Friend or foe: Contemporary Sino-Brazilian trade relations and side-effects in the Brazilian economy

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Then Brazilian vice-president, João Goulart, addressing an audience in Beijing, during an official state visit in 1961.

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List of Abbreviations

GDP – Gross Domestic Product

UN – United Nations

SISCOMEC – *Sistemas de Comércio Exterior* (Foreign Trade Integrated System)

ISI – Import Substitution Industrialisation

PT – *Partido do Trabalhadores* (Worker's Party)

PIS – Program of Social Integration

COFINS – Contribution for the Financing of Social Security

WTO – World Trade Organisation

CCP – Chinese Communist Party

ODI – Outward Direct Investment

UNCTAD - United Nations Conference on Trade and Development

FDI – Foreign Direct Investment

IMF – International Monetary Fund

EU – European Union

PRC – People's Republic of China

ALCA – *Area de Livre Comercio nas Americas* (Free Trade Area of the Americas)

IISCAL – *Iniciativa para las Inversiones Sustentables China-América Latina* (China-Latin America Sustainable Investment Initiative)

CBPO - *Companhia Brasileira de Projetos e Obras* (Brazilian Company of Projects and Works)

RENAI - *Rede Nacional de Informações sobre o Investimento* (National Network of Information about Investments)

MST – *Movimento dos Trabalhadores Rurais Sem Terra* (Landless Rural Worker's Movement)

Introduction

"Ao primeiro contato convosco diante da recepção calorosa que vós proporcionastes, senti-me como se estivesse hospedado na casa de um velho e bom amigo. Viva a amizade cada vez mais estreita entre a China popular e os Estados Unidos do Brasil!" (João Goulart, 1961)[1]

The above excerpt found in a speech given by former Brazilian President, João Goulart (1961-1964), addresses a nascent People's Republic of China (Costa, 2015; Menezes de Carvalho, 2013). A lot has happened since.

China's unprecedented rise as a global economic powerhouse and ever-growing multifarious interactions with different countries is well documented and touted in both economic and political literature. In just a few decades, China transitioned from the periphery to the center of the international system, via the establishment of a robust economy capable of growing real Gross Domestic Product (GDP) at an average 9.4% between 1978-2012 (WEF, 2015, link). Equally imposing is China's total global export contribution, which grew from 1% in 1980 (UNCTAD, 2005: 133) to 13.5% in 2018 (UN Comtrade Database, 2020). For comparison, in 2018 the United States and Germany represented 9% and 8.4% of global exports respectively. Such an impressive ascent to economic power makes it easy to understand why China rapidly became a critical trade partner of various regions, such as Latin America. From 2000 to 2016, trade between the Latin American continent and the Asian nation increased by a factor of 26, during this time, China naturally became the number one trade partner of many [Latin American] countries, chief among them that of Brazil (IISCAL, 2018; Hogenboom, 2018).

As per Pereira de Melo and Filho's examination of Sino-Brazilian trade relations, the intensification of economic ties between both countries in the last two decades was not aleatory when one considers a commodity exchange rhetoric (2015). Brazil has long enjoyed a strong presence in the global commodity market as a critical supplier. When the opportunity presented itself, Brazil took full advantage of the felicitous expansion in demand for primary products, courtesy of high levels of growth in China's economy (Pereira de Melo and Filho, 2015, pg. 65). In the 2000s, as China's appetite for raw materials surged exponentially, Brazilian exports to China – especially those of iron ore and soybeans – increased almost thirty-fold (Jenkins, 2012, China and Brazil: Economic Impacts of a Growing Relationship). Such figures highlight a relationship that not only transcends juxtapositional boundaries but also serve as a role model for South-South relations. During this period of significant Chinese demand,[2] Brazil experienced what is commonly referred to as a 'commodities boom' (Neto 2017; Jose da Luz 2016; Jenkins 2015; Salama 2015). Between 2002 and 2012, Brazil witnessed its fastest rate of economic growth since the second world war, along with a fall in inequality – the Gini index

[1] Translation: The warm welcoming received in our first contact, left me feeling as if I was visiting an old friend's house. Long live the growing relationship between China and Brazil.

[2] Other markets, particularly in Asia also contributed to increased demand of Brazilian commodities (Neto 2017).

[3]in Brazil fell from 58.7 in 2002 to 52.6 in 2012 and GDP growth rate averaged around 4 per cent (Neto, 2017).

Building from the beforementioned figures, China's economic growth and global influence, particularly its prosperous relationship with Latin America has not gone pass unnoticed (Lederman 2008; Qureshi and Wan 2008; Lall, Weiss, and Oikawa 2005). In the last few years, however, a significant portion of economists and policymakers have begun to worry about the effects of China's unadulterated economic expansion (Hogenboom 2018; Lin 2018; Agbebi and Virtanen 2017; Jose da Luz 2016; Pereira de Melo and Filho 2015; Jenkins 2015; Salama 2015). Central to their reservations is China's increasing demand for raw materials. Ferchin, Garcia-Herrero and Nigrinis link this concern to a fear of extreme export concentration and, in turn, deindustrialization (2013). Gallagher and Porzencaski (2010) and Moreira (2007) share a similar view while also expanding on the potential deleterious effects on technological development and long-term growth (2007; 2010). This pervasive observation has been applied and adapted to a multitude of case studies, including that of Sino-Brazilian relations. The case for deindustrialization in Brazil has gained considerable traction over the years, specifically when academics began confronting an increasingly uneven distribution of Brazilian exports to China (Neto 2017; O'Neil 2012; Becard 2011). In 2007, Brazilian manufactured products represented only 8 per cent of exports to China, while that of commodities represented a towering 74 per cent (Beccard 2011; SISCOMEX 2009).

