

# Commodities Boom and the Structure of Sino-Brazilian Trade: A Study of the Period 2000-2021

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The present study aims to analyze the growing Sino-Brazilian trade relationship and how China has contributed to the commodity price boom in the recent period. Throughout the article, it was possible to identify that the export and import agenda between countries differs in terms of number of products and technological intensity, so that imported products are capital intensive, while exported products are predominantly commodities. The text is divided into two main sections, firstly addressing the literature review on the commodities boom and highlighting the “China effect”. The second section analyzes trade between the countries, so that the trade relationship has followed an increasing trajectory since 2003. As of 2009, China has become Brazil’s main trading partner, surpassing historical partners such as the United States and Argentina.

*Keywords:* trade balance, commodities, Brazil-China trade structure

## Introduction

The rise of China since the turn of the century is one of the phenomena that has drawn the most attention from the international economy. Unlike what happened to developed countries that slowed down after the liquidity crisis in 2008, China managed to maintain an economy growing at a fast pace (Hiratuka & Sarti, 2016, p. 84).

In 2009, China became Brazil’s main trading partner, surpassing traditional importers such as the United States and Argentina. Since then, the Chinese have boosted the Brazilian economy through demand for commodities, generating significant trade surpluses. Given the Chinese commercial relevance, this research aims to discuss the Sino-Brazilian trade relationship and how China has influenced the price and demand for commodities, boosting Brazilian exports and accentuating bilateral dependence on this segment.

The article is divided into two parts. First, the commodity price boom is examined, highlighting the recent Brazilian export basket, the main importing countries, the price cycle of different product categories, and the main explanations found in the literature about the price level, emphasizing aspects of demand, supply, and costs. Explanatory factors that emphasize demand are the most frequent in the literature, highlighting the speculative bubble of 2008, the “China effect”, the level of key prices in the international economy and favorable macroeconomic conditions. At the same time, the main explanations on the supply and cost side are the devaluation of the dollar against the currencies of countries that export commodities and the accelerated increase in unit labor costs.

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The second section analyzes China's growing share of Brazilian exports and the main products traded between the countries. The data reveal that since the 2000s, bilateral trade has expanded and, in 2009, China became the main Brazilian importer. Regarding the category, the export basket involves the concentration of a reduced number of products with low technology, while for imported products there is greater diversity and with high added value.

### **Boom of the Commodity Cycle in Brazil and the Influence of China**

According to Ver ísimo and Xavier (2014), commodities are defined as products that have intensive use of natural resources in their primary state and contain a low level of industrialization. The producing sectors are characterized by being undifferentiated, as is the case of agricultural, mineral, and energy products. In addition, they produce “high rents—differential rents in the Ricardian sense of the term—that is, windfall profits associated with the typical price cycles of these products” (Carneiro, 2012, p. 7).

Because it deals with goods that fluctuate according to a series of cycles (agricultural, economic, climatic), its degree of specialization has concentrated the productive forces in a little variable list of exports and intensified the Dutch disease in Latin America. “Since the increase in primary exports, such as soy, iron ore and oil, values the real effective exchange rate and reduces the participation of industry in GDP” (Freitas, 2022, p. 412).

According to data released by the Special Secretariat for Foreign Trade and International Affairs (SECINT), the main commodities that Brazil produced and exported during 2021 were soybeans (13.8%), corn (8%), green coffee (7.3%), soybean meal (7.1%), fresh chicken meat (6.9%), and cellulose (6.8%). Together, the six products represented almost half of all Brazilian exports. As shown in Figure 1, among the main export destinations, China (31.3%), the United States (11.1%), and Argentina (4.2%) stand out.



*Figure 1.* Main destinations of Brazilian exports during the year 2021 (data in millions US\$).

Source: Own elaboration based on ComexStat.

The literature indicates that, during the years 2000 to 2010, the peripheral economies, which have predominantly commodity-related products as their export agenda, went through a price boom. According to the authors Prates and Marçal (2008), the rise in prices is due to global macroeconomic conditions, the “China effect” and the level of key prices in the international economy. For the first, the authors highlight the growth trajectory of the global economy from 2002 and how the price of commodities proved to be sensitive to fluctuations in international performance. This is because agricultural raw materials and metals are inputs for industrial production, with relatively tight supply in the short term (Prates & Marçal, 2008, pp. 165-166).

