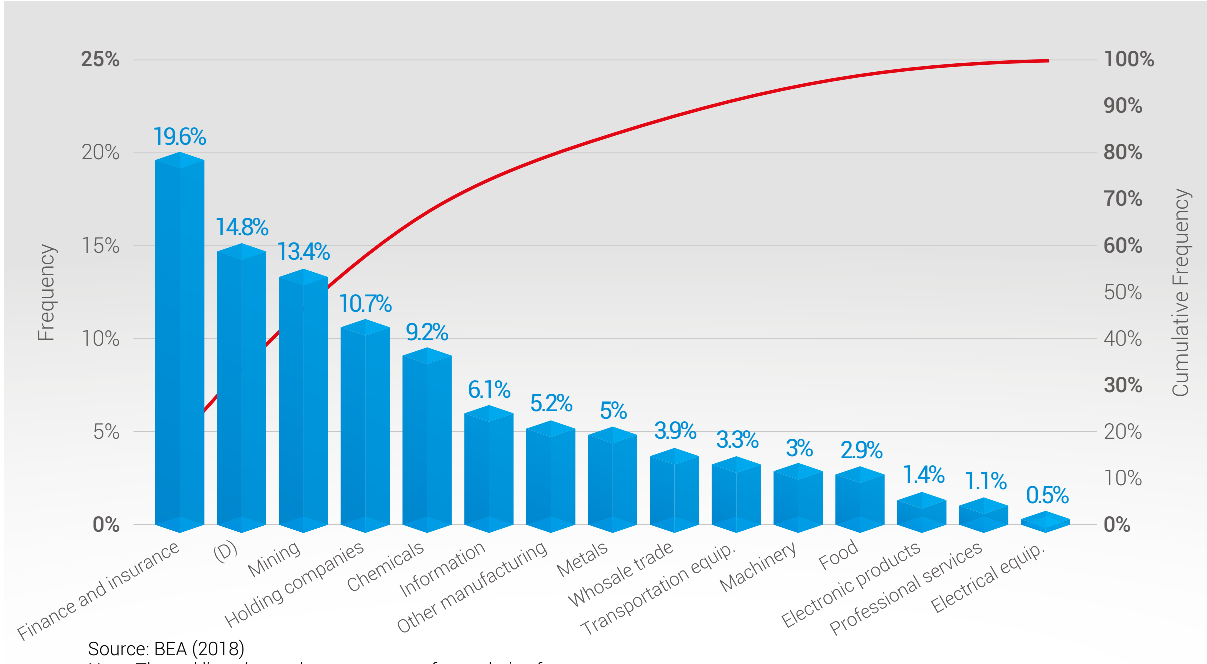
Figure 6 evaluates U.S. direct investment by sector in Brazil in 2017. A comparison of the data in Figures 5 and 6 illustrates the differences in the sectoral composition of U.S. FDI globally and in Brazil. For example, the top five sectors with the highest percentages of U.S. FDI position in Brazil amounted to 67.7%, compared to 79% for the top five sectors globally.

In Brazil, the "Finance and insurance" sector attracted the highest percentage of U.S. FDI in 2017, with 19.6% of the total, while this sector represented 13.7% of total U.S. FDI position worldwide. The other sector that was in the top five for both Brazil and globally was "Holdings", which represented 10.7% of the total U.S. FDI position in Brazil; much lower than the global share of 49.8%. "Mining" and "Chemicals" also represented a relatively greater share of U.S. FDI in Brazil than in the world[12].

[12] Existing economic theories of the determinants of FDI consider the acquisition of natural resources, the pursuit of efficiency (strategy for verticalization of multinationals and insertion in global value chains), the search for markets (horizontal strategy to open new markets), and political aspects. Accordingly, empirical studies on determinants of FDI use models whose explanatory variables include the availability of natural resources, cost of labor, quality of labor, production costs, infrastructure (efficiency and quality), size and growth of the economy, the preferential access to markets, per capita income, consumer preferences, degree of trade liberalization, trade policy issues, taxes, inflation, exchange rate, among others.

BILATERAL INVESTMENT MAP BRAZIL/USA

Figure 6 - U.S. FDI position in Brazil by sectors in 2017 (% of total FDI position)



Source: BEA (2018)
Note: The red line shows the percentage of cumulative frequency.
(D) refers to data that are not available due to confidentiality restrictions. Possibly, this 14.8% of the total of U.S. FDI position in Brazil refer to other industries and depository institutions.

1.1.2 Data for American multinational enterprises abroad[13]

Table 2 presents performance indicators of U.S. subsidiaries abroad in terms of asset value, sales, value added to the GDP, and number of employees. In addition, the table includes the performance of the U.S. companies in the world to serve as a benchmark. U.S. affiliates abroad held assets totaling US$ 24.9 trillion in 2015 and employed 14.1 million people outside the United States.

In Brazil, U.S. multinational companies held a total asset value of US$ 268.3 billion in 2015. Between 2009 and 2015, these assets increased by 29.8%, equal to an average annual growth rate of 4.4%. This growth was reflected in the number of employees, with U.S. companies generating 131,900 new jobs in Brazil from 2009 to 2015. During the same period, domestic sales of U.S. companies in Brazil grew by 20.6%, reaching US$ 171.3 billion in 2015, despite a decrease in value added from 2009 to 2015.

[13] Previous FDI statistics are closely related with the statistics of American multinational companies abroad (Activity of Multinational Enterprises - AMNE), also provided by the BEA, and are, therefore, complementary. However, the difference is that FDI statistics cover relations of control (>50% ownership) and influence (10-50% ownership), while AMNE statistics cover only relations of control. In addition, another difference is in the classification by country, since FDI statistics are classified according to the country of immediate investment, while AMNE statistics consider the ultimate investing country.

Table 2 - Performance Indicators of American affiliates in Emerging Economies (US$ million or number of jobs)

Countries	Variables	Value 2009	Value 2015	Change 2009-2015	Average Annual Growth 2009-2015
Brazil	Assets	206,617	268,260	29.8%	4.4%
	Sales	142,023	171,321	20.6%	3.2%
	Value Added	37,427	37,270	-0.4%	-0.1%
	Employment	522,400	654,300	25.2%	3.8%
China	Assets	190,914	391,464	105.0%	12.7%
	Sales	143,702	357,372	148.7%	16.4%
	Value Added	30,442	66,366	118.0%	13.9%
	Employment	941,000	1,713,700	82.1%	10.5%
India	Assets	81,193	130,679	60.9%	8.3%
	Sales	42,011	79,153	88.4%	11.1%
	Value Added	14,575	26,898	84.5%	10.8%
	Employment	518,000	1,138,700	119.8%	14.0%
Mexico	Assets	296,904	438,590	47.7%	6.7%
	Sales	167,483	240,907	43.8%	6.2%
	Value Added	30,990	45,720	47.5%	6.7%
	Employment	969,100	1,374,300	41.8%	6.0%
Russia	Assets	42,665	58,874	38.0%	5.5%
	Sales	28,012	41,215	47.1%	6.6%
	Value Added	7,373	9,513	29.0%	4.3%
	Employment	106,100	172,400	62.5%	8.4%
World	**Assets**	**11,491,424**	**13,174,008**	**14.6%**	**4.8%**
	Sales	**2,917,599**	**3,996,503**	**37.0%**	**3.7%**
	Value Added	**592,485**	**894,533**	**51.0%**	**2.9%**
	Employment	**5,290,300**	**6,820,700**	**28.9%**	**4.5%**

Source: BEA (2018)

In 2015, among the countries analyzed, U.S. companies allocated a larger portion of their assets in Mexico, followed by China, Brazil, and India, reaching US$ 438.6 billion, US$ 391.5 billion, US$ 268.3 billion, and US$ 130.7 billion, respectively. However, in terms of the variation between 2009 and 2015, China was the country which most benefited, with a growth of U.S. assets in the Chinese territory of 105% over the period. Also, U.S. companies generated more value added to the Chinese product, China being also the market that they sell more domestically.

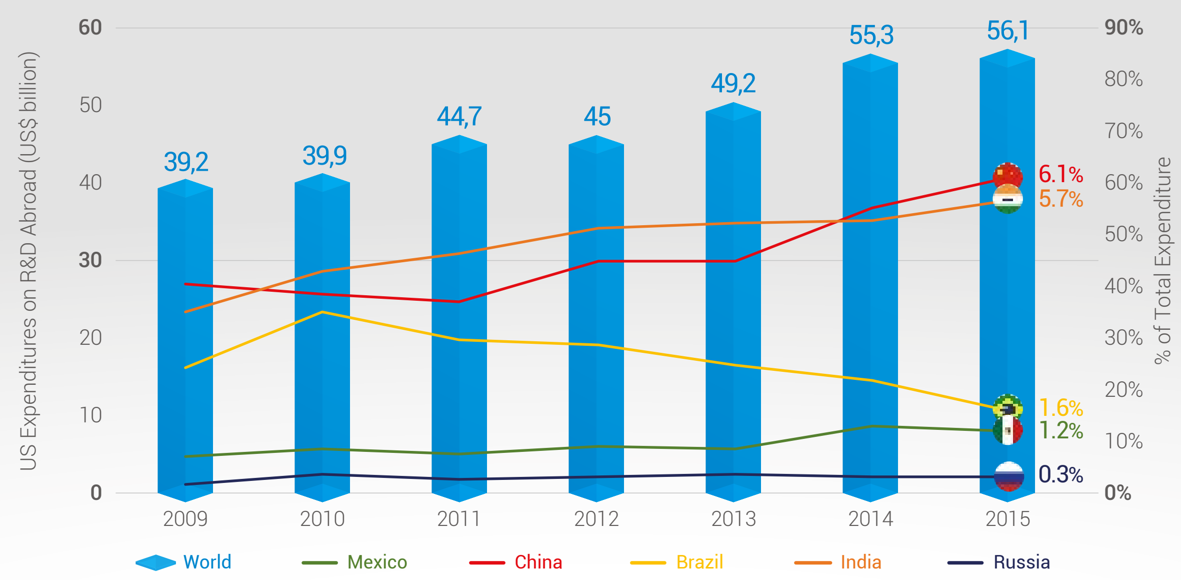
On the other hand, in proportion to the number of assets in these destinations, Americans generated more jobs in India, with a total of 1.1 million Indian employees in 2015. This can be possibly explained by the sectors covered by U.S. investments in India, which focused on labor-intensive activities, namely "Information" and "Professional Services".

The value of U.S. FDI in R&D is another very important point to be considered, especially for developing

economies, given the positive externalities that R&D expenditures can provide to local economies. In this regard, Figure 7 demonstrates the evolution of U.S. companies' R&D expenditures in the world and in selected countries. U.S. affiliates' R&D expenditures abroad reached US$ 39.2 billion in 2009 and increased to US$ 56.1 billion in 2015, an increase of approximately 43% over the period.

Between 2009 and 2015, American multinationals more than doubled the expenditures on R&D in China and India, reaching, respectively, 6.1% and 5.7% of U.S. total R&D spending abroad in 2015. Brazil was ahead of Mexico and Russia, receiving 1.6% of U.S. R&D spending in the world in 2015, equivalent to US$ 884 million. In Brazil, U.S. R&D spending increased from 2009 to 2010, only to decline each year through 2015. The opposite trend is observed in Mexico, which experienced steady growth in annual R&D expenditures from 2011-2014, with a slight decline from 2014 to 2015. In Russia, R&D spending remained at a very low level between 2009 and 2015, reaching a peak of US$ 213 million in in 2014.

Figure 7 - Expenditures on R&D of US FDI in the world and in selected countries



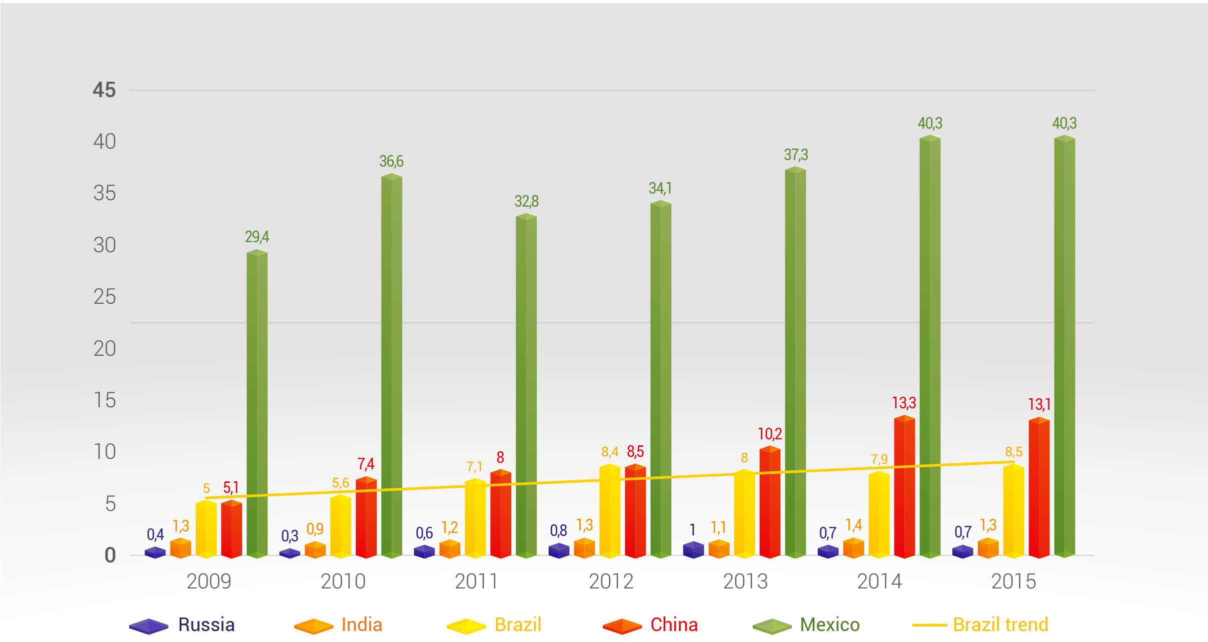
Source: BEA (2018)

In addition to the variables already presented, BEA provides the value of exports and imports of goods by American subsidiaries abroad, which are presented in Figures 8 and 9. It is worth noting that bilateral trade between Mexico and the United States was much greater than that observed in the other nations analyzed, primarily due to geographical proximity and the NAFTA.

U.S. affiliates in Brazil, Mexico, and China significantly increased their exports between 2009 and 2015. Taking this into consideration and the growth in the U.S. FDI position, there is evidence that U.S.

FDI is complementary to exports in Brazil, Mexico, and China[14]. Moreover, this may indicate that U.S. multinationals abroad are more closely integrated into Global Value Chains (GVC) in these markets, compared to India and Russia.[15]

Figure 8 - Exports of American affiliates in emerging markets (US$ billion)



Source: BEA (2018)

In more concrete terms, in 2015 U.S. affiliates in Mexico, China, and Brazil exported approximately US$ 40.3 billion, US$ 13.1 billion and US$ 8.5 billion, respectively. Among these three nations, the largest growth occurred in China, with an increase of 158.1% from 2009 to 2015. This is in contrast to India, where the value of goods exports by U.S. multinationals remained practically stable in 2009 and 2015 since these exports reached approximately US$ 1.3 billion.

Imports of U.S. subsidiaries abroad between 2009 and 2015 increased in India, Mexico, and China, by 316.1%, 86.7%, and 56.9%, respectively. In Brazil, this strong trend was not observed, despite growth in some years of the period under analysis. Thus, there is evidence that U.S. FDI is complementary to imports in India, China, and Mexico, however, it appears to be a substitute in Brazil. In terms of value, in 2015 U.S. affiliates in Mexico, China, Brazil, and India imported, respectively, US$ 65.2 billion, US$ 10.8 billion, US$ 3.0 billion, and US$ 2.2 billion in goods. It is

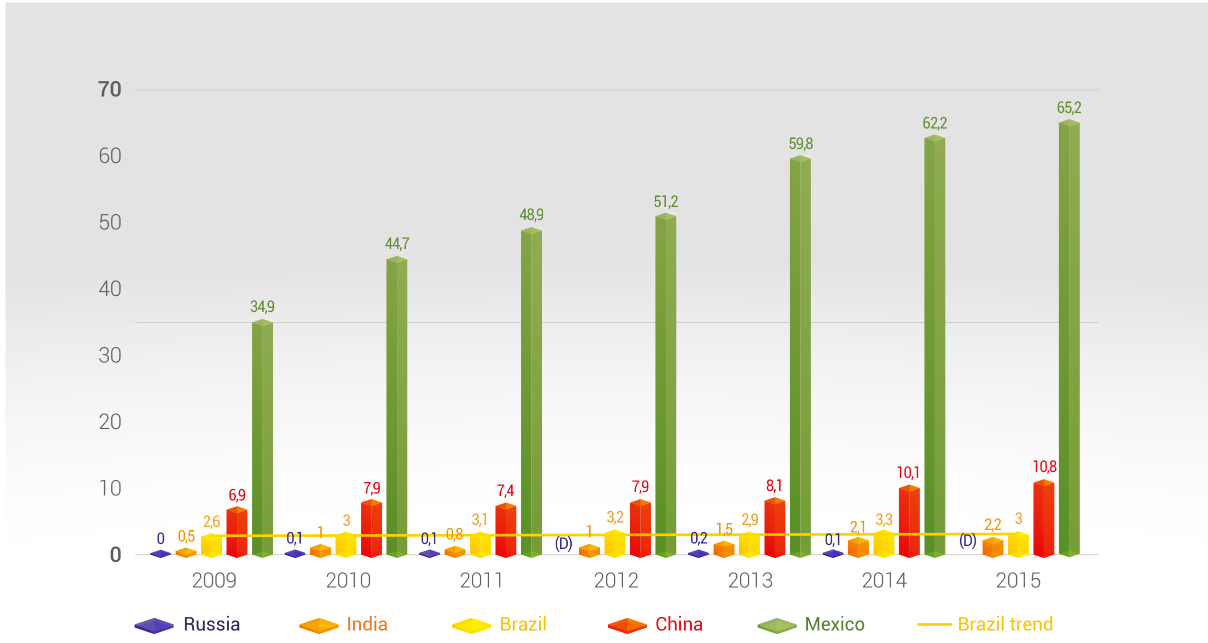
[14] There is extensive literature on economics that discusses if FDI is a substitute or complement to exports and imports. However, more specific inferences require the estimation of econometric models that enable more robust conclusions. Therefore, this work suggests only that there is evidence of complementarity or substitution between FDI and exports and imports. [See FIORENTIN, G. P.; AZEVEDO, A. F. Z.; REIS, M. A Relação entre Investimento Estrangeiro Direto e Comércio Internacional no Brasil entre 2001 e 2012. Pesquisa e Planejamento Econômico, Rio de Janeiro, v. 48, p. 7-36, 2018]

[15] Once again, this is only an indication, since more robust conclusions require using international trade data by value added in computable general equilibrium models, indicators or using input-output matrices.

worth noting that these values are much higher than the value imported by U.S. subsidiaries in Russia, which imported US$ 18 million in 2009 and US$ 62 million in 2014.

