The Political Economy of Brazil-China Trade Relations, 2000–2010

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Sino-Brazilian trade reached record levels in 2010. At the core of this phenomenon was the return to a primary production structure reinforced by the difficulty of diversifying exports of Brazilian manufactures of higher value added and technological content. Brazilian imports have revolved around the acquisition of manufactures similar to the ones produced in Brazil and with a sophisticated technological profile. The results of this trade tie are related to differences in the development agendas of the two countries, especially their industrial policies.

Em 2010, o volume do comércio sino-brasileiro ultrapassou níveis anteriormente registrados. O cerne desse fenômeno foi um retorno à estrutura de produção calçada no setor primário. Ademais, esse retorno foi reforçado pela dificuldade em diversificar as exportações dos manufaturados brasileiros de alto valor agregado e conteúdo tecnológico. As importações brasileiras estão centradas na aquisição de manufaturas similares às produzidas no Brasil e que apresentam um perfil tecnológico sofisticado. Os resultados desses laços comerciais correspondem às diferenças nas agendas de desenvolvimento dos dois países, especialmente suas respectivas políticas industriais.

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China is, at present, second only to the United States in its importance in world trade. Its importance derives not only from the volume of its external purchases and sales but also from its extensive global connections and from the rapidity with which it has achieved its position (IMF, 2011). The growth of its gross domestic product has generated rising demand for basic products. Given China's demographic, productive, and economic heft, this demand has in turn raised the prices of commodities on the world market, provoking historic changes in the terms of trade between nations. According to the World Trade Organization (WTO, 2011), China's GDP grew by 9.6 percent in 2008, 9.1 percent in 2009, and 10.3 percent in 2010. In those same years its foreign purchases increased by 3.8 percent, 2.9 percent, and 22.1 percent by volume. Expressed in

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current value, foreign purchases went up 39 percent in 2010. Commodity prices dropped 30 percent in 2009 because of unfavorable international conditions, but the following year they recovered, increasing by 26 percent. The overall rise in value for these products is striking: from 2005 to 2010 commodities prices increased an average of 9 percent per year in real terms.

China has led the globalization process down an entirely different path from the one envisioned in the 1990s (Amaral Filho and Melo, 1998). With this redesign of the global stage, it is not hard to understand why China has emerged as an important trade partner of Brazil over the past decade. Brazil, as a venerable supplier of commodities to the world market, has taken advantage of the felicitous expansion in demand for these products that resulted from the high levels of growth in the Chinese economy. In 2009 China became the largest purchaser of Brazilian goods, displacing the United States. From the Brazilian point of view, this transition had positive effects: the export of primary products to the Chinese market led to a jump in revenue. At the same time, Brazil faced certain threats related to its imports of Chinese manufactures, which rapidly evolved, shifting from low-technology products to products with medium and high technological content.

The Sino-Brazilian relationship reached record levels in 2010, turning China into Brazil's largest trade partner but with a strong focus on the export of Brazilian basic products. Given this context, this article aims to analyze the flow of trade between Brazil and China between 2000 and 2010, examining the implications for Brazil's economy.[1] The following section outlines the profile and context of the Brazilian and Chinese economic policies that create the institutional environment in which their commercial interactions are carried out. The next analyzes the characteristics of these interactions, including Brazil's increasing dependence on the Chinese economy for foreign trade and the predominance of primary products in Brazil's export profile. At the same time, it examines the future threats that might be posed by the import of Chinese manufactures. The final section presents some conclusions.

BRAZIL'S INTERNATIONAL POSITION IN THE CONTEXT OF EXPANDING CHINESE TRADE

The structure of trade relations between Brazil and China, which has generated both opportunities and dangers for Brazil, cannot be interpreted in a unilateral or Manichean manner, in terms of China's commercial expansionism alone. Rather, it must be understood in terms of differences in the two nations' economic development agendas. After two decades of semistagnation, the second term of President Fernando Henrique Cardoso in the early 2000s witnessed a certain recovery of Brazilian economic growth, a recovery linked to an increase in exports. This export expansion was supported internally by the shift in exchange-rate regimes that the Russian financial crisis imposed on Brazil in 1998. Brazil moved from a more or less fixed exchange rate to a floating one, making it possible to devalue the national currency, the real.

Externally, the recovery depended on the rise in commodity sales. Foreign direct investment also played a role as overseas investors took advantage of

high interest rates and the privatization process, especially in the areas of banking, energy, and telecommunications.

Several macroeconomic factors proved fundamental to this modest growth. One was the government's persistence in the successful struggle against inflation, a struggle begun in 1994 with the Real Plan. Another was the management of the internal public debt, which came to be supported through the creation of a primary surplus and through the proceeds from privatizations. A final factor was the policy of floating exchange rates. The market contributed to the appearance of good macroeconomic governance—especially the financial market, since internal and real interest rates soared to high levels. Beyond these macroeconomic fundamentals, however, one must not overlook the importance of trade opening and deregulation. These policies, in addition to contributing to the battle against inflation, also served as an implicit industrial policy to accompany the Real Plan during the Cardoso administration.

Starting in 2003, the Lula government maintained this macroeconomic architecture. The continuity inspired market confidence in Lula's economic policies, especially because the government maintained its commitments to the public bond market. Nonetheless, from 2003 to 2006 real GDP growth still remained at low levels—an average of 3.5 percent annually. Growth here was buoyed by the positive balance of trade, powered by the combination of a (continuing) devalued exchange rate and an increase in foreign commodities sales. In Lula's second term, from 2007 to 2010, economic growth became more robust—an average of 4.6 percent annually. This growth was nurtured by an internal market in which workers' mean incomes had improved. Growth also continued to rely, however, on positive performance in the area of primary product sales. During this period the rise in the exchange rate became worrisome, as did the rapid increase in the importation of manufactured goods. The increasing exchange rate encouraged imports, promoting a switch from domestically produced intermediate goods and consumer durables to their foreign equivalents. This process caused the growth rate for domestic industry to decrease more than GDP (see Castro, 2009). Given this context, the national product underwent clear changes in its sectorial composition: a decrease in the share devoted to industry, an increase in that of services, and a dynamic expansion in the primary sectors oriented toward export. For example, the mineral extraction segment, which represented 1.6 percent of GDP in 2002 (value added at basic prices), had by 2008 reached 3.2 percent, retreating to 1.8 percent in 2009 during the moment of crisis (IBGE, 2012). These sectorial changes can be observed in the period after the democratic opening and the monetary stabilization. The cause of these changes goes beyond institutional innovation to include the conditions and relations of international trade as influenced by the impact of Chinese products (Castro, 2009).

From the perspective of deindustrialization, it can be said that these factors represent important changes in the patterns of accumulation and growth associated with the old model of import substitution. Deindustrialization reinforced the finance-led growth regime, which had been rapidly expanding ever since the debt crisis of the 1980s, when revenues created by the primary sector started to flow toward the financial system. Finance-led growth is a macroeconomic configuration dominated by the logic of finance, in which gains stem

from financial assets. In his seminal article on finance in the context mentioned here, Boyer (2000) strove to identify this new growth regime, which, in the developed countries, would ultimately replace the system of accumulation based on mass production. He characterized it in terms of features such as easy access to credit and the creation of derivatives markets as sources of growth. However, in Brazil this regime operates differently. It responds to the public sector's need for financing, a need that results from the latter's obligations to its internal debt. This, in turn, creates pressure on interest rates. Resolved neither by the reforms of the Cardoso administration nor by Lula's first term in office, this fiscal and financing problem has imposed a high opportunity cost on savings and capital. It has also restricted public intervention and private productive investment, generating detrimental impacts on growth performance. Despite this vicious circle, in the past decade this regime has promoted high financial gains for owners of savings, capital, and commercial surplus created by commodities exporters.

In the face of the negative structural impacts of foreign trade—specifically, imported manufactures—the Lula administration launched two explicit industrial policies. Aimed at improving the competitiveness of the industrial sector, these policies highlighted the government's reaction to its relative loss of control over certain structural variables of the economy. On one hand, the government perpetuated the macroeconomic policy of the previous administration. However, it formulated a policy with a structural bent, with the intention of reinstating planning and strengthening the country's productive structure. Thus Brazil has witnessed a return of the nation's industrial development policy after a weakening of the Washington Consensus principles. According to Cimoli, Dosi, and Stiglitz (2009), when this consensus prevailed industrial policies were considered bad words that ought not to be uttered in any public or private setting—an orientation that Brazil followed to the letter in the 1990s. At the same time, China was enacting two five-year plans (the eighth and the ninth), which gave the country a modern infrastructure and allowed it to speed up its economic growth.

Thus the objective of the industrial, technological, and foreign trade policy launched on March 31, 2004, was to increase the efficiency of the productive structure, enhance Brazilian companies' capacity for innovation, and expand exports vis-à-vis imports. The general plan embedded in the policy was to enhance the role of Brazilian industry on the international scene. As is well known, the effects were very modest. According to Cano and Silva (2010), for example, the policy was incompatible with the macroeconomic rules governing the exchange rate, interest rates, and public expenditures. As a result, only isolated initiatives were implemented, and they failed to spur the intended investment levels and were incapable of solving structural problems. The industrial sector could not contribute to the growth and strengthening of the country's international economic position. According to Castro (2009), the March 2004 policy was unable to respond to new international challenges because, while it was intended to strengthen the sectors responsible for creating (and diffusing) technological progress, it neglected to support specific innovative activities. Elsewhere (2010) he argues that, in a world transformed and reorganized by China's disruptive presence, an affected country like Brazil could react through

three types of public policies: (1) protection, (2) repositioning, and, finally, (3) looking ahead, which would encourage new sectors that had not previously been considered. The 2004 policy, designed to reposition the country's industrial sector, failed to yield results.

In 2008 the government launched a new policy to boost Brazilian industry. This policy attempted to sustain a long productive development cycle based on investment, business competitiveness, and increase in exports. It envisioned the identification of goals and pursued increased interaction between government agencies and between government and the private sector. There was hope that it would lead to a system capable of building and sustaining the long-term competitiveness of economic sectors (Cano and Silva, 2010). Once again, the government's strategy was repositioning, although this time it was characterized by protection mechanisms favoring the textile and shoe manufacturing sectors. Despite a favorable internal macroeconomic context in the year the policy was launched—at least before the effects of the 2008 crisis emerged—it was a contradiction to keep the real appreciated and interest rates high when the objective was to increase the export of industrial goods. According to the Central Bank of Brazil (BACEN, 2012), between 2006 and 2011 the real appreciated 31.21 percent while the basic interest rate was at 11.5 percent. In the same period the average annual inflation rate was 4.8 percent, according to the Getúlio Vargas Foundation's inflation index.

Even if other goals had been achieved, their effects would have been diminished by the international crisis that emerged in the second half of 2008. To soften the detrimental effects of the crisis on the Brazilian economy, the government implemented another group of anticyclical policies, short-term measures intended to increase consumption through tax exemptions on final goods purchases. Despite many successful initiatives, the large-scale goals were not achieved: the international financial crisis compromised, to a certain extent, the anticipated investment level, while Brazilian exports were hit by the reduction of global demand. Moreover, the currency appreciation only made matters worse. One could argue that the real impediment to Lula's industrial policies was a set of macroeconomic variables, but the problems can be best understood in terms of the disputes and contradictions in the economic system, where government agencies such as the Finance Ministry, the Central Bank, and the Ministry of Development, Commerce, and Industry interacted with civil society in a technocratic environment.

According to Erber (2011), Brasília under Lula faced the choice between two developmental agendas: a"restrictive institutionalist" agenda and a "neo-developmentalist" one advocating broader and faster growth that demanded effective government participation to frame regulation and investment priorities. In Erber's view, the proponents of the restrictive institutionalist agenda won this dispute. As a result, the status quo of finance-led growth was preserved. This regime stemmed from a tacit coalition composed of commodities exporters, conservative public agencies, and technocrats, as well as the financial system (banks, investment funds, pension funds, insurers, etc.)—segments of the economy that benefited from foreign demand and high interest rates. Not by chance, the rural caucus became the largest and strongest multiparty caucus in Congress.[2] In line with the neo-developmentalists, the Banco Nacional de

Desenvolvimento Econômico e Social (Brazilian Development Bank—BNDES) was still amassing vast financial resources geared toward investment and mergers and acquisitions. The hope was to form a group of "national champions," but to no avail. The Lula administration still managed to push for an important social agenda characterized by the Bolsa Família program, real minimum wage increases, and consumer credit expansion. These measures benefited the domestic market and favored economic growth.

In August 2011 the new Dilma Rousseff administration continued the government's response to the challenges posed by global competition by launching the Greater Brazil Plan (MDIC, 2011b). Among other things, the objective of this plan was to increase the competitiveness of Brazilian industry and shield it from other countries' manufacturing sectors in both domestic and international markets. It also defended the country's industry from currency appreciation—the real increased substantially in value as a result of higher international liquidity in 2011–2012. The plan was supported by manufactures importers and industrial-sector entities closely linked to the Federação das Indústrias do Estado de São Paulo (São Paulo State Industry Federation—FIESP), as well as labor unions. It created a plethora of financial and fiscal mechanisms and made them available to sectors that were vulnerable to exchange rates and to international competition such as shoemaking, software, and clothing. Some of them were restrictive of the import sector, while others provided payroll tax exemptions to the private sector, but the greatest impact occurred in the area of exchange rates. The government decided to intervene more rigorously in real appreciation by resorting to higher taxation of foreign capital entering Brazil. The mechanism allowing for this maneuver was a tax on financial operations. Brasília could also count on the Central Bank to intervene by purchasing dollars on the market and by reducing interest rates. This set of governmental decisions in favor of Brazilian industry proved different from the stances that had characterized previous plans. This time the policy was protectionism, the hope being that the productive sector would have time to reposition itself and adjust to the adversities it confronted. However, it lacked the ammunition to promote the productivity of companies, especially with respect to innovation.

There is little evidence to support the assertion that this protectionism signaled the weakening of the conservative development orientation and the strengthening of the neo-developmentalist program. There were, however, efforts to build a more positive agenda geared toward economic and industrial development. In 2012 the Central Bank showed decisiveness in reducing the basic interest rate. At the same time, the government signaled an increase in the primary surplus and a reduction of its net debt (which fell from 45.5 percent of GDP in 2007 to 35.75 percent in March 2012). It remains to be seen whether these improvements will be enough to initiate the dismemberment of the finance-led growth regime.[3]

China became the centerpiece of international trade in the first five years of this century as the deliberate result of a development strategy structured around a model of disciplined and forced industrialization. The model aims at the creation of employment and income for a gigantic population inhabiting a territory that, despite its vastness, lacks natural resources. There is no doubt that behind this strategy lies a conscious catch-up trajectory. On the basis of a

core duality—restrictive politics combined with a market economy or "market socialism"—the Chinese state has implemented a complex and coherent development agenda with a high degree of autonomy vis-à-vis both the world economy and civil society. This agenda was born in 1978 with price liberalization and incentives for agricultural surplus and greater industrial productivity. It was grounded in a set of steps established by successive Communist Party congresses and People's National Assembly deliberations, which adjusted and adapted the strategies and tactics that guided the development model. If there was any ambiguity between reformists and conservatives in this agenda, it was dissipated from 1991 on with the beginning of the eighth five-year plan, when, strengthened, the reformists took the initiative to remove it. Thus the great difference between the Chinese model and its counterparts in the developing countries, including Brazil, is a matter of political and institutional coordination. In fact, the Chinese model became the trademark of the general Asian development model (Wade, 2005).

China's annual growth rates converged toward an average of 10 percent, increasing demand for basic and industrial products for its manufacturing industry while augmenting the Chinese family's need for food. In the new status quo, the Chinese consumed more as a result of the expansion in the country's emerging middle class. At the same time, China's large-scale and low-cost industrial production inundated the world market. Its competitiveness was a central feature of the country's growth regime, at least in its initial phase. As a result, the Chinese model appeared to be limited to the use of cheap labor and currency manipulation (which kept the renminbi undervalued), but this has proved to be a simplistic and ahistorical view. Besides the direct and favorable costs of the factors of production such as industrial real estate and labor, Chinese industry can also rely on economies of scale made possible by sizable public-private investment. This investment is enabled by high domestic savings rates for families and public and private companies, which in 2006–2007 reached 50 percent and 54 percent of GDP respectively (Corden, 2009; Nonnenberg, 2010). The savings rate was already high during the era of the planned economy, but its composition was significantly modified after 1978, when family savings became an important share of total saved resources—around 17 percent (Naughton, 2007; Nonnenberg, 2010).

The government, whose participation in the economy ranges between 25 percent and 30 percent, leverages and supports much of this investment. Moreover, even though they behave as if they existed in a free-market regime, companies receive heavy government subsidies, which reduce investment risk and stretch the return on investment. In fact, economies of scale are an important feature of China's economy and have a decisive impact on the relative costs of production. Their importance can be estimated from the robust rates of gross fixed capital formation, which, from the 1980s to 2000, grew at the same rate as savings. In 2005 the Chinese investment rate stood at 40 percent of GDP, higher than in any other country (Nonnenberg, 2009; 2010). Thus China became the world's top producer of various items, including TV sets, trucks, steel, and cement. In combination with high growth rates and monetary stability (low inflation), these factors—high savings rate, high capital formation, and favorable exchange rate—simultaneously shape the Chinese economic model and

create benefits for countries that export natural resources to China, especially resource-rich nations such as Brazil and some countries in Africa. These benefits also result from improvements in the terms of trade.

However, these factors have also created discomfort for countries with other patterns of industrialization in the developing and developed worlds, including Brazil, the United States, and some European nations. In other words, countries and their economic sectors are going through a process of substitution of domestic production for imports, which has negative impacts on the density of the domestic productive chain, leading to the so-called deindustrialization. Accordingly, China's emergence as the "new epicenter of the world economy" (Castro, 2010) has produced contradictory results, even within a single country such as Brazil. China's arrival as a major player in the world market has brought both dangers and opportunities to the Brazilian economy.

It is true that an abundance of cheap labor, located primarily in rural areas, initially boosted China's competitiveness. This process seemed to corroborate Lewis's (2010) model, with development based on the availability of unlimited labor.[4] In this initial stage, Chinese production was confined to low-complexity products, often of poor quality, that gave the country's production a bad reputation on the international stage. But China seemed destined to follow a path similar to that of its Asian neighbors, Japan and the "Asian tigers," who sought out science, technology, and innovation and incorporated these forces into their high value-added production processes. Such products, intended for export, gave Asian nations the opportunity to finance the importation of raw materials and natural resources, which, in turn, allowed them to continue growing sustainably.

In the realm of technologically sophisticated products, competitiveness can be established only if the producers take into account certain essential attributes: product differentiation, quality, and diversification. With such products, moreover, the income elasticity of demand overwhelms price movement, which is associated with production cost. The core of the development model initially relied on reduced labor cost and depreciated currency. Given the particular properties of technological products, the model's core had to shift, incorporating new factors that could boost company productivity and promote growing revenues. The literature on economic development has shown that these types of national industrialization processes, coupled with great structural changes, are not easily managed. They need efficacious coordination models to make savings and investment converge and to promote complementarity between investments (see, for example, Cypher and Dietz, 2009).

The series of five-year plans adopted by the Chinese government reached its twelfth installment in 2011. It is unquestionable that the reforms, strategies, and policies implemented through these plans have increased productivity and industrial competitiveness. Between 1995 and 2005 work productivity in China stood at 6.7 percent. Between 2005 and 2009 it reached 9.6 percent—higher than in Russia, China, and Brazil (Conference Board, 2010).[5] In the past four decades, China has opened its economy and implemented reforms that strengthened its dynamic comparative advantage, turning the country into an important player on the international economic scene (Lin, 2012). Internally, the central government has promoted decentralization to achieve administrative flexibility and

agility. This process has turned many cities and provinces into vital economic axes and allowed them to control companies such as Chery, an economy-class automobile manufacturer. Under state protection, several productive companies and commercial banks have been created to bring dynamism and stability to growth and industrialization. In tandem with the reforms, the government has intervened broadly in physical infrastructure projects that required large sums (ports, airports, railways and roads, energy generation, supply chains, and so forth). These interventions have avoided bottlenecks while creating positive externalities for companies. They have increased the competitiveness of Chinese manufacturing through two avenues: first, implementation of aggressive strategies, policies, and plans for national innovation, science, and technology, and, second, massive entry of foreign direct investment, made possible when China joined the WTO in 2001 (Corden, 2009). Joining the WTO ushered in the process of import substitution in various industrial sectors such as aluminum, machinery, cement, chemical products, steel, and related materials (Anderson, 2008). These avenues created a feedback loop. Innovation, science, and technology policies were integrated with policies that controlled human resources, sectorial strategies, infrastructure, intellectual property, and foreign direct investment. All of this took place within a logic of national innovation, which was critical to the catch-up effect. The implementation and success of these policies proved decisive, spurring the results that the Chinese economy has achieved in international commerce today (Lin, 2012). Policies designed and adopted primarily to promote industrialization ushered in the greatest industrial push in contemporary history. These policies were, moreover, adaptive in nature, allowing the nation's productive forces to envisage new perspectives. The success of these initiatives is characterized by the consonance between macroeconomic policies (interest rates, exchange rate, and inflation) and policies geared toward structural and economic transformations but also attentive to the need to correct market and institutional failures (Rodrik, 2009; see also Stiglitz, 2007).

Brazil has faced a series of difficulties in addition to the chronic financial embarrassment created by the domestic public sector debt, which made it impossible for developmental policies to bear substantial fruit. While Chinese structural policies yielded positive results for the country's economic model,[6] they contributed to the negative outcomes of Brazilian industrial policy and reinforced the economy's primary-export bias. Furthermore, persistent currency appreciation and the relative stagnation of industrial productivity led the import market to open its doors to Chinese manufactures, rewarding Beijing's efforts to produce technologically complex goods. According to Castro (2009), the effective undervaluation of the Chinese currency, coupled with proactive public policies, bolstered the value of the industrial chain in that country beyond the simple industrialization centered on assembly lines and thus allowed Chinese competitiveness to spread to new industrial sectors. As a result, the composition of Chinese exports changed from the 1990s on, beginning with simple products and going on to incorporate information technology and electronic items assembled domestically and finally including machinery, transport equipment, and varied electronic goods with higher technological content (Chernavsky and Leão, 2010).

For Brazil, the success of commodities exports redresses the modest results of industrial policies in the manufactures export sector. Thus, Salama (2011) argues that because of the abundance of Brazilian exports to China, Brazil's constrained external role does not limit the capacity for growth as much as it did in the past. Increasing exports of raw materials compensate for imbalances in the manufacturing industry, leading to positive outcomes for the trade balance and reducing the current accounts deficit. In this context, public policies tailored to promoting growth tend to have greater freedom. The strong appreciation of the Brazilian real played a major role in the loss of competitiveness of industrial products, which was aggravated by policies that lowered interest rates in the developed countries and by the higher level of international liquidity. Still, according to Salama (2011), *ceteris paribus*, as long as the real is overvalued and the yuan is undervalued in relation to the dollar the price-competitiveness factor will always favor Chinese products. Furthermore, growing Chinese productivity, largely sustained by the low cost of labor[7] in the country, has significantly impacted the trade of products with low technological sophistication, characterized by high price elasticity of demand. The increasing importation of Chinese products of this kind threatens important Brazilian industrial sectors. In fact, labor-intensive companies have seen two complementary trends: replacement of domestic inputs with cheaper imported inputs to preserve profits and complete or partial transformation of production into commercial activity with the purpose of reselling imported goods. In the latter case, some clothing companies have outsourced part of their production to their Chinese counterparts, creating a blend of business strategies that allows for the reduction of average production cost.

This scenario alerts us to an alarming reality: Brazilian industrial policies have failed to deliver positive results, the real has been persistently appreciating, productivity has fallen, and, consequently, national industry has been losing competitiveness. Although it would be premature to advance a conclusive assessment of the new growth and development patterns of the Brazilian economy, it is impossible not to notice the manufacturing sector's declining share of the country's GDP. In 1990, the first year of the nation's economic liberalization process, manufacturing represented 21.9 percent of GDP. In 2010, it dropped to 16 percent. Thus, Salama (2011) and Bresser-Pereira (2010), representing two schools of thought on Latin American neo-developmentalism, have been drawing attention to the current deindustrialization of the Brazilian economy. Salama argues that Brazil has been experiencing "premature deindustrialization" in both domestic and foreign environments, its main cause being a loss of industrial competitiveness due to low productivity. Bresser-Pereira, in contrast, attributes Brazil's deindustrialization to the "Dutch disease" (a term coined by Corden, 1984), stemming from currency appreciation brought about by the high prices of exported primary goods.[8] Palma (2007), evoking a "new Dutch disease," shows empirically that Brazil has entered a phase of premature deindustrialization for three reasons: trade liberalization, financial liberalization, and the return to a pattern of international specialization heavily based on natural resources.

Other writers, however, avoid categorizations of this problem and prefer to ponder its nuances. Among them Nassif (2008) identifies difficulties associated

with low industrial productivity in recent years but states that there is no clear deindustrialization process, since there has been no reshuffling of productive resources among sectors. Moreover, he points to the lack of evidence for a change in the pattern of specialization in the different industries. Bonelli and Pessoa (2010) assert that the contraction experienced by the Brazilian manufacturing sector is the product of a macroeconomic context with low cyclical growth rates, greater economic openness, and deregulation. They dismiss the dangers attributed to Brazil's return to primary commodity production, claiming that recently this process has involved diversification, and suggest that the retrenchment of the Brazilian manufacturing industry may signal a trend toward normalcy because of the increase in per capita income. Notwithstanding these prudent observations, all these writers draw attention to the risks of excessive currency devaluation to the competitiveness of national industry.

The Brazilian debate over deindustrialization has been dominated by these arguments and by the belief that the problem is systemic—produced by various structural causes acting simultaneously. In this context, it is worth mentioning, first, that the Brazilian government has been incapable of identifying a more decisive development agenda and, second, that government expenditure has contributed to deindustrialization. In 2011 the interest payments on the government's internal debt alone represented 5.7 percent of GDP. The need to finance this debt has prompted high interest rates, which depress the growth of gross fixed capital formation. Between 2002 and 2006 this indicator did not exceed 16.5 percent of GDP, increasing to 17 percent in 2007 and reaching 19.3 percent in 2011 (in contrast to a savings rate of 17.2 percent). These increases were probably only possible because of the active participation of the BNDES in the economy, initiatives such as the growth acceleration program, and the expansion of the domestic market, which was influenced by credit availability to families (IBGE, 2012; on the macroeconomic implications of capital formation, see Bruno et al., 2011). A number of consequences flow from these two problems: a deficient educational system, faults in logistics and infrastructure, high taxes, high energy costs, hefty labor hiring costs, and low levels of innovation.

THE BRAZIL-CHINA RELATIONSHIP AND REVERBERATIONS IN BRAZILIAN FOREIGN TRADE: A PRIMARIZATION EFFECT?

Between 2002 and 2008 Brazil's volume of trade experienced an ascending trajectory. Exports grew 22 percent annually, a rate above the international average. In the same period, imports grew at an annual rate of 25 percent, setting historical records for Brazilian trade in 2008. In the following year, however, the international financial crisis reversed this trend. In 2009 the reduction of foreign demand depressed exports by 23 percent, while imports declined by 26 percent. Trade performance improved again in 2010, when the total trade volume hit a historic mark: US$384 billion. The following year a new record was set when this volume reached US$482 billion. Trade ties between Brazil and China in the first decade of the twenty-first century also increased. The relevant indicators for Brazil-China trade are even higher than for trade

between Brazil and other countries, offering evidence of a new general global trend that stems from China's new commercial role (see Eichengreen and Tong, 2005). Brazil's increased exports to China minimized the negative effects of the international financial crisis—in particular reducing the commercial loss created by the reduced global trade flow. In this specific context, the Brazilian business elite welcomed commercial ties with the Chinese instead of opposing them. While the degree of openness (the ratio between trade flow and GDP) in the commercial ties between these two countries increased by five times between 2000 and 2009, since 2003 the same indicator for transactions between Brazil and the rest of the world declined by 30 percent (Acioly, Pinto, and Cintra, 2011), taking into account that GDP grew from 2006 on and that the dollar depreciated. Thus China singlehandedly rebalanced Brazil's degree of commercial openness to the world.

Brazilian diplomacy quickly realized the importance of this trade relation and caused the Brazilian government to identify China as a strategic partner. President Lula traveled to China three times (in 2004, 2008, and 2009), and President Hu Jintao reciprocated the visits with a trip to Brazil. Between 2003 and 2009 there were 25 Brazilian and 27 Chinese official missions between the two nations. President Dilma traveled to China in 2011, her first year in office, prompting the execution of several cooperation agreements, just as her predecessor had done in his trips. In fact, to show his predisposition toward a Sino-Brazilian partnership Lula had welcomed his Chinese counterpart in 2004 with the news that Brazil would officially recognize China's market-economy status. This gesture reflected not only commercial pragmatism but also political calculation. Brasília remained silent on the matter of the yuan's depreciation, hoping, it seems, to buy China's political support for an old Brazilian aspiration: a seat on the United Nations Security Council. An unintended consequence of these moves was the weakening of Brazil's commercial and economic agenda vis-à-vis China, which prompted complaints from leaders in the Brazilian manufacturing industry who were affected by Chinese imports.[9]

In recent years, the structure of Brazilian foreign trade has changed significantly. Between 2008 and 2010 the share of basic products in the volume of exports increased by 21 percent, to the detriment of industrialized products (MDIC, 2011a), clearly demonstrating the trend toward deindustrialization. Among industrialized goods, manufactures, especially final consumption goods and capital goods, lost weight. At the same time, industrialized goods increased as a share of imports, with manufactures, especially consumer goods (both durable and nondurable) and capital goods, leading the trend. Thus, the negative effects of trade have impacted precisely the two segments that led the two waves of the import-substitution catch-up model (the Goals Plan [1956–1961] and the Second National Development Plan [1974–1979]), both of which came at a substantial cost to Brazilian society.

Sino-Brazilian bilateral trade has prompted these changes. Its influence has been felt since 2004 not only because of the increase in the export of basic goods but also because larger volumes of Chinese manufactures of higher value added and sophistication have been added to the basket of traditional imports such as clothing and toys. At this point it is worth remembering two important facts. First, after 2001 China went through not only import substitution but also

TABLE 1
Development of the Trade Balance (US$ millions), 2002–2010

	World			*China*			*China Exports / World Exports (percent)*	*China Imports/ World Exports (percent)*
Year	*Exports*	*Imports*	*Balance*	*Exports*	*Imports*	*Balance*		
2002	60,439	47,243	13,196	2,521	1,554	967	4.17	3.29
2003	73,203	48,326	24,878	4,533	2,148	2,386	6.19	4.44
2004	96,678	62,836	33,842	5,442	3,710	1,731	5.63	5.91
2005	118,529	73,600	44,929	6,835	5,355	1,480	5.77	7.28
2006	137,807	91,351	46,457	8,402	7,990	412	6.10	8.75
2007	160,649	120,624	40,025	10,749	12,619	–1,870	6.69	10.46
2008	197,942	173,197	24,746	16,403	20,040	–3,637	8.29	11.57
2009	152,995	127,672	25,322	20,191	15,911	4,279	13.2	12.46
2010	201,915	181,649	20,267	30,786	25,593	5,193	15.25	14.09

Source: Data from MDIC (2011a).

export substitution, which favored the development of goods with high technology content (machinery, electronics, and similar goods). Second, although the Brazilian economy was characterized by limited openness, it began to participate actively in the global value chain, helped by its currency depreciation.

Until 2006 Brazil maintained a trade surplus with China (Table 1). The trend shifted in 2007 but not as a consequence of depressed exports—in fact, Brazilian shipments abroad continued to grow in spite of unfavorable exchange rates. Instead, the trade deficit with China between 2007 and 2008 resulted from a higher volume of imports favored by the real's appreciation in relation to the dollar and greater demand for foreign goods. The country's economic growth in this period warranted this trend. In 2009 and 2010 the trade balance shifted once again in Brazil's favor, despite the stronger foreign purchases in the second of these years. From 2005 on high commodities prices improved the terms of trade for Brazil to an unprecedented degree, reinforcing the country's trade balance advantage. However, it is worth remembering that the systematic increase in production and foreign sale of Brazilian oil, coupled with a reduction in foreign dependency on this commodity, helped improve the terms of trade for the basket of basic goods. Moreover, the index in the Brazilian terms of trade increased from 100 in 2006 to 130 in 2010, influenced primarily by basic goods (FUNCEX, 2012). The quantum indices (relative to volume), including both purchases from and sales to China, rose in the years between 2000 and 2007, but the rate for imports was higher than its export counterpart, a trend that has intensified in recent years (Melo, Moreira, and Veloso, 2010). The price index and the Brazilian export quantum indices to China for the triennial 2008–2010 reveal how important China had become to Brazilian foreign sales. Although the export quantum recoiled in 2009 relative to the previous year, the prices of Brazilian goods purchased by China continued to increase, justifying that nation's larger share in the total value of Brazilian exports.

Over the period in question, there is no question that the volume of exported basic goods was not the only factor shaping the configuration of Brazil's foreign

TABLE 2
Main Destinations of Exports (percent), 2008–2010

Ranking	*Country*	*2008*	*2009*	*2010*
1	China	8.29	13.73	15.25
2	United States	13.85	10.20	9.56
3	Argentina	8.89	8.36	9.17
4	Netherlands	5.30	5.33	5.07
5	Germany	4.47	4.04	4.03
6	Japan	3.09	2.79	3.54
7	United Kingdom	1.92	2.43	2.29
8	Chile	2.42	1.74	2.11
9	Italy	2.41	1.97	2.10
10	Russian Federation	2.35	1.90	2.06

Source: Data from MDIC (2011a).

accounts. The improved terms of trade were also critical. As Landim (2011) has already noted, if it had not been for the increase in commodity prices—an effect of China's strong demand—the surplus in the Brazilian trade balance would have been inverted and its current account would have sunk into a deficit that could have reached US$89 billion. This amounts to 4 percent of GDP—a percentage deemed dangerous when it comes to external vulnerability. Chinese purchases of basic goods have been steady throughout the past decade. By 2010, these goods accounted for 70 percent of Brazil's total exports. The strengthened Sino-Brazilian trade reverberated across the larger context of Brazil's commercial relations and led to changes in the positions of Brazil's other trade partners. China itself, which since 2003 had been increasing in relevance to its South American partner, became the number-one importer of Brazilian goods in 2010, outranking the United States (Table 2). U.S. hegemony was practically inverted in the last three years of the series: the difference in the U.S. share shifted in 2008 toward China in 2010. Argentina, Brazil's main partner in Mercosur, fell from second place in 2008 to third place in the subsequent years, roughly maintaining its traditional share. From 2000 to 2010, trade (both imports and exports) between Brazil and China surged by more than 20 times, increasing from US$2.3 billion in 2000 to US$56.4 billion in 2010 (MDIC, 2011a). In 2010 Brazilian exports to China reached US$30.4 billion, accounting for 15 percent of the country's total exports. Brazil's main export items were iron ore and soybeans, goods with large economies of scale controlled by major companies that employed intensive technology and, in the case of soybean production, large swaths of land. In this context, Brazil not only increased its dependency on China but also became more dependent on a reduced number of products, which, as a result of low value added, have limited impact on the expansion of income and jobs in the country's productive chains and their regions (Center-East, North-Northeast, and Southeast–Minas Gerais).

Brazil's foreign accounts show a growing deficit for medium-high, high, and medium-low technological-intensity items.[10] Only the low technological-intensity sector sells products that generate surplus in foreign accounts. Indeed, between 2002 and 2008 these sectors experienced export growth on the order

of 18 percent. On the import side, the segments producing goods of medium-low technological intensity shrank 3 percent. In 2009, when the international financial crisis was running its course, exports and imports of all segments retrenched (MDIC, 2011a). The profile of Sino-Brazilian trade in the past few years confirms the observation that goods with low technological content weigh heavily in the total value of Brazilian exports. The result of commerce between the two nations echoes the trend in Brazilian transactions with the rest of the world: only the low-technology sector yields a surplus. For China, this is far from an isolated case. Beijing has been systematically buying ore and agricultural products from developing nations while purchasing capital goods from developed countries, particularly in Asia.

According to Pinto (2010), there are two observable movements in the pattern of Brazilian trade, considered against the backdrop of the technological-intensity paradigm. The first concerns the return to primary goods production, linked to the reduction of the relative share of industrial goods. The second corresponds to the lack of upgrading of Brazil's industrial exports. After all, the industrial sectors that suffered a loss of participation in the volume of trade were the ones classified as having high and medium-high technological intensity. Thus Pinto draws attention to the emergence of a regression process in the Brazilian commercial insertion, as technologically intensive goods were imported at a faster pace than they were exported. In this regression, Brazil's trade surplus comes from the sale of non-industrialized goods, or low-technological-content goods. The configuration of the scenario structured by the Brazilian import sector, especially in its ties with China in the past decade, evidences to a certain extent how inefficient Brazil's industrial development policies have been. Incapable of promoting manufactures exports, these policies seem to have arrived too late and to have been too little. It remains to be seen whether new policy initiatives will be sufficient to counteract the processes that have redesigned the international division of labor.

As some writers have indicated (Gonçalves, 2012; Pinto, 2010), erratic policies, the appreciation of the real, and the dynamic of trade relations with China have buttressed the regressive specialization of exports and of Brazilian industry in general. In the long run, if structural reforms are not implemented, this trend may deepen the country's external vulnerability. In the case of manufacturing industry specialization, there are two critical points to consider. First, the inflection point in the inverted curve of the specialization trajectory takes place too soon, at a point where per capita income is relatively lower than in other countries. Second, this specialization occurs in the traditional sectors with low technological content (see Carvalho, 2008). It is apparent that Brazil's productive structure has been adapting to the new configuration of the international division of labor and that trade ties to China play a major role in this process.

Much can be learned by looking at the performance of Brazilian foreign trade from the perspective of concentration. Total Brazilian exports became more concentrated at the end of the first decade of this century. In 2002, 34 sectors accounted for 90 percent of Brazilian exports. In 2010, 31 sectors were responsible for the same share of sales. China's role as the major buyer of certain goods certainly favored this trend toward concentration. In contrast to exports, imports sustained the same level of concentration during the decade

mentioned, in spite of the growing presence of Chinese goods within Brazil's borders. This stability stemmed from a simple mechanism: although domestic and international input suppliers to the Brazilian industry have been replaced by Chinese providers, the structure of Brazilian imports has not been fundamentally altered.

In this context, it is striking that the level of concentration of Brazil's exports to China is twice that of its exports to other countries. In fact, the Brazilian export schedule to China is concentrated in a few sectors mainly associated with agricultural commodities and ore. Sales to China increasingly revolve around a process that took shape between 2000 and 2010. (Purchases from China have been oscillating around plus or minus five points in the same period.) This concentration is even more evident when we consider the sectors that export to China. Only seven accounted for 90 percent of sales to that nation in 2010, with the mining sector and the exporters of oleaginous fruits alone accounting for 65 percent. Concentration in exports to China has been increasing every year (MDIC, 2011a). Moreover, as indicated above, the corporate structure that grounds Brazilian commodities exports is controlled by a relatively small number of big companies, among them Vale, Petrobrás, Embraer, Fibria Celulose, and the multinationals Dreyfus Commodities Brasil, Cargill Agrícola, Bunge Alimentos, and ADM do Brasil. For example, in the second quarter of 2011 Vale (formerly Vale do Rio Doce), the world's largest iron ore mining company, shipped 42 percent of its production to China. In 2008 its sales to that country had represented 28 percent of its total output (Landim, 2011).

Brazil's intrasector commerce[11] with the world in the 2000s has been characterized by a relatively stable balance with intersector trade. This scenario suggests an economic structure with a high level of productive activity in various sectors and a significant level of domestic demand. However, Sino-Brazilian trade is characterized by a preponderance of intersector transactions, which means that it increasingly rests on the sale of Brazilian products that depend on Ricardian comparative advantage. In a nutshell, Brazil exports commodities that derive from its natural resources and industrialized goods, both intermediate and final, from highly diverse segments. In 2010 soybeans and iron ore (a product with little to no value added) represented more than half of the total value sold to China (Table 3). This situation has inspired repeated reevaluations of the roles the productive sectors play in the Brazilian economy's development. In the deindustrialization debate, many experts wonder if Brazil is dismissing industry—the very sector that used to be seen as the catalyst of the nation's economic sovereignty—as the country's development engine. In the 1950s the Goals Plan drove Brazilian industrialization. That initiative drew inspiration from the hypothesis of Prebisch (1950) and Singer (1950) that basic goods (at the time the cornerstone of Latin American economies) had a tendency to cause deterioration of the terms of trade; a key reason (among others), the argument went, was the low income elasticity of these products. Comparing this hypothesis with the current state of Brazil's economy, it is appropriate to ask whether its premises and the policies and strategies it spurred have become obsolete. In fact, contemporary re-primarization is not a simple return to the primary-goods export model that was predominant in the past. The new primary-goods export model incorporates technology and displays a degree of

TABLE 3
Main Goods Exported to China, 2010

Products	*Share*
Iron ore pellets and concentrates	0.3956
Soybean meal	0.2317
Crude oil	0.1317
Non-agglomerated iron ore and concentrates	0.0376
Chemical pulp of nonconiferous wood	0.0295
Crude soybean oil	0.0254
Sugarcane	0.0164
Airplanes heavier than 15,000 kg empty	0.0120
Tobacco, partly or wholly unprocessed	0.0111
Niobium	0.0106

Source: Data from MDIC (2011a).

diversification and regional decentralization. Moreover, it took the arrival on the world stage of China, with its extraordinary level of demand, to reveal that the deterioration of the terms of trade for basic products is not inexorable.

Countless empirical studies have produced results unfavorable to the Prebisch-Singer proposition, especially as it applies to the Brazilian case. Other studies do point to evidence of volatility and price decreases (see Balagtas and Holt, 2009; Gonçalves and Barros, 1982; Marçal, 2006; Ocampo and Parra, 2003). However, it would be irrational to allow the rise in prices and the surge of basic-product exports to demobilize a new catch-up effort promoted by the Brazilian state,[12] especially as oil from the Pre-Salt layer is poised to enter the basket of exports in the future. That the Brazilian government has monitored and stimulated the deindustrialization of exports, especially those destined for China, only complicates the configuration of industrial policies.

This phenomenon is a product of Chinese direct investment in Brazil, especially in state-owned companies. The Chinese government has chosen Brazil to be part of Beijing's global strategic supply base of natural resources, along with Australia, Indonesia, and some African countries. Moreover, Chinese direct investment also targets several segments of the Brazilian domestic market—especially the sale of economy-class cars—and this targeting makes sense because of the market's significant size (Conselho Empresarial Brasil-China, 2011). The share of Chinese investment in Brazil as a share of Chinese investment in Latin America jumped from 3.5 percent between 1990 and 2009 to 62.7 percent in 2010, when Chinese investment in Brazilian territory totaled US$12.6 billion. This investment entered the country through partial mergers and acquisitions (46 percent), greenfield (23 percent), complete mergers and acquisitions (21 percent), and joint ventures (10 percent) and was concentrated in six sectors: energy (oil and gas) (45 percent), a sector in which the Chinese group Sinopec acquired 40 percent of the Spanish group Repsol's Brazilian operations, agribusiness (20 percent), where the Chinese have participated in projects aimed at improving ports and grain processing, mining (20 percent), metallurgy (10 percent), electricity (3 percent), and education (2 percent). These data show the Sino-Brazilian relationship moving toward a "dependent-associated" model of

integration, which transcends pure trade ties and spills over into direct investment, with the potential to evolve and reach financial relations geared toward infrastructure projects financing. To illustrate this point it suffices to mention that the China Development Bank financed the acquisition of equipment for the Southeast Super Port and lent US$10 billion to Petrobrás for Pre-Salt drilling (Conselho Empresarial Brasil-China, 2011).

Finally, Brazilian imports originating in China grew 60 percent in just one year, from 2009 to 2010. This sizable surge has two explanations: the healthy performance of the Brazilian economy, which grew from –0.3 percent in 2009 to 7.5 percent in 2010, and the appreciation of the real, which contrasted with a devalued yuan. Two sectors stood out in the schedule of imported goods: machinery, equipment, and electrical devices, on the one hand, and reactors and nuclear equipment, on the other. Together, they amounted to 53 percent of purchases, and they increased by 51 percent and 75 percent, respectively, in relation to 2009 (MDIC, 2011a). Input purchases for the electronics industry have also stood out in this process. As global chains expand and consolidate, Brazil has attempted to solidify its position as an assembler of durable goods built for its domestic market. Thus it depends on the growing importation of intermediate goods for multinationals (Watanabe, 2011). China is becoming increasingly important as a supplier of strategic inputs for the electronics sector in the entire global production chain. It has therefore boosted Brazilian imports of intermediate goods destined for this sector's production, as well as for the activities of other related sectors. These import orders have been commissioned by multinationals' assembly factories operating within Brazil, such as Samsung—the country's largest corporate importer—and transnational companies such as Volkswagen, Renault, Volvo, Mitsubishi, Iveco, Honda, and Motorola (Watanabe, 2011).

The Confederação Nacional da Indústria (National Industry Confederation—CNI) published a survey in 2011 showing that China's presence in the Brazilian domestic market is more intense in six industrial sectors: electronic and communications devices, textiles, precision and hospital equipment, diverse industries, shoes, and machinery. Among these, the electronic and communications devices and the textile industries are exposed to especially fierce competition: more than 70 percent of the companies in these sectors compete with Chinese versions of their products.

The survey also reveals the general impact of the Chinese presence on Brazilian industry. Approximately half of the companies exposed to competition with Chinese products lost ground in the domestic market. For 9 percent of these companies the loss was extensive. Forty-one percent of the companies stated that they competed with Chinese manufactures in the Brazilian market but acknowledged that their share of the market remained unaltered. The survey claims that in four sectors (metal products, leather, shoes, and textiles) more than half of the Brazilian companies that vied with the Chinese lost their share of the domestic market. According to Watanabe and Pedroso (2012), Brazilian domestic production shrank in the textile and clothing sectors in 2011 while the volume of textiles imported grew by 9 percent and that of clothing and accessories by 49 percent. C & A and Renner, Brazil's two largest clothing retailers, doubled their foreign purchases in 2011–2012. This process increases

unemployment and prompts an unlearning mechanism in the company that distances itself from the industrial work routine. The loss of dynamism in the aforementioned sectors may be observed in their shrinking capacity utilization in the past few years: in 2008 capacity utilization dropped 5.77 percent in the textile industry and 6.1 percent in its clothing counterpart, and in 2009 it shrank 4.31 percent and 7.94 percent, respectively. In spite of a rebound in the employment rate of the textile industry in 2010, the clothing sector still shed jobs at a rate of 1.84 percent. In 2011 the textile industry lost 1.08 percent of workers while the clothing sector reduced its labor force by 3.23 percent (IBGE, 2012).

CONCLUSIONS

China has emerged as Brazil's main trade partner in the past decade. A traditional commodities supplier to the world market, Brazil has taken advantage of the opportunity created by increased Chinese demand for raw materials. Chinese demand for primary goods, derived from the country's high growth rates, is coupled with a lack of clarity in Brazilian strategies. In 2009 China supplanted the United States as the principal buyer of Brazilian goods. Sino-Brazilian bilateral exchange reached record levels in 2010, which reinforced trade ties at the same time as it consolidated Brazil's position as an important supplier of raw materials to the Chinese growth machine. In this context, Brazilian exports to China focused on three main items: iron ore, soybeans, and oil. As for imports, two sectors accounted for more than half of them: machinery, devices, and electrical materials and reactors and nuclear equipment. However, it is over the automobile sector, especially the segment of economy-class vehicles, which leads the Brazilian automotive industry, that the threat of fierce Chinese competition looms. Instead of emerging through imports, this trend will probably come from Chinese direct investment through companies such as JAC, Chery, and Dongpeng. The first two already have a sizable chain of dealerships in the country. Once in place, this trend will pose new challenges to Brazilian industrial policy.

In general, the structure of Brazilian foreign trade has significantly changed in recent years. Brazilian products with high, medium-high, and medium-low technological intensity have occupied a decreasing share of trade volume. A positive bottom line for Brazil emerges only for trade in low-technology goods. Thus even beyond the increasing importance of primary goods on the export schedule, one can observe a loss of technological intensity and a reduction in the value added of Brazil's exported manufactures. On the import side, Brazil has entered a relation of dependency with Chinese suppliers in that, to avoid the appreciation of the real, its industry has acquired Chinese inputs to replace those of other foreign providers and even its own domestic suppliers. Considering this asymmetry of commercial and institutional forces between the two countries, the growing importance of trade with China may lead to vulnerabilities, regardless of the opportunities the Sino-Brazilian relationship has elicited. Since China is a buyer of large volumes of extremely concentrated basic products, any oscillation in its demand will immediately be reflected in Brazil's foreign accounts. The expanded purchases of Chinese products, eased

by exchange rate disparities, may result in a relation of dependency with suppliers, considering the growing imports of cheap inputs made in China. Also, the strong presence of Chinese final products has sharpened domestic competition and reallocated an increasingly larger share of the productive sphere to commerce. As a result, employment and industrial production have been particularly affected in sectors where price elasticity has a decisive impact on competitiveness, as in the case of the textile and clothing industries.

China's emergence on the world stage and its interaction with Brazil have had two major results. On one hand, Brazil is amassing powerful forces as a result of its comparative advantage in primary goods. On the other hand, it has not had a model of industrial development capable of advancing the positive legacies of the old import-substitution model, which was exhausted with the crisis of its external financing in 1982. Thus it is imperative for Brazil to secure the positive results achieved so far through exports but at the same time take advantage of them to boost national industry and the creative services, aiming at a long-term, sustained competitiveness. To this end, it will be necessary to reestablish a logic of production to underpin the growth regime and allow for the recovery and expansion of the gross capital formation rate. Institutional innovation could foster this latter goal. It is not enough for industrial policies to be full of good intentions; they must also be aligned with macroeconomic policies, and they cannot coexist with structural faults. Besides facing the difficulties of enacting industrial policies of structural scope, Brazil insists on promoting nonsystemic policies that remain reactive, defensive, and protective (especially under the more voluntaristic Dilma administration). Successful management of monetary stability has not allowed it to avoid the challenges of a complex international scenario. China, for its part, has profited from proactive development policies and strategies. These differences suggest that the evidence presented here on the trade ties between China and Brazil is largely a result of the choices, directions, and management of their national development processes.

NOTES

1. The data presented here are from the Ministry of Development, Industry, and Foreign Trade, accessed through the Alice system. Sectors are distinguished in terms of the Mercosur Common Nomenclature.

2. According to the Interunion Department of Parliamentary Consulting, there are 158 representatives and 18 senators in the Brazilian Congress today who in one way or another are committed to the rural caucus agenda, which includes debt renegotiation, changes in the Forest Code, and other political topics.

3. While this article was being written, President Dilma Rousseff denounced the private banks for charging exorbitant interest rates.

4. It would be premature to announce the end of this model, but there is already discussion of the Lewis turning point (see Yiping and Tingsong, 2010).

5. In these two instances, Brazil showed an increase in labor productivity of 0.3 percent and 2.6 percent respectively. Russia's increased 3.7 percent in both cases, and India's grew 4.2 percent and 5.2 percent.

6. It is clear that this model has caused internal distortions to national income distribution and to the spatial distribution of wealth. Equally visible are the lack of democratic freedom and of political representation for the majority of the country's population. Moreover, excessive investments in the country have been shown to be risky in that they contribute to the creation of bubbles in the real

estate sector. Some of these risks are identified and analyzed in a recent report by the World Bank and the Development Research Center of the State Council (2012).

7. The unit cost of labor, composed of wages, productivity, and the exchange rate, is the determinant of price competitiveness.

8. Furtado (2008 [1957]), although not using the term "Dutch disease," showed compellingly that oil production and export had a detrimental impact on other productive segments of the Venezuelan economy, especially in its manufacturing sector.

9. Besides recognizing China's market-economy status, Brazil voted in China's favor at the United Nations Human Rights Commission, hoping that China would reciprocate with political support for Brazil's aspirations in international fora. However, it lacks the gravitas necessary to sway political decisions its way in international trade negotiations. These issues shed light on the noneconomic sources of the "Dutch disease" that affects the Brazilian economy.

10. As classified by the Organization for Economic Co-operation and Development (OECD, 2004) on the basis of the proportion between research and development expenses to production and value added in each sector.

11. Intrasector trade between two economies is defined by simultaneous import and export transactions in the same sector. Intersector trade entails the exchange of products between different sectors of two economies. Intrasector trade reflects not comparative advantages but economies of scale in each economy. These economies of scale can play an independent role in international commerce (Krugman and Obstfeld, 1995).

12. According to Albuquerque (2009), the Brazilian economy has been "stagnant in the international context" since the second half of the 1970s.

REFERENCES

Acioly, L., E. C. Pinto, and M. A. M. Cintra
2011 *As relações bilaterais Brasil-China: A ascensão da China no sistema mundial e os desafios para o Brasil*. Brasília: IPEA.

Albuquerque, E. M.
2009 "Catching up no séculoXXI: construção combinadade sistemas de inovação e de bem-estar social," pp. 55–83 in J. Sicsú (ed.), *Crescimento econômico: Estratégias e instituições*. Brasília: IPEA.

Amaral Filho, J. and M. C. P. Melo
1998 "Globalización o metamorfosis del capitalismo." *Revista Ciclos* 8 (especial): 51–74.

Anderson, J.
2008 "China's industrial investment boom and the renminbi," pp. 61–69 in M. E. Goldstein and N. R. Lardy (eds.), *Debating China's Exchange Rate Policy*. Washington, DC: Peterson Institute for International Economics.

Balagtas, J. V. and M. Holt
2009 "The commodity terms of trade, unit roots, and nonlinear alternatives: a smooth transition approach." *Americam Journal of Agricultural Economics* 91 (1): 87–105.

BACEN (Banco Central do Brasil)
2012 "Boletim do BC: relatório annual." http://www.bacen.gov.br (accessed September 24, 2013).

Bonelli, R. and S. de A. Pessôa
2010 *Desindustrialização no Brasil: Uma resumo da evidência*. Texto para Discussão 7. Rio de Janeiro: IBRE/Fundação Getúlio Vargas.

Boyer, R.
2000 "Is a finance-led growth regime a viable alternative to Fordism? A preliminary analysis." *Economy and Society* 29 (February): 115–145.

Bresser-Pereira, L. C.
2010 "Doença Holandesa e sua neutralização: uma abordagem ricardiana," pp. 117–153 in L. C. Bresser-Pereira (ed.), *Doença holandesa e indústria*. Rio de Janeiro: Fundação Getúlio Vargas.

Bruno, M., H. Diawara, E. Araújo, A. C. Reis, and M. Rubens
2011 "Finance-led growth regime no Brasil: estatuto teórico, evidencias empíricas e consequências macroeconómicas." *Revista de Economia Política* 31: 730–750.

Cano, W. and A. L. Gonçalves da Silva
2010 *Política industrial do governo Lula*. Texto para Discussão 181. Campinas/São Paulo: IE/UNICAMP.
Carvalho, L. B.
2008 "Diversificação ou especialização: uma análise do processo de mudança estrutural da indústria brasileira nas últimas décadas." Master's thesis, Instituto de Economia/Universidade Federal do Rio de Janeiro.
Castro, A. B.
2009 "The impact of public policies in Brazil along the path from semi-stagnation to growth in a Sino-centric market," pp. 257–276 in M. Cimoli, G. Dosi, and J. E. Stiglitz (eds.), *Industrial Policy and Development*. New York: Oxford University Press.
2010 "No espelho da China," pp. 219–239 in L. C. Bresser-Pereira (ed.), *Doença holandesa e indústria*. Rio de Janeiro: Fundação Getúlio Vargas.
Chernavsky, E. and R. P. F. Leão
2010 "A evolução e as transformações estruturais do comércio exterior chinês," pp. 69–102 in L. Acioly and R. P. F. Leão (eds.), *Comércio internacional: Aspectos teóricos e as experiências indiana e chinesa*. Brasília: IPEA.
Cimoli, M., G. Dosi, and J. E. Stiglitz
2009 "The political economy of capabilities accumulation: the past and the future of policies for industrial development," pp. 1–38 in M. Cimoli, G. Dosi, and J. E. Stiglitz (eds.), *Industrial Policy and Development*. New York: Oxford University Press.
Confederação Nacional da Indústria
2011 "Sondagem especial: especial China." February. http://www.cni.org.br (accessed July 10, 2012).
Conference Board
2010 "The Conference Board total economy database: summary statistics." January. http://www.conference.org (accessed November 5, 2012).
Conselho Empresarial Brasil-China
2011 *Investimentos chineses no Brasil*. Rio de Janeiro: Conselho Empresarial Brasil-China.
Corden, W. M.
1984 "Booming sector and Dutch disease economics: survey and consolidation." *Oxford Economic Papers* 36: 359–380.
2009 "China's exchange rate policy, its current account surplus and the global imbalances." *Economic Journal* 119: 430–441.
Cypher, J. M. and J. L. Dietz
2009 *The Process of Economic Development*. New York: Routledge.
Eichengreen, B. and H. Tong
2005 "How China is reorganizing the world economy." *Asian Economic Policy Review* 1 (June): 73–97.
Erber, F. S.
2011 "As convenções de desenvolvimento no governo Lula: um ensaio de economia política." *Revista de Economia Política* 31 (1): 31–55.
FUNCEX (Fundação Centro de Estudos de Comércio Exterior)
2012 "Funcexdata." http://www.funcex.com.br (accessed November 23, 2012).
Furtado, C.
2008 (1957) "O desenvolvimento recente da economia venezuelana, 1957," pp. 35–118 in *Ensaios sobre a Venezuela*. Rio de Janeiro: Contraponto.
Gonçalves, R.
2012 "Governo-Lula e o nacional-desenvolvimentismo às avessas." *Revista da Sociedade Brasileira de Economia Política* 31 (February): 5–30.
Gonçalves, R. and A. C. Barros
1982 "Tendências dos termos de troca: a tese de Prebisch e a economia brasileira 1850–1979." *Pesquisa e Planejamento Econômico* 12 (April): 109–132.
IBGE (Instituto Brasileiro de Geografia e Estatística)
2012 "Contas nacionais." http://www.ibge.gov.br (accessed April 23, 2013).
IMF (International Monetary Fund)
2011 *Changing Patterns of Global Trade*. Washington, DC: IMF.

Krugman, P. and M. Obstfeld
1995 *Économie internationale*. Brussels: De Boeck & Larcier.
Landim, R.
2011 "Brasil depende da China para evitar a crise." *Jornal o Estado de São Paulo*, August 14.
Lewis, W. A.
2010 "O desenvolvimento econômico com oferta ilimitada de mão de obra," pp. 413–462 in A. N. Agarwala and S. P. Singh (eds.), *A economia do subdesenvolvimento*. Rio de Janeiro: Centro Internacional Celso Furtado/Contraponto.
Lin, J. Y.
2012 *Demystifying the Chinese Economy*. New York: Cambridge University Press.
Marçal, E. F.
2006 "Há realmente uma tendência à deterioração dos termos de troca? Uma análise dos dados brasileiros." *Revista Economia* 7: 307–329.
MDIC (Ministério do Desenvolvimento, da Indústria e do Comércio Exterior)
2011a "Aliceweb." http://www.mdic.gov.br (accessed April 15, 2012).
2011b "Plano Brazil maior." http://www.brasilmaior.mdic.gov.br (accessed May 20, 2012).
Melo, M. C. P., C. A. L. Moreira, and A. W. Veloso
2010 *O Nordeste do Brasil na expansão do comércio chinês*. Fortaleza: Banco do Nordeste do Brasil.
Nassif, A.
2008 "Há evidências de desindustrialização no Brasil?" *Revista de Economia Política* 28 (1): 72–96.
Naughton, B.
2007 *The Chinese Economy*. Cambridge: Massachusetts Institute of Technology.
Nonnenberg, M. J. B.
2009 "China: estabilidade e crescimento." *Revista de Economia Política* 30 (2): 201–218.
2010 "Estratégia de desenvolvimento da China," pp. 289–317 in L. C. Bresser-Pereira (ed.), *Doença holandesa e indústria*. Rio de Janeiro: Editora FGV.
Ocampo, J. A. and M. A. Parra
2003 "The terms of trade for commodities in the twentieth century." *CEPAL Review* 79: 7–35.
OECD (Organization for Economic Cooperation and Development)
2004 "Science, technology, and industry scoreboard 2001: Towards a knowledge-based economy." http://www.oecd.org (accessed March 12, 2012).
Palma, G.
2007 *Four Sources of De-industrialisation and a New Concept of the "Dutch Disease."* Cambridge: Cambridge University Press.
Pinto, E.
2010 "O eixo sino-americano e a inserção externa brasileira: antes e depois da crise," pp. 81–132 in L. Acioly and M. Cintra (eds.), *Inserção internacional brasileira: Temas de economia internacional*. Brasília: IPEA/Dient.
Prebisch, R.
1950 "The economic development of Latin America and its principal problem." *Economic Bulletin for Latin America* 7: 1–51.
Rodrik, D.
2009 *Making Room for China in the World Economy*. Cambridge: Harvard Kennedy School.
Salama, P.
2011 *Chine-Brésil: Industrialisation et "desindustrialisation precoce."* Paris: Université de Paris XIII.
Singer, H.
1950 "The distribution of gains between investing and borrowing countries." *American Economic Review* 40: 473–485.
Stiglitz, J. E.
2007 *Towards a New Model of Development*. Beijing: China Development Forum.
Wade, R. H.
2005 "Lessons from East Asia's development experience," pp. 98–115 in Michael Dauderstädt (ed.), *Towards a Prosperous Wider Europe: Macroeconomic Policies for a Growing Neighborhood*. Bonn: Friedrich-Ebert Foundation.
Watanabe, M.
2011 "Fabricantes de bens duráveis lideram aumento de importações." *Jornal Valor Econômico*, August 23.

Watanabe, M. and R. Pedroso
2012 "Importação em alta desestrutura setor têxtil." *Jornal Valor Econômico*, February 15.
World Bank and Development Research Center of the State Council
2012 *The People's Republic of China: China 30, Building a Modern Harmonious and Creative High-Income Society*. Washington, DC: World Bank/DRCSC.
WTO (World Trade Organization)
2011 "Annual report 2011." http://www.wto.org (accessed May 6, 2012).
Yiping, H. and J. Tingsong
2010 *What Does the Lewis Turning Point Mean for China? A Computable General Equilibrium Analysis*. Beijing: China Center for Economic Research.