For many, it was evident that in Brazil's steadfast pursuit of growth, it was slowly becoming ever more deindustrialized and dependent on commodity exports, leaving the Latin nation chronically subjugated to price fluctuations and a gradual decline in manufacturing (Kirsch, 2017; Tregenna, 2008). This thesis extends the work of Jenkins, Tregenna and Pereira de Melo and Filho on China's influence over deindustrialization of the Brazilian economy explicitly. Supplementing on already established commentary on the characteristics of Sino-Brazilian relations, which include Brazil's shrinking manufacturing sector and growing dependence on the Chinese economy, this thesis also delves on Chinese Outward Foreign Direct Investment (hereinafter ODI). In this novel pursuit of understanding the determinants for Chinese ODI in Brazil, the paper expects to unveil, otherwise hidden, idiosyncrasies and alternate explanations for how and why China and Brazil began this process of congregation and intensification of economic relations. Based on the aforementioned, the thesis will answer the following question:

'To what extent is China to blame for the declining share of Brazil's manufacturing sector?'

The research is divided in three separate parts, each with subsections that consolidate the understanding of contemporary Sino-Brazilian relations.

[3] The Gini index is a measure of the distribution of income across a population. A higher Gini index indicates greater inequality, with high income individuals receiving much larger percentages of the total income of the population. The coefficient ranges from 0 (or 0%) to 1 (or 100%), with 0 representing perfect equality and 1 representing perfect inequality (Chappelow, Investopedia: 2020).

The first section will be dedicated to the theoretical discussion of three main theories carried throughout the entirety of this thesis: ODI, Deindustrialization and Dependency. Selected theories will be accompanied by qualitative analysis, in an attempt to quantify the levels of asymmetry present in Sino-Brazilian trade relations. The following section proceeds to provide a detailed historical description of agreements and pivotal events between Brazil and China, allowing for a greater contextual understanding of Sino-Brazilian relations. The ensuing section of this research marks the beginning of the thesis' critical analysis, whereby three main Brazilian industries are examined (soy, steel and manufacturing, respectively) under the three underlying theoretical lenses. In conclusion, the thesis amalgamates its findings and compares them to the general debate amplified by several academics over imbalances currently present in Sino-Brazilian relations.

Chapter 1 – Literature Review

1. Foreign Direct Investments, Deindustrialization, and Dependency: A Theoretical Overview

In this chapter, the thesis will provide a critical analysis on Foreign Direct Investment (FDI). More specifically Outward Direct Investment (ODI) and its determinants from a Chinese perspective via the Eclectic Paradigm lens. This is then followed by a comprehensive discussion on deindustrialization, complimented by an examination of dependency theory. Throughout the discourse, elements of Marxism and Marxist theories will be inserted as a way of expanding the academic scope of the discussions at hand.

1.2 Determinants for Chinese ODI into Brazil through via the Eclectic Paradigm lens

According to a United Nations Conference on Trade and Development (UNCTAD, 2009;2014), FDI originating from developing nations represented 21% of the world's total outflows in 2013 (Tomio and Amal, 2015: 17), where Brazil became, together with China, leading sources of FDI among developing countries (Kreppel and Holtbrugge, 2012: 5).

There are many reasons as to why corporations and countries seek to attract FDI. According to Lai (2001), is the potential in technology spillovers - countries and firms often assimilate FDI as a stimulant for technological progress (Blomström and Kokko, 2000; Kimino, *et al*., 2007; Liu, 2013). Borrowing from Driffield (2001), Liu (2013) concludes that through the entry of foreign firms, the host economy is likely to witness an increased level of competition, thus forcing domestic firms to achieve higher levels of operational efficiency. Correspondingly, there is strong evidence for FDI increasing a host economy's exports by increasing production of local firms (Liu, 2013; Wei and Liu 2006; Buckley *et al*., 2002: 2007a). Contextually, there are some who suggest that China's strive towards implementing new markets into its economy coincide with the "liberalization of its FDI regime" (Chantasawat, Fung, Iizaka and Siu, 2010: 533).

From an academic perspective, Denisia (2010) suggests that analyzing FDI through theoretical frameworks leads to a more complete understanding of the economic mechanism and the behavior agents, both at a micro and macro level (Moosa 2015). As such, these theoretical frameworks will serve as the basis for discussions on FDI determinants for China, and how

such determinants affect Sino-Brazilian relations. Moreover, as noted by Tomio and Amal, most empirical studies on FDI emphasize the role of neoliberal policies in host countries to attract foreign investment (2015). These include deregulation of capital markets, lowering of trade barriers and privatization to name a few. However, Tomio and Amal also note that "very few attempts have been made to address the determinant factors of FDI from developing economies" (2015: 24) – as is the case for Brazil and China.

This thesis adopts the International Monetary Fund's (IMF) definition of FDI as a "cross border investment where a resident in one economy has control or a significant degree of influence on the management of an enterprise resident in another economy". Dunning's eclectic paradigm (1985) will serve as the main theoretical framework through which this thesis will examine FDI determinants for China.

1.2.1 The Eclectic Paradigm

As explained by Tomio and Amal (2015), in his quest to conglomerate existing FDI theories, Dunning (1985) obtained the eclectic paradigm. The eclectic paradigm prevails on the notion that the level of a company's foreign value-adding activities depends on four conditions being satisfied.