In addition, in 2014, the ratio between the exports and imports of U.S. multinationals abroad is greater than one (>1) in Brazil, China, and Russia[16], while in Mexico and India it is less than one (<1). It should be noted that if this ratio is positive, then the contribution of U.S. multinationals to the trade balance of these host countries results in a surplus and, otherwise, in deficit.

Figure 9 - Imports of American affiliates in emerging markets (US$ billion)



Source: BEA (2018)
Note: (D) refers to data that are not available due to confidentiality restrictions. Values unavailable for Russia in 2012 and 2015.

Another way to assess FDI is through disaggregated statistics which allow deepening the analyses. Accordingly, a distinction often made by the literature is to disaggregate FDI data in terms of greenfield investments from those related to mergers, acquisitions, and shares, known as brownfield. The intrinsic reason for this differentiation is that short-term local economic impacts of these two investment modes are very different in terms of economic growth and jobs. That is because greenfield investments are those involving the construction of new facilities or the expansion of existing ones, while brownfield investments do not necessarily expand the productive capacity of the country since there is only a change in shares control between residents and non-residents.

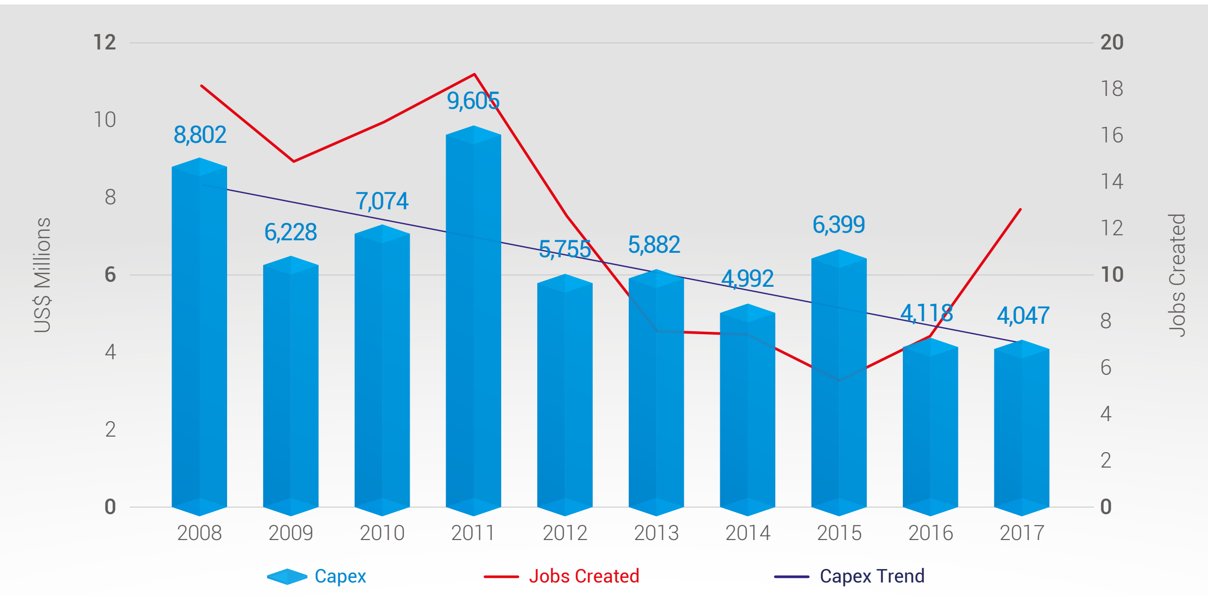
[16] Data from 2014.

1.2. Announcements of Greenfield investment from the United States in Brazil[17]

Greenfield investment announcements can be used to indicate trends and may be considered an indicator of the value of FDI position in the future. According to data from fDi Markets, Brazil ranked tenth among global destinations of announced U.S. greenfield investment[18], with a cumulative value of investments of US$ 62,901 million between 2008 and 2017. These greenfield investments involved 894 projects of productive investment in 37 different sectors that were made by 573 American companies.

Figure 10 presents the evolution of U.S. greenfield investment announcements in Brazil between 2008 and 2017, in terms of the estimated value of investments (US$ million) and the number of jobs. U.S. greenfield investment announcements in Brazil in 2008 were more than twice the amount registered in 2017, when they reached the lowest value observed during this time series. Beginning in 2011 there is a downward trend of investment as measured by the value of the announced investments. The year 2011 posted not only the highest amount of investment announcements, it also generated the largest number of jobs, with expectations of US$ 9.6 billion in investments and 18,681 new jobs in Brazil.

Figure 10 - Evolution of announcements of U.S. greenfield investment in Brazil



Source: FDI Markets (2018)

[17] fDi Markets (a service of The Financial Times) tracks greenfield investment project announcements, which include the establishment of new projects of productive investment or investments in existing companies involving physical expansion and/or generation of jobs. Thus, mergers and acquisitions and other investments in participation are not considered, because in them there is no immediate physical expansion. It is important to take into account that all data and details about these investment projects are based on public information about the announcements of investments of companies, but not all investments are actually carried out. In addition, information on capital invested and number of jobs created are not always provided by the companies and, in these cases, the values are estimated by the fDi Markets, according to their own methodology.

[18] Considering the same period, the nine main destinations of announced U.S. greenfield investment in the world in ascending order are: United Kingdom, China, India, Germany, Canada, Mexico, Australia, France and Singapore.

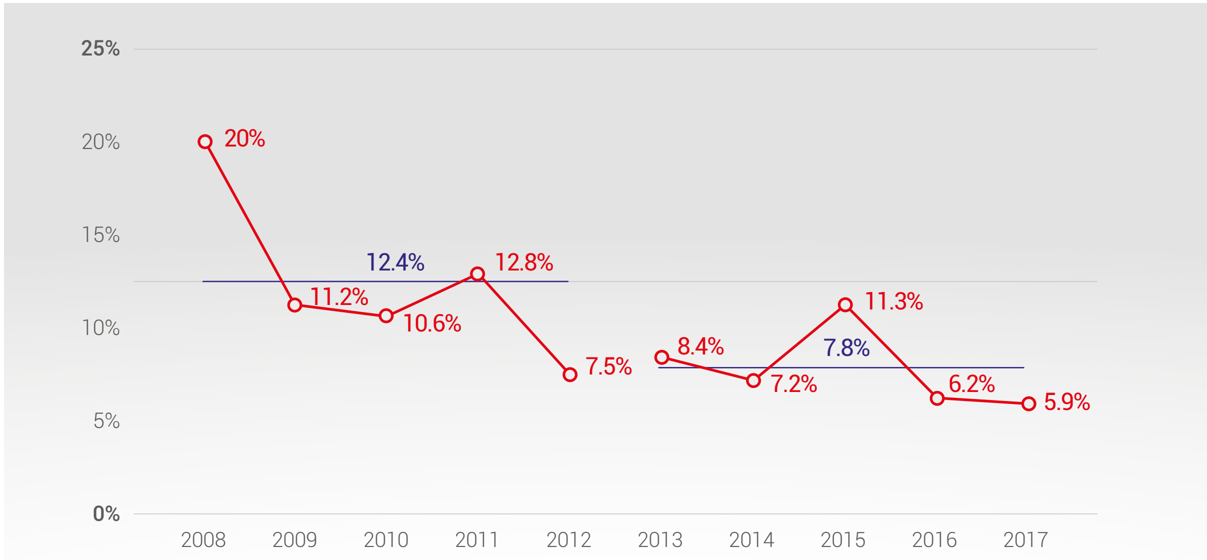
BILATERAL INVESTMENT MAP **BRAZIL/USA**

In addition, the number of jobs fell significantly between 2011 and 2015, but grew again in 2016 and 2017, years in which U.S. companies announced, respectively, 7,377 and 12,848 new job openings in Brazil. This resumption of growth in the number of jobs contrasts with a reduction in the amount of investments announced in the same period. However, this apparent contradiction is due to the fact that U.S. greenfield investments, in its national territory, in the years 2016 and 2017, were destined to more labor-intensive sectors.

Another way to evaluate these greenfield investment statistics is by analyzing the value of the announced greenfield investments in relation to the total direct investment position, as shown in Figure 11. The value of U.S. greenfield investment in Brazil as a percentage of the existing investment position can be used as an indicator for potential growth of FDI position in the future, provided the announcements are confirmed. The blue lines in Figure 11 refer to the average values observed for each sub-period.

From this perspective, announcements of U.S. greenfield investment in Brazil also showed a strong downward trend during the period between 2008 and 2017. In 2008, the value of announced greenfield investment reached 20% of the value of total U.S. FDI in Brazil, whereas, in 2017, this percentage dropped to only 5.9%.

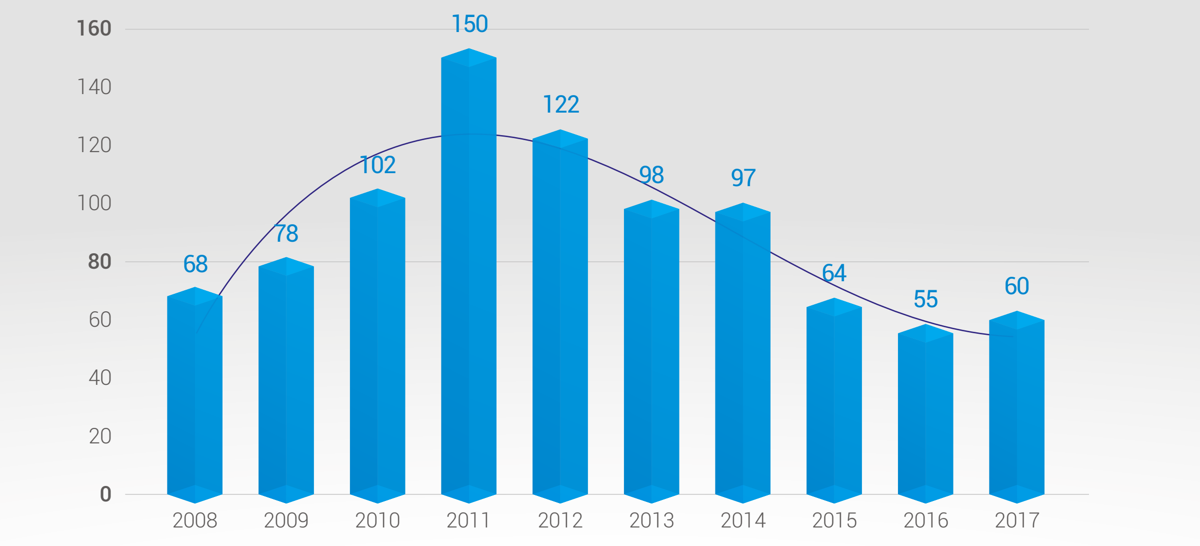
Figure 11 - Announcements of U.S. greenfield investment in Brazil in % FDI position



Source: FDI Markets (2018) e BEA (2018)

On average, the percentage observed for the 2008-2012 period was 12.4%; a much higher figure than than that of the 2013-2017 period, which was 7.8%. This analysis reinforces the observed slowdown in the average growth rate of U.S. FDI position in Brazil that was shown previously in Table 1. The number of announced productive investment projects announced by American companies in Brazil show a slightly different trend from that observed in the estimated value of the announced investments, as illustrated in Figure 12.

Figure 12 - Number of announcements of greenfield investment projects of the U.S. in Brazil



Source: FDI Markets (2018)

Between 2008 and 2011, the number of announced investment projects grew from 68 to 150, respectively. However, after this period, announcements were gradually reduced significantly until reaching the lowest value observed for the series, which occurred in 2016 when only 55 projects were announced. However, a recovery may be observed in 2017, when 60 greenfield investment projects were announced, although this growth compared to the previous year is still relatively small.

Table 3 shows the cumulative value of announced U.S. greenfield investments in Brazil by sector during 2008-2017. "Communications" was the sector that received the largest amount of investment during this period, with 26% of the total announced greenfield investment. These announcements totaled US$ 16.3 billion between 2008 and 2017 and were carried out by 64 American companies through 88 projects, which were expected to generate 9,277 new jobs in Brazil.

BILATERAL INVESTMENT MAP **BRAZIL/USA**

Table 3 - Sectors with greenfield investments announced by the U.S. in Brazil*

Sector	Projects	Capex (US$ millions)	Share	Jobs Created	Companies
Communications	88	16,358	26.0%	9,227	64
Automotive (OEM)	25	6,409	10.2%	16,982	9
Metals	18	5,631	9.0%	7,077	8
Financial Services	45	5,481	8.7%	1,959	42
Alternative / Renewable Energy	20	5,190	8.3%	1,826	15
Coal, Oil and Natural Gas	12	5,001	8.0%	1,905	11
Automotive Components	23	2,807	4.5%	7,423	12
Chemicals	58	2,637	4.2%	5,031	44
Food & Tobacco	29	1,768	2.8%	6,266	15
Semiconductors	9	1,582	2.5%	4,791	6
Industrial Machinery, Equipment & Tools	57	1,475	2.3%	6,492	45
Software & IT services	189	1,236	2.0%	13,268	139
Others (25)	321	7,325	11.6%	39,480	248
Total	**894**	**62,901**	**100.0%**	**121,727**	**573**

Source: fDi Markets (2018)
* Refers to the cumulative value for the period from 2008-2017.

The second largest cumulative value of announced U.S. greenfield investment in Brazil, between 2008 and 2017 occurred in the "Automotive OEM" sector. In this sector, U.S. companies announced US$ 6.4 billion in investments, equivalent to 10.2% of the total announced U.S. greenfield investment in the country during this period. The "Automotive OEM" sector also stands out due to the employment impact with 16,982 jobs expected to be generated in Brazil.