Regarding the “China effect”, the rapid growth that the Asian country had during the turn of the century is emphasized, driving the demand for metallic commodities and the purchase of agricultural products to supply its vast population. Finally, the authors point out that the American interest rate and the devaluation of the dollar against the euro and yen until 2005 encouraged the demand for commodities in European countries and Japan as a way to recover industrial growth (Miller & Coy, 2004; Prates & Marçal, 2008).

It should be noted, however, that if, on the one hand, Chinese demand for raw materials has put upward pressure on commodity prices, creating an inflationary component in developed countries, on the other hand, the production and export of Chinese manufactured products at highly competitive factors have had an important deflationary impact on the world economy. This last movement, it is worth highlighting, has surpassed the first, a condition that has contributed significantly to the configuration of an international scenario marked by low levels of inflation and interest rates. (Oliveira, 2008, p. 82)

Other factors may also collaborate with the explanation of rising prices, such as the speculative bubble of 2008 (Cavalcante, 2008; Cunha, Léis, Santos, & Prates, 2011; Silva, 2018). Silva (2018), for example, investigated the presence of speculative bubbles between 2008 and 2017 for corn, live cattle, soybeans, and coffee prices through the Generalized Supremum Augmented Dickey-Fuller (GSADF). The results suggested that there were about 47 bubbles in the period, being predominant in corn and soybean prices. Research carried out by Cavalcante (2008) analyzed the relationship between oil prices and speculation in the futures market. According to the author, the bubbles were formed from the large flow of resources from other financial markets (stocks and bonds) to the oil derivatives market between 2000 and 2007 (Cavalcante, 2008, p. 1).

Despite the great focus of studies on aspects related to demand, Serrano (2014) states that there are two limitations in the literature regarding this approach: (i) generalization about the transmission mechanisms of demand and (ii) disregard of supply limitations and costs of commodity production. For the first, the author’s analysis focuses on the limitations that the “China effect” exerted on the price of commodities when comparing the 1990s with the post-2000 period, so that in the world GDP, production and trade have not grown more rapidly since the 21st century. In addition, aspects related to the income elasticity of world demand need to be taken into account, since the vast majority of commodities have an elasticity of less than one.

Regarding the disregard of aspects related to supply and production costs, Serrano (2014) argues that the devaluation of the dollar against the currencies of countries that export commodities and the relatively rapid increase in unit labor costs may have been elements that influence the rise of prices. These fluctuations can be observed from Figure 2, which highlights the food price index, agricultural raw materials, minerals, and fuel, making it possible to identify a growth pattern between the series. Despite the sudden break in the series that occurred in 2009 due to the international crisis, the price standard remained high and recovered quickly the following year, with emphasis on minerals and fuels. The same movement can be seen in the period after COVID-19.

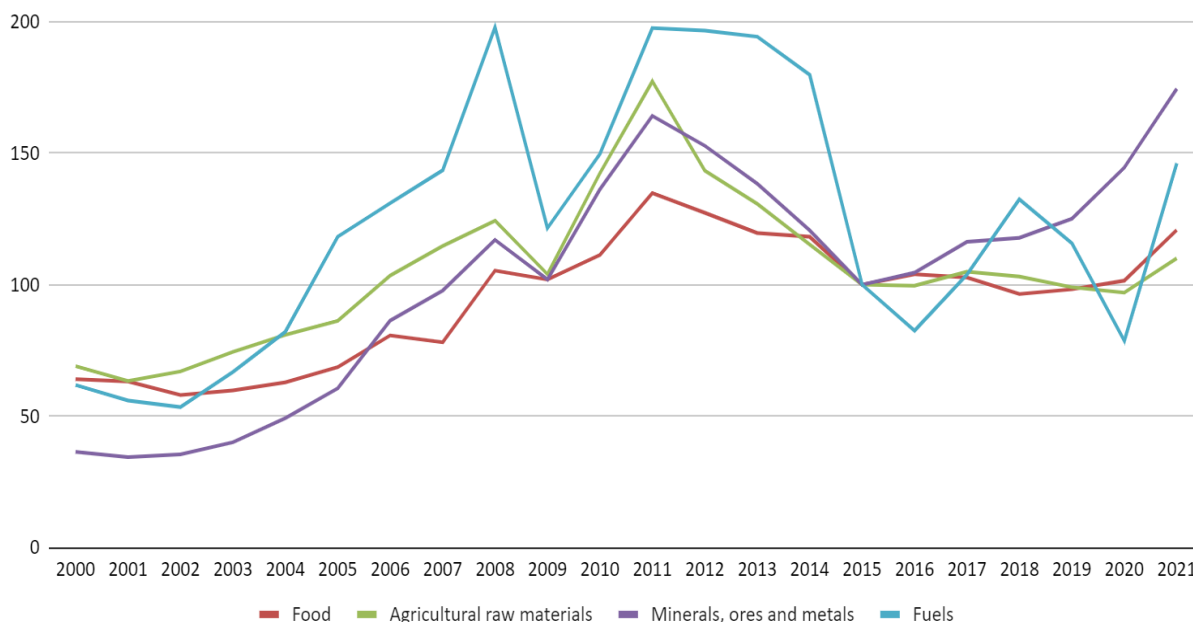


Figure 2. Commodities price index between 2000-2021.

Source: Own elaboration based on UNCTAD data.

When it comes to cycles of rising commodity prices, a crucial question refers to the duration of this high phase, as the historical pattern has always been marked by its strong intensity and short duration (Carneiro, 2012, p. 20). With the expansion of Asian countries, the price of minerals, ores, and metals have been the ones that have grown the most since 2009, gradually decreasing in subsequent years.

The correlation between China's internationalization and rising commodity prices is frequently highlighted in the literature (Prates & Marçal, 2008; Mortatti, Miranda, & Bacchi, 2011; Carneiro, 2012; Veríssimo & Xavier, 2014). This is because the Chinese share in Brazilian exports has grown exuberantly throughout this century and has become Brazil's main trading partner, surpassing the United States and Argentina. In this sense, a more detailed analysis of the Sino-Brazilian trade relationship is in order.

### Brazil-China Bilateral Trade

As shown in the previous section, China's participation in the Brazilian economy's exports gained new forms during the turn of the century, surpassing the Americans and becoming Brazil's largest trading partner in 2009. The Chinese economy has managed to maintain an economy growing at an accelerated pace, unlike most other countries, which suffered significantly from the impacts of the subprime crisis (Hiratuka & Sarti, 2016, p. 84). Figure 3 shows the participation of China and the United States in Brazilian exports since the 2000s, so that it is possible to perceive the clear opposite trend between the countries.

Imports of Chinese products also grew significantly in the last two years before the international financial crisis, with a positive variation of 60.19% between 2006 and 2008. The strengthening of Sino-Brazilian trade has followed an upward trajectory since 2003 due to the favorable international scenario of economic growth and liquidity. In addition, the overthrow of protectionist measures since China's integration into the WTO facilitated commercial and financial advances. The data show that import and export flows were reduced only in two moments: (i) due to the global financial crisis of 2008 and (ii) the internal crisis of the Brazilian economy in 2014.

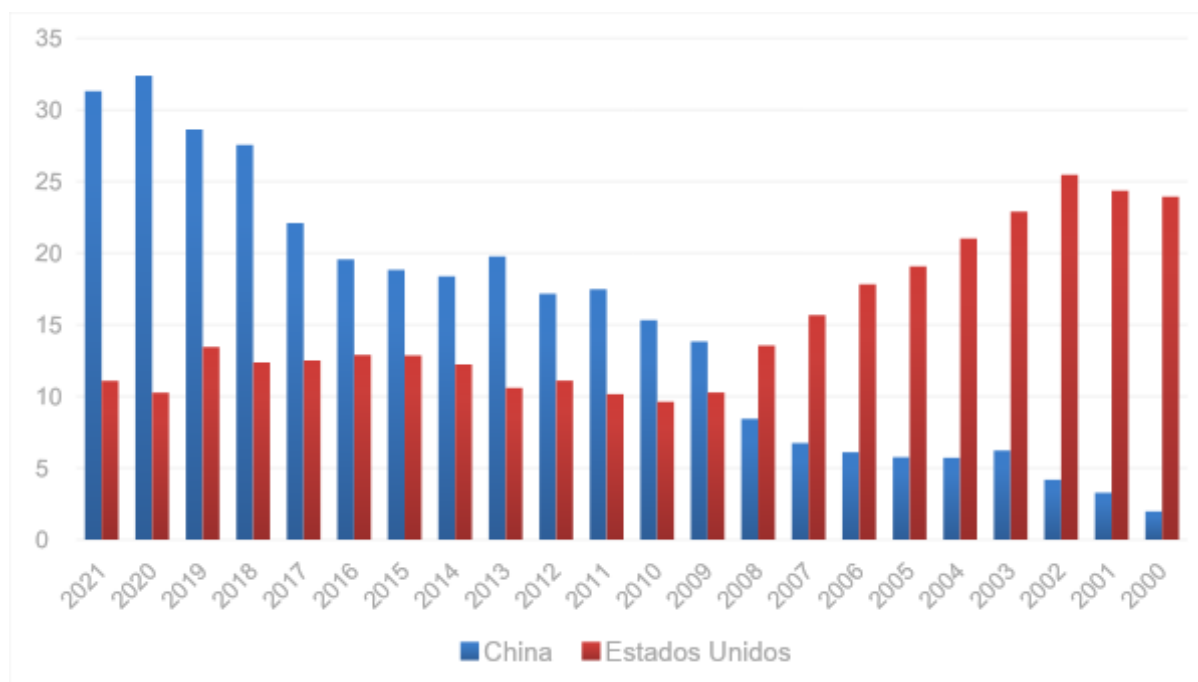


Figure 3. Share in Brazilian exports to China and the United States (percentage data).

Source: Own elaboration based on ComexStat data.

For the former, the impact of the international crisis affected the volume of imports in 2009, resulting in a reduction of 20.61% compared to 2008. On the contrary, exports in the same year amounted to almost US\$201 billion, representing an increase of 20.01% compared to the previous year. Despite the reduction in imports during the crisis, China intensified its participation in products destined abroad, confirming the idea defended by Hiratuka and Sarti (2016) about the impacts of subprime in relation to the Asian country.

Trade relations between the countries were also partially overshadowed by the Brazilian economic crisis at the end of 2014, resulting in a 26.23% reduction in imports between 2014 and 2017, although Chinese participation has not decreased in relation to the total volume of imports. Exports also showed a reduction, starting in 2013 and stabilizing around US\$351 billion between 2016 and 2017, without the Chinese participation having also been reduced in relation to the total volume of exports.

As Figure 4 illustrates, after 2017, there is a sharp increase in countries' trade relations, with the effects caused by the COVID-19 health crisis that began at the end of 2019 being recovered in subsequent years. Since 2020, exports and imports with China have been reaching important milestones, so that in 2021 exports to the Chinese were US\$87.9 billion, the highest historical record among countries. One aspect worth mentioning is that, despite the significant flow of 2021, the Chinese share was reduced by one percentage point in exports, which may be linked to China's slow recovery in the post-crisis period.

Despite the strengthening of trade between the countries, the groups of exported and imported products showed very different characteristics, both in terms of their degree of added value and the number of product groups involved. The data indicate that there is a tendency to export industrialized products from China to Brazil, contrary to exports from Brazil to China, which has a predominance of products with low added value (Mortatti, Miranda, & Bacchi, 2011). Figure 5 illustrates the main categories of products demanded by the Chinese, which are concentrated in soybeans (36%), iron ore and concentrates (20%), crude petroleum oils or oils from

bituminous minerals, crude (18%), meat fresh, frozen or chilled beef (9%), cellulose (4%), and sugar and molasses (2%). Together, six products accounted for 89% of all exports, contributing to the historic record of US\$89.4 billion in the year 2022.

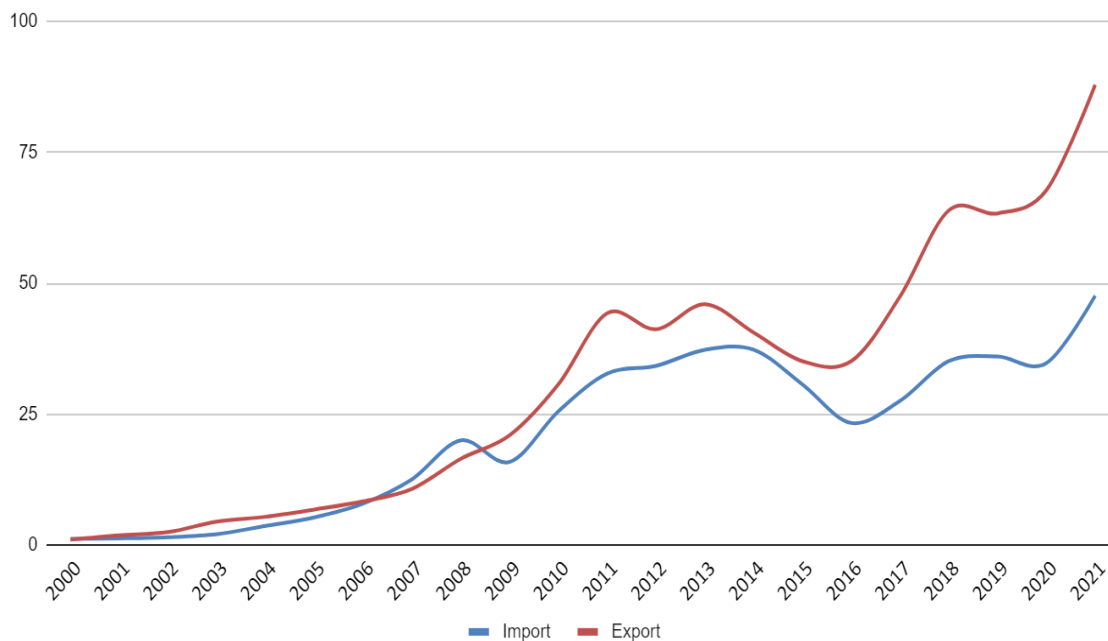


Figure 4. Sino-Brazilian trade between 2000-2021 (data in billions of US\$).

Source: Own elaboration based on ComexStat data.

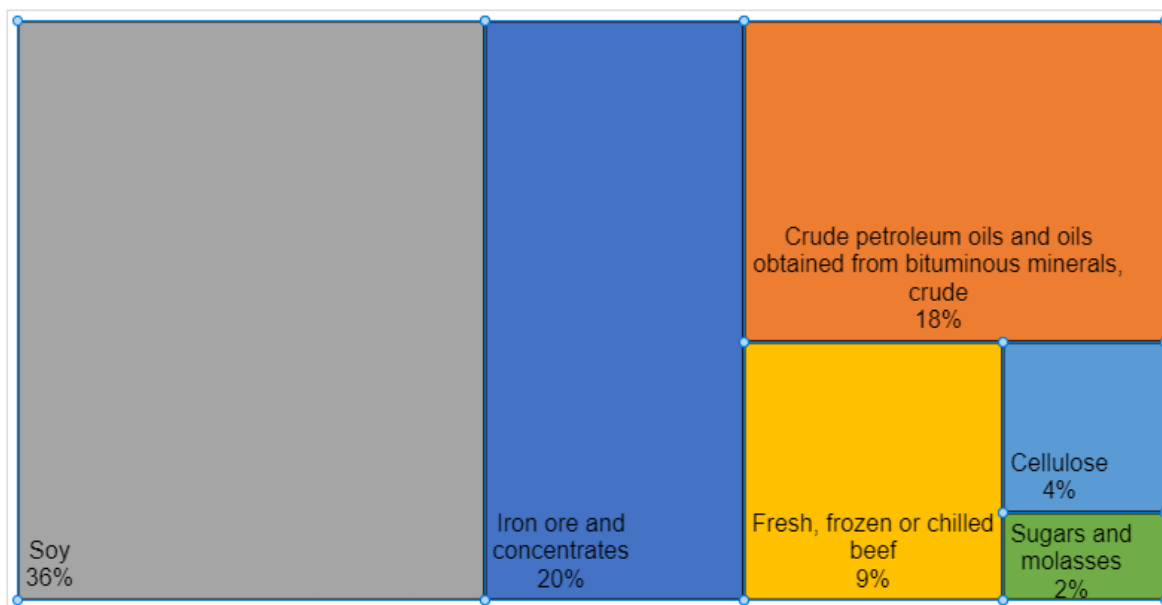


Figure 5. Main products exported by Brazil in 2022—Destination: China (data in billions of US\$).

Source: Own elaboration based on ComexVis data.

If, on the one hand, the Brazilian export basket to China involves a reduced number of products with uneven distribution, mainly with a focus on commodities, imports follow a completely opposite path, with a diversified basket and a wide range of industrial products. Among the main products are thermionic valves and tubes (11%),

compounds (8.20%), telecommunications equipment (6.80%), insecticides (4.90%), and other products—manufacturing industry (4.80%). Furthermore, Figure 6 illustrates that 11 product groups accounted for almost 50% of all Brazilian imports from the Chinese, which during 2022 accounted for US\$60.7 billion.

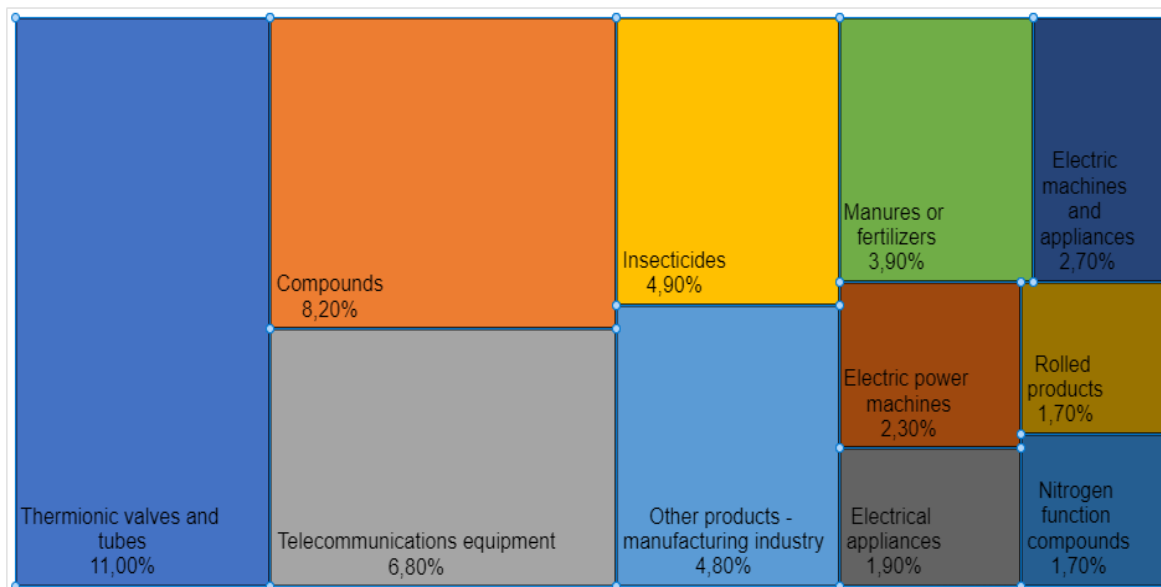


Figure 6. Main products imported by Brazil in 2022—Origin: China (data in billions of US\$).

Source: Own elaboration based on ComexVis data.

It is possible to conclude, based on the collected data, that exports to China contain a reduced number of products with low added value, mainly commodities. On the other hand, imports predominate among products originating in the industry, such as valves and tubes, telecommunications equipment, electric energy machines, and electronic equipment machines, involving a wide range of products when compared to exports and the import agenda itself with Brazil's other trading partners.

It is also important to point out that although China exports to Brazil several products related to the industrial sector, the level of technology incorporated in these products is relatively low. The reasons for these differences may be related to the fact that China is not traditionally a major exporter of industrial products, like the US and the major economic powers in Europe that exercise dominance in this category. On the side of the Brazilian supply, as has already been mentioned a few times, Brazil is one of the countries that holds the most natural resources, many of which are seen as important to contribute to the maintenance of Chinese growth.

### Final Considerations

China is one of the countries that has grown the most in recent years, so its population is increasingly demanding commodities, which has strengthened the Brazil-China relationship.

As it has one of the largest economies in the world and the largest among Latin countries, Brazil has shown itself to be one of the most relevant countries for the Chinese development project. So, in 2009, China consolidated itself as Brazil's main trading partner, increasing its share of Brazilian exports, even during the COVID-19 pandemic. This performance meant that the participation of the United States, Brazil's former main trading partner, was reduced in relative terms.

The structure between the countries' trade is proved to be quite different, so that the export and import list with China differs in terms of number of products and technological intensity. While for imported products there is a capital-intensive degree, exports predominate in commodities.

In this sense, China has also been one of the main influencers on the demand side of commodity prices, in view of its growing interaction in the global market by generating the "China effect". At the same time, the main explanations on the supply and cost side are the devaluation of the dollar against the currencies of commodity-exporting countries and the accelerated increase in unit labor costs.

If, on the one hand, the commercial relationship between the countries has generated significant surpluses in the trade balance, China's focus on products, especially agricultural ones, has increasingly intensified Brazil's specialization in products with low added value.

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