These are as follow:

> 1 – "The extent to which it possesses unique and sustainable ownership specific (O) advantages vis-à vis firms of other nationalities in the servicing of particular markets or groups of markets" (Tomio and Amal, 2015:82; Dunning and Lundan, 2008).
>
> 2 – Under the assumption that condition (1) is satisfied, the extent to which firms perceive it to be in their best interest to replace market transactions with internal transactions. Thereby, firms wishing to curb costs, will most likely wish to internalise operations (Coase, 1937). Additionally, as suggested by Moosa (2015) and Buckley and Casson (1976), if markets in intermediate products are imperfect, firms have an incentive to bypass them by creating internal markets such that the activities linked by the markets are brought under common ownership and control. Conclusively, in the long run, the process of internalisation will continue until marginal benefits and marginal costs are equal. These advantages are called market internalization (I) advantages.
>
> 3 – Under the assumption that conditions (1) and (2) are satisfied, the immobile nature of factors such as natural resources or low waged labor, lead firms to search for locations (L) that decrease production or service costs. Therefore, location mostly deals with factors of production, mainly labor, natural resources, unexploited and protected markets and transport costs (Kusluvan, 1998).

4 – Lastly, given the configuration of the ownership, location, and internalization (OLI) advantages facing a particular firm, the level in which a firm perceives foreign production to be consistent with the long-term objectives of the stakeholders and institutions which underpin its managerial and organizational strategy (Tomio and Amal 2015:82; Dunning and Lundan 2008).

In Buckley's *et al.* (2007) seminal work on the determinants of Chinese ODI, the application of Dunning's eclectic paradigm (OLI) is interpreted as a theory which carries three primary conditions: i) foreign-market-seeking; ii) efficiency (cost reduction)-seeking; iii) resource-seeking (Buckley *et al.* 2007; Dunning 1977, 1993). It is important to note here, that the three conditions presented below are not utilized by Buckley *et al.* to explain the determinants of Chinese ODI. Instead, their work explores 11 distinct hypotheses[4], some of which are applied and remodeled into the discussion below:

i. Foreign-market-seeking

- It is generally accepted that the size of a market acts as a significant determinant of FDI flows, with empirical studies showing a positive correlation between FDI flow and market size (Chakrabarti, 2001; Buckley *et al.*, 2010). Works conducted by Taylor (2002), Zhang (2003), Deng (2004), Buckley *et al.* (2006, 2010) show a rise of market seeking motives driving Chinese multinational enterprises (MNEs), which are progressively aimed towards large markets. The theoretical explanation for this lies on expanding economies presenting more profit generating opportunities (Lim, 1983, Buckley *et al.*, 2010). This thesis may therefore deduce that a strong determinant for Chinese investment into Brazil is correlated to the country's rapid rate of economic growth in the last 30 years. Brazil's growth, as it will be shown in later sections, was facilitated by several macroeconomic factors. Succinctly, controlling inflation through the Plano Real in the 1990s, and the management of internal debt - supported by the creation of a primary surplus through the proceeds from privatization – are a few of the factors which contributed to Brazil's economic rise (Pereira de Melo and Filho, 2015: 66).

ii. Efficiency-seeking

- Buckley *et al.* openly state that the use of efficiency-seeking under a Chinese context is impractical given the country's comparatively low labor cost levels, together with the nature of efficiency-seeking which lies on FDI occurring when outward investors "seek lower-cost locations for operations" (2010: 501). While in agreement with Buckley *et al.*'s decision, this thesis finds that the hypothesis under asset-seeking[5] project certain characteristics which overlap with those found in efficiency-seeking. The assumption of asset-seeking lies on Chinese ODI being positively correlated with a host country's endowments of ownership advantages. Thus, Chinese ODI follows a trend of acquiring information and

[4] Buckley *et al.* 2010: 506-507.

[5] Buckley *et al*. (2020: 505).

know-how of certain industries through greenfield entry and direct acquisition as demonstrated by Taylor (2002), Zhang (2003), Deng (2004), Buckley *et al.* (2006, 2010). Such "asset-seeking" may therefore be presented as an alternate version for efficiency-seeking, due to China acquiring technology and companies which increase both the number of assets owned by Chinese companies and the country's production and economic efficiency, through the accession of technology. When redirected to the context of Sino-Brazilian relations, over the period between 2007-2018, the main modes of entry for China in Brazil were greenfield and Merger and Acquisitions (M&A). In 2018 alone, Chinese investments in Brazil were predominantly greenfield (accounted for 50% of total investment projects), with M&As coming in second representing 42% of total investment projects (Cariello, 2019). While small in comparison relative to other destinations in which China invests in, such as Hong Kong, Singapore and South Korea (Santander, 2020), nonetheless, the purchasing of Brazilian companies and technologies has allowed China to gain substantial efficiency in various sectors, particularly in electricity generation, infrastructure and commodities (Cariello, 2019).

iii. Resource-seeking

- Resource-seeking as the name implies, deals with the acquisition or procurement of raw materials and energy sources, which are otherwise in short supply in the home country. Resource-seeking may also involve, as Buckley *et al.* and Dunning (2001) put it, "the search for specific assets such as R&D capacity and output, design facilities and brand names that are embedded in advanced country firms and which can usually be accessed only by takeover of these firms of subdivisions of them" (2010:501). Since the beginning of China's engagement with FDI, in this case ODI, the government has utilized investment as a way of securing domestic supply as the country grew exponentially, and sectors such as minerals, petroleum, timber, fishery and agricultural products are perhaps the biggest beneficiaries from such investments (Sia 2002; Cai 1999; Zhan 1995; Ye 1992). Contextually, given Brazil's rich endowments of natural resources, particularly that of iron, arable land and oil, it quickly becomes the target for economies such as China, who need a constant stream of goods that satisfy its growing economy. To that end, Buckley *et al.* theorize that there is a strong association between Chinese ODI with host countries which contain vast amounts of natural resources, such as Brazil. The result of *Buckley et al.*'s findings, which are to be disclosed in later sections of this thesis, allude to a strong Chinese investment channel towards Brazil's resource sectors. Such channels, as it will be discussed below, pave way to the phenomena of premature deindustrialization (Palma 2007) and dependency (Cardoso and Faletto 1979). Resource-seeking, perhaps more than other conditions, is an apparatus used by China through which Brazil is negatively affected by.