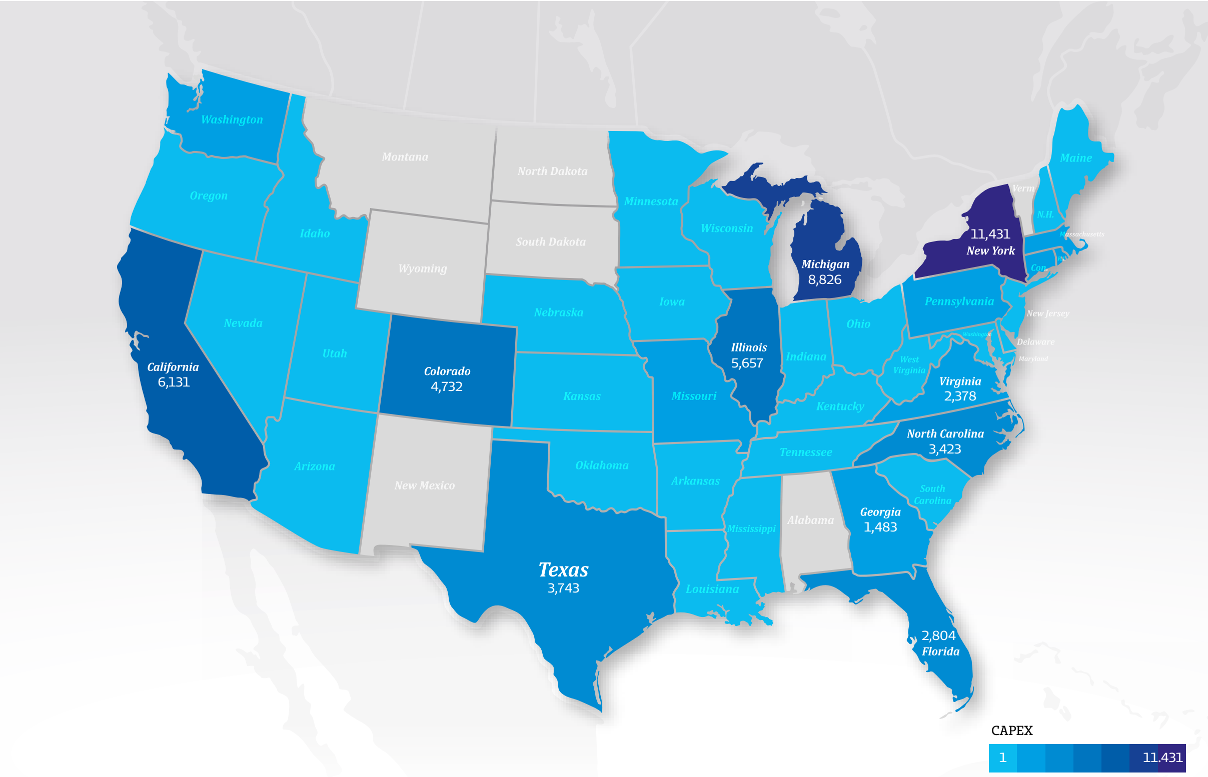
The leader in the criterion for the largest number of projects was the "Software e IT Services" sector, with a total of 189 greenfield projects announced that summed up to US$ 1.2 billion in investments between 2008 and 2017. In addition, by number of companies, in that same period, this sector is the one that had more U.S. companies announcing investments in Brazil (139 companies), with an estimated 13,268 new jobs created in Brazil. "Others" is defined as an aggregate of 25 sectors that had announced greenfield investment and that were not listed in Table 3, since individually they were not significant in terms of value compared to the others.[19]

Map 1 uses a heat map to illustrate the American states that were sources of announced greenfield investment in Brazil between 2008 and 2017. The colors of the states on the map denote the level of capital expenditures of the announced greenfield investment that was sourced from those states. In

[19] The 25 sectors aggregated as "Others" are the following: "Real estate", "Beverages", "Paper, printing and packaging", "Transportation", "Business services", "Plastics", " Warehousing and Storage", "Pharmaceuticals", "Aerospace", "Hotels and tourism", "Consumer goods", "Medical devices", "Engines and turbines", "Ceramic and glass", "Non-automotive Transportation OEM", "Electronic components", "Office machines and equipment", "Rubber", "Biotechnology", "Consumer electronics", "Textiles", "Healthcare services", "Building and Construction materials", "Defense and space", and "Leisure and entertainment".

addition, the map highlights the ten U.S. states that were the source of the largest greenfield investment announcements during that period, which together correspond to more than 80% of the total.

Map 1 - U.S. greenfield investment in Brazil by origin states (US$ million)*



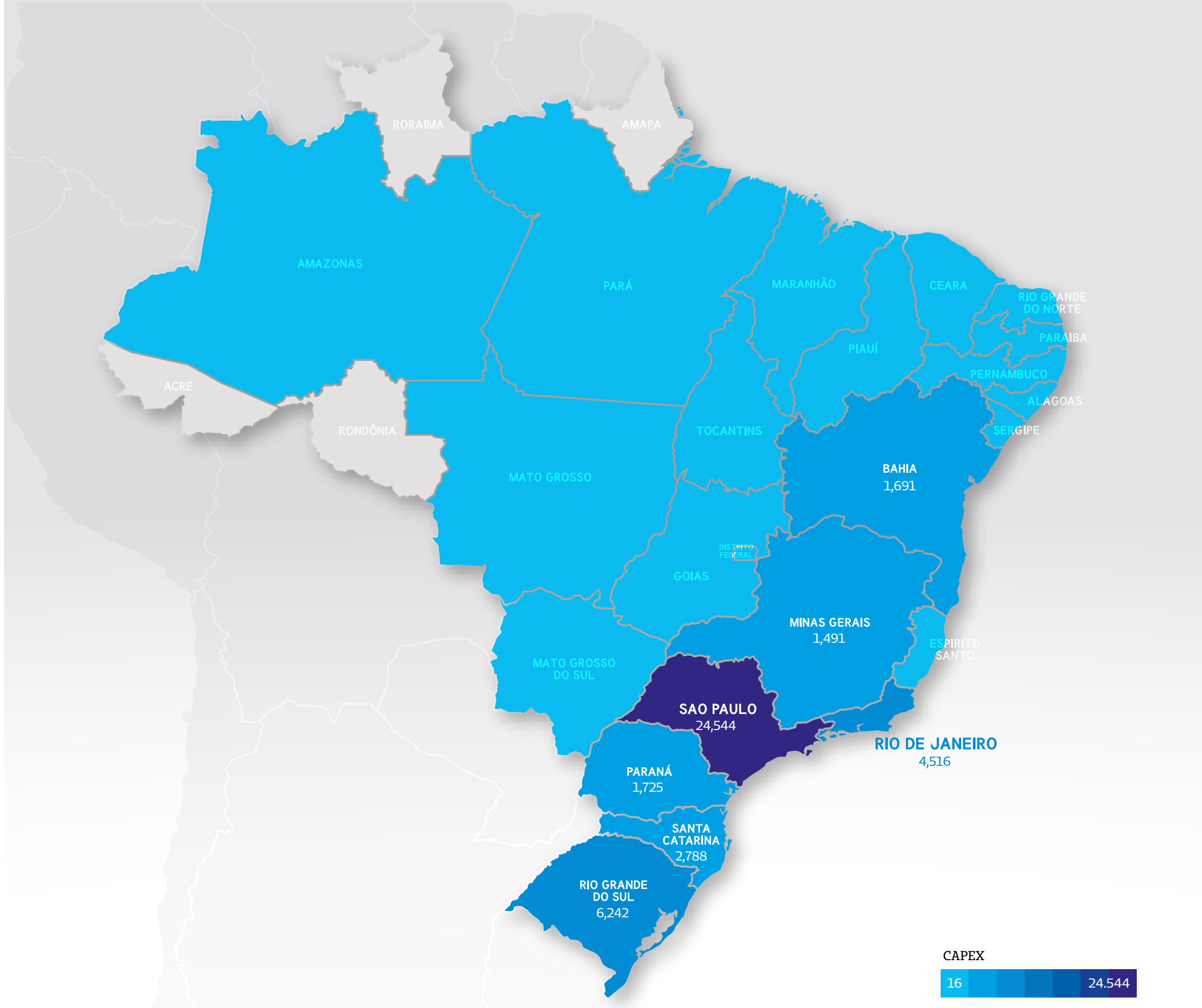
Source: fDi Markets (2018)
* Refers to the cumulative value for the period from 2008-2017.

New York, at US$11.4 billion, was the largest source of announced greenfield investment in Brazil, representing 18.2% of the total between 2008 and 2017. The following states are Michigan, California, Illinois, and Colorado, with announcements of US$ 8.8 billion, US$ 6.1 billion, US$ 5.6 billion and US$ 4.7 billion, respectively.

Map 2 shows the Brazilian states that were announced as the destination of U.S. greenfield investment between 2008 and 2017. The Brazilian states that were the destination of announced greenfield investments greater than US$ 1 billion are identified in Map 2 by colors that denote the estimated level of capital expenditures. Together, these six states represented more than 68% of the total investment announcements during this period. In total, American multinationals invested in 22 states of Brazil plus the Federal District, excluding only the states of Acre, Amapá, Rondônia, and Roraima.

BILATERAL INVESTMENT MAP **BRAZIL/USA**

Map 2 - U.S. greenfield investment in Brazil by destination states (US$ million)*

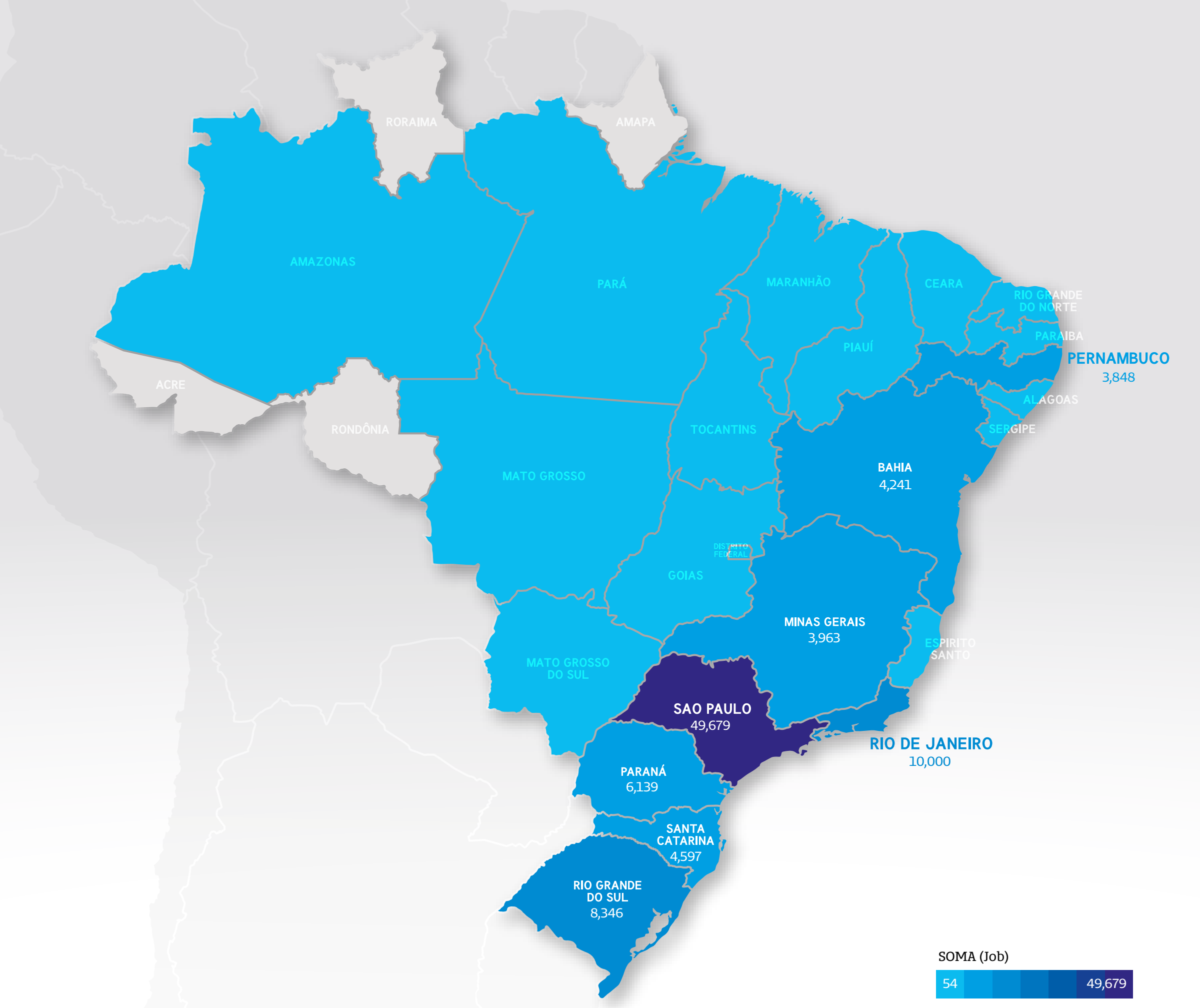


Source: fDi Markets (2018)
* Refers to the cumulative value for the period from 2008-2017.
Note: Not all investments announced mention the recipient state in Brazil. Therefore, the heat map shown considers only those projects that specified the recipient state; as a result, it was not possible to map by state 22.7% of the total amount of announced U.S. greenfield investment in Brazil occurred during the 2008-2017 period.

The "Automotive OEM" sector concentrated investments in the states of Rio Grande do Sul and São Paulo. Additionally, announcements of U.S. greenfield investments in the "Coal, oil and gas" sector converged in Rio Grande do Sul. On the other hand, investments in the "Metals" sector were located mainly in the states of Minas Gerais, Rio de Janeiro, and Bahia. Furthermore, investments announced by the United States in "Financial Services" mainly covered the states of São Paulo and Rio de Janeiro. Finally, most U.S. investment projects in Brazil in "Alternative / renewable energy" were in the states of São Paulo and Santa Catarina.

Map 3 illustrates the estimated number of jobs generated by greenfield investment announcements. Again, São Paulo benefited the most, with a total estimate of 49,679 new jobs between 2008 and 2017. During the same period, São Paulo was followed by the states of Rio de Janeiro, Rio Grande do Sul, and Paraná, where U.S. investments were expected to generate 10,000, 8,346, and 6,139 new jobs, respectively.

Map 3 - U.S. greenfield investment in Brazil by destination states (in number of jobs)*

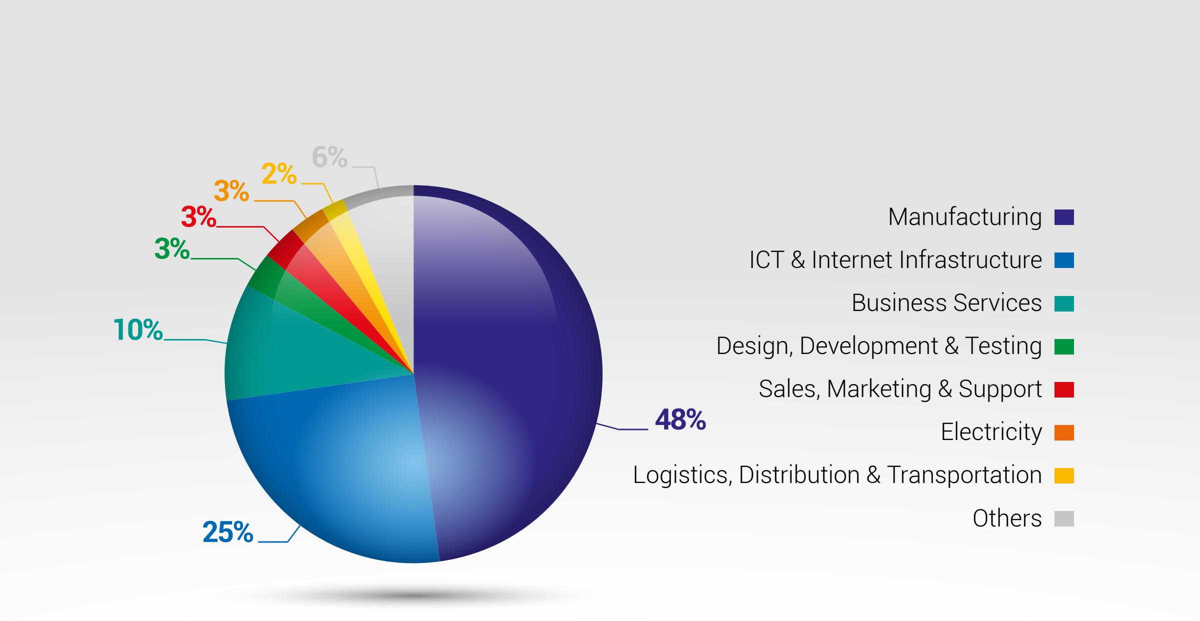


Source: fDi Markets (2018)
* Refers to the cumulative value for the period from 2008-2017.
Note: Not all investments announced mention the state that will receive them in Brazil. Therefore, the heat map shown considers only those projects that specified the recipient state; as a result, it was not possible to map, by states, 19.5% of the total number of job openings generated between 2008 and 2017.

The review of the announced greenfield investment data reveals that most U.S. investment in Brazil during the 2008-2017 period involved the establishment or expansion of industrial production. As illustrated in Figure 13, "Manufacturing" is the economic activity that attracted the largest amount of announced U.S. greenfield investment in Brazil during this period, with 48% of the total. Although with much smaller shares than that observed in "Manufacturing", "ICT & internet infrastructure" and "Business services", are also relatively significant with 25% and 10% of the total announced U.S. greenfield investment, respectively. There were also announcements in the activities of "Design, development & testing", "Sales, marketing & support", "Electricity", and "Logistics, distribution & transportation".

BILATERAL INVESTMENT MAP **BRAZIL/USA**

Figure 13 - Greenfield investments announced by the U.S. in Brazil by activities (% Total)*



Source: fDi Markets (2018)
* Refers to the cumulative value for the period from 2008-2017.

During the 2008-2017 period, 573 American companies announced greenfield investment projects in Brazil, as shown in Table 4. General Motors (GM)[20] stands out, accounting for 21 announcements of investment projects in Brazil, which totaled US$ 6.5 billion and were expected to generate 15,828 jobs in Brazil. In this sector, Ford also featured among the 10 companies with the highest investment in Brazil, with 2.5% of the total announced U.S. greenfield investments in the country and was estimated to hire 4,876 Brazilians.

Another highlight was the "Communications" sector, through greenfield investment announcements by Level 3 Communications, NII Holdings, Verizon Communications, and Equinix. These four companies together invested US$ 6.08 billion, equivalent to 9.7% of the total capex of the period.

The second and third largest announcements of U.S. greenfield investment in Brazil by Capex were made by TransGas and Nucor, respectively. TransGas operates in the "Coal, oil and gas" sector and announced two investment projects amounting to US$ 3.8 billion and 501 new jobs. Nucor made two announced greenfield investments that totaled US$ 3 billion. This company in the "Metals" industry was expected to generate 3,007 jobs in Brazil, six times more than TransGas. The ninth in this ranking of greenfield investments during 2008-2017 is IBM, which invested US$ 1.03 billion in 17 announced greenfield projects in Brazil and generated an estimated 2,007 new job openings in the country.

[20] In the same period, General Electric (GE) announced 21 greenfield projects in Brazil, which totaled an investment of US$ 629.5 million. As only the 10 largest announcements, in terms of value, were detailed in Table 4, GE was included in the category of Others.

Table 4 - The 10 American companies with the largest announcements of greenfield investment in Brazil*

Parent Companies	Sector	Projects	Capex (US$ Millions)	Share (%)	Jobs Created
General Motors (GM)	Automotive	21	6,514	10.4%	15,828
TransGas Development Systems	Coal, Oil and Natural Gas	2	3,800	6.0%	501
Nucor	Metals	2	3,003	4.8%	3,007
Level 3 Communications	Communications	7	2,296	3.6%	491
Archer Daniels Midland	Multi-sector	7	1,978	3.1%	772
Ford	Automotive	6	1,542	2.5%	4,876
NII Holdings	Communications	4	1,397	2.2%	2,267
Verizon Communications	Communications	3	1,373	2.2%	267
IBM	Multi-sector	17	1,033	1.6%	2,077
Equinix	Communications	7	1,023	1.6%	253
Others (563)	-	818	38,942	61.9%	91,388
Total		**894**	**62,901**	**100%**	**121,727**

Source: fDi Markets (2018)
* Refers to the cumulative value for the period from 2008-2017.

In the ranking of the 1,000 largest companies (in terms of net income) operating in Brazil, 46 have shares of American capital, as shown in Table 5. Together, U.S. multinationals had an income of US$ 68.1 billion in Brazil in 2017. The two best placed in this ranking operate in the "Food and beverage" sector, namely: Cargill and BRF, respectively in the 15th and 16th position. In addition, the two companies' net income was similar, with Cargill reaching US$ 10.7 billion and BRF amounting to US$ 10.4 billion.

Table 5 - Enterprises with American capital among the 1,000 largest incomes in Brazil in 2017

Ranking 2017	Company	State	Sector	Capital of Origin	Net Income (US$ Millions)	Net Profit (US$ Millions)	EBITDA (US$ Millions)
15º	Cargill *	SP	Food & Beverages	US	10.731	169	-52
16º	BRF *	SP	Food & Beverages	BR/US	10.490	-344	825
21º	Walmart ²	SP	Retail Trade	US	7.883	-	-
22º	Oi 4 *	RJ	IT & Telecom	BR/US	7.456	-2.086	861
69º	Whirlpool *	SP	Household Appliances	US	2.972	134	186
80º	Lojas Renner *	RS	Retail Trade	US/GB	2.333	230	444
86º	Mosaic ² *	SP	Chemicals and Petrochemicals	US	2.200	-	-
105º	Pfizer ²	SP	Pharmaceutical and Cosmetics	US	1.581	-	-
120º	Pepsico ²	SP	Food & Beverages	US	1.428	-	-
136º	Avon Brasil ²	SP	Pharmaceutical and Cosmetics	US	1.265	-	-
	Others (36)			US	19.764	-	-
Total							**68.103**

Source: Valor 1000 (2018)
Notes: * Data extracted from the consolidated or combined balance sheet. 2 Values estimated by Valor 1000. 4 Company in judicial or extrajudicial recovery. -Data not supplied or that does not apply to the company. The average direct exchange rate (R$/US$) of 2017, used in the calculations, was 3.1906.

American companies Walmart and Oi were in the 21st and 22nd positions, by net income, in 2017, with US$ 7.8 billion and US$ 7.4 billion, respectively. Walmart operates in "Retail trade" while Oi operates in "IT & Telecom". The sectors "Household Appliances", "Chemicals and Petrochemicals", and "Pharmaceutical and Cosmetics" also appear in Table 5. Disregarding Oi[21] and BRF[22], the other companies have presented positive net profits, which highlights Brazil as a market that is highly capable of generating excellent returns from foreign direct investment.

However, it is worth noting that according to UNCTAD's World Investment Report 2018, political and economic issues may affect the dynamics of investment flows and positions worldwide in the coming years, since trade disputes have recently intensified on a global level and the United States approved a corporate tax reform aimed at increasing domestic investment and boosting economic growth in the country. The UNCTAD World Investment Report 2018 also warns that the current global investment patterns may be affected by the increased tax competition between countries.

As for trade issues, they condition companies' investment decisions since investors are extremely susceptible to economic instability - in this case, that generated by a trade war. In addition, increased protectionism could affect global value chains in various sectors, since tax increases generate incentives to relocate existing productive activities. Moreover, the profitability of some multinational companies may be affected, reducing the propensity of economic agents to invest.

As for the United States[23], in December 2017 a national tax reform bill was approved with the potential to deeply impact the positions and flows of American investments abroad. The tax reform bill established changes in corporate tax regime and measures that encourage American multinationals to repatriate their funds distributed abroad[24]. Such repatriations would result in a decreased of U.S. direct investment position abroad, with a mirror effect on FDI positions in other nations.

Specifically, the measures approved in the United States included: i) reduction of the statutory corporate income tax rate from 35% to 21%, ii) capping of deductible interest to 30% of taxable income, iii) switching from a worldwide tax system to a territorial tax system, taxing only the income obtained in American territory[25], iv) a transitional measure, in the form of a single tax, very favorable for the repatriation of earnings accumulated abroad, namely: 15.5% for profits converted into cash (liquid assets) and 8% for profits

[21] Oi entered judicial recovery process in 2016. Recently, it was acquired by American funds.

[22] Possibly, BRF's performance was strongly affected by the Federal Police operation known as Carne Fraca [weak flesh] initiated in 2017. On that occasion, some companies, including BRF, were accused of tampering with the meat they sold in domestic and foreign markets.

[23] In addition to being part of the objective of this study, the focus on the United States is due to the relevance of that country in FDI worldwide, since half the global position of FDI is located in their territory or belongs to their multinationals.

[24] According to UNCTAD (2018), a tax break on repatriation has been awaited by American multinationals since the Homeland Investment Act (HIA) of 2005. At the time, the HIA repatriated two-thirds of the total of American resources distributed worldwide, about US$ 300 billion of retained earnings, thanks to tax cuts on capital repatriation. Currently, it is estimated that earnings of American multinationals retained abroad are much higher, reaching US$ 3.2 trillion. Thus, a possible repatriation of these resources could cause significant input flows and, consequently, cause a significant drop in the position of U.S. FDI in the world, from the current US$ 6.4 trillion of cumulative earnings to, possibly, US$ 4.5 trillion.

[25] With this measure, the United States joined the majority of OECD countries that already taxed only income of their multinationals generated domestically.

reinvested in the company's business (illiquid assets), v) a set of measures to combat tax evasion, among others. (UNCTAD, 2018)

In short, the impact of the approved tax reform may eliminate the need for U.S. companies to maintain their earnings abroad, causing a reduction in profits reinvested by American subsidiaries worldwide. Furthermore, the greater degree of freedom in the use of money abroad could lead to an additional increase in mergers and acquisitions (although perhaps more domestic mergers and acquisitions than transnational mergers and acquisitions), but restrictions on the deductibility of interest could mitigate this effect. Finally, the incentive to invest in the United States can lead to greater entry of FDI in the United States and, possibly, to reorient the global manufacturing activity, with impacts on Brazil[26].

1.3. Case Studies of U.S. Companies in Brazil

To demonstrate business practices involving Brazilian and U.S. companies, with regard to foreign direct investments, this study highlights the presence American companies in Brazil to illustrate successful cases of these investments.

HYPERLOOP

Sector: Transport

Year of Foundation: 2013

Brief history: The Hyperloop Transportation Technologies Company was created to meet the challenge set by billionaire entrepreneur Elon Musk, founder and CEO of Tesla, SpaceX, and Solar City. The challenge, called Hyperloop, released in 2013 in a white paper, proposed that entrepreneurs take on the project to develop a new mode of transporting people and cargo in capsules, through tubes in almost vacuum conditions using passive levitation and which could reach up to 1,223 km/h. One of the key differentiating factors of the technology is that the system can produce more energy than it consumes, enabling it to be profitable, unlike current railways in which energy and maintenance costs almost prevent operation. Hyperloop was created a few years ago and already has more than 27 patents, 7 contracts with governments, and 800 collaborators. Its innovative model of collaboration will even be taught at Harvard University. In May 2017, the company concluded the first feasibility study of this mode of transport and has plans to expand R&D Centers in its priority markets, aiming to customize the technologies developed. In May 2018, it was announced that one of these centers will be in Brazil.

Year of internationalization and location of the enterprise abroad: The company announced in April 2018 the installation of a Global Center of R&D in the city of Contagem, state of Minas Gerais, Brazil.

Factors for choosing internationalization in that market (decision tracking): In an interview with Época magazine, Mr. Bibop Gresta, president of the company, declared that Brazil has many opportunities for the development of technologies related to logistics. In particular because of the lack of existing infrastructure, and the need to create a faster, cheaper, and more efficient transportation system. He also expressed the government's concern with sustainability. In addition, he reported having found that there is an ecosystem of high-level innovation in the country and limited competition for talent with other companies.

Financial Data: Not supplied.

[26] Brazil and the United States have no Bilateral Investment Agreement and no agreements to avoid double taxation.

BILATERAL INVESTMENT MAP BRAZIL/USA

SEABORN NETWORKS

Sector: Telecommunications

Year of opening: 2012

Brief history: Seaborn was formed in 2012. The company develops, owns and operates submarine fiber optic cables systems. Recently, the company designed, financed, built, and currently operates Seabras-1, the first direct network between Brazil and the United States. Additional routes are being developed for Argentina, South Africa, and the Caribbean, among others.

Year of internationalization and location of the enterprise abroad: In 2012, the company expanded to Brazil and the United Kingdom.

Factors for choosing internationalization in Brazil (decision tracking): The route between Brazil and the U.S. is the primary global communication route between South America and the rest of the world. New systems are needed considering the aging systems built in 2000, as well as the need for an independent developer-owner-operator to i) open the route to the world market and ii) offer a higher quality of service than what was previously available.

Financial Data: Construction of a more than 10,600 km long greenfield communications system between the U.S. and Brazil, as well as a submarine station and investment in terrestrial fiber in Brazil. The project's total cost exceeds US$ 500 million and the company currently has 45 employees.

CARGILL

Sector: Food and agriculture

Year of opening: 1865

Brief history: Cargill provides food, agricultural, industrial, and financial services and products to the world. This U.S. multinational has 155,000 employees in 70 countries.

Year of internationalization and location of the enterprise abroad: Cargill's headquarters in Brazil is in the city of São Paulo, and it has an extensive presence in 17 states and the Federal District, consisting of manufacturing sites, warehouses, port terminals, and offices in 160 municipalities. It has operated in Brazil for more than 50 years.

Cargill's business in Brazil

- **Agriculture -** Cargill purchases, processes, and markets soy and other commodities globally. It also trades sugar and cotton in the global market.
- **Food -** Cargill supplies a wide range of ingredients for the food and beverage industry, providing innovation to the retail and food service markets. The company has its own branded consumer products.
- **Animal nutrition -** It develops ingredients for animal nutrition under the brands Nutron and Integral.
- **Industrial -** It develops and markets sustainable products, based on agricultural raw materials. It supplies vegetable oils for the manufacture of lubricants, medicines, cosmetics, coatings, and chemicals. Its starch range caters to the paper, chemicals, textiles, mining, and pharmaceutical and other industries.

Factors for choosing internationalization in Brazil (decision tracking): Brazil has a natural vocation for agriculture, with favorable land and climate, as well as people and technology capable of efficiency. It is not possible to think of feeding the world population without considering the Brazilian production. Therefore, Brazil is a very important country for Cargill's global strategy.

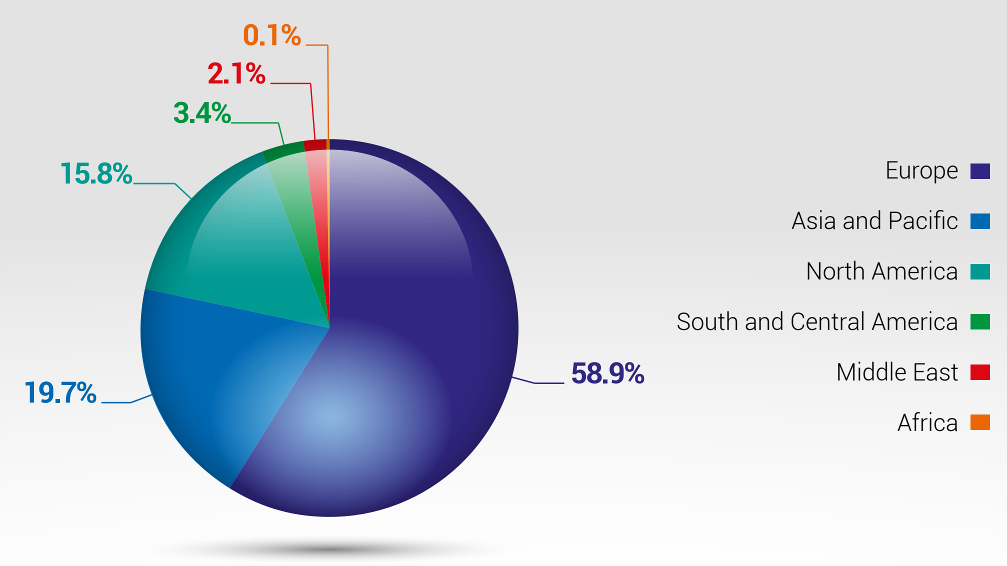
Financial Data: Cargill's net income in Brazil was R$ 35 billion in 2017, with R$ 790 million profit. The company has 10,000 employees in Brazil. In 2017 the company made significant acquisitions, and major upgrades to its factories, investing R$ 790 million in Brazil in 2017 and R$ 4.6 billion over the past seven years. The company expected to invest R$ 300 to R$ 400 million in 2018.

2. BRAZILIAN FOREIGN DIRECT INVESTMENT IN THE UNITED STATES

2.1. Brazilian foreign direct investment abroad

Data from the Bureau of Economic Analysis indicate that in 2017, the global foreign direct investment position in the United States reached more than US$ 4 trillion, an amount that nearly doubled during the past decade. As Figure 14 shows, Europe is the region that has the largest FDI position in U.S. territory, with 58.9% of the total, followed by Asia & Pacific and North America respectively, with 19.7% and 15.8% of the total. The shares of South and Central America, the Middle East, and Africa are very low. These three regions combined hold less than 6% of the global FDI position in the U.S. As an individual country, Brazil is a leading source of FDI from within these three regions, representing 31% of the total position from South and Central America in the United States.

Figure 14 - Global FDI position in the United States in 2017, by region (%)



Source: BEA (2018)

Table 6 presents the FDI position in the United States of the 20 main investor countries in 2017. Together these nations held 91.7% of the FDI position in the U.S. in 2017, while, in 2008, they held 92% of the total. Nevertheless, while the average annual growth rate of global FDI underwent a slowdown in recent years, the global of FDI position in the United States showed the opposite trend, with an average growth of 6% between 2008 and 2012, and 10.2% between 2013 and 2017.

It should be noted that among the countries listed in Table 6, there are those that are known to be offshore financial centers such as Switzerland and Bermuda, which are ranked the 7th and 18th main investors in 2017, respectively. The United Kingdom has the largest FDI position in the United States, with US$ 614.8 billion, equivalent to 15.3% of the total in 2017, and down from 24.3% in 2008.

Table 6 - Main source of the FDI position in the United States (2008-2017)

Rank	Countries	Position (US$ Millions)		Share		Change	Average Annual Growth	
2017		2008	2017	2008	2017	2008-2017	2008-2012	2013-2017
1º	United Kingdom	496,494	614,865	24.3%	15.3%	23.8%	↓ 4.0%	↓ 1.3%
2º	Canada	194,346	523,761	9.5%	13.0%	169.5%	↑ 6.1%	↓ 18.4%
3º	Japan	237,769	476,878	11.6%	11.8%	100.6%	↑ 6.2%	↓ 7.8%
4º	Germany	207,494	405,552	10.1%	10.1%	95.5%	↑ 7.1%	↓ 9.2%
5º	Ireland	51,057	328,671	2.5%	8.2%	543.7%	↑ 15.2%	↑ 38.8%
6º	France	166,920	301,540	8.2%	7.5%	80.6%	↑ 7.9%	↓ 8.9%
7º	Switzerland	72,828	201,867	3.6%	5.0%	177.2%	↑ 13.4%	↑ 9.5%
8º	Holand	97,910	169,155	4.8%	4.2%	72.8%	↓ 3.7%	↓ 7.6%
9º	Singapure	26,207	88,596	1.3%	2.2%	238.1%	↓ -9.7%	↓ 46.4%
10º	Belgium	31,822	80,352	1.6%	2.0%	152.5%	↓ -0.7%	↓ 24.1%
11º	Spain	34,171	73,244	1.7%	1.8%	114.3%	↑ 11.5%	↑ 7.0%
12º	Australia	41,198	73,002	2.0%	1.8%	77.2%	↑ 8.5%	↓ 7.7%
13º	China	1,229	58,048	0.1%	1.4%	4623.2%	↑ 83.9%	↑ 44.5%
14º	Sweden	23,279	54,150	1.1%	1.3%	132.6%	↑ 14.2%	↑ 4.8%
15º	Korea, Republic of	13,945	50,633	0.7%	1.3%	263.1%	↑ 15.9%	↑ 13.1%
16º	Brazil	9,385	42,841	0.5%	1.1%	356.5%	↑ 13.2%	↑ 14.0%
17º	Israel	17,213	39,307	0.8%	1.0%	128.4%	↑ 6.7%	↓ 13.3%
18º	Bermuda	100,942	35,920	4.9%	0.9%	-64.4%	↓ -34.7%	↓ 11.3%
19º	Italy	29,251	35,672	1.4%	0.9%	22.0%	↓ 4.2%	↓ 3.2%
20º	Mexico	29,331	35,408	1.4%	0.9%	20.7%	↓ -1.3%	↓ 2.7%
	Total (20 Countries)	**1,882,791**	**3,689,462**	**92.0%**	**91.7%**	**96.0%**	**5.2%**	**10.8%**
	Total in U.S.	**2,046,662**	**4,025,492**	**100.0%**	**100.0%**	**96.7%**	**6.0%**	**10.2%**

Source: BEA (2018)
Note: The data presented are for the Ultimate Beneficial Owner (UBO). The UBO classification assigns FDI ownership to the country of the highest-level decision-maker in a company's ownership chain. This measure eliminates distortions in data that may arise from FDI for the United States that pass through intermediate countries. The United States was not included in this ranking.

According to the BEA, five countries sharply increased their FDI in the United States between 2008 and 2017. These countries include China, Ireland, Brazil, South Korea, and Singapore, with increases of 4,623.2%, 543.7%, 356.5%, 263.1%, and 238.1%, respectively. Alternatively, the five countries that presented the smallest changes in the same period were Bermuda, Mexico, Italy, United Kingdom, and the Netherlands, with variations of -64.4%, 20.7%, 22%, 23.8%, and 72.8%, respectively.

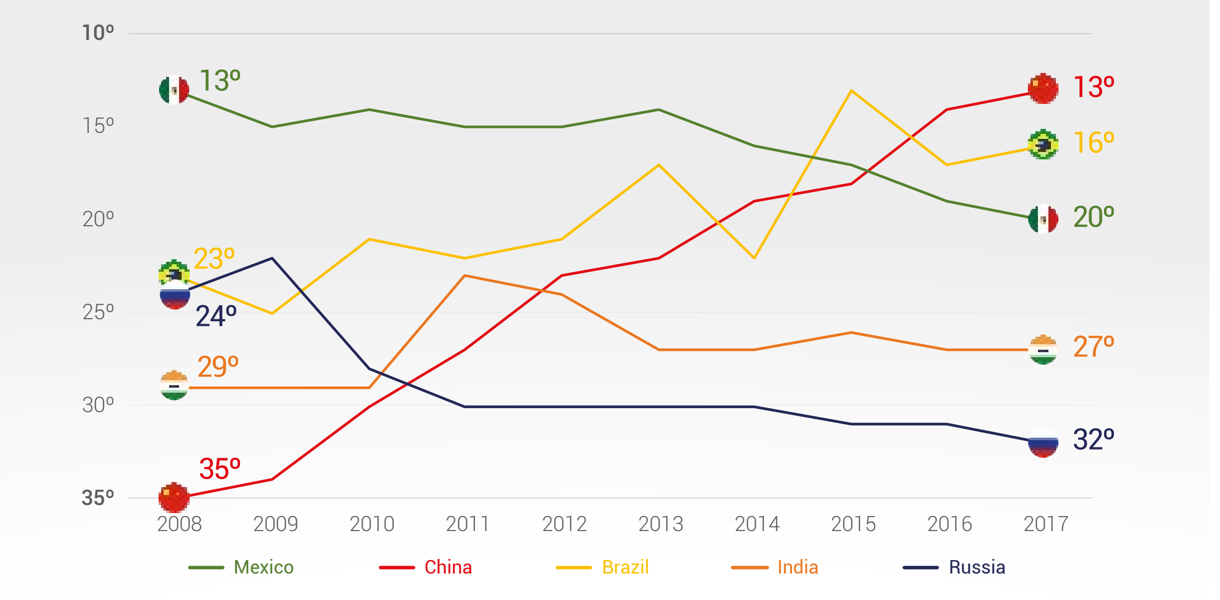
The countries that gained a greater share of FDI position in the United States were those that had the highest average annual growth rates. Accordingly, the six that had average annual growth rates two times greater than that observed in the global FDI position in the United States, in the

2008-2012 period, were China, South Korea, Ireland, Sweden, Switzerland, and Brazil. These nations promoted an annual average growth of their positions of 83.9%, 15.9%, 15.2%, 14.2%, 13.4% and 13.2%, respectively. In the 2013-2017 period, the six most dynamic countries highlighted with their average annual growth rates are Singapore (46.4%), China (44.5%), Ireland (38.8%), Belgium (24.1%), Canada (18.4%), and Brazil (14%).

As a result of this significant growth, China and Brazil climbed several positions in the ranking of countries with the largest FDI positions in the United States, as seen in Figure 15. Note that China, which held a share of US$ 1.2 billion in 2008, was ranked 35th in the beginning of the period analyzed, however, by 2017 it ranked 13th with a FDI position in the U.S. of US$ 58 billion, equivalent to 1.4% of the global FDI position in the United States.

During the period from 2008 to 2017, Brazil initially ranked 23rd and in 2017 was ranked as 16th largest source of foreign direct investment in the United States, although it reached 13th in 2015. However, the following year China surpassed and maintained its lead ahead of Brazil. In terms of value, the Brazilian FDI position in the United States increased from nearly US$ 9.3 billion, in 2008 to US$ 42 billion in 2017. As a result, Brazil increased its relative share from 0.5% to 1.1% of the total FDI position in the United States through this period.

Figure 15 - Evolution in the ranking of main source of the FDI position in the United States



Source: BEA (2018)

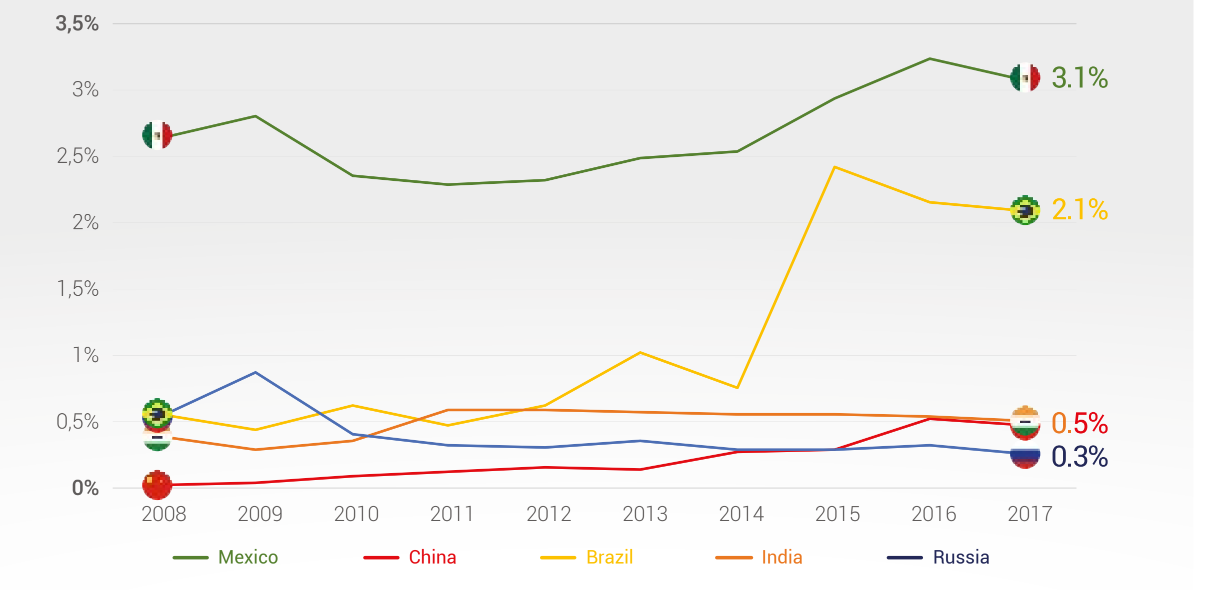
Although India also gained positions during 2008-2017, its performance was below that of China and Brazil, as Indians gained only two positions in the period. Specifically, in the initial period India ranked 29th and, in the end, it reached 27th. In terms of value, the Indians held, in 2008 and 2017, a FDI position of US$ 4.6 billion and US$ 13.1 billion, respectively. However, its relevance to foreign investment in the United States is still low, given that its share of total U.S. FDI position was always below 0.5% in the period.

On the other hand, Mexico and Russia lost positions between 2008 and 2017, although for different reasons. While Russia was in the 24th position in the ranking, in 2008, Mexico was well ahead, being the 13th main country investing in the United States that same year. However, in 2017, both lost positions, falling to the 32nd and 20th positions in the ranking, respectively. Russia's position fall occurred because the FDI position of Russian allocated in the U.S. fell by more than half between 2008 and 2017, from US$ 8.9 billion to US$ 4.2 billion. On the other hand, the low dynamism in the period, compared to the other countries, explains Mexico's lowered rank. Specifically, Mexico held a FDI position in the United States of US$ 29.3 billion in 2008 and US$ 35.4 billion in 2017.

From another point of view, Figure 16 analyzes the FDI position of selected emerging economies in relation to their respective GDPs. From this perspective, Mexico becomes the leading emerging market source of FDI into the United States among those analyzed. In 2017, the value of Mexico's FDI in the United States represented 3.1% of its GDP. However, this is expected given that the two countries are natural trading partners, with integrated supply chains.

It is also interesting to examine Brazilian FDI in the United States as a percentage of GDP. Brazil registered the largest growth of the FDI positon in the United States as a percentage of its GDP among the group of emerging economies analyzed, increasing from 0.6% initially and reaching 2.1% of its GDP by 2017.

Figure 16 - Evolution of the direct investment position of emerging economies in the U.S. (% GDP)

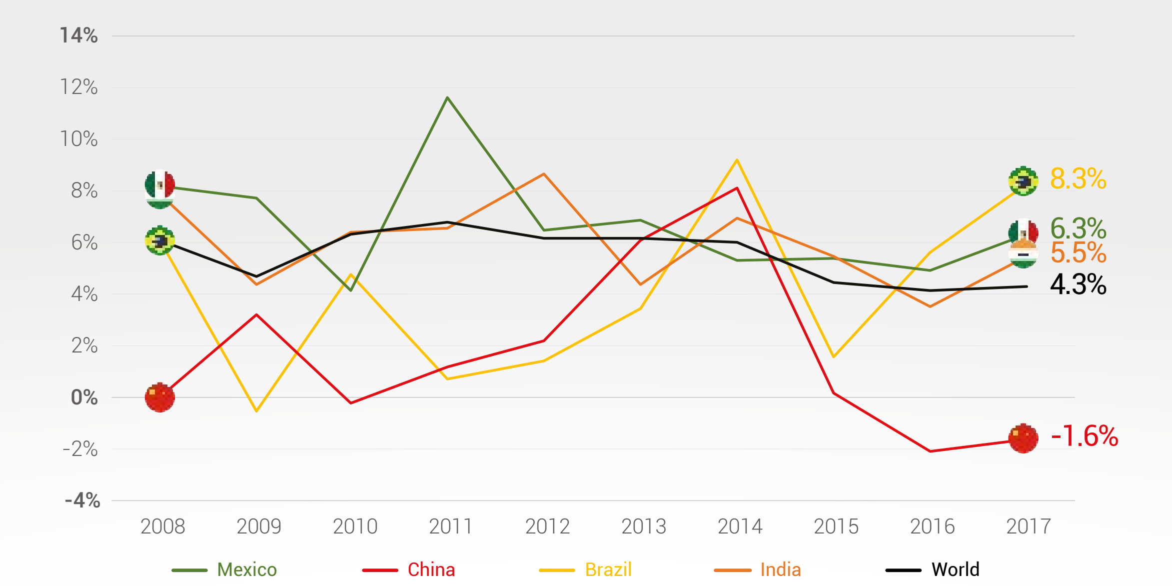


Source: BEA (2018)

Although China increased its direct investment position in the United States by 4,623.3% between 2008 and 2017, when analyzed in relation to its GDP, its investments in the United States represented only 0.5% of its GDP in 2017. It is worth noting that this was the same percentage destined by India to assets in the United States. Among these five emerging economies, only Russia reduced the percentage of its GDP allocated in the United States in the period, closing the historic series with 0.3% of the total produced by its economy.

The evolution of the income obtained by FDI in the United States, as a percentage of the position is presented in Figure 17. In 2017, the last year of the period, among the emerging markets that were analyzed, Brazilian multinationals obtained the highest profits in the United States, with a profitability of 8.3%. They were followed by Mexican, Indian, and Chinese companies, which had return rates in the United States of 6.3%, 5.5%, and -1.6% respectively.

Figure 17 - FDI income of the emerging economies in the United States (% of FDI Position)



Source: BEA (2018)
Note: Data for Russia were unavailable in every year of the time series. Data on income from Chinese FDI in the United States, in 2008, are under the restriction of confidentiality.

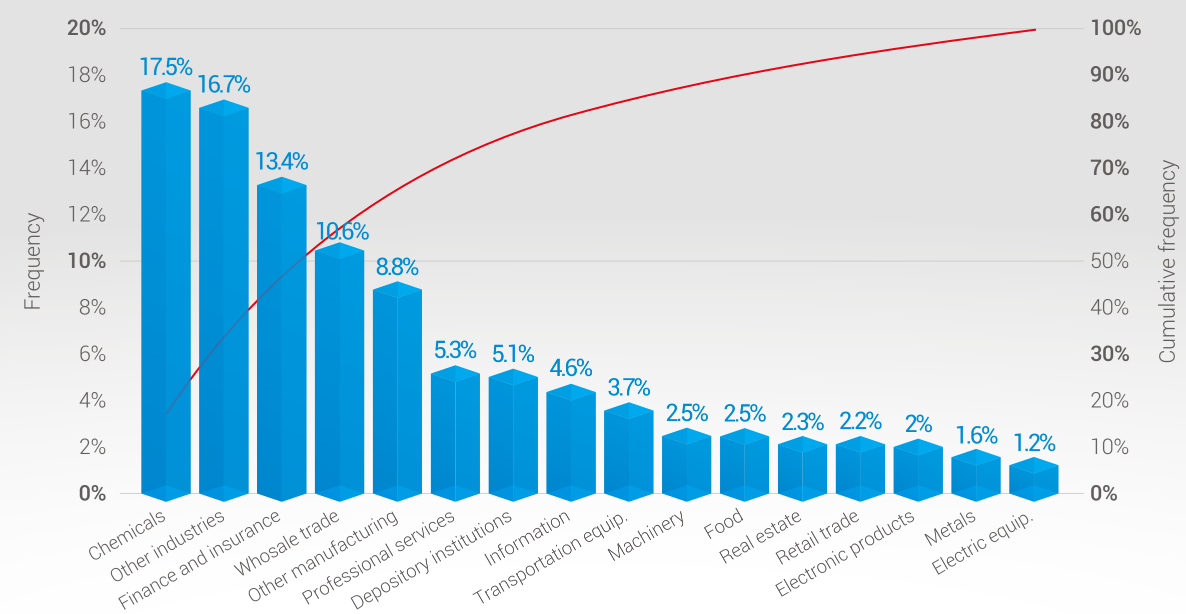
Interestingly, despite a significant increase in the Chinese FDI position in the United States during the past ten years, Chinese companies registered the lowest profitability. In addition, the rates of return of Chinese investments in the United States were negative in three of the nine years analyzed.

BILATERAL INVESTMENT MAP **BRAZIL/USA**

2.1.1. Sectoral Composition of Global and Brazilian FDI in the United States

Figure 18 describes the sectoral composition of global FDI position in the U.S. economy in 2017[27]. It is worth noting that four sectors concentrated more than 50% of the global FDI position in the United States, namely: "Chemicals" (17.5%), "Other industries", (16.7%), "Finance and insurance" (13.4%), and "Wholesale trade" (10.6%). The "Other Manufacturing", "Professional services", and "Depository institutions" sectors had a share of more than 5% of the total global FDI position in the same year.

Figure 18 - Global FDI position in the United States by sectors in 2017 (% total FDI position)



Source: BEA (2018)
Note: The red line shows the percentage of cumulative frequency.

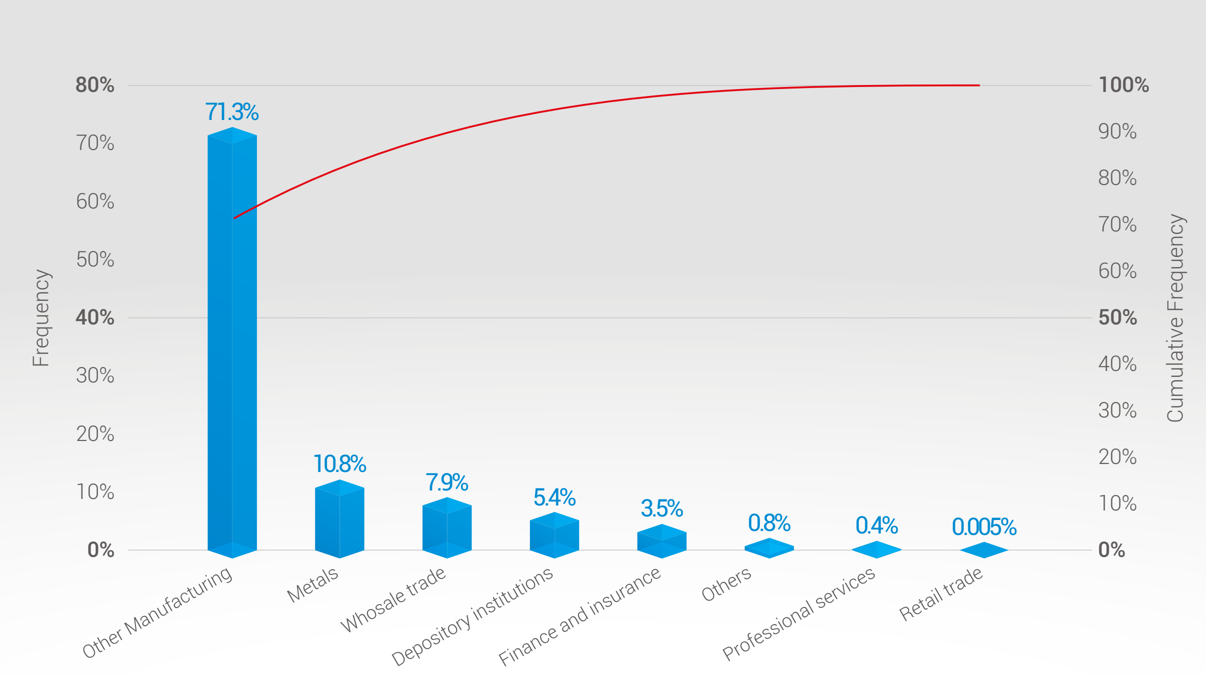
Figure 19 shows the allocation of Brazilian FDI position in the United States by sectors. Unfortunately, since some parts of the sectoral data are subject to confidentiality restrictions, a broader analysis, as conducted in Figure 18, was not possible. Anyway, there is a high concentration in the "Other manufacturing" sector, which represents 71.3% of Brazilian FDI position in the United States. The definition of "Other manufacturing" is different from that used in Figure 18. This category includes unpublished data of the following manufacturing sectors: "Food", "Chemicals", "Transportation equipment", "Machinery", and "Other manufacturing".

A comparison of the sector patterns contained in Figures 18 and 19, shows that, in relative terms, Brazil allocated a higher percentage of its position in the "Metals" and "Financial institution" than the

[27] The BEA classifies the statistics for the world FDI position in the United States into the following sectors: "Food", "Chemicals", "Metals", "Machinery", "Electronic products", "Electrical equipment", "Transportation equipment", "Other manufacturing", "Wholesale trade", "Retail trade", "Information", "Depository Institutions", "Finance and insurance", "Real estate", "Professional services", and "Other industries".

global FDI allocated to these sectors. In contrast, the Brazilian share was lower than the global in "Wholesale trade", "Finance and insurance", "Professional services", and "Retail trade".

Figure 19 – Brazilian FDI position in the United States by sectors in 2017 (% total FDI position)



Source: BEA (2018)
Note: The red line shows the percentage of cumulative frequency.
"Others" refers to unpublished data on the Information, Holdings, and Other industries sectors.

2.1.2. Data on Foreign multinational companies in the United States

Table 7 presents some performance indicators of foreign multinational enterprises that operate in the U.S. market. In particular, the data set was explored for the value of assets and domestic sales, the value added to the gross product, and the number of jobs generated by the companies. The origins of the enterprises presented are Brazilian, Chinese, Indian, Mexican, and Russian. Furthermore, data on all foreign affiliates in the United States were aggregated into the World category.

In 2015, foreign multinationals had a total of US$ 13.2 trillion in assets in the United States and employed 6.8 million people. Domestic sales and value added to the American product reached approximately US$ 4 trillion and US$ 8.9 billion in 2015, respectively.

In absolute terms, Brazilian companies, compared to companies from other economies, sold more domestically and generated more value added in the United States between 2009 and 2015. Additionally,

BILATERAL INVESTMENT MAP BRAZIL/USA

Brazil was the second nation, among those analyzed, that generated the most employment, only behind Mexico, which employed 5,700 more people than Brazil in 2015. That same year, Brazilian companies had US$ 102.2 billion in assets and employed 74,200 people in the United States. The value sold domestically and the value added by Brazilian subsidiaries to the U.S. gross product were US$ 48.3 billion and US$ 7.9 billion, respectively.

Table 7 - Performance indicators of foreign multinational companies in the U.S. (US$ million or number of jobs)

Countries	Variable	Value 2009	Value 2015	Change 2009-2015	Average Annual Growth 2009-2015
Brazil	Assets	49,587	102,167	106.0%	12.8%
	Sale	23,826	48,285	102.7%	12.5%
	Value Added	2,870	7,931	176.3%	18.5%
	Employment	41,300	74,200	79.7%	10.3%
China	Assets	18,944	193,346	920.6%	47.3%
	Sale	2,964	22,088	645.2%	39.8%
	Value Added	420	5,157	1127.9%	51.9%
	Employment	4,400	43,800	895.5%	46.7%
India	Assets	18,168	59,561	227.8%	21.9%
	Sale	10,584	27,754	162.2%	17.4%
	Value Added	2,684	6,383	137.8%	15.5%
	Employment	32,900	56,500	71.7%	9.4%
Mexico	Assets	36,522	46,514	27.4%	4.1%
	Sale	19,110	32,808	71.7%	9.4%
	Value Added	5,450	6,950	27.5%	4.1%
	Employment	52,300	79,900	52.8%	7.3%
Russia	Assets	17,454	5,839	-66.5%	-16.7%
	Sale	9,980	5,873	-41.2%	-8.5%
	Value Added	961	1,185	23.3%	3.6%
	Employment*	14,000	(I)	-40.0%	-12.0%
World	Assets	11,491,424	13,174,008	14.6%	2.3%
	Sales	2,917,599	3,996,503	37.0%	5.4%
	Value Added	592,485	894,533	51.0%	7.1%
	Employment	5,290,300	6,820,700	28.9%	4.3%

Source: BEA (2018)

Notes: * in the case of Russia, to calculate the change and the average annual growth rate of employment, we used the latest data available on that country, in this case, the values refer to the 2009-2013 period, and, in 2013, there were 8,400 jobs.

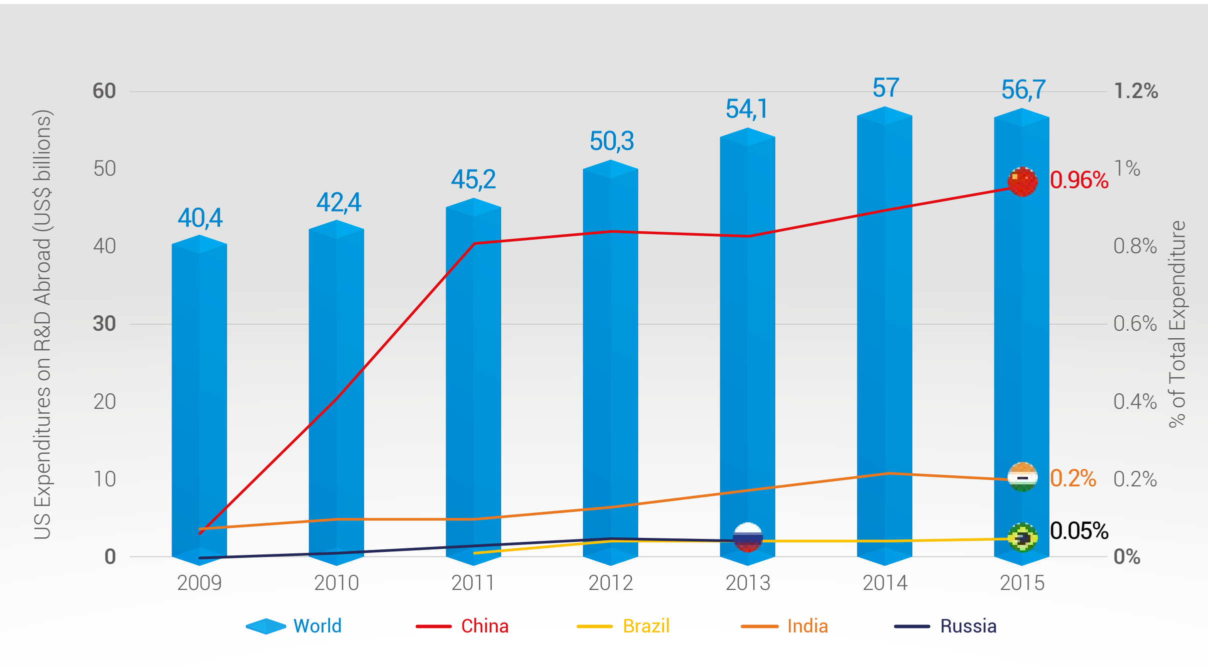
(I) refers to employment data that were suppressed by the BEA, but that is in the range between 5,000 and 9,999 jobs.

Chinese multinationals sold less than half of what Brazilian companies sold domestically in 2015 despite having the greatest value in foreign assets in the United States. Moreover, in terms of employment, Chinese companies employed 60% fewer people than Brazilian companies as seen in Table 7. Despite this, China experiences the greatest average annual growth rate compared to the other emerging economies.

Although with less dynamism than the Chinese, Brazil and India also showed higher growth rates than those of the world in all variables, while for Mexican enterprises that only occurred for three variables. In contrast, Russian companies showed negative rates in three variables.

Figure 20 shows the expenditures on R&D by foreign branches in the United States during the 2009-2015 period. Foreign companies increased their expenditures on R&D in the United States at an average annual growth rate of 5.8%, reaching US$ 56.7 billion in 2015. Despite significant Chinese growth in R&D, in 2015 it represented only 0.96% of the total expenditure on R&D by foreign branches in the United States. However, this still surpasses the expenditures of Indian, Brazilian, and Russian multinationals, which was consistently lower than 0.5% of the total spending in all years of the period under analysis.

Figure 20 - R&D expenditures by foreign companies in the U.S.

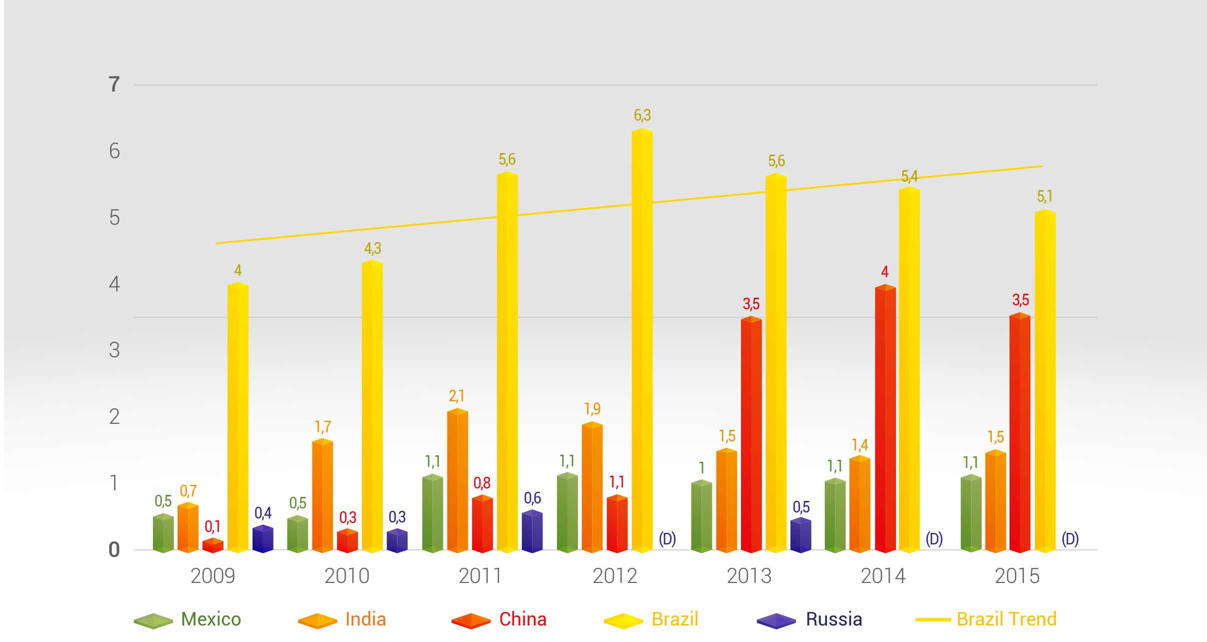


Source: BEA (2018)
Note: Incomplete data for Brazil and Russia. For Mexico, only the spending for 2009 is available, which was US$ 5 million, equivalent to 0.01% of the total spending on R&D of foreign companies in the United States.

Figures 21 and 22 present the value of American exports and imports carried out by foreign branches established on American territory in the 2008-2017 period. Again, Brazil stands out among the emerging economies analyzed. It contributed a greater value to the total U.S. exports, reaching US$ 5.1 billion in 2015. Additionally, U.S. exports from Brazilian branches in the United States showed a positive trend in the 2009-2015 period, with an average annual growth rate of 4.2%. Moreover, in 2012 Brazilian multinationals exported US$ 6.3 billion in goods to the world from the United States.

Chinese subsidiaries in the United States also increased U.S. exports significantly from 2013 to 2015, reaching a total of US$ 3.5 billion. On the other hand, India, Mexico, and Russia had much lower values than those observed for Brazil. In 2014, Indian, Mexican, and Russian branches are estimated to have exported US$ 1.4 billion, US$ 1.1 billion, and US$ 0.5 billion, respectively.

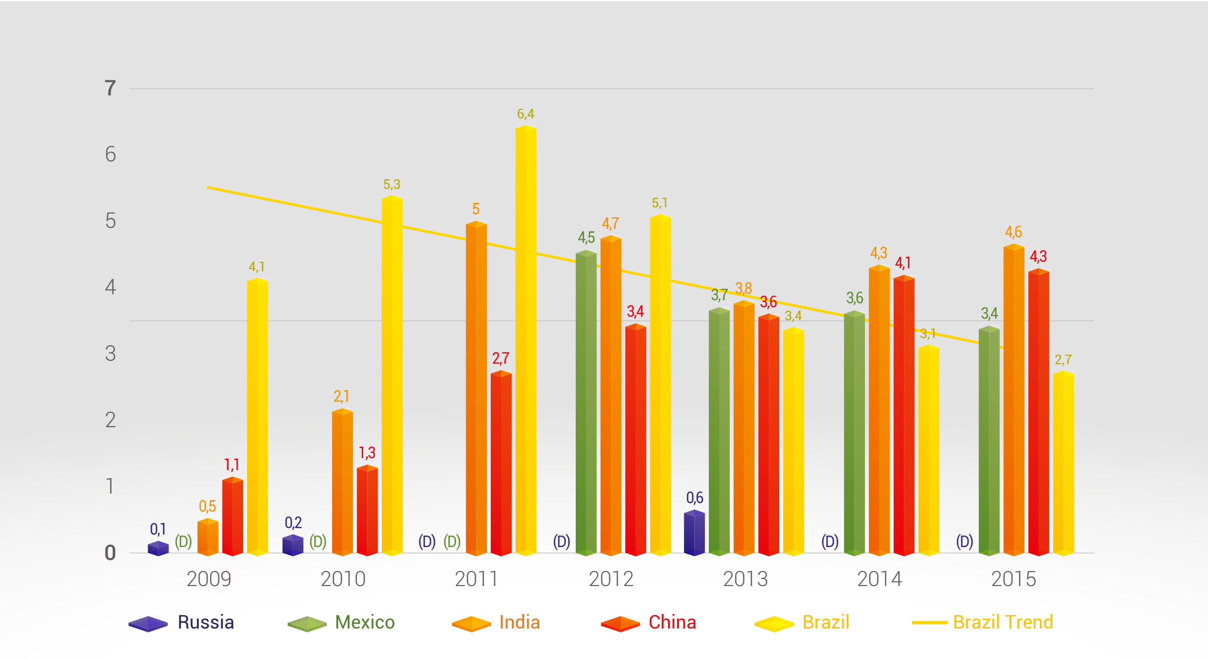
Figure 21 - American exports of foreign affiliates (US$ billion)



Source: BEA (2018)
Note: (D) refers to data that are not available due to confidentiality restrictions. Values unavailable for Russia in 2012, 2014 and 2015.

As for imports, while Indian and Chinese subsidiaries established in the United States increased their imports in the 2009-2015 period, Brazilian and Mexican subsidiaries decreased their imports beginning in 2012. In 2015, American imports carried out by Indian, Chinese, Mexican, and Brazilian multinationals totaled US$ 4.6 billion, US$ 4.3 billion, US$ 3.4 billion, and US$ 2.7 billion, respectively.

Figure 22 - American imports of foreign affiliates (US$ billion)



Source: BEA (2018)
Note: (D) refers to data that are not available due to confidentiality restrictions. Values unavailable for Russia in 2011, 2012, 2014, and 2015 and, for Mexico, in 2009, 2010, and 2011.

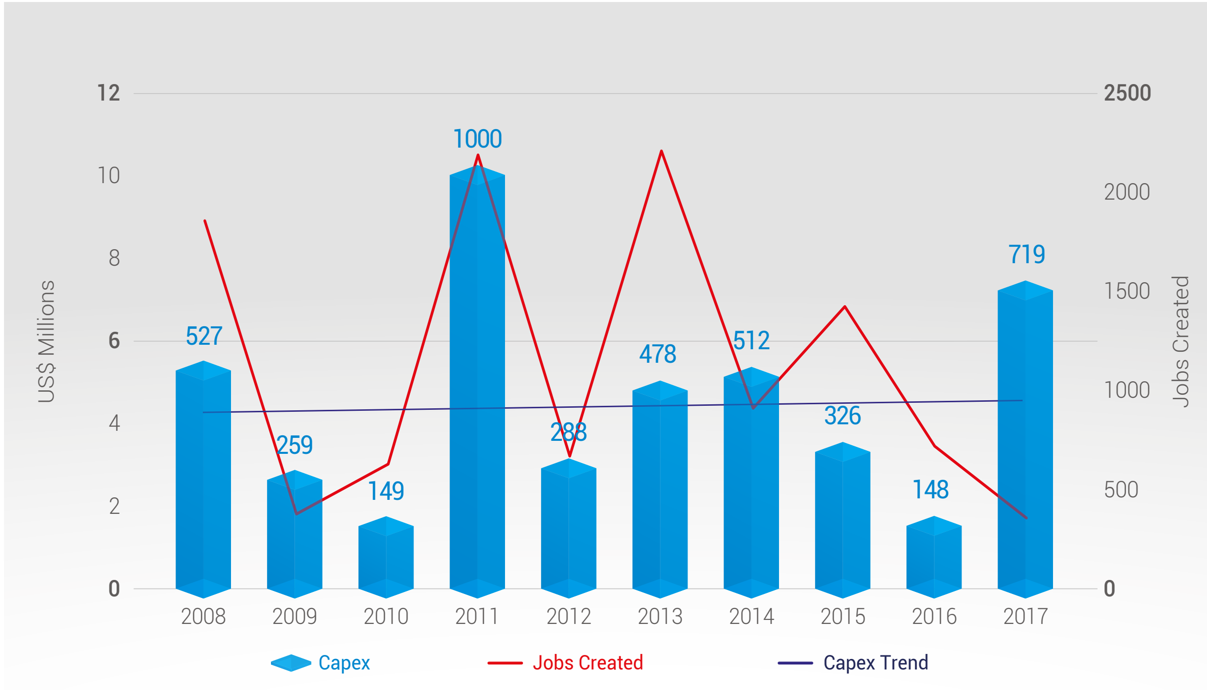
Thus, taking into account the increase in Brazilian FDI position in the United States, the growth in exports and the reduction in imports by Brazilian multinationals, there is evidence that Brazilian investments aimed at obtaining market share as well as greater efficiency and a greater share in Global Value Chains. This behavior was opposite to that observed in investments by Indian companies, which seem to be more interested in gaining greater access to the U.S. market.

2.2. Announcements of Greenfield investment from Brazil in the United States

fDi Markets data show that during 2008-2017 Brazilian companies announced a total of 656 greenfield investment projects in 76 countries, totaling US$ 51.1 billion. Based on the criterion of number of projects, the United States received the largest number of announcements of Brazilian greenfield investment. In terms of value, the United States was the second main destination, only behind Colombia. In the United States, greenfield investments were announced by 92 Brazilian companies, through 138 projects, whose estimated Capex and employment generation totaled US$ 4.4 billion and 11,340 people during the period.

Figure 23 shows the value of the announced annual greenfield investment (US$ million) from Brazil to the United States, as well as the estimated number of jobs created between 2008 and 2017. First, there was a lot of volatility in the value of greenfield investment from year to year, with a slightly positive trend. In addition, the highest concentration of investment announcements occurred in 2011, in which total investments reached US$ 1 billion, and the lowest was observed in 2016, with less than 15% of the maximum value above.

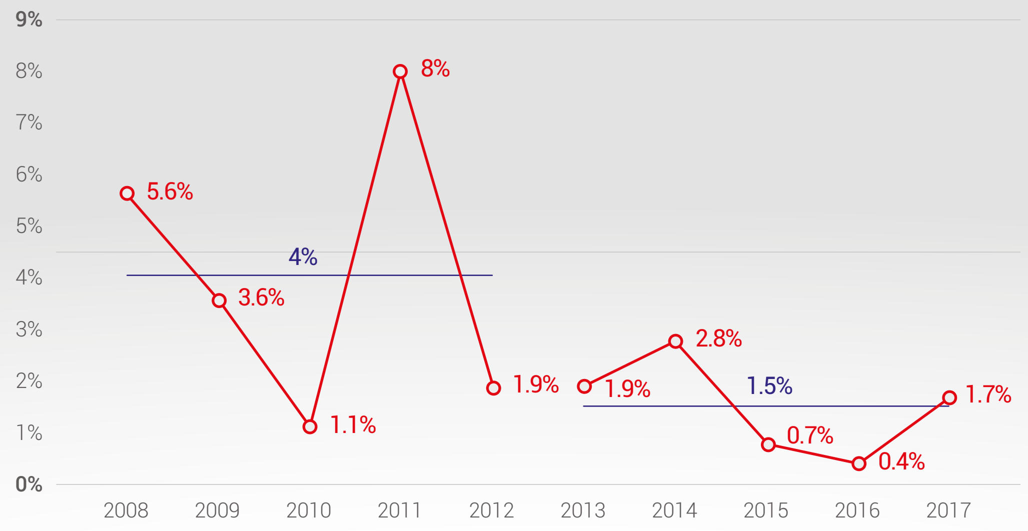
Figure 23 - Evolution of the announcements of greenfield investment from Brazil in the United States



Source: fDi Markets (2018)

On the other hand, Figure 24 analyzes the announcements of greenfield investment from Brazil in the United States in relation to Brazilian FDI position in the United States, from 2008 to 2017. The average percentage for the 2008-2012 period is more than double of that observed in the 2013-2017 period, given the reduction from 4% to 1.5% in the respective periods. Moreover, the first period experienced more volatility compared to that observed in the second.

Figure 24 - Announcements of greenfield investment from Brazil in the U.S. (% FDI position)

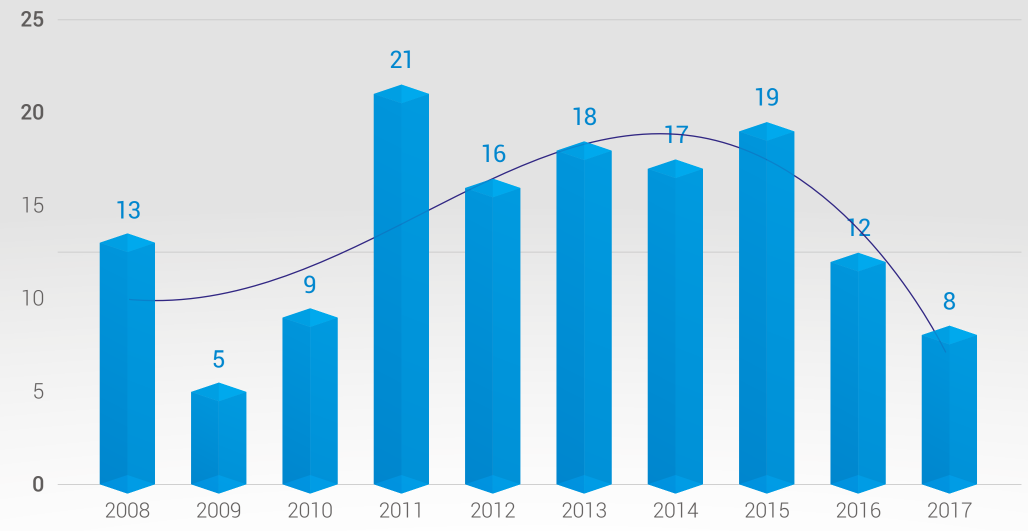


Source: fDi Markets (2018) e BEA (2018)

In addition, the highest percentages of announced greenfield investment relative to FDI position were observed in 2011 and in 2008, years in which they reached 8% and 5.6%, respectively. Possibly, these investment announcements, if implemented, explain a part of the growth in the Brazilian FDI position in the United States in the period from 2008-2017, mirroring is the trends observed in Table 6. Alternatively, the percentage drop in recent years may indicate that Brazilian FDI position Brazil in the U.S. will experience moderate growth in the coming years.

Figure 25 shows the history of greenfield investment announcements by Brazil in the United States in terms of number of projects during the full period. It is probable that the global financial crisis of 2008 negatively impacted the announcements of investment projects in 2009 and 2010; however, after the crisis, that number grew, ranging from a maximum of 21 and a minimum of 16 per year. Nevertheless, in 2016 and 2017 investment project announcements decreased again. Specifically, these two years combined do not reach the number of announcements in 2011 alone.

Figure 25 - Number of announced greenfield investment projects by Brazil in the United States



Source: fDi Markets (2018)

With regard to sectors, announcements of greenfield investments from Brazil in the United States were diversified, given that they covered 25 different sectors, as shown in Table 8. Among them, the largest investment announcements in value were allocated to the "Plastics" sector, through eight projects that were executed by seven Brazilian companies[28]. These projects generated 313 jobs and more than US$ 815 million in greenfield investment during the 2008-2017 period. In terms of announced value, the "Software & IT services" sector has a share of only 3.8% of the total investment of the period. However, this sector stands out in estimated number of new jobs created: 1,969. Furthermore, 20 Brazilian companies announced 27 greenfield investment projects in "Software & IT services", with an estimated value of US$ 167.4 million.

During the same period the "Chemicals", "Textiles", "Coal, oil and natural gas", and "Metals" sectors announced investments valued at US$ 573.5 million, US$ 418.1 million, US$ 402.8 million, and US$ 382.8 million, respectively. As a result, these sectors occupied the second, third, fourth, and fifth positions, respectively, in the ranking of sectors with the greatest value of Brazilian investment announcements in the United States.

In addition, the "Textiles", "Food & tobacco", and "Pharmaceuticals" sectors were also expected to generate more than 1,000 new job openings in the United States. It is also worth noting that the definition of "Others" refers to the aggregate set of the following sectors: "Rubber", "Consumer products", "Communications", "Electronic components", "Industrial machinery, equipment & tools", "Business

[28] Providencia USA Inc, Braskem America, Industria Brasileira de Anilinas (INBRA), Clodam do Brasil, Valfilm North America, Braskem, and Koinonia Espumas.

services", "Ceramics & glass", "Engines & turbines", "Automotive components", "Biotechnology", "Transportation", "Medical devices", and "Beverages".

Table 8 - Sectors with greenfield investment announced by Brazil in the USA*

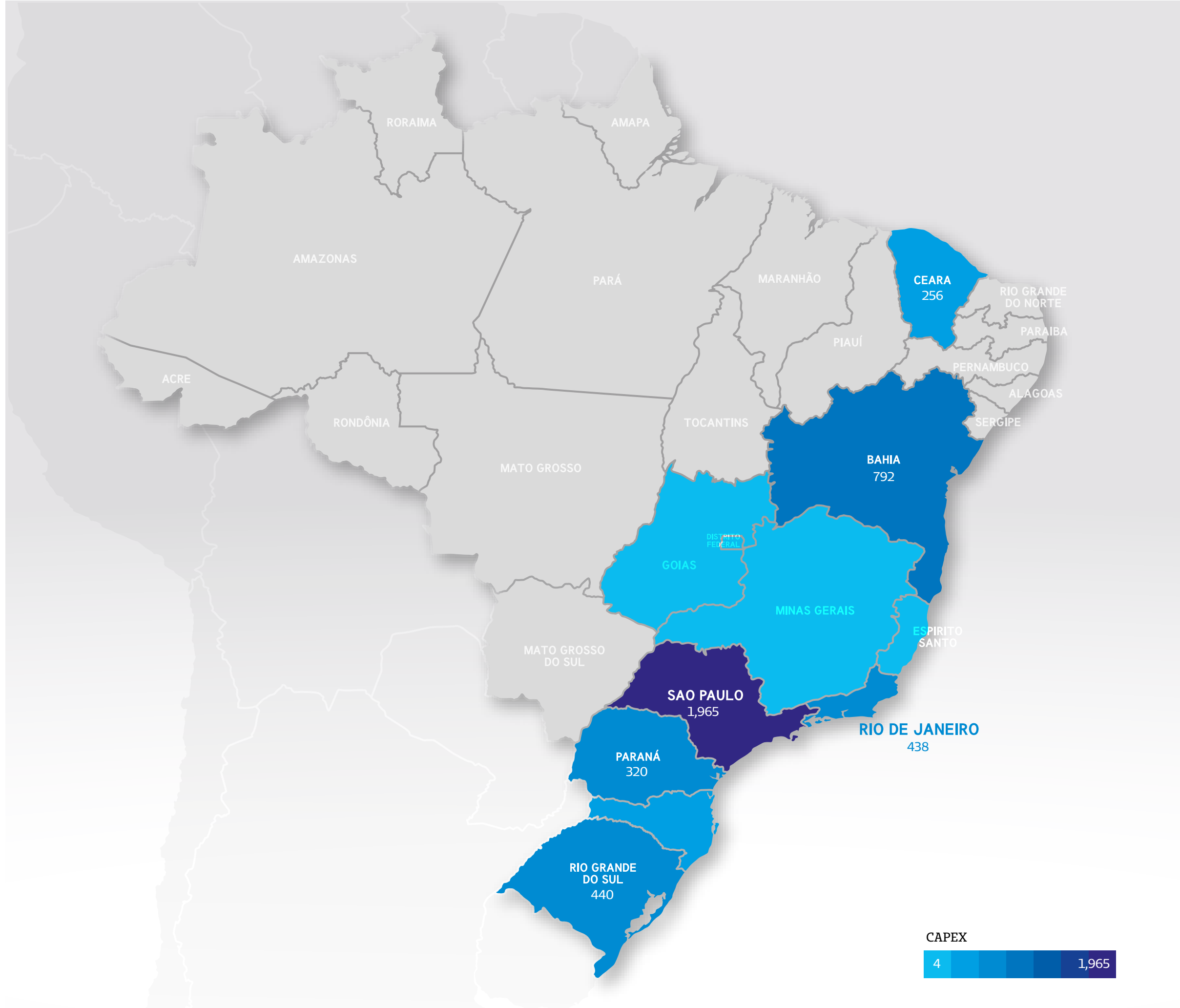
Sector	Projects	Capex (US$ millions)	Share	Jobs Created	Companies
Plastics	8	815,3	18.5%	313	7
Chemicals	10	573,5	13.0%	380	7
Textiles	5	418,1	9.5%	1,198	3
Coal, Oil and Natural Gas	3	402,8	9.1%	368	3
Metals	13	382,8	8.7%	788	5
Food & Tobacco	13	369,4	8.4%	1,576	6
Pharmaceuticals	2	223,6	5.1%	1,396	2
Alternative / Renewable Energy	1	203,1	4.6%	54	1
Financial Services	18	200,2	4.5%	698	11
Aerospace	7	171,1	3.9%	693	2
Software & IT Services	27	167,4	3.8%	1,969	20
Paper, Printing & Packaging	1	120,0	2.7%	329	1
Others (13)	30	358,3	8.1%	1,578	27
Total	**138**	**4,406**	**100.0%**	**11,340**	**92**

Source: fDi Markets (2018)
* Refers to the cumulative value for the period from 2008-2017.

Map 5 uses a heat map to show the Brazilian states from which announced greenfield investment in the United States originated during the period from 2008-2017. Although 11 Brazilian states were the source of greenfield investment announcements in this period, the announcements were most notably concentrated in São Paulo, where they totaled US$ 1.9 billion, equal to approximately 44.6% of the total estimated value of Brazilian announcements in the United States.

The other five major source states identified in Map 5 include Bahia, Rio Grande do Sul, Rio de Janeiro, Paraná, and Ceará. Companies from these states announced investments of US$ 792 million, US$ 440 million, US$ 438 million, US$ 320 million, and US$ 256 million, respectively. Together, these investment announcements reached 50.9% of the total announced greenfield investment during 2008-2017.

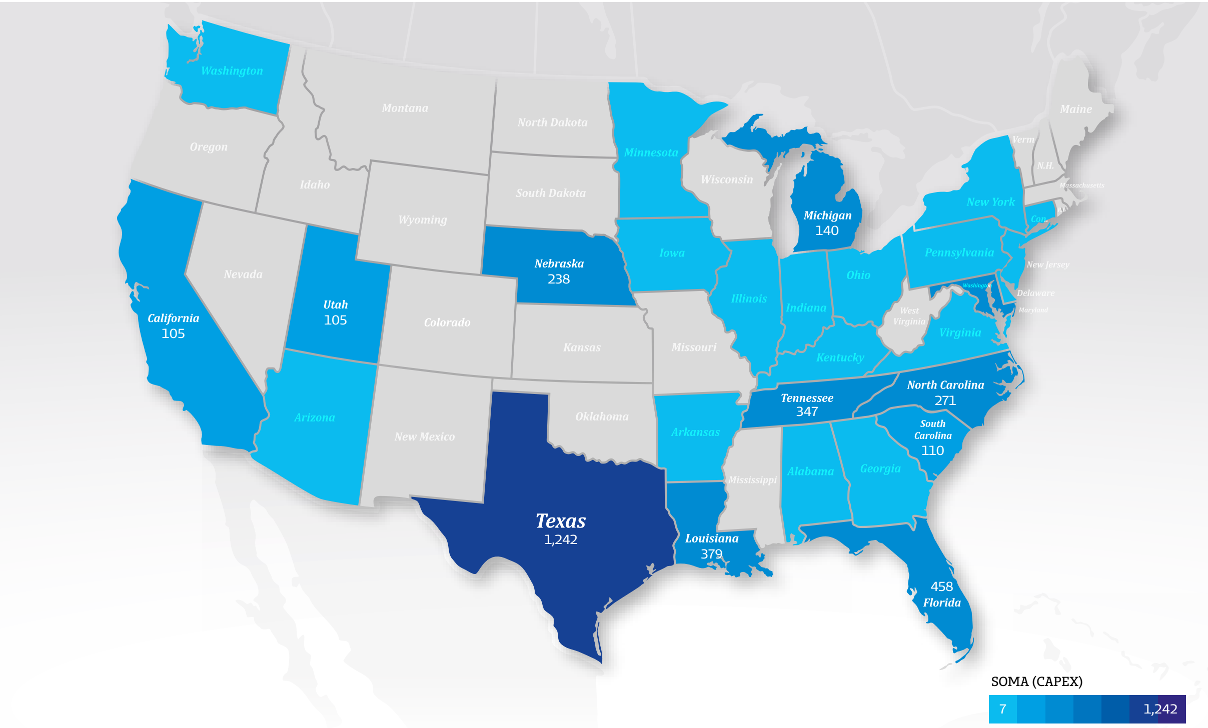
Map 5 - Greenfield investment announced by Brazil in the U.S. by origin (US$ million)*



Source: fDi Markets (2018)
Note: The fDi Markets database does not specify the states of origin of 3 greenfield investment projects. These totaled, in the 2008-2017 period, US$ 11.7 million in investments, which were announced by 3 Brazilian companies.

Map 6 shows the U.S. states that were announced to receive Brazilian greenfield investments during the same period. In total, 27 U.S. states were the destination of Brazilian investment; however, only the 11 that received announcements of more than US$ 100 million were highlighted on the map. During the period, there was a concentration of investment announcements in Texas, with a total of US$ 1.242 billion, representing 28.2% of the total announced. Following Texas are Florida, Louisiana, Tennessee, North Carolina, and Nebraska which received 10.4%, 8.6%, 7.9%, 6.2%, and 5.4% of the total announced, respectively. With 2% to 5% of the total number of announcements, Maryland, Michigan, South Carolina, Utah, and California were also identified on the map, as they were to receive investments of US$ 214 million, US$ 140 million, US$ 110 million, US$ 105 million, and US$ 105 million, respectively.

Map 6 - Greenfield investment announced by Brazil in the U.S. by destination (US$ million)*



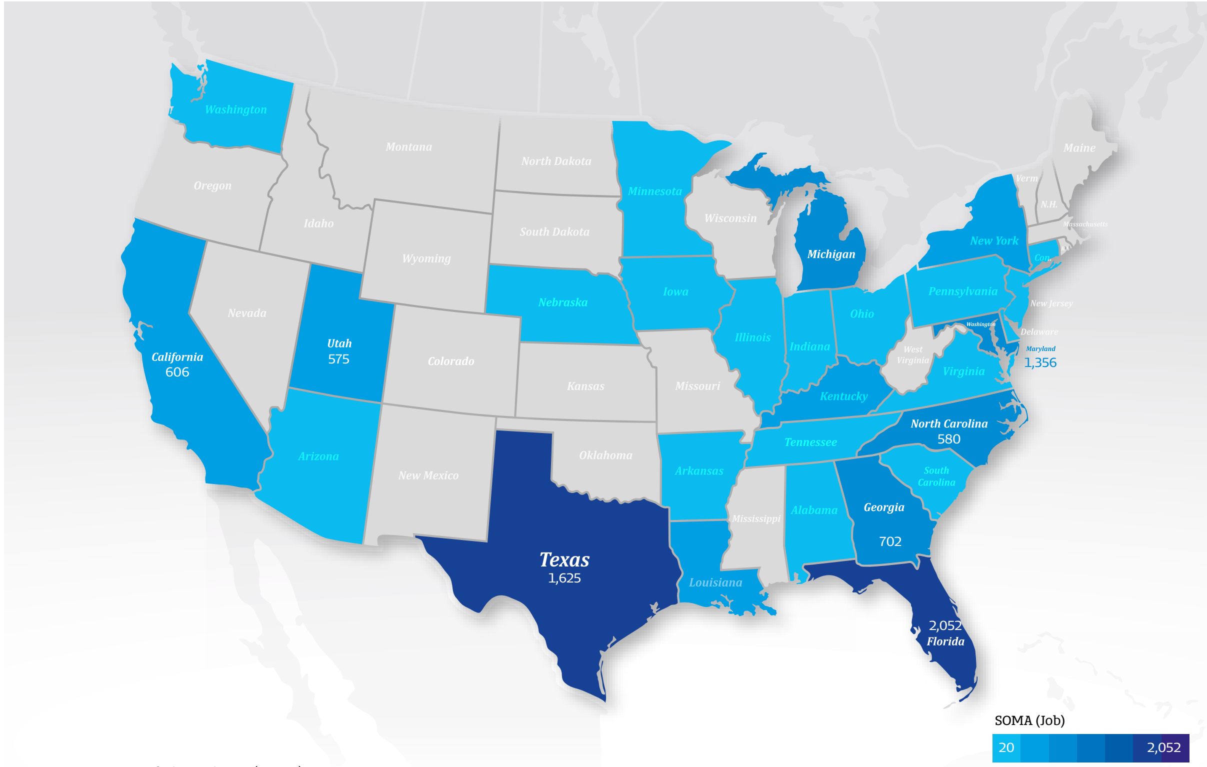
Source: fDi Markets (2018)
Note: The fDi Markets database does not specify the states of destination of 6 greenfield investment projects. These totaled, in the 2008-2017 period, US$ 173.3 million in investments, which were announced by 5 Brazilian companies.

In Texas, the leading sectors for greenfield investment were “Plastics”, “Chemicals,” and “Textiles”, with announcements of US$ 712.5 million, US$ 208 million, and US$ 256.1 million, respectively. The state of Florida received announced greenfield investment in the “Aerospace”, “Financial Services”, “Software & IT services”, and “Food and tobacco” sectors, with greenfield projects that amounted to US$ 157.2 million, US$ 98.9 million, US$ 38 million, and US$ 62.6 million, respectively. In the state of Louisiana, investments in the “Coal, oil and gas” sector totaled US$ 379.4 million. Similar to Texas, Tennessee also received investments in “Chemicals” but the value was even greater, with an amount of US$ 331.3 million during the period. The Brazilian investment announcements in the “Pharmaceuticals” sector were destined to Maryland, with a total of US$ 200 million.

Investments in the “Paper, printing & packaging”, and “Alternative / renewable energy” sectors were completely concentrated in the states of North Carolina and Nebraska. Specifically, North Carolina received announced investments of US$ 120 million in the “Paper, printing & packaging” sector, while Nebraska received US$ 203.1 million of announced greenfield investment in “Alternative / renewable energy”. With sector concentrations lower than 30%, Utah, Michigan, California, and South Carolina were announced to receive Brazilian greenfield investment in “Food & tobacco”, “Metals”, “Software & IT services”, and “Textiles”, respectively.

Map 7 presents the estimate of jobs generated by the Brazilian multinationals in U.S. states. Considering this, the highest number of estimated jobs generated between 2008 and 2017 was in the states of Florida, Texas, Maryland, and Georgia, with a total of 2,052, 1,625, 1,356, and 702 jobs, respectively.

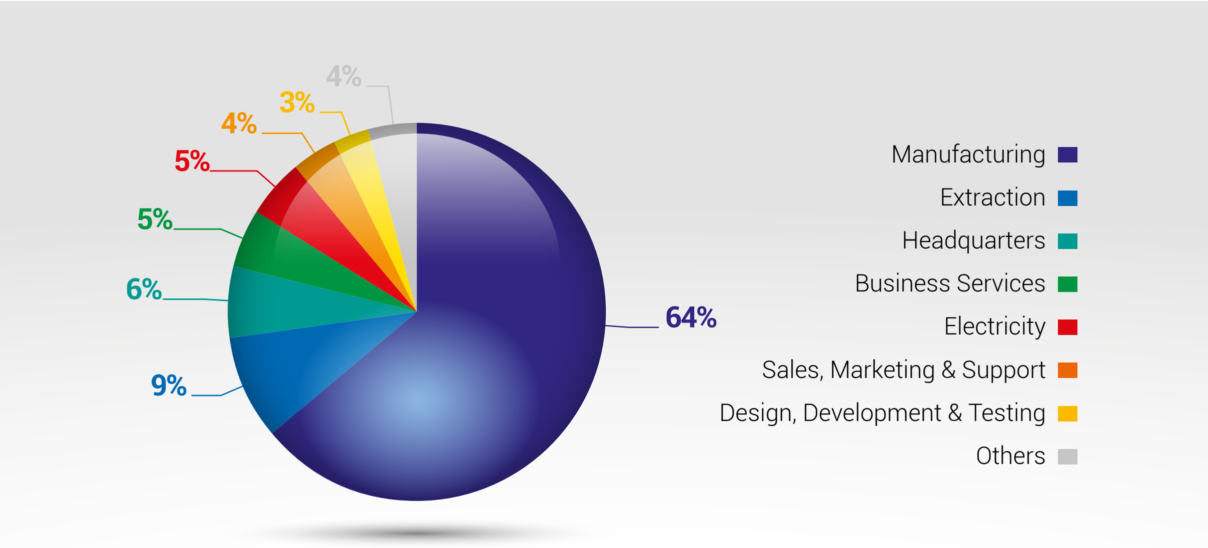
Map 7 - Greenfield investment announced by Brazil in the U.S. by destination (number of jobs)*



Source: fDi Markets (2018)
Note: The fDi Markets database does not specify the states of destination of 6 greenfield investment projects. These totaled, over the period from 2008-2017, 430 new job openings in the United States, which were announced by 5 Brazilian companies.

Greenfield investments from Brazil in the United States are concentrated in the “Manufacturing” activity, with 64% of the total value of announcements of the 2008-2017 period, as observed in Figure 26. Individually, all other activities represented less than 10% of the total announcements of Brazilian investment in the United States, and, among these, the most relevant were: “Extraction” (9%), “Headquarters” (6%), “Business services” (5%), “Electricity” (5%), “Sales, marketing & support” (4%), and “Design, development & testing” (3%). In Figure 26, “Others” refers to activities of “Logistics, distribution & transportation”, “Maintenance & servicing”, “Recycling”, and “Technical support centers”.

Figure 26 - Greenfield investments announced by Brazil in the USA by activities (% total)*



Source: fDi Markets (2018)
* Refers to the cumulative value for the period from 2008-2017.

Finally, Brazilian multinationals responsible for the ten largest investments in the United States from 2008-2017, in terms of value, are listed in Table 9. In this period, Odebrecht and JBS were the companies that announced the most greenfield investments in U.S. territory, with a total of US$ 792 million and US$ 508 million, respectively. However, JBS created the most number of projects and jobs generated, with a total of 12 projects and 1,423 job openings. In terms of value, Petrobras was the Brazilian multinational with the third largest investment announcement in the U.S. This company from the "Coal, oil & gas" sector invested US$ 379 million through a single project.

Table 9 - Brazilian companies with announcements of greenfield Investment in the United States*

Companies	Sector	Projects	Capex (US$ Millions)	Share (%)	Jobs Created
Odebrecht	Multi-sector	4	792	18.0%	272
JBS	Multi-sector	12	508	11.5%	1,423
Petrobras	Coil, Oil and Natural Gas	1	379	8.6%	260
Gerdau	Metals	11	360	8.2%	670
Santana	Textile	2	256	5.8%	1,100
Petropar	Multi-sector	3	222	5.0%	399
Ultrapar	Chemicals	2	208	4.7%	92
Votorantim Participacoes	Chemicals	2	208	4.7%	92
EMS	Pharmaceuticals	1	200	4.5%	1,298
Companhia Providencia	Multi-sector	2	140	3.2%	84
Others (74)	-	98	1,133	25.7%	5,650
Total		**138**	**4,406**	**100%**	**11,340**

Source: fDi Markets (2018)
* Refers to the cumulative value for the period from 2008-2017.

In the "Metals" sector, Gerdau is the most prominent investor, with 11 announced investment projects that totaled US$ 360 million and were estimated to generate 670 jobs. In "Chemicals", Ultrapar and Votorantim, both with similar investment characteristics, stood out since each announced two greenfield investment projects totaling US$ 208 million and 92 jobs. In the "Pharmaceutical" sector, the most important investment was announced by EMS, whose projects generated an estimated 1,298 jobs and an announced investment value of US$ 200 million during this period. Another company with high job creation is Santana, which generated 1,100 jobs through two greenfield projects worth US$ 256 million.

2.3. Case Studies of Brazilian companies in the United States.

To demonstrate business practices involving Brazilian and American companies, with regard to bilateral FDI, this study highlights the presence of Brazilian companies in the United States to illustrate successful cases of these investments.

OXITENO

OXITENO

Sector: Chemical

Year of Foundation: 1973

Brief history: Oxiteno develops innovative and sustainable solutions that supply multiple markets, such as agrochemicals, personal care, home care and I & I, oil & gas, coatings, among others. The company is present in the Americas, Europe, and Asia, with 12 industrial plants in Brazil, Mexico, Uruguay, Venezuela, and the United States, in addition to commercial offices in Argentina, Belgium, China, Colombia, and R&D centers in the US, Mexico and Brazil. The company is part of Ultra (B3: UGPA3; NYSE: UGP), one of the largest economic conglomerates in Brazil.

Year of internationalization and location of the enterprise abroad: In the United States, Oxiteno's operations began with the opening of its commercial office in 2007, as part of its growth strategy in the Americas. In 2012, the company acquired its first industrial plant in the U.S., which was inaugurated in 2018. Oxiteno's industrial plant in Pasadena, TX, its main office in Houston, TX and R&D center in Hattiesburg, MS, operate together, serving customers nationwide through different channels with a broad portfolio of products and solutions.

Factors for choosing internationalization in that market (decision tracking): The investment decision reflects the importance of this market, both from the perspective of consumption and the conditions of supply of raw materials. It also consolidates the United States at the center of the company's growth strategy and ensures local service to customers across the country, while meeting the needs and expectations of various strategic clients globally.

Financial Data: Over six years, Oxiteno has invested approximately US$ 200 million and has created more than 120 direct jobs and several indirect jobs in the United States.

BILATERAL INVESTMENT MAP **BRAZIL/USA**

MICROBIOL

Sector: Manufacture of fertilizers, except organic mineral fertilizers

Year of Foundation: 2000

Brief history: Microbiol is responsible for the production and marketing of Microgeo brand. Microgeo is a patented organic fertilizer product and the result of much research. It was developed in 2000 in the city of Limeira, state of São Paulo – Brazil. To ensure the immediate supply of customers and resellers, the plant has a production capacity of up to 120 tons per day. From the receipt of the raw materials from 100% national suppliers to product delivery, Microgeo leaves the factory in a maximum of 48 hours and reaches the producer with the support of partners and dedicated distributors of the brand, strategically located in Brazil's main agricultural regions and in neighboring countries, such as Uruguay, Argentina, Bolivia and Paraguay. Microgeo has the IBD Organic certification and the product is located in an area of 5,000 m². Microbiol has more than 100 committed collaborators to serve its customers.

Year of internationalization and location of the enterprise abroad:

- **University of Minnesota:** 3 years of validation (2015, 2016, 2017 crop) in the university's SW Research Center in Lamberton, MN. Due to the management, climate, and type of soil of the region, the results did not demonstrate a favorable financial viability.
- **Virginia Polytechnic Institute and State University:** 3 years of validation (2018, 2019, 2020 crop) in Blacksburg, VA. They started a new experiment in this region due to the different type of soil and climate compared to Minnesota. The company believes that its technology can present a more effective result in Virginia.

Factors for choosing internationalization in that market (decision tracking): Expansion into new markets is intended to decrease its dependency on the domestic Brazilian market, which despite having huge potential, is very dependent on climatic conditions and can be affected by regional economic crisis.

Financial Data: Not supplied.

TOTVS

Sector: Software

Year of Foundation: 1983

Brief history: A leader in the market of business management software, TOTVS is recognized for its innovation. It has more than 50% market share in Brazil and 26,000 customers in South America. To remain at the forefront, the company invests in research and has segmented development centers.

Year of internationalization and location of the enterprise abroad: In 2012, the Brazilian company opened the TOTVS Labs, an office in Silicon Valley, focusing on innovation and development of new products and solutions for the company. There, solutions are created in line with the latest technology trends, such as cloud, mobility, big data, and social computing.

Factors for choosing internationalization in that market (decision tracking): The company chose to open a center to test and create new products and businesses in this region due to its history, availability of talent with technology skills, and a culture of innovation.

Financial Data: The TOTVS Lab Office employs 14 employees directly.

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