

# ブラジルと中国の貿易分析と今後の展望

Brazil and China: An Analysis of Trade Relations and Future Perspectives

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## 1. Introduction

The global economy has experienced great changes since the start of the 21<sup>st</sup> century. Developing economies such as China, Brazil, Russia and India, the so-called BRICs<sup>1</sup>, presented in the past decade rapid economic growth and increasing per capita income. Although each country had different paths of development, these populous countries became important players in the world economy.

Many changes also occurred in the developed world. Especially after the global financial crisis in 2008, the widening of the financial turmoil resulted in economic downturn in many developed countries. Recently, the threat of a debt crisis in Europe has also affected world financial markets, deepening the uncertainties in the world economy.

In contrast to the stagnation in the developed world, the world economy has been fueled by the rapid economic growth in countries such as the BRICs, led especially by China. This rapid economic growth has affected worldwide production, trade, labor and investments. In addition, rapid economic growth and development in countries with large populations has also resulted in increasing demand for natural resources, commodities, food and energy, affecting worldwide prices of commodities, goods and services.

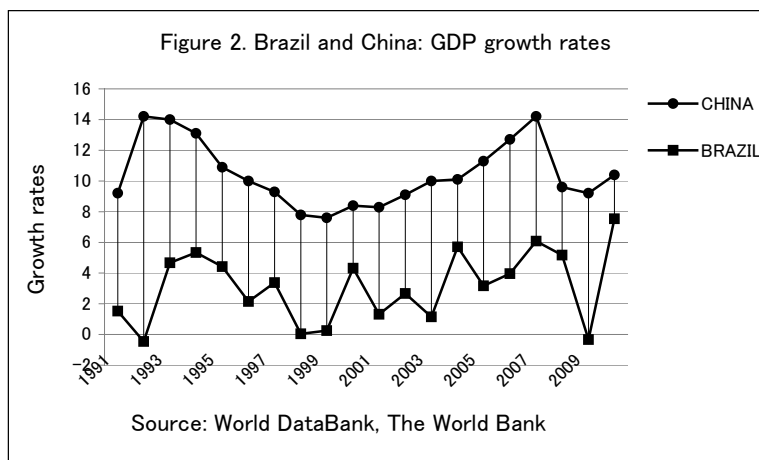
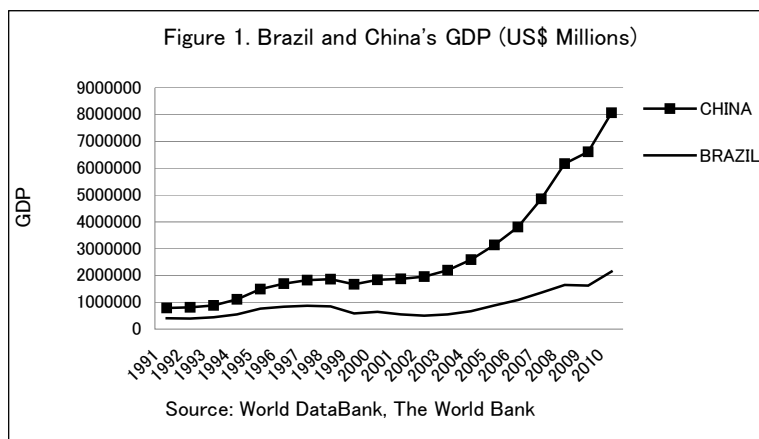
In the light of the above, this paper will analyze the evolution of trade relations of two BRICs' countries, Brazil and China. The main objective is to evaluate how Brazil's trade relations with China have changed in the past years as a result of the trends in the world economy mentioned above. The paper will be divided into 3 parts. The first is this introduction. The second will address the main economic aspects of China and Brazil and the evolution of their trade relations. It also shows a trade intensity analysis of Brazilian trade with China. The last part addresses the main conclusions.

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## 2. Brazil and China: Main Economic Developments and Trade Relations

### 2.1 Main economic developments

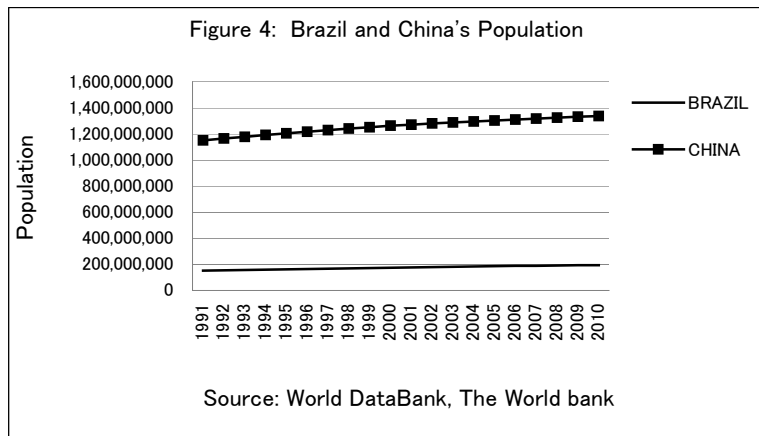
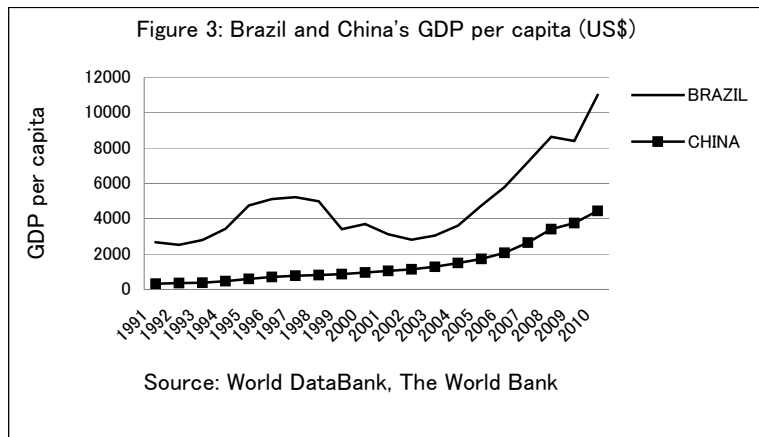


In the 1990s, Brazil's economy in terms of GDP was similar to China's, as can be seen in figure 1. In 1998, for example, Brazil's GDP was US\$871,200 million whereas China's GDP was 952,653 million. During this decade, both countries presented good economic performance with positive growth rates, as shown in figure 2. In the case of China, growth rates were very high compared to Brazil, presenting in some years double-digit figures. In the 2000's, although GDP increased, Brazil struggled to

maintain stable growth rates, lagging far behind China. In the case of China, extraordinary economic growth was observed in the 2000's, characterized by increasing growth rates. In 2008, China's economy had grown to almost three times that of Brazil, with its GDP reaching US\$4,521,827 against Brazil's GDP of US\$1,652,818. The biggest test for these "growth markets"<sup>2</sup> came with the devastating global financial crisis in 2008, the so-called "Lehman Shock". As can be seen in figure 2, the financial turmoil affected the Brazilian economy more than the Chinese. Whereas Brazilian growth rates changed from 5.2% in 2008 to -0.3% in 2009, only a slight decrease in China's growth rate was observed, changing from 9.6% in 2008 to 9.2% in 2009. In the following year, both countries presented high and positive growth rates showing that both economies are much less vulnerable to financial crisis than the developed countries. As noted by Spence (2011), "with growth returning to pre-2008 levels, the breakout performance of China, India, and Brazil are important engines of expansion for today's global economy".

As a result of the above economic performance, according to the International Monetary Fund (IMF), in terms of GDP, China became the second largest economy of the world in 2010, surpassing Japan and following just behind the USA. Brazil also gained great importance in the world economy, becoming the sixth largest economy in 2011 according to the IMF data, surpassing economies such as the United Kingdom and Italy.

This great economic performance has greatly changed Chinese and Brazilian economies and also affected production, trade and investment strategies worldwide. In addition, economic growth has also caused a great impact on per capita income. As can be seen in figure 3, both countries have presented increasing per capita income. In case of Brazil, per capita income changed from US\$2,677 in 1991 to US\$10,992 in 2010. In case of China, it increased from US\$330 in 1991 to US\$4,431 in 2010. China has a huge population, almost seven times that of Brazil, as can be seen in figure 4. This means that, although nominal values are lower than those of Brazil, the increase of per capita income in China is very significant, resulting in a huge increase of the number of new consumers. In both countries, substantial increases in per capita income resulted in increased demand for commodities, natural resources, goods and services as many people moved to upper social classes<sup>3</sup>. These two continental countries have huge domestic markets to be fueled, and trade also plays an important role in both countries' economies, as will be seen in the next section.



## 2.2 Brazil and China's trade performance

Table 1 shows Brazil and China's total exports and imports to/from the world. Evolution of trade in both countries has been characterized by high increases in exports and imports from/to the world, resulting in increasing trade surplus during the 2000s. In more detail, in the case of Brazil, whereas exports in 1992 accounted for only US\$ 35,975,315,456, in 2011 these values reached the amount of US\$256,038,702,056, with increasing trade surpluses. In the case of China, the country's trade value is huge compared to Brazil. Whereas in 1992 China's exports to the world accounted for US\$84,940,015,164, in 2011 they reached US\$1,898,388,434,783. China's imports from the world also increased from US\$84,940,015,164 in 1992 to US\$1,396,001,565,258 in 2011. As these figures indicate, China also presented high and increasing trade surpluses. The impact of the 2008 financial crisis on their trade performance can also be seen in table 1.

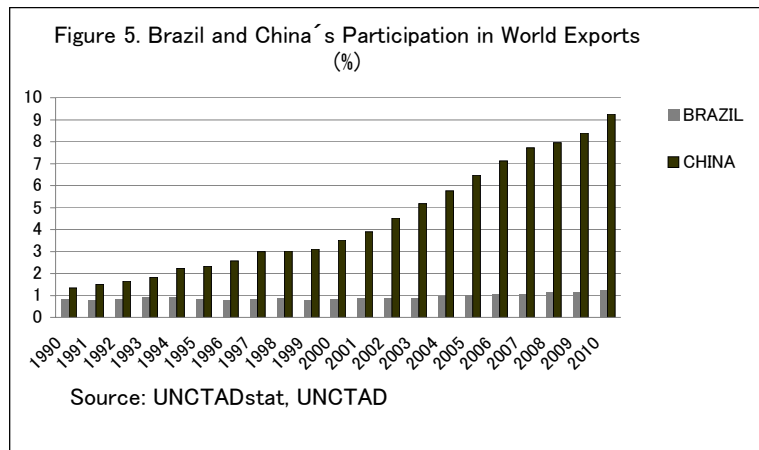
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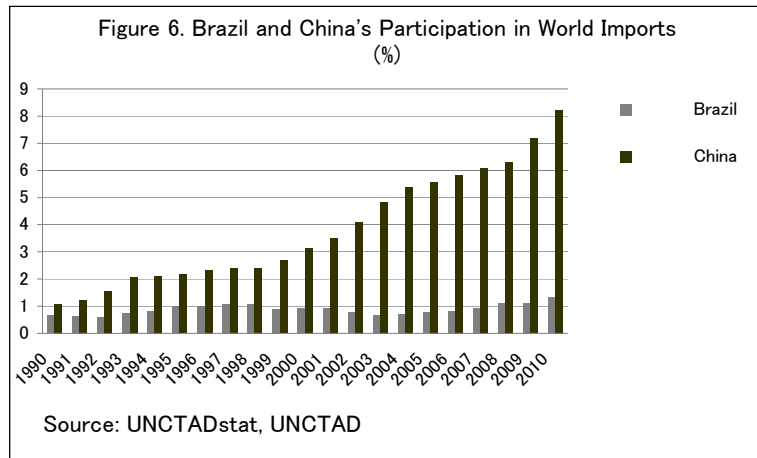
BRAZIL *			CHINA*				
Year	Exports	Imports	Balance	Year	Exports	Imports	Balance
1992	35,975,315,456	22,345,572,352	13,629,743,104	1992	84,940,015,164	80,585,300,523	4,354,714,641
1993	38,700,838,912	27,299,446,784	11,401,392,128	1993	91,743,948,346	103,958,939,693	-12,214,991,347
1994	43,557,826,560	35,508,473,856	8,049,352,704	1994	121,006,259,433	115,613,601,803	5,392,657,630
1995	46,504,931,328	53,734,285,312	-7,229,353,984	1995	148,779,499,983	132,083,499,604	16,696,000,379
1996	47,745,933,312	56,729,460,736	-8,983,527,424	1996	151,047,461,759	138,832,734,845	12,214,726,914
1997	52,985,810,944	65,074,597,888	-12,088,786,944	1997	182,791,584,798	142,370,324,066	40,421,260,732
1998	51,119,869,952	60,793,118,720	-9,673,248,768	1998	183,808,983,040	140,236,767,232	43,572,215,808
1999	48,011,410,609	51,747,393,438	-3,735,982,829	1999	194,930,778,542	165,699,066,576	29,231,711,966
2000	55,118,913,952	55,850,546,401	-731,632,449	2000	249,202,551,015	225,093,731,030	24,108,819,985
2001	58,286,592,791	55,601,756,872	2,684,835,919	2001	266,098,208,590	243,552,880,618	22,545,327,972
2002	60,438,649,875	47,242,654,093	13,195,995,782	2002	325,595,969,765	295,170,104,110	30,425,865,655
2003	73,203,221,846	48,325,649,661	24,877,572,185	2003	438,227,767,355	412,759,796,407	25,467,970,948
2004	96,677,246,370	62,835,613,536	33,841,632,834	2004	593,325,581,430	561,228,747,993	32,096,833,437
2005	118,528,688,118	73,600,375,464	44,928,312,654	2005	761,953,409,531	659,952,762,119	102,000,647,412
2006	137,806,190,344	91,342,783,548	46,463,406,796	2006	968,935,601,013	791,460,867,850	177,474,733,163
2007	160,648,869,728	120,620,871,174	40,027,998,554	2007	1,220,059,668,452	956,115,447,556	263,944,220,896
2008	197,942,442,909	173,196,633,755	24,745,809,154	2008	1,430,693,066,080	1,132,562,161,442	298,130,904,638
2009	152,994,742,805	127,647,330,788	25,347,412,017	2009	1,201,646,758,080	1,005,555,225,206	196,091,532,874
2010	197,356,436,225	180,458,788,518	16,897,647,707	2010	1,577,763,750,888	1,396,001,565,258	181,762,185,630
2011	256,038,702,056	226,243,408,907	29,795,293,149	2011	1,898,388,434,783	1,396,001,565,258	502,386,869,525

\* Values in US\$ dollars.

Source : COMTRADE

Figures 5 and 6 show Brazil and China's participation in world's exports and imports, respectively. When compared to world total trade, Brazil's participation in world trade is still very low, reaching only 1.2% of world exports and 1.3% of world total imports in 2011. In the case of China, its participation in world trade grew remarkably. Whereas in 1990 China's participation in world exports accounted for only 1.3% of total world exports, in 2010 participation in world exports increased to 9.3%. The same trend was observed in China's participation in world imports. The performance of China's trade has a great impact on world trade and demonstrates the growing importance of this country for the world economy.





### 2.3 Brazil's trade relations with China

Year	EXPORTS	IMPORTS	TRADE BALANCE
1990	381,792,448	203,452,512	178,339,936
1991	226,395,312	75,091,304	151,304,008
1992	460,024,576	57,279,776	402,744,800
1993	779,376,448	156,969,616	622,406,832
1994	822,407,488	196,790,672	625,616,816
1995	1,203,741,184	417,913,152	785,828,032
1996	1,113,813,632	1,252,020,608	-138,206,976
1997	1,088,200,576	1,316,815,104	-228,614,528
1998	904,859,904	1,133,868,672	-229,008,768
1999	676,129,026	942,936,091	-266,807,065
2000	1,085,301,597	1,222,098,317	-136,796,720
2001	1,902,122,203	1,328,389,311	573,732,892
2002	2,520,978,671	1,553,993,640	966,985,031
2003	4,533,363,162	2,147,799,004	2,385,564,158
2004	5,441,745,722	3,710,477,153	1,731,268,569
2005	6,834,996,980	5,354,519,158	1,480,477,822
2006	8,402,368,827	7,989,343,057	413,025,770
2007	10,748,813,792	12,617,754,515	-1,868,940,723
2008	16,403,038,989	20,040,022,368	-3,636,983,379
2009	20,190,831,368	15,911,144,513	4,279,686,855
2010	30,752,355,631	25,535,684,189	5,216,671,442
2011	44,314,595,336	32,788,424,507	11,526,170,829

(\*) Values in US\$ dollars

Source: COMTRADE

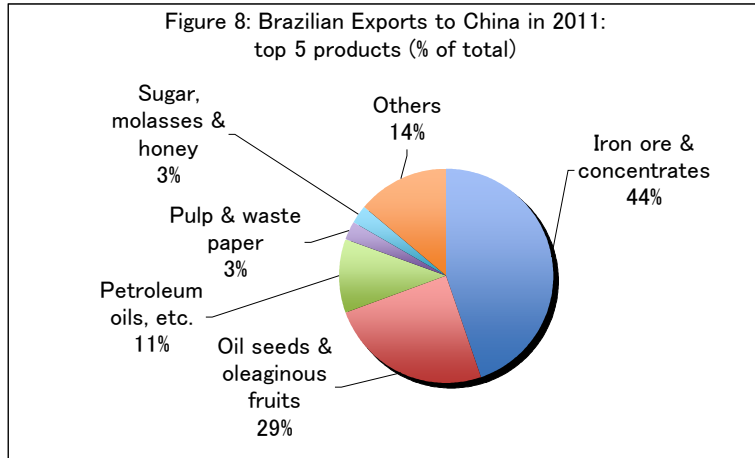
Table 2 shows the bilateral trade between Brazil and China. Brazilian exports to China increased from US\$381,792,448 in 1990 to US\$44,314,595,336 in 2011. In the case of imports, whereas in 1990 imports from China accounted for only US\$203,452,512, in 2011 imports values increased to US\$32,788,424,507. As observed, at the beginning of the 1990s Brazilian exports and imports to/from China were not so significant. However, in the past two decades, China became an important trade partner for Brazil.

The growing importance of China as a trade partner can also be seen in figure 7. This figure shows the percentage of Brazilian exports and imports to/from China on Brazil's total exports and imports, respectively. In the case of exports, whereas in 1992 only 1.3% of Brazilian total exports were exported to China, in 2011, Brazilian exports to China accounted for 17.3% of total Brazilian exports. In the case of imports, the same trend was observed. Whereas in 1992 only 0.3% of Brazilian imports were from China, in 2011 imports from this country had risen to 14.5% of total Brazilian imports.

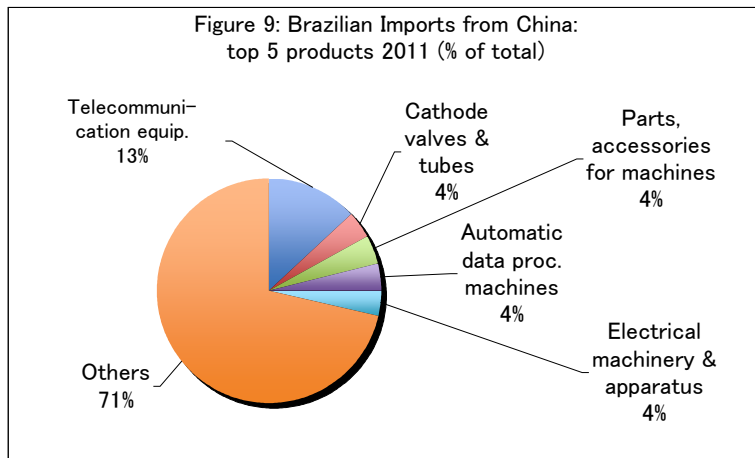


Figures 8 and 9 show Brazilian exports and imports' composition (top 5 main products) and their share in Brazilian total exports and imports to / from China (in percentages). In the case of exports, the top 5 products shown in the figure 8 account for more than 85% of the total exports to China. Brazilian exports are composed basically of natural resource-intensive products and primary products (commodities). This reflects China's heavy dependence on imports of natural resource-intensive products and commodities from other countries, one of the greatest challenges China faces due to its rapid growth and growing demand<sup>4</sup>. In the case imports, Brazil imports from China technology-intensive goods such as electrical and machinery parts and apparatus. From these figures, it can be observed that trade between Brazil and China is complementary, with Brazil exporting natural resources and primary goods and importing from China more technology-intensive goods. Regarding the trade balance between these two countries, although Brazil imports many technology-intensive goods, trade surpluses have occurred in the past years. Apart from the huge volumes of

natural resource and primary products exported to China, trade surpluses can also be related to the increase in the price of commodities in world markets.



Source: UNCTADstat



Source: UNCTADstat

Table 3 shows China's total imports from the world, imports from Brazil and the percentage of Brazil's imports on China's total imports. Whereas in 1995 imports from Brazil represented only 0.9% of China's total imports, in 2011 imports from Brazil accounted for 3% of China's total imports. This shows the increasing importance of Brazil as a trade partner for China and as an important source of products, especially



natural resources and commodities as mentioned previously.

**Table 3. CHINA's Imports**

YEAR	TOTAL IMPORTS	IMPORTS FROM BRAZIL	% (*)
1995	132,083,500	1,231,530	0.9
1996	138,832,735	1,484,065	1.1
1997	142,370,324	1,488,961	1.0
1998	140,236,765	1,133,103	0.8
1999	165,699,067	968,530	0.6
2000	225,093,731	1,621,441	0.7
2001	243,552,881	2,347,233	1.0
2002	295,170,104	3,003,020	1.0
2003	412,759,796	5,842,292	1.4
2004	561,228,748	8,672,861	1.5
2005	659,952,762	9,992,524	1.5
2006	791,460,868	12,909,495	1.6
2007	956,115,448	18,342,071	1.9
2008	1,132,562,161	29,863,443	2.6
2009	1,005,555,225	28,280,983	2.8
2010	1,396,001,565	38,099,447	2.7
2011	1,743,394,866	52,386,750	3.0

(\*) Percentage of imports from Brazil over total imports

Source: UNCTADstat

#### 2.4 Brazil's trade with China: trade intensity index

The previous sections showed that Brazil and China have become important trade partners. In this section, in order to analyze the linkages in Brazil's trade with China, the trade intensity index was calculated.

The trade intensity index "is based on an actual observation of bilateral trade flow, and it measures the intimacy of the trading relationship between any given two countries" (Okuda, 1997, p.32). The formula of the trade intensity index is defined as,

$$TII_{ij} = (X_{ij} / X_i) / (M_j / M_w)$$

X<sub>ij</sub> are exports from country i to country j;

X<sub>i</sub> are total exports of country i ;

M<sub>j</sub> are total imports of country j ;

M<sub>w</sub> is the total world trade.

The right side of the equation has as numerator the share of exports of country i to country j in total exports of country i. The denominator is the share of the country j's imports in the world trade. As a result, an index higher than unity (1) means that two countries have high trade linkages.

The data used in this analysis was taken from the UNCTADstat database online.

**Table 4. Trade Intensity Index**

Year	TII
1995	1.1
1996	0.9
1997	0.8
1998	0.6
1999	0.5
2000	0.5
2001	0.8
2002	0.9
2003	1.1
2004	0.9
2005	0.9
2006	0.9
2007	1.0
2008	1.1
2009	1.6
2010	1.6

The calculation of trade intensity index for trade between Brazil and China was made for years 1995 to 2010. Table 4 shows the results of the calculation. Trade intensity indexes have increased and rated higher than 1 every year since 2007. These results show that trade between Brazil and China, compared to the world, has gained increasing importance as can be confirmed by the results.

### 3. Conclusions and future perspectives

The present paper addressed the evolution of trade between two BRICs countries, Brazil and China. These countries, considered “growth markets”, have presented unexpected economic performance with high growth rates, increasing per capita income and the appearance of a huge consumption market. These changes, especially led by China, have changed the world economy, not only in terms of trade, but also in terms of worldwide production, division of labor and investments, among many other aspects. Although developed markets have stagnated, these countries overcame the financial crisis in 2008 and are considered driving forces of the current world economy.

The analysis of trade performance showed that China has played an important

role in world markets and influenced world trade. Brazil trade with China has changed drastically, with substantial increases in exports and imports. The rapid development in China has pushed demand for natural resource-intense products and commodities. In this aspect, Brazil has become an important source of natural resources and commodities and food for China. And in the case of imports, Brazil imports many electrical and machinery-related goods from China. Although Brazil has presented trade surplus with China, this complementary trade should be carefully analyzed in future economic agreements between Brazil and China, taking into account terms of trade and also productive investments from China. The huge expansion in “growth markets” will also increase the demand for more natural resources and commodities, and Brazil (and other traditional natural resource and commodity exporting countries) must also take into account environmental issues related to the expansion of agribusiness. The rapid economic growth in many developing countries will bring challenges and also opportunities not only for developing countries but also for the stagnated developed world, as all countries are now inter-linked in a globalized economy.

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**Notes:**

- 1 The acronym BRICs was coined by Jim O'Neil in 2001, in his remarkable paper "Building Better Global Economic BRICs", Goldman Sachs Global Economics Paper No. 66, November 2001.
- 2 In 2011, Jim O'Neil started to call BRICs countries "Growth Markets" as they have different economic aspects from the "emerging economies" as mentioned in his book "The Growth Map, Economic Opportunity in the BRICs and Beyond", page 7.
- 3 It is important to note that in both countries there are great regional disparities and also inequalities in income distribution that are not addressed in this paper.
- 4 The increasing demand in populous countries for natural resources and commodities and food will also deeply affect world markets leading to concerns on the world food supply ("food crisis").