1.3 Implications of Premature Deindustrialization in the Manufacturing Sector

Deindustrialization is commonly referred to in academic literature as a general contraction in the manufacturing sector, more specifically employment (Rowthorn and Ramaswamy, 1997; Rowthorn and Coutts, 2004; Tregganna, 2007; Palma, 2008). Theoretical discussions around deindustrialization rose to prominence during the 1970s, when many tried to identify the cause for rapid declines in manufacturing employment in the developed world (Tregenna, 2007; Haibin, 2013; Neuss, 2016). One of the most captivating research to have come out in that time was that of Ajit Singh (1977). In his paper on the deindustrialization of Britain's economy, which at the time recorded a 7% fall in employment in manufacturing in the years 1970-1974, he found a net contraction of manufacturing employment that averaged 120,000 a year (1977:113). The magnitude of these initial findings reinforced the notion of manufacturing being viewed as a crucial activity that drives outward shifts of the production frontier, and that deindustrialization is likely to present pronounced long-term implications on the rates of growth and employment (Palma, 2014; Tregenna 2008).

Over the years, deindustrialization as a theory continued to sustain a growth in intellectual following and in the process evolving significantly. The focus has now become more heterogenous - deindustrialization takes place in countries in various stages of economic development. This was first noted in the 1980s in East Asia, Latin America and South Africa, where deindustrialization began picking up pace after radical economic reforms, despite - as observed by Gabriel Palma - their level of income per capita being substantially lower than other nations which began to deindustrialize earlier (2014). This process was labeled as 'premature' deindustrialization (Palma, 2005) and serves as the main lens in which this thesis analyses expressed concerns over China's contribution to deindustrialization in Brazil.

While there are various channels in which deindustrialization may be analyzed, there is no de-facto explanation for Brazil's deindustrialization, especially in relation to its trading terms with China. Sourcing primarily from the works of Jenkins (2015), Palma (2014), Tregenna (2013, 2009) and Dasgupta and Singh (2006), the discussion makes significant references to their application of Marxist, Kaldorian and Structuralist narratives to the deindustrialization discourse. Thus, allowing for a more thoughtful and accessible understanding of causes and implications of deindustrialization.

1.3.1 The Importance of Defining Deindustrialization and the Role of Manufacturing

Most contemporary literature around deindustrialization, as discussed in the previous section, defines the concept as a fall in the share of manufacturing in total employment. Approaching deindustrialization solely in these terms offers a rather restricted understanding, since it does not account for changes in the share of manufacturing in GDP. It is important that this is recognized, since it can unfold many implications when forming policies, as this thesis will demonstrate. Furthermore, appreciating these differences allows for a broader and more inclusive approach to deindustrialization as a theory. The semantic approach to deindustrialization was initially conducted by Tregenna in her seminal work on characterizing deindustrialization (2008).

Tregenna posits that simply classifying deindustrialization as a fall in the share of manufacturing in employment is "narrow" as it does not account for trends in the level or share of manufacturing output (2008). For example, if two economies that experienced a similar decline in the share of manufacturing employment, but where the share of manufacturing in GDP fell in one and rose in the other, may be interpreted as having experienced an equivalent degree of deindustrialization if utilizing solely a definition in terms of employment share (Tregenna, 2008).

Regarding the implementation of policies, a poorly defined concept of deindustrialization may result in countries adopting ill-prepared strategies, since they do not know whether to be concerned with a fall in the manufacturing employment share, or with a fall in manufacturing share GDP, or both (Tregenna, 2008). A clearer conceptualization of this issue is best described by Tregenna herself, who writes:

> An expanding manufacturing sector could show declining levels of employment if falling labour intensity outweighs the growth in the sector. Similarly, the share of manufacturing in GDP could rise concurrently with a fall in the share of manufacturing in total employment if changes in manufacturing labour intensity exceed those in the rest of the economy by a sufficient magnitude to outweigh the increase in manufacturing's share of GDP (441:2008).

By now, it should be evident that Tregenna, as well as other scholars, place significant emphasis on manufacturing. According to Kaldorian laws, a quick rate of growth in manufacturing will

result in a faster growth rate in the economy as a whole. This is followed by the second and third law which assert that the growth rate of labor productivity in manufacturing is endogenous to the growth rate of manufacturing output and aggregate productivity growth is positively related with the growth of manufacturing output and employment respectively (Tregenna, 2008:435).

Moreover, as explained by Treganna, manufacturing is a vital component since it can also act as a source of growth via the dynamic economies of scale, where expanding the manufacturing sector would raise manufacturing productivity (2008). Finally, Tregenna looks at how the manufacturing sector can help alleviate balance of payments, which is important to sustaining high growth rates, especially if a country lacks a robust primary commodity export sector (2008: 434).

1.3.2 Causes for deindustrialization

The literature concerned with deindustrialization identifies a variety of potential causes (Jenkins, 2015; Tregenna, 2009, Palma, 2005). Assorted literature on the subject utilizes a wide range of economic nomenclature, which often complement one another. Rowthorn and Coutts (2004), who are referenced in Tregenna's work (2013;2008), summarise four distinct explanations of deindustrialisation. The first is specialization, which relates to domestic outsourcing of activities to service. Secondly is a decline in the relative prices of manufacturers, translating into a smaller share of consumer expenditure. Thirdly is that international trade might "negatively affect manufacturing employment in advanced economies by increasing productivity through higher competitive pressures. This cuts low value-added activities or inefficient firms, and tends to replace labour intensive activities subject to import pressures with less labour intensive activities producing relatively sophisticated exports." (Tregenna, 437:2008). Lastly is an overall decrease in the rate of investments, which may decrease the share of manufacturing, or as Jenkins calls it, a form of "hollowing out" of the manufacturing sector (2015:46). Van Neuss' work, titled 'The Economic Forces behind Deindustrialization: An Empirical Investigation' (2016), compliments the work done by Rowthorn and Coutts by employing four theories which explain the 'economic forces' behind deindustrialization. These theories are non-homothetic preferences, cross-sector differences in technology, inter-sectoral division of labor and international trade.

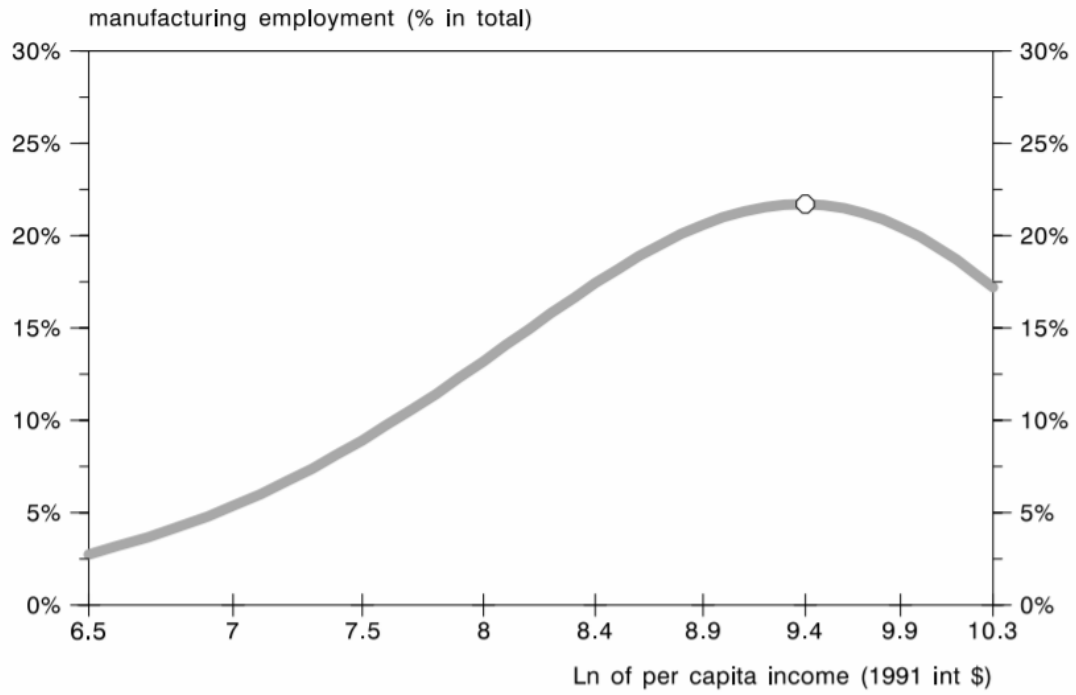
In his work on deindustrialization, Gabriel Palma states that the most widely subscribed conceptualization of deindustrialization derives from an understanding of the relationship

between manufacturing employment and income per capita as an 'inverted U' (10:2014). Palma adopts Rowthorn's Regression (1994) diagram to demonstrate this, which utilizes data from 1990.

Figure 1

Rowthorn's Regression: manufacturing employment and income p.c., 1990

Source: Palma, 2014:15



Under the 'inverted U' paradigm, Palma clarifies that deindustrialization occurs when economies reach a specific level of per capita income. Thus, when developed economies transition from manufacturing employment to specialized services it is seen as "part of their normal process of development" (20:2014).

Such view overlaps with that of 'orthodox' economists, who regard deindustrialization as carrying metamorphic traits of economic development. By drawing comparisons to 'de-agrarianization' where labour from the agricultural sector is transferred to the industrial sector, orthodox thinking assumes a similar incorporated experience when the industrial sector is slowly overtaken by the service sector. In Tregenna's search for the causes for deindustrialization, she is confronted with a 'Kuznetsian' angle which supports the natural evolution path noted above, whereby "relative growth of manufacturing might be expected to level off as a natural phase in economic development" (437:2008). Tregenna further supplements this discourse by referencing William Baumol's work on unbalanced growth

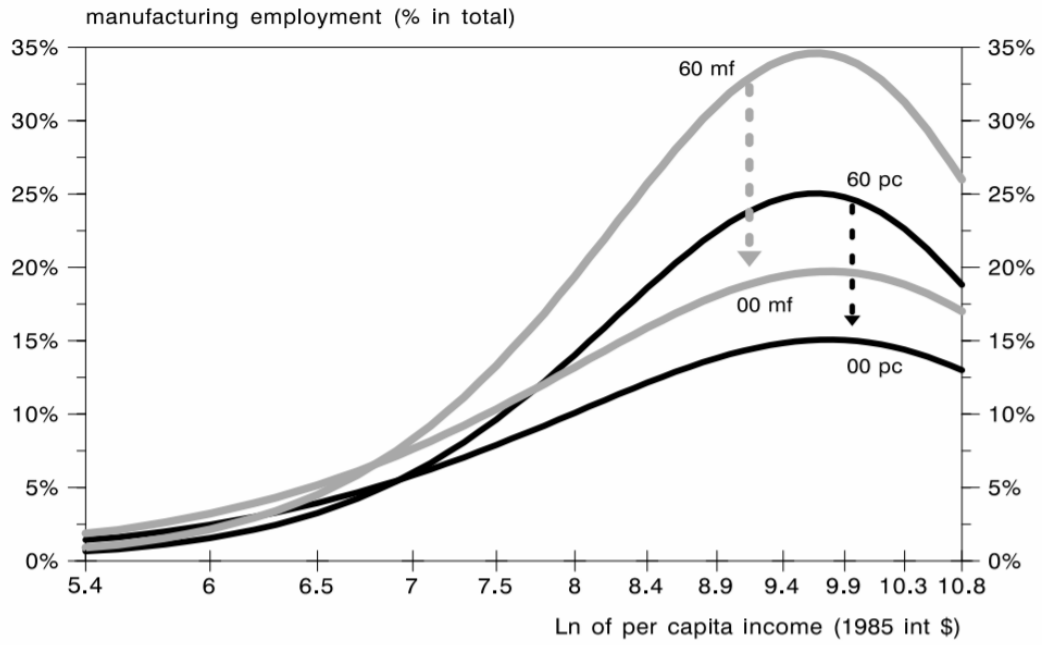
(2008; Baumol,1967). In it, Baumol explains how sectors with strained productivity growth increasingly suppress the growth of the whole economy, and that the only condition necessary is that demand for products of the specific sector be inelastic to price (Spilimbergo, 1998; Bautmol, 1967). As Spilimbergo explains it, the logic lies in technological progress, "which is supposed to be bigger in manufacturing than in services, lowers the relative cost of manufacturing goods; consumers will consume more services, which are inelastic to price" (450:1998). Therefore, under this process more workers migrate towards the service sector. Such assumption allows deindustrialization to be seen not necessarily as a damaging undertaking, but rather as a process by which the economy becomes more developed. However, this proposition is countered by the notion of "premature" deindustrialization (Palma, 2008).

Under the 'premature' deindustrialization paradigm, we find an explanation which is fitting to experiences found in Latin America, most specifically that of Brazil: Dutch – Disease. In its purest and earliest form, the Dutch-Disease is described as the appreciation of the real exchange rate resulting from a boom in commodity exports (Palma, 2014:14). In other words, there is a shift in the economy related to either a novel commodity boom or a change in economic policy away from trying to generate a trade surplus in manufacturing (Jenkins, 2015:45). This form of 'premature' deindustrialization is commonly associated with the experience of deindustrialization in the Global South, which in itself leads to the notion of "primarization" – an increased reliance on exports of primary products (Jenkins, 2015). Hence the employment of the term Dutch-Disease – originating from the Netherlands' preoccupation and focus on extracting natural gas after its discovery in the 1960s, leading its manufacturing employment sector to make the switch from manufacturing to gas (*The Economist*, 2343, 1977).

Palma exemplifies this transition by a graph, which displays the long-term changes between manufacturing employment and income per capita in the 'trade-surplus-in-manufacturing' (mf) and 'trade-surplus-in-primary commodity-or-services' (pc) groups of countries (2014: 15).

Figure 2

Changes in Manufacturing Employment and Income p.c., 1960 to 2000



Source: Palma, 2014:15

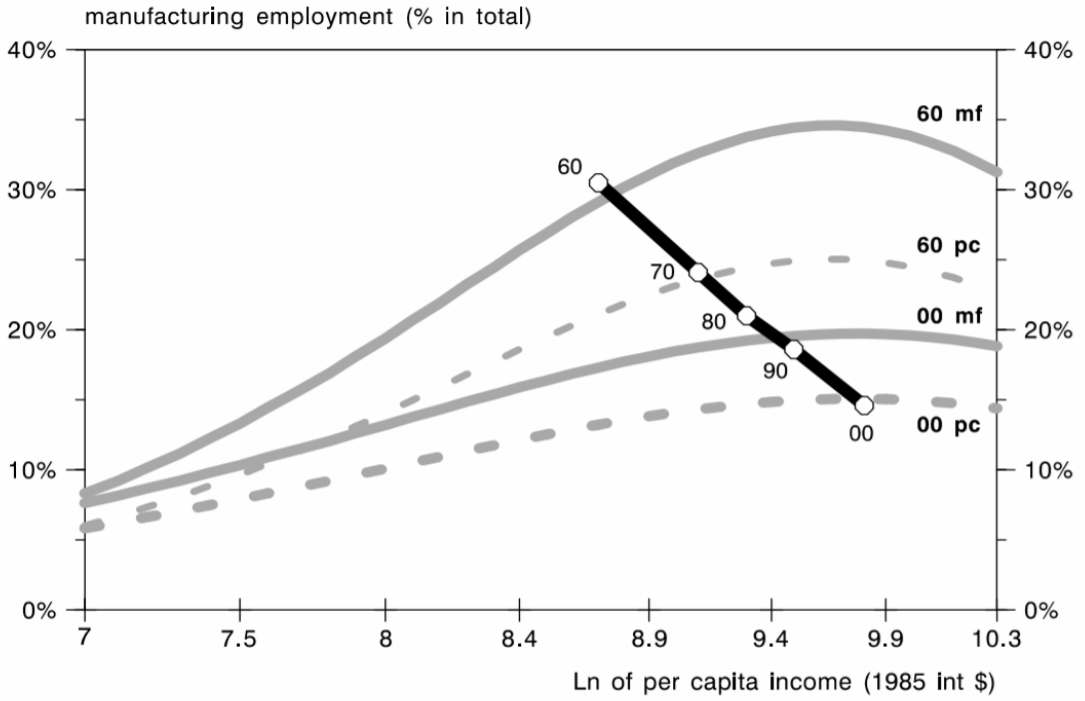
As Palma points out:

> Although the 'pc' countries tend to reach a lower level of industrialization at any given point in time, the 'pc-effect' per se has not led to a higher degree of deindustrialization. In fact, taking the highest point of the curves, in these four decades the share of manufacturing employment in both 'mf' and 'pc' countries dropped by about half (2014:15).

The Netherlands' deindustrialization process is demonstrated in Figure 3, where manufacturing employment switches from an 'mf' structure to a 'pc' one.

Figure 3

The Netherlands Deindustrialization experience, 1960-200

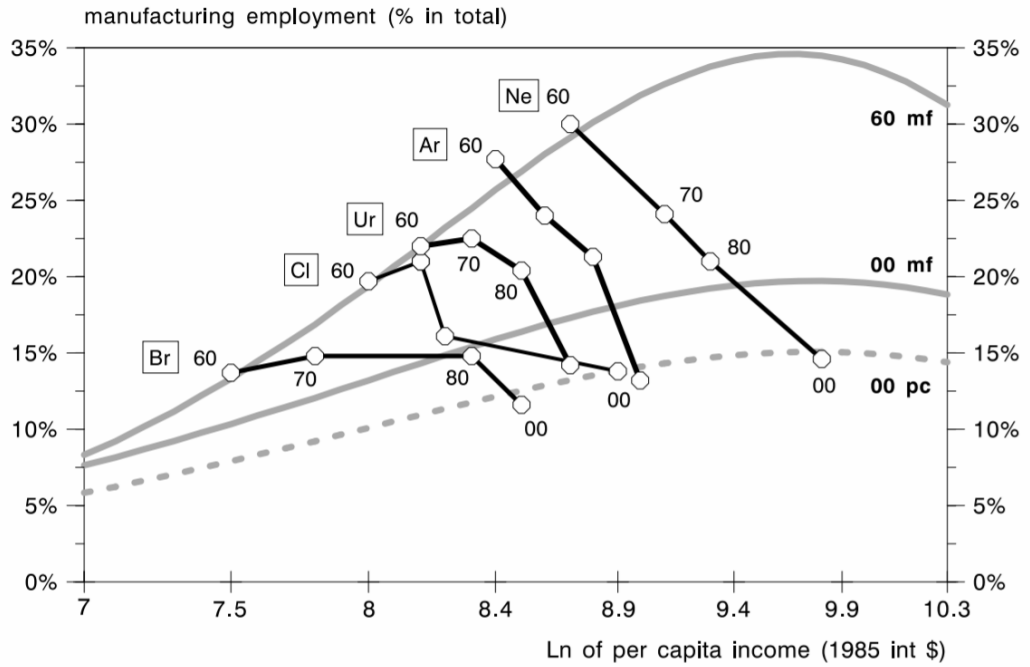


Source: Palma, 2014:16

As described previously, the Dutch-Disease made its way to the Latin American continent in the 1980s. Testifying in turn, that it is a phenomenon not only reserved to the Netherlands. In fact, it also occurred in the UK, where there was an oil and financial-services exports boom - an experience shared also by Germany, France, Italy, Belgium and Austria with varying degrees. What is unique to Latin America, was the genesis of the transition, where import-substitution industrialization (ISI) had achieved industrialization levels characteristic of trade-surplus-in-manufacturing groups (Palma, 2014). The switch happened when the Washington Consensus policies began inducing Latin American policymakers to embark in a trade liberalization and privatization policy adoption (Teichman, 2019). Palma once more utilizes a graph to explain and demonstrate this change, whereby a transition from ISI to financial liberal policies led to an alteration of the employment structure from manufacturing to resource or Ricardian oriented employment (2014). As such, the difference between Latin America and the Netherlands (and other EU nations) becomes apparent, where the former was subjugated to a policy reform prompted by a 'structuralist' agenda, while the latter was due to a discovery of resources.

Figure 4

Argentina , Brazil, Chile & Uruguay, 1960-200



Source: Palma, 2014:18

It is worth noting that the introduction of the Dutch-Disease phenomena under a deindustrialization context is not to be seen as a stand-alone theory, but rather as an additional layer to deindustrialization. As Palma explains it, there are four distinct sources of deindustrialization[6], with varying degrees of impact, but all complimentary. The initial three sources will not be discussed in this thesis since they overlap with Rowthorn and Coutts' (2004) explanation for deindustrialization as seen above. Palma lies on what can be categorized as the 'heterodox' end of the spectrum, where he stresses the issue of "premature" deindustrialization as a differing and harmful concept (2008). Commonly, orthodox thinking assumes that all economic activities are similar in terms of dynamic potential and that nations should specialize according to their comparative advantages (Jenkins, 2015: 44). Contrastingly, heterodox rationale partakes in a long tradition of "emphasizing the specificity of manufacturing and the key role of industrialization in economic development" (Jenkins, 2015: 44; Reinert, 2007).

[6] 1st An 'inverted-U' relationship between manufacturing employment and income per capital; 2nd A declining relationship over time between income per capita and manufacturing employment; 3rd changing income per capita corresponding to the turning-point of the regression; 4th the Dutch-Disease (See 'De-Industrialization, 'Premature' De-Industrialization and The Dutch-Disease'; Palma, 2014).

1.4 Dependency

The application of dependency as a theory to Sino-Brazilian relations is somewhat of a novel endeavor. However, dependency proves to be useful in explaining certain contemporary Sino-Brazilian idiosyncrasies. Particularly regarding engagement and culminating concerns over potential adverse effects derived from China's trade interaction with Brazil in recent years. To that end, an equitable review of dependency theory is laid out and applied in an attempt to accurately scrutinize China's trading habits with Brazil. With commentary and analysis brought forward by Agbebi and Virtanen (2017), Jenkins (2015), Dos Santos (1970), Prebisch (1968) and Frank (1966), this section presents dependency theory under a new light, one which accommodates a relationship between two South-South nations instead of the traditional North-South framework.

Dependency theory historically may be traced back to the late 1950s, as a theory capable of explaining the widening gap between rich and trailing economies. Raúl Prebisch – often associated as the pioneer of dependency theory (Agbebi and Virtanen, 2017) – suggested, while as a Director of the United Nations Economic Commission for Latin America (UNCLA), that economic activity in developed nations not only did not benefit poorer nations, but considerably decreased general economic progress (Secondi and Ferraro, 2008). This analysis contradicted neo-classical theory which always assumed that economic growth was beneficial to all, regardless of whether the goods were being distributed equally. Dependency as explained by Brown (1985), cannot be categorized as a single unified theory. This is true when one considers the divergent explications put forward by neo-classicals, Marxists and world systems theorists for dependency. The common denominator however lies in some countries being conditioned in their development by their 'dependence' on other countries (Brown, 1985:62).

1.4.1 Defining Dependency

The definition of dependency chosen by this thesis derives from Theotonio Dos Santos, a prominent Brazilian economist often associated as one of the pioneers of dependency theory. He defines dependency as:

> A situation in which the economy of certain countries is conditioned by the development and expansion of another economy to which the former is subjected. The relation of inter-dependence between two or more economies, and between these and world trade, assumes the form of dependence when some countries can

> expand and can be self-sustaining, while other countries can do this only as a reflection of that expansion, which can have either a positive or a negative effect on their immediate development. (Dos Santos, 1970a: 231)

Such interpretation follows closely with Prebisch's centre-periphery system, used to describe the asymmetric relation between Latin American economies and focuses in the industrialized North and emphasis on the role played by commodities (ECLA, 1961). To put it simply, developing countries would export primary commodities to countries in the 'North' who then utilized those imported commodities to produce manufactured goods, only to then be sold to the original developing countries. According to Ferraro, such exchange always results in the manufactured product costing more than the primary product, thus the developing world is never able to remain competitive and earn enough from their export earning to pay for their imports (2008:58-64).

Jenkins also draws on Prebisch's deep concern over the dangers of relying heavily on primary products exports, whereby commodity exporters face a "secular deterioration of the terms of trade vis-à-vis exporters of manufactured goods" (2015:44). Positing in turn, economic growth in developed industrialized nations do not necessarily lead to growth in poorer nations (Secondi and Ferraro, 2008). As such, analyzing and implementing dependency theory becomes a practical tool in understanding development or lack thereof of in developing economies. Central to what is being analyzed here is the role raw materials or primary products play in this discourse.

In his book, *The Poverty Curtain*, Mahbub ul Haq explains that the unbalanced relationship between developed and developing nations, which placed the former at the center of the world, was exacerbated by colonialism (1976). The relationship, as Haq describes it, saw developing nations at the periphery, being tasked with supplying raw materials to the North. An exploitative interaction that remains despite decolonization (Haq, 1976). Agebi and Virtanen state that this theory "can be used to speculate that rampant exploitation would less likely occur between equal partners than unequal partners. In other words, the exploitation in North-South economic engagement has its foundations in historical inequality" (2017:431). Such observation was first brought forward by sociologist Andre Gunder Frank and Prebisch, who argue that the South's underdevelopment was a product of historical development between the North and the South (Agbebi and Virtanen, 2017; Prebisch,1968; Frank, 1966). The key

difference from Prebisch's perspective is that a greater emphasis should be placed on the impact of western industrialization on developing nations (Agbebi and Virtanen, 2017).

As explained in Agbebi and Virtanen's paper, Prebisch's argument posits that divisions between North and South were created by rapid industrialization and export competitiveness, which led to declining terms of trade for developing nations and ultimately dependency of the South on the North (2017:432). David H. Pollock offers a more detailed account of this theory, explaining that Prebisch unequivocally rejected the doctrine of comparative advantage and that commodity exports alone were inadequate to provide jobs and opportunities (2006:16 Pollock, Raul Prebisch: The Essence of Leadership, 2006 link).

Ferraro's 'Dependency Theory: An Introduction' (2008) succinctly encapsulates the above definitions by bringing forth three common features, recognizing in turn the peculiarity of the intellectual stature pressed by liberal reformers, Marxists and world system theorists. First, he implements the notion of the international system being run of two sets of states, the dynamic always being dominant/dependent or core/periphery, whereby the dependent state heavily relies on the export of commodities for foreign exchange earnings (2008: 58-64). A second common feature is concerned with "external forces being of singular importance to the economic activities within the dependent states" (Ferraro, 2008: 58-64). Thirdly, as per Ferraro, most dependency definitions stipulate relations between dominant and dependent states as being dynamic, since interaction between both states not only reinforce but also intensify unequal patterns, thus suggesting that dependency is an ongoing process (2008:58-64).

This was in reference to Argentina's own struggles, whereby Prebisch assumed that industrialization was the only method in which the country could develop and maintain full employment. Prebisch's prescription to accelerate industrialization in developing countries in order to remain competitive was through the adoption of import substitution. Agbebi and Virtanen's paper refer to Prebisch's import substitution solution, bringing forth the case for raw materials and the role they play in accelerating industrialization:

"Import substitution as prescribed by Prebisch (1968) would only be effective if the South have developed the capacity not only to substitute imports but also to add value to natural resources, which can then be exported in the form of processed goods" (Agbebi and Virtanen, 2017:432).

Chapter 2 – Methodology

2. Research Design

In order to answer the research question whether China is to blame for the declining share of Brazil's manufacturing sector, this thesis utilizes a comparative case study approach influenced by secondary literature. As explained in Arend Lijphart's (1971) article "Comparative Politics and Comparative Method", a comparative approach allows systemic comparison, that when employed accordingly, may "contribute to adjudicating among rival explanations" (Collier, 1993:106). This is particularly useful when analyzing contrasting theories employed by Jenkins (2012) and Ferchