

**BRAZIL AND CHINA. RELATIONS AND EXCHANGE OUTLOOK:  
THE MINAS GERAIS NORTHERN CASE**

**BRASIL E CHINA. RELAÇÕES E PERSPECTIVAS DE  
INTERCÂMBIO: O CASO DO NORTE DE MINAS GERAIS\***

*Marcos Fábio Martins de Oliveira\*\**

*Geraldo Matos Guedes\*\*\**

*Sarah Dantas Rabelo Mota\*\*\*\**

*Giselle Caroline Marques Ferraz\*\*\*\*\**

**Abstract:** Brazil and China spend through a lot of trajectories in the last decades and China, because of the high growth rates, got significant progress on its development. Brazil, on the other hand, shows a modest economic growth. Despite the discrepancies, trade and investment relations have expanded, establishing complementarity between these two economies. This article analyzes the case of Minas Gerais, especially its northern region, trying to describe and understand how the Chinese expansion has affected the prospects for investment in the region and how the change of the Chinese model (seated in the creation of infrastructure and export to a mix, with greater emphasis on domestic consumption) could threaten the planned mineral investments, while it can open other possibilities, especially in the agricultural sector.

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\*\* Prof. Dr. da Unimontes, Universidade Estadual de Montes Claros

\*\*\* Economista, Prof. Msc. da Unimontes

\*\*\*\* Economista. Membro da equipe da Inemontes – Incubadora Tecnológica da Unimontes.

\*\*\*\*\* Acadêmica de Economia, da Unimontes.

**Keywords:** Brazil and China's development; Foreign Direct Investment – FDI, North of Minas Gerais

**Resumo:** Brasil e China passaram por trajetórias diversas nas últimas décadas, conseguindo a China, devido às elevadas taxas de crescimento, galgar significativos avanços em termos relativos em seu desenvolvimento. Enquanto isto, o Brasil apresenta modesto avanço econômico. Apesar das discrepâncias, as relações comerciais e de investimento tem se expandido, estabelecendo-se uma complementaridade entre as duas economias. Este artigo analisa o caso de Minas Gerais, especialmente sua região Norte, procurando descrever e entender como a expansão chinesa afetou as perspectivas de investimento na região e como a alteração do modelo chinês (assentado na criação de infraestruturas e exportação para um misto, com maior ênfase no consumo interno) pode ameaçar os investimentos minerais planejados, ao mesmo tempo em que pode abrir outras possibilidades, especialmente no setor agropecuário.

**Palavras-chave:** Desenvolvimento Brasil e China, IED - Investimento Estrangeiro Direto, Norte de Minas Gerais.

**Resumen:** Brasil y China han pasado por diferentes caminos en las últimas décadas. Por medio de las altas tasas de crecimiento, China ha logrado avances significativos en términos relativos en su desarrollo; Brasil, por otra parte, ha presentado un modesto avance económico. A pesar de las discrepancias, las relaciones comerciales y de inversión se han ampliado, lo que hizo posible establecer una complementariedad entre las dos economías. Este artículo examina el caso de Minas Gerais, en especial su región norte, tratando de describir y entender cómo la expansión de China ha afectado a las perspectivas de inversión en la región y cómo cambiar el modelo chino (basado en la creación de infraestructura y la exportación a un mezclado, con más énfasis en el consumo interno) podría poner en peligro la inversión minera planificada, mientras que se puede abrir otras posibilidades, especialmente en el sector agrícola.

**Palabras clave:** Desarrollo de Brasil y China IED - Inversión extranjera directa, el norte de Minas Gerais.

This article has a test characteristic, trying to describe and make a preliminary analysis of the relations between the State of Minas Gerais, especially one of its regions, the North, with China. The aim is to continue this work by formalizing a research plan, because such relationships are significant for Minas Gerais, because China nowadays is its main trading partner, in addition, has a direct influence on the prices of its exports to the rest of the world.

The work is divided into six sections besides this introduction and the final considerations: 1. Brazil and China, historical background; 2. Brazil and China: The recent period, 1990s and 2010s; 3. Brazil-China relations; 4. Minas Gerais (State)– China relation; 5. The mining and metallurgical projects proposed for the North of Minas Gerais; and 6. Some questions about the mining investment and other opportunities for exchanges and the relations between China and the North of Minas Gerais.

It thus intends to determine the impact of Chinese development strategies in relations between the two countries, verifying what the perspectives of continuity of mining investments in the North of Minas Gerais are and the possibilities of new investments and partnerships.

## **1 Brazil and China: historical background**

Just as historical context and reference point, we have the seventies of the twentieth century as a starting point and design of the current configuration of relations between Brazil and China.

Brazil, after a vigorous period of economic growth during the “Brazilian Miracle”<sup>1</sup>, persists in an investment and development path, during the global crisis (oil crisis); the result in terms of growth and industrial diversification is positive, shown in Table 1 below and shown on the classic Barros and Pires (2004), “Brazilian economy in forced gear”.

In the same period China was experiencing a difficult period. In the early years of the People’s Republic, China went through a process of economic and policy restructuring. There was the beginning of the expansion of the state industrialization

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<sup>1</sup> For a review of the Brazilian economy see Gremaud (2004) and Giambiagi & Villela (2005)

through Five-Year Plans guiding. In 1958, Mao established the “Great Leap Forward”, intending to transform China “from an agrarian and backward country into an advanced industrial country and truly socialist”, but was unsuccessful (SHENG, 2004, p. 107). Mao then is removed temporarily from power by Deng Xiaoping and Liu Shaoqi. When he returned, he started the Cultural Revolution, which lasted until 1976 (SHENG, 2004).

Deng Xiaoping, with Mao’s death, returns to power in China. One of the biggest changes in the Chinese political and economic system in the post Maoist era was performed in the field, giving more freedom to producers in the commercialization of their production and the extinction of rural communes. City residents were allowed by the government to start small businesses and the consumption of goods and services was also encouraged. Pires (2012, p. 32) points out that “China has adopted a national strategy that knew how to submit the market’s needs for its own economic logic,” adapting Marxism to globalization and modernization processes in which other countries were already lined up. (KROEBER, 1987)

Both countries were able to go through a growth path during the global crisis (Oil), as can be seen in Table 1, but the paths begin to differentiate in the late seventies.

Table 1 – GDP annual growth rate (%) Brazil/China (1970 – 1999)

Year	Brazil	China	Year	Brazil	China
1970	8,77	19,4	1985	7,95	13,55
1971	11,3	7	1986	7,99	8,93
1972	12,05	3,8	1987	3,6	11,72
1973	13,98	7,9	1988	-0,1	11,3
1974	9,04	2,3	1989	3,28	4,21
1975	5,21	8,7	1990	-3,10	3,93
1976	9,79	-1,6	1991	1,51	9,27
1977	4,61	7,6	1992	-0,47	14,28
1978	3,23	11,88	1993	4,67	13,94
1979	6,77	7,6	1994	5,33	13,08
1980	9,11	7,81	1995	4,42	10,99
1981	-4,39	5,17	1996	2,19	9,92
1982	0,58	9,02	1997	3,39	9,23
1983	-3,41	10,75	1998	0,35	7,85
1984	5,27	15,21	1999	0,49	7,62

Source: Authors. World Bank data, World Development Indicators

The end of the 1970s is an important breaking point for Brazil; after period of high growth, the country faces a period of oscillations and low growth, rising concerns of government officials to problems such as deficits – domestic and foreign – and inflation, causing social disorders, exacerbating the transition from the military period (1964- 1995) to democracy.

Low relative economic growth and tumultuous political transition (death of the elected civilian president, Tancredo Neves, assuming his deputy, José Sarney, coming from the military regime), although well managed (politically), aggravated the inflation problem. They tried to solve the inflation problem, but avoiding paying the costs necessary to fight it.

The country faced (up to the “*Plano Real*”) a succession of economic plans; which should be more appropriately called Stabilization Plans. These plans passed by temporary successes (with price freezes: state control of general prices in the economy, or tabulation) and subsequent lack of control.

The situation comes to a critical point, with inflation reaching 82.38% per month in the last month of the Sarney government. The new elected president, Fernando Collor de Mello, made a sudden attempt to combat inflation, with the confiscation / block of the financial assets. The attempt failed, aggravated by the impediment process (impeachment) of the first president elected by direct vote (after the return to democracy). This problem would only be solved after stabilization reached with the Real Plan, with the adoption of the new currency (Real) and the control of inflation. Table 2 shows the evolution of these rates.

Table 2, Brazil – Inflation, annual rate (%) - 1980 – 2014

1980	..	1998	3,2
1981	101,72	1999	4,86
1982	100,54	2000	7,04
1983	135,03	2001	6,84
1984	192,12	2002	8,45
1985	225,99	2003	14,72
1986	147,14	2004	6,6
1987	228,34	2005	6,87
1988	629,11	2006	4,18
1989	1430,72	2007	3,64
1990	2947,73	2008	5,66
1991	432,78	2009	4,89
1992	951,65	2010	5,04
1993	1927,98	2011	6,64
1994	2075,89	2012	5,4
1995	66,01	2013	6,2
1996	15,76	2014	6,33
1997	6,93 -	-	-

Source: Authors. Data from the World Development Indicators – World Bank.

Towards China, its rapid economic growth over the past three decades has been administered by the industrial sector and the increased participation of it in the Chinese GDP. Structural changes, says Naughton (2007), associated with the rapid growth of secondary sector reshaped the Chinese industry and its relationship with other sectors - primary and tertiary.

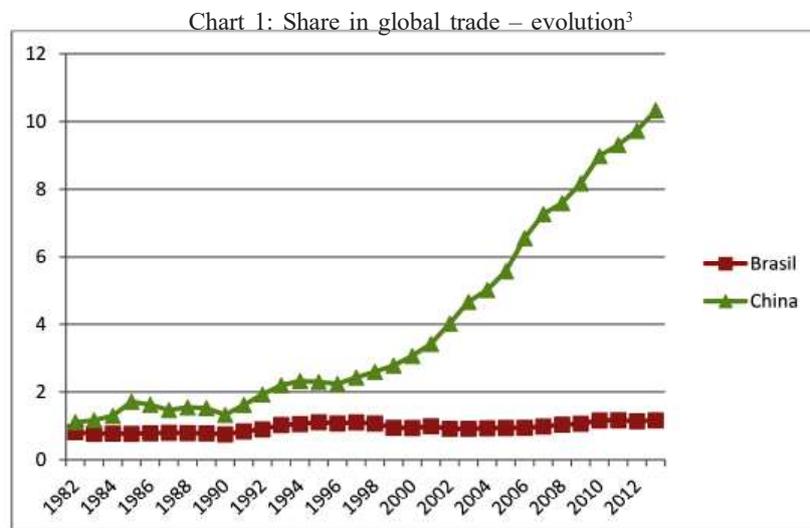
Until 1978, China's industrial development was focused on the production of a few basic goods. In addition, the base of the economy was still too focused on the primary sector. After 1978, China diversified its production in a set consumption goods with relatively low technology and labor intensive; diversification that had been neglected during the planned economy period (1948-1978)<sup>2</sup>. The primary

<sup>2</sup> The primary sector, which in 1982 represented 33% of GDP, accounts for 10% of GDP in 2013. The secondary sector maintained its participation in national income stable over this period, representing, in some years, more than 47% of GDP and ending 2013 with over 43% market share. The third sector, however, was the one with major growth. Increased from 23.94% in 1978 to 46.09% of GDP in 2013. As for the secondary sector, it is worth to emphasize here the increase in the share of high-tech products in the development of it. The export quantity of such products has grown significantly in recent decades.

sector in China, despite losing relative share in GDP of the country, was able to adapt, as stated by Naughton (2007), the availability of land and labor (rural exodus). Thus, the secondary sector and the tertiary began to lead the process of growth and China's development.

In the early 1980s, seeking to create favorable conditions for investment and the incorporation of technology from abroad, during his opening process, China created the Special Economic Zones (SEZs) based in the free and processing zones that already existed in Southeast Asia and Latin American countries, like Argentina and Brazil (Oliveira apud SILVA and BREDA, 2002). At first, it was created four SEZs located in cities in the southern Chinese coast. Later, more were created fourteen SEZs, thanks to the success achieved by the first, which meant that foreign investment in the country to expand rapidly and significantly. China, since then, if reconnected from the international economic system.

The result for China will be an expansion of its share in world trade, while Brazil will maintain its relative position, as can be seen in Chart 1:



Source: Authors. Data from the World Development Indicators – World Bank.

<sup>3</sup> Period limited by the database

This remodeling happens with China becoming stronger in industrial production (initially labor-intensive, but with increasing incorporation of technology) and Brazil specializing itself in the export of commodities. These aspects will be analyzed in the next section.

## **2 Brazil and China: a recent view - Decades of 1990 and (20)10**

Two events were remarkable in the recent period, in Brazil: the end of inflation and the resumption of growth; and in China, its transformation into a global relevant player, becoming driver of other economies, among them Brazil. Another significant event was the 2008 crisis, although these two countries have submitted different reactions. This section presents a brief analysis of this period focusing, at the end, the Brazil-China relations.

After Collor's impeachment process, Itamar Franco takes place as president, in which government was implementing the *Plano Real*; its results are positive and lasting, which means that the inflation keeps itself under control (secured by currency or monetary anchors) and the country back to a path of growth, initially modest, but growing; which was discontinued in 2009, 2014 and 2015 (sharp decrease projections).

About China, it has now developed into a powerhouse in world trade. The opening of the Chinese trade was fundamental part of the "reform and opening" process, began in 1978 and was strengthened by the country's entry into the World Trade Organization (WTO) in 2001 (Naughton, 2007).

Regarding the 2008 crisis, the impacts are global. Brazil and China did not suffer too much, and had their economies even more interlinked, because of the coping strategies.

Table 3 – GDP annual growth rate (%) – Brazil/China/World (2000 – 2014)

Year	Brazil	China	World
2000	4,38	8,43	4,26
2001	1,28	8,30	1,82
2002	3,07	9,09	2,07
2003	1,22	10,02	2,80
2004	5,66	10,08	4,15
2005	3,15	11,35	3,59
2006	4,00	12,69	4,12
2007	6,01	14,19	3,94
2008	5,02	9,62	1,48
2009	-0,24	9,23	-2,07
2010	7,57	10,63	4,08
2011	3,92	9,48	2,84
2012	1,76	7,75	2,23
2013	2,74	7,68	2,35
2014	0,14	7,35	2,47

Source: Authors. Data from the World Development Indicators – World Bank.

China, taking advantage of their accumulated external surpluses and its high reserves (Table 4), promotes an anti-cyclic policy with emphasis on generating infrastructure and overall investment, resulting in increased employment and income. As seen in Table 3, the result was the maintenance of high growth rates even after crisis.

Table 4 - Foreign Reserves - China (1978-2012)

Year	Gold reserves (10 000 oz.)		Foreign Exchange Reserves (USD 100 mi)				
1978	1280	1996	1267	1978	1,67	1996	1050,29
1979	1280	1997	1267	1979	8,4	1997	1398,9
1980	1280	1998	1267	1980	-12,96	1998	1449,59
1981	1267	1999	1267	1981	27,08	1999	1546,75
1982	1267	2000	1267	1982	69,86	2000	1655,74
1983	1267	2001	1608	1983	89,01	2001	2121,65
1984	1267	2002	1929	1984	82,2	2002	2864,07
1985	1267	2003	1929	1985	26,44	2003	4032,51
1986	1267	2004	1929	1986	20,72	2004	6099,32
1987	1267	2005	1929	1987	29,23	2005	8188,72
1988	1267	2006	1929	1988	33,72	2006	10663,4
1989	1267	2007	1929	1989	55,5	2007	15282,49
1990	1267	2008	1929	1990	110,93	2008	19460,3
1991	1267	2009	3389	1991	217,12	2009	23991,52
1992	1267	2010	3389	1992	194,43	2010	28473,38
1993	1267	2011	3389	1993	211,99	2011	31811,48
1994	1267	2012	3389	1994	516,2	2012	33115,89
1995	1267	-	-	1995	735,97	-	-

Source: Authors. Data from the National Bureau of Statistics – China Yearbook 2013

Even giving priority to this investment strategy in government infrastructure and spending, China begins to sketch alternatives, seeking to reduce the rate of growth to more sustainable levels, investment in clean energy sources<sup>4</sup> and prioritizing domestic consumption, development of trademarks and own technologies in order to avoid excessive dependence on exports.

According to Pires (2009), about 1.5 million engineers and professionals in the science and technology area are graduated annually in China. This factor has contributed to the steady advance in R&D in the country and to the development of Chinese trademarks and institutions.

Chinese SEZs at first worked only based on export production with low-skilled workers and focused on simplified procedures for production, low wages and high scale production. Later, they managed through the copycat process absorbing foreign technology, and the companies used to work as subcontractors of multinationals. More recently, as exemplified in the previous topic, China began to produce completed goods with higher added value, replacing the copy process to start a new phase of Chinese industry and, according to Pires (2009), many of these goods were produced in own Chinese laboratories, with its own staff. In addition, “Chinese companies begin a process of creating their own global trademarks, whether by stating their own companies, either by acquiring trademarks and foreign companies” (PIRES, 2009 s / p.). China prepares its future not to fall into the middle-income trap (see concept and discussion to Brazil in Pires and Paulino, 2014).

Brazil, taking advantage of global growth provided by China and benefited from its effects, expands its exports of commodities, particularly mineral and agricultural. This enables the expansion of public spending, public and private wage increases above productivity increases. The result is the continued growth but at the expense of the reversal of surpluses from the public and external

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<sup>4</sup> The country is engaged in a large-scale and long-term program to reduce the use of fossil fuels and increase the use of alternative energy, especially solar and aeolic. The twelfth Chinese Five-Year Plan is about the relevance of increasing the share of alternative energy in the country energy generation. See on Silva (2014) Chinese leadership in these sectors.

accounts. The policy remains viable while kept the external flows of investment and the price of commodities above the historical rates.

Economic growth was maintained at a high cost – loss of Brazilian industrial competitiveness and the consequent deindustrialization. This deindustrialization was one of the strongest in the world, with a great presence of Chinese production in Brazil. The structural problems of the Brazilian economy defined its lower growth (see GIAMBIAGI and Schwartsman, 2014). In the other hand, regarding to Brazil-China relations, the exchange grows continuously.

In 2009, a report by The Beijing Axis called The China Compass (Compass China) argued that China is an economic superpower with an ambitious development plan, which needs to import goods. This year, the main goods that China imported were machinery and equipment, chemicals and mineral derivatives.

Because of the Chinese growth, its business begins to determine and dictate rules on some bilateral relations. In Brazil – despite the South-South<sup>5</sup> partnership signed on a bilateral agreement in May 1961 –, only in 1993 (Itamar Franco's government) Asia became an economic priority due to their cooperative potential in science and technology as well as being a fruitful market for exports and imports (OLIVEIRA, 2004).

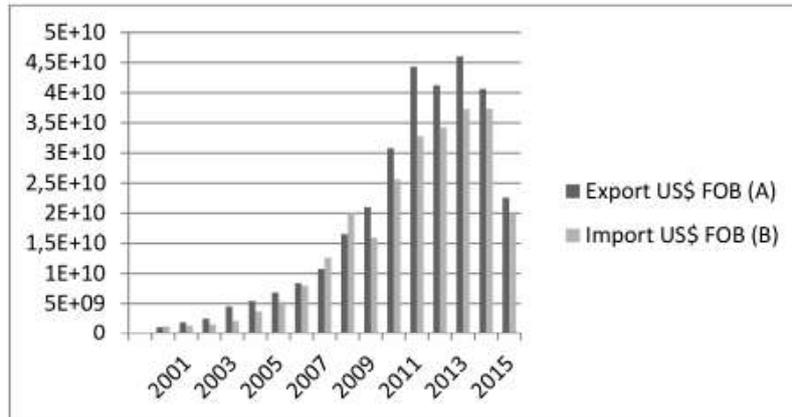
During the 1990s, with a major Brazilian economic openness and better Chinese position in international trade, we can see a closer relationship between Brazil and China. This approach evolves, and since 2002 China became Brazil's main trading partner.

Thus there was an expansion (by 2013) the exchange between the two countries, with positive balance for Brazil in the most recent period, mainly since 2009.

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<sup>5</sup> South-South relationship is also discussed in Tedeschi (2011) and Santillán (2009).

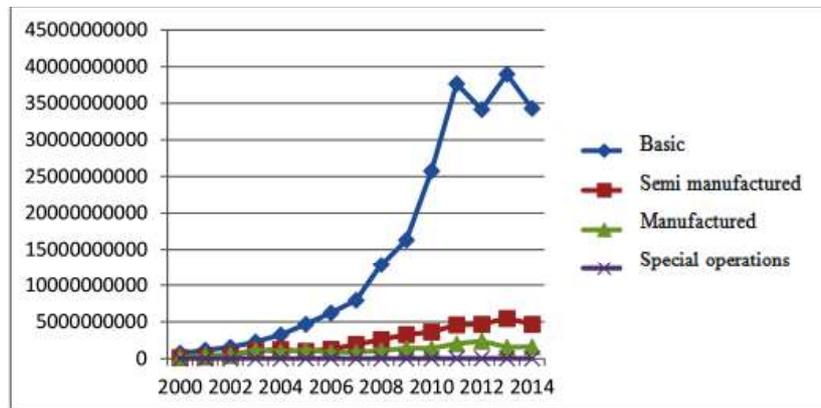
Chart 2: Brazil-China Commercial Exchange 2000-2015



Source: Authors. Data from MDIC / SEPEX / CAPEX

When analyzing the composition of the exchanges we can see a concentration of Brazil's exports to China in lower value-added products, mainly the basic ones, according to Chart 3.

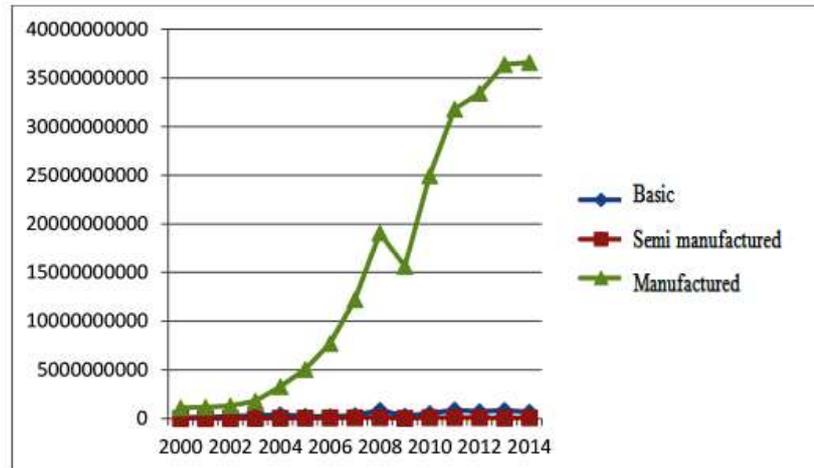
Chart 3: Brazilian exports to China (evolution) – 2000 to 2015



Source: Authors. Data from MDIC / SEPEX / CAPEX

In another perspective, it's clear that the import of high value-added products (manufactured in the chart) from China is growing, as can be seen in Chart 4.

Chart 4: Brazilian imports from China (evolution) – 2000/2015



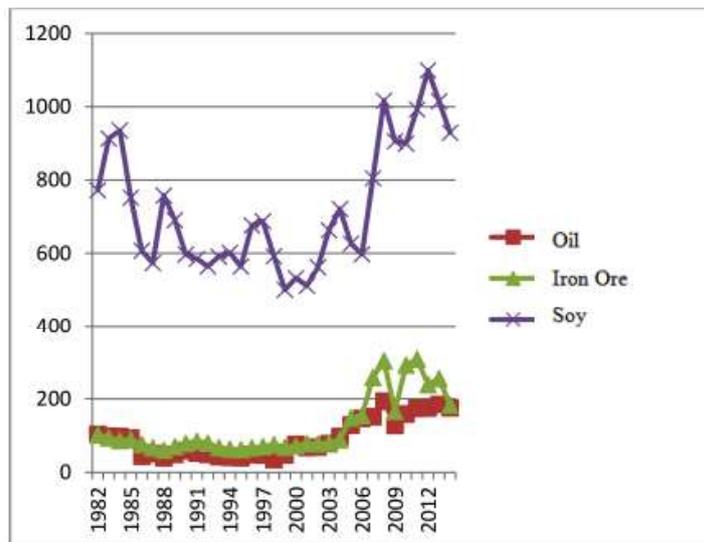
Source: Authors. Data from MDIC / SEPEX / CAPEX

Other important data offered by the Ministry of Development, Industry and Trade (MDIC) of Brazil regards to the main exported and imported goods from China. Among the main products exported by Brazil there are soybeans (with 53%), iron ore (14%) and crude oil (12%). On the import side are highlighted products with high added value, like ships, booms (and other related products) as well as devices connected to telecommunication and television.

China nowadays is the largest trading partner of Brazil, according MRE/DPR/DIC. In 2014/15 China represented 19.3% of Brazilian exports and 17.5% of imports. In 2014, the turnover between Brazil and China was about US\$ 19.33 billion, about 18.4% of Brazilian foreign trade. But its influence is even greater than its own relative participation in Brazilian exports, because commodity prices (after all, Brazilian exports to China is mainly composed of: soybeans, minerals and fuel) has strong influence of Chinese demand, and these products in 2014 accounted for 86.8% of Brazilian exports (soybeans with 50.5%, ore with 30.6% and fuels 5.1%).

Chart 5 below shows the prices evolution of the main commodities exported by Brazil, demonstrating the increase in these prices over the last (2000 until recently).

Chart 5: Evolution of the actual values of the main commodities exported by Brazil 1982 – 2014



Source: Authors. Data from Global Economic Monitor (GEM) Commodities – World Bank

### 3.1 Chinese Investments in Brazil

Another aspect about bilateral relations is the fact that China has become an important investor in Brazil. In 2003 China announced a series of investments, the result of old strategic partnership between countries, but also the new strategy of Chinese growth. In total were announced more than \$ 37 billion, spread over 86 investment projects in several sectors of economy, the largest share of these investments will be allocated in the sectors of metals, oil, gas and coal (about 84% of the total announced).

Table 5: Chinese investments announced in Brazil by sector (2003 – 2011)

<b>Sector</b>	<b>Projects</b>	<b>Value (US\$)</b>	<b>Part.(%)</b>
Metals	12	20.949.976.471	56,53
Oil, Gas and Coal	3	10.383.200.000	28,02
Electricity	2	1.904.571.429	5,14
Automotive	8	1.490.803.000	4,02
Transport	1	710.000.000	1,92
Two wheels	19	504.822.561	1,36
Electronics	19	332.665.634	0,90
Food and tobacco	2	302.600.000	0,82
Industrial machinery, equipment and tools	4	239.142.857	0,65
Paper, printing and packaging	2	65.700.000	0,18
Chemicals	2	61.428.000	0,17
Financial services	4	37.600.000	0,10
Plastics	1	31.900.000	0,09
Telecommunication	5	31.000.000	0,08
Consumer goods	1	11.000.000	0,03
Business services	1	3.400.000	0,01
<b>Total</b>	<b>86</b>	<b>37.059.809.951</b>	<b>100,0</b>

Source: BRAZIL/RENAI

Among these investments, as can be seen in Table 6, the largest amount of investment is expected for the Southeast, for both periods: 2003 to 2011 (about US \$ 25 billion) and 2009-2010 (about \$ 17 billion).

Table 6: Chinese Investments in Brazil by Region (2003 – 2011)

<b>Region</b>	<b>Value (US\$)</b>	<b>Part.(%)</b>
Southeast	24.866.400.000	67,1
Southeast / northeast	2.600.000.000	7,0
Southeast / midwest	1.726.000.000	4,7
North	2.283.890.192	6,2
Northeast	2.066.766.471	5,6
South	195.511.429	0,5
Unspecified	3.321.241.860	9,0
<b>Total</b>	<b>37.059.809.951</b>	<b>100,0</b>

Source: BRAZIL/RENAI

Considering only the period 2009-2010 the investment announcement was more than \$ 22 billion, and the southeast the main destination.

Table 7: Chinese Investments in Brazil by Region (2009 – 2010)

<b>Region</b>	<b>Value (US\$)</b>	<b>Part.(%)</b>
Southeast	17.132.800.000	75,4
Southeast / northeast	2.600.000.000	11,4
Southeast / midwest	1.726.000.000	7,6
North	427.066.471	1,9
Northeast	296.946.418	1,3
South	184.511.429	0,8
Unspecified	368.741.860	1,6
<b>Total</b>	<b>22.736.177</b>	<b>100,00</b>

Source: BRAZIL/RENAI

Still according to the RENAI report, the main state-destination of these investments is Rio de Janeiro (20% share in investments announced), followed by the group São Paulo / Rio de Janeiro / Espírito Santo (19%), and Espírito Santo with approximately 15%. Minas Gerais is the 4th top destination, with 10% participation in the announcements.

Table 8: Chinese Investments in the Southeast by Sector (2003 – 2011)

<b>Sector</b>	<b>Valor (US\$)</b>	<b>Part.%</b>
Metals	13.240.400.000	53,25
Oil, Gas and Coal	10.170.000.000	40,90
Automotive	1.106.800.000	4,45
Industrial machinery, equipment and tools	210.000.000	0,84
Chemicals	59.500.000	0,24
Plastics	31.900.000	0,13
Financial services	18.800.000	0,08
Telecommunications	14.300.000	0,06
Two wheels	11.300.000	0,05
Business services	3.400.000	0,01
<b>Total</b>	<b>24.866.400.000</b>	<b>100,0</b>

Source: Brazil/RENAI

Table 8 shows the main recipient sectors of those investments, especially metals, oil, gas, coal and automotive.

#### **4 Relations *Minas Gerais* (State) – China**

If relations with China are important (priority) for Brazil, for the state of Minas Gerais are even more. In the periods from January to July in 2014 and 2015, China's share of exports of Minas Gerais reached, respectively, 31.46% and

23.42%, while for the United States, volume was 8.12% and 10.43%; and in Argentina, 5.75% and 6.62%. Asia is the main destination of exports from Minas Gerais state, with 47.76% and 38.21% for the same periods.

Table 9: Export Destinations (Minas Gerais) – 2014/15

Description	2015	2014
	(Jan-Jul)	(Jan-Jul)
	Part	Part
	%	%
China	23,42	31,46
U.S	10,43	8,12
Argentina	6,62	5,75
Netherlands (Holland)	6,31	5,95
Japan	5,07	6,54
Germany	4,76	4,07
<b>Main economic blocs</b>		
Asia (excluding Middle East)	38,21	47,76
European Union – EU	24,83	22,36
Latin American Integration Association - ALADI	12,61	9,62
United States (including Puerto Rico)	10,45	8,14
Middle East	6,33	5,57
other blocs	7,57	6,54
<b>Total</b>	<b>100</b>	<b>100</b>

Source: Authors. Data from MDIC/ SEPEX/ CAPEX

On imports of Minas Gerais, China is also the main supplier, periods JAN / JUL 2014 and 2015 the Chinese share is 15.56 and 18.29% United States 15.90 and 16.76%, and Argentina 15.71 and 11.79%. Asia (25.99%) took in 2015 (Jan-JUL) the lead supplier for Minas Gerais, position formerly occupied by the European Union followed by the United States.

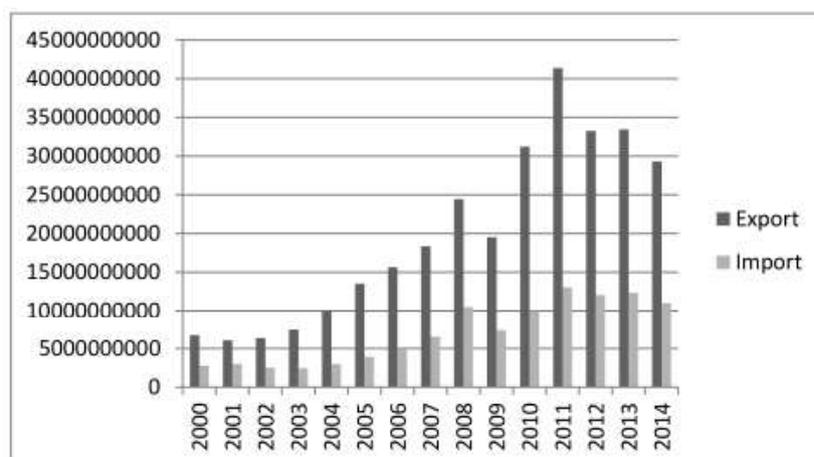
Table 10: Import Destinations (Minas Gerais) 2014/15

Description	2015	2014
	(Jan-Jul)	(Jan-Jul)
	Part	Part
	%	%
<b>Total area</b>	<b>100</b>	<b>100</b>
China	18,29	15,56
U. S.	16,76	15,90
Argentina	11,79	15,71
Italy	8,20	9,09
Germany	4,49	6,99
Mexico	3,16	2,73
<b>Main economic blocks</b>		
Asia (excluding Middle East)	25,99	22,56
Latin American Integration Association - ALADI	21,57	24,24
European Union – EU	21,19	25,29
United States (including Puerto Rico)	16,78	15,91
Eastern Europe	3,18	3,50
Other blocks	11,28	8,49

Source: Authors. Data from MDIC/ SEPEX/ CAPEX

Regarding the balance, the trade balance is favorable to Minas Gerais, because it presents surplus, even in the crisis period. The balance, however, are declining because of falling commodity prices, an important item in the export basket of Minas Gerais.

Chart 6: Trade balance of Minas Gerais (relative position in the world) – 2000/14 (absolute amounts in US dollars).



Source: Authors. Data from MDIC/ SEPEX/ CAPEX

According to Tables 11 and 12, we can see that both in export as in the import with the world, in Minas Gerais, the intermediate goods are the most commercialized. It's also worth noting that much of the import tariff is made up of capital goods, while the second largest groups in exports are consumer goods.

Table 11: Minas Gerais exports (2014 – 2015)

Description	2015 (jan - jul)		2014 (jan - jul)		Var% 2015/2014
	US\$ FOB	Part. %	US\$ FOB	Part.%	
Total area	13.047.871.929	100	17.642.463.163	100	-26,04
Capital goods	446.610.705	3,42	464.037.225	2,63	-3,76
Consumer goods	967.770.690	7,42	1.245.085.783	7,06	-22,27
Intermediate goods	11.608.273.839	88,97	15.887.622.359	90,05	-26,94
Fuels and lubricants	11.669.558	0,09	11.245.494	0,06	3,77
Other operations	13.547.137	0,10	34.472.302	0,20	-60,70

Source: Authors. Data from MDIC/ SEPEX/ CAPEX

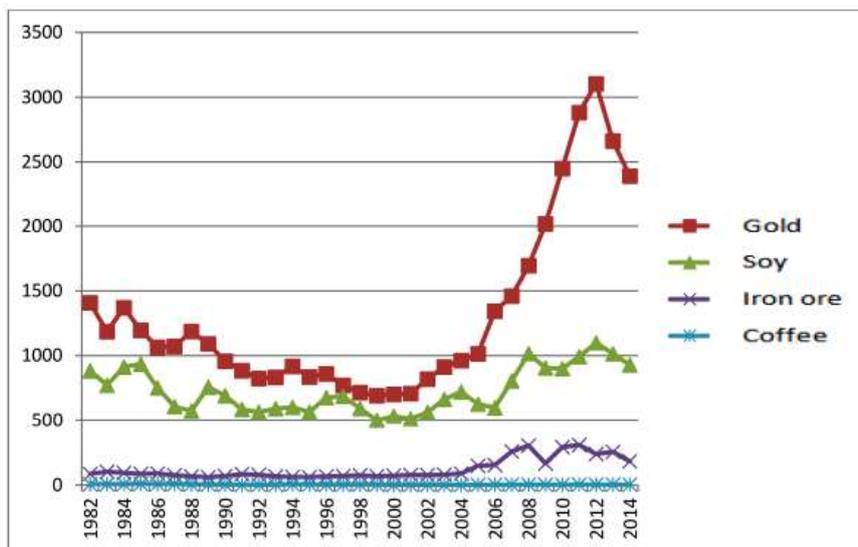
Table 12: Minas Gerais imports (2014 - 2015)

Description	2015 (JAN - JUL)		2014 (JAN - JUL)		Var.% 2015/2014
	US\$ FOB	Part.%	US\$ FOB	Part.%	
Total area	5.391.768.523	100,00	6.303.786.285	100,00	-14,47
Capital goods	1.728.799.476	32,06	2.111.304.760	33,49	-18,12
Consumer goods	925.471.311	17,16	1.097.197.840	17,41	-15,65
Intermediate goods	2.369.171.580	43,94	2.674.667.368	42,43	-11,42
Fuels and lubricants	368.326.156	6,83	420.616.317	6,67	-12,43

Source: Authors. Data from MDIC/ SEPEX/ CAPEX

According to *MDIC*, between the main products exported by Minas Gerais, there are the following commodities: iron ore (27% participation in the agenda), coffee (17%), gold (5%), soybeans (4%) and, with regard to imports, there is higher value-added products: automobiles, steel rails and some chemicals.

Chart 7: Evolution of the real values of main commodities exported by MG (1982 – 2014)



Source: Authors. Data from Global Economic Monitor (GEM) Commodities – World Bank

It may be noted the rise in prices by 2000 and decline by 2012 (beyond the 2009 crisis). This fall caused serious consequences on the economy of Minas Gerais and the state of public finances, projecting deficits in its budget.

## 5 The Minero-metallurgical Developments Proposed for Northern Minas Gerais

This section describes the mining projects proposed for the northern region of Minas Gerais, namely: Minas Bahia SA Mining and SAM. This information was obtained from several newspapers and journals and those presented to the Canadian and London stock markets. In SAM's case, was also used information from its RIMA and corporate information from Honbridge, Chinese company that owns SAM.

The MIBA SA and Mineração Peixe Bravo (MPB), with mining assets in the North of Minas Gerais, are mining subsidiaries of Eurasian Natural Resources (ENRC), originating in Kazakhstan, Chinese-funded, listed on the London Stock Exchange. It is the world's largest producer of ferrochrome, one of the largest exporters of iron ore, and one of the largest suppliers of alumina.

The company's investments began with the acquisition of Minas Bahia - MIBA (100%) and Mining Peixe Bravo (MPB) (51%) in October 2010. To acquire these two projects in the North of Minas Gerais, the company has disbursed US \$ 304 million. In August 2011, the group acquired the remaining shares of MPB, ending the acquisition of both companies. Previously, both projects were committed to the Brazil Steel Holdings, which had made a tender offer by the two companies. (London Stock Exchange, ENRC files, Oct. 2010).

According to data available on the London Stock Exchange (2010), the MIBA Company has the mineral rights to *Jibóia* Iron Ore Project, which is located 600 km from Belo Horizonte and 170 km of the East-West Railroad in the region of Grão Mogol. According to the Golder Associates in May 2010 were proven reserves of 2.9 billion tons with an average of 25.9% iron content (824 million tons with an average of 27% ore content and 2.041 billion tons with an average of 25.5% of iron content). The development has a production capacity of about 25 Mtpa (million ton per year) from five years of operation. The Project has the potential to produce pellets with 66.5% iron. The cost of the project in noncurrent assets is estimated at \$ 2.6 billion.

The estimated investment of the *Jibóia* project in 2011 remained at US\$ 2.6 billion. Estimates for the *Peixe Bravo* Project have not yet been published. (MDIC, 2015). Regarding the location of the project – MIBA operation base in the North of Minas Gerais – it's situated in Grão Mogol, while the project Mining *Peixe Bravo* (MPB), known as *Rio Pardo de Minas*, is located in the same region name.

According to preliminary information released by the company, the mineral reserves in the Rio Pardo region have 30-40% iron content, reaching, with the improvement, to 68%, due to the low level of impurities. The goal of exploration is 1.5-2 billion tonnes. Expected to reach a production of 16 million metric tons of ore benefited 68% Iron for 25 years. The area that covers the Rio Pardo de Minas project totals approximately 900 km<sup>2</sup>. The *Jibóia* Project has similar characteristics to Rio Pardo de Minas Project. The ore processing will take place in Rio Pardo or Caetité (Bahia). It is planned the construction of a railway section of 160 km connecting the Project in Rio Pardo to the East West railway.

About the job creation, the company estimates that when the projects are in operation, about 8000 direct and indirect jobs will be created.

Another Chinese project announced for the North of Minas Gerais is the South American Metals S/A (SAM). The SAM is a mining company incorporated in Brazil, with 100% equity interest of Chinese from Honbridge Holding Ltd. and managed by *Votorantim Novos Negócios*. Honbridge is the controlling shareholder of SAM since the end of 2010, when it acquired for \$ 405 million the company *Votorantim Novos Negócios*. The licenses for mining, processing, mineral pipeline and construction of the port are already in the final stages. *Votorantim Novos Negócios* should contribute to the development of the project until the start of production, as signed contract.

The company is based in the city of Salinas and production activities will focus on Grão Mogol and Padre Carvalho. SAM holds 81 mining rights in the states of Minas Gerais (97.8% of the area covered by the mining rights) and Bahia (2.2% of the area covered by the mining rights), including nine blocks with 1,140 km<sup>2</sup>. The main mineral rights that keep the *Vale do Rio Pardo* Project are DNPM 831 028/2007 831 029 and DNPM / 2007, called Block 8. Block 8 totals 26.24 km<sup>2</sup> and has estimated reserves of 2.6 billion tons. The *Vale do Rio Pardo* project should start operations at the end of 2015, according to estimates of the company and will consume investments in assets of \$ 3,6 billion. The mining rights of company extend over 1,140 km<sup>2</sup> in the states of Minas Gerais and Bahia, where 97.8% of this total are located in the state of Minas Gerais.

The *Vacaria* River Dam expected to be completed by the company with investments of R\$46 million. In addition, the company will invest R \$ 8.5 million in an irrigation project, which will be coordinated by the Minas Gerais Rural Foundation (Ruralminas) with modules 2-100ha, serving 400-450 families.

The dam for urban supply in the “Vale das Cancelas” will consume investments of R \$ 4.5 million and will be managed by Copasa Northern Integrated Sanitation Services and Northeast of Minas Gerais S / A (COPANOR).

Regarding job creation, the company estimates that 6,146 employees are engaged in the implementation phase of the Mining Complex and the Aqueduct, besides

other 2,951 employees working at the mineral pipeline and dewatering station.

In the operating phase, the mine should receive a contingent of 614 employees during the working life of the enterprise. The processing plant will require more than 1000 employees. Demand for employees working in the mineral pipeline is estimated at 44 employees, of which 28 may be local.

According RIMA data, many resources have been mobilized and jobs were generated by Chinese companies in the mining area in the North of Minas Gerais. There are two main companies (MIBA which will have investments of US \$ 2.6 billion and SAM of US \$ 3.6 billion, totaling an investment of US \$ 6.2 billion, equivalent to R \$ 21.6 billion. (conversion based on commercial dollar selling August 5, 2015). About the generation of jobs will be created over 9000 jobs in the installation period and 8.6 thousand jobs during the operational phase of business activities.

There are expectations for other mining investments in the North of Minas Gerais. The *Vale do Rio Doce* company and BHP Billiton were asked to begin mining research activities for future production in the region. Vale plans to invest in Serranópolis de Minas.

## **6 Some Investigations on Mineral Investments and other Possibilities of Exchange and North of Minas Gerais Relations With China**

Chinese investments planned for the North of Minas Gerais are concentrated mainly in the volume of resources in the mining sector. However, the new phase of Chinese development (prioritizing domestic consumption and less focus on infrastructure expansion) calls into question the viability of these investments in the short term; some of these problems are:

a) first, the price decline of minerals and the low content (compared to other exporting areas of Minas Gerais and Brazil) could lead to transformation of these areas into strategic reserves, that is, investments could be postponed?

b) In what way the export logistics will be made possible? The issue is not just financial, given the interest groups to participate in the viability of its implementation; the problem is in rail or mineral pipeline options. The first preference of the

Government of Minas Gerais, has the advantage of greater integration with the return shipping, allowing, for example, the import of coal (the region is a major producer of charcoal), which would stimulate the implementation of plants for the production of iron and steel. The problem is the operating cost, that combined with the ore price fall can derail at the current price, its operation. About the mineral pipeline (lower operating costs), the discussion extends to environmental issues, given the water as a scarce factor.

c) The fact that environmental licenses are relatively complex. Minas Gerais government is studying the implementation of new systems, making it more agile and less costly.

If the outlook in the mining sector demands attention, other options open in the agricultural sector. The partnership with the producers of machinery and Chinese agricultural equipment expands with these companies gaining ground in the regional market (the same is happening in construction, which in both cases promotes competition with domestic production, but not located in the region) , as in the release of the final “Plano Safra Norte de Minas” of 2015.

Expectations of the region in the agricultural sector are based on the change in the Chinese model, having as one of its foundations the income expansion, now facing the internal market. With this expected expansion of consumer food products, which the North of Minas Gerais region can provide, like: Meat (beef especially in the case of the North of Minas. Chinese mission was in Brazil for this purpose: beef, pork and birds) and fruits. The region has several irrigation projects<sup>6</sup> in this last item, especially those deployed by CODEVASF, *Companhia de Desenvolvimento do Vale o São Francisco*, such as Jaíba, Pirapora, Gorutuba and Jequitai (under construction).

The idea is to transform the perimeters in fruit export centers. The ABANORTE (Fruit Growers Central Association of Northern Minas) is being tested for export via sea transport and especially air, to Europe and United States, aimed at the Chinese market (by air). For this, is structuring the project *Região da Jaíba*, intending to export bananas (main item) as well as Palmer mango and lemon.

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<sup>6</sup> See list of projects listed in Codevasf site, referenced at the end of this work.

Other ways to possible partnerships are investments in energy, particularly solar and wind. In the solar energy case, Hondrigde South America has expressed interest to strengthen the existing generation park; European groups, such as Spanish Asolar are already investing in the region. The wind has great potential, and the region a large hall suitable winds in this regard. As China is the major producer and growing leadership in both sectors (SILVA: 2013), the partnership possibilities are promising.

The Government of the State of Minas Gerais seeks to stimulate regional development, therefore recently launched the ISSP-NNM (Strategic Plan for Integration North and Northeast of Minas Gerais - September 2015); which intends to integrate the investments and public actions: municipal, state and federal, at the same time that show potential for the private sector. The document is simple, but it is an attempt to resume the planning as a development tool.

From the industrial point of view, expectations depend on the Brazilian national situation, the overall adequacy of productivity (and insertion in international supply chains) and devaluation of the real against the dollar, which may give competitiveness to exports of already established companies.

## **Conclusions**

It was noted that China has promoted a more intense development process and effective than Brazil, based on an active participation in the international market and the increasing competitiveness of the country. Through three complementary phases: a) export of low value-added products, but gradually incorporating technology and value; b) from the 2008 crisis, the creation of infrastructure becomes support the expansion of investments; and c) finally, it has been in development for several years, a new approach to the development of proprietary brands and technologies. China seeks to pull away from the middle-income trap, when the country by increases in domestic income, particularly wages, would lose competitiveness in foreign markets. China restructures, creating the conditions for the passage of lower middle income to upper middle income, based on high productivity and modern sectors, which would allow it to expand both domestic and foreign markets.

Meanwhile Brazil experienced serious problems. After a vigorous growth process in the decades of (19) 60 and 70 the country focused on the problems of domestic and foreign deficits later to combat inflation. This problem solved from the Real Plan (1993 PAI, and 1994 Plan and the new currency).

The resumption of Brazilian growth was favored by the expansion of the global cycle of commodities and expansion of public wages and spending policies, proving to be unsustainable.

In this perspective fit the Brazil-China relations. Of a possible South-South partnership, relations resemble more and more to the north-south, with China in a dominant position, exporting manufactures and increasingly technology, while Brazil focusing on exports of commodities and or processed products lower added value. The problem is not in exporting commodities, but the loss of competitiveness of Brazilian industry. The strategy adopted by Brazil has enhanced their deindustrialization.

If the situation is serious in the case of Brazil, for Minas Gerais, the situation of falling prices of commodities, particularly iron ore has been more damaging, given that this is the most specialized sector of the state economy. In addition to the reduction in prices and a drop in exports to China, the slowdown in the creation of infrastructure causes excess capacity in Chinese industries, which, looking for opportunities, take part of the mining export market, and presses the own Brazilian market.

To the north of Minas Gerais, industrial competition has the same parameters as the national framework. As for capabilities, they are complementary to the Chinese economy. But the change of Chinese strategy post 2008 (now no longer focused on creating infrastructure) threatens the continued investments in the mining sector, on the other hand, it opens up possibilities for exports in the agricultural sector and to attract Chinese investments in generating energy (wind and solar).

China has been promoting appropriate development policies, it is up to Brazil following (and adapt) these policies, focusing on the expansion of production capacity in a sustainable and competitive manner, only then Brazil could reverse the asymmetry board who settled in relations between the two countries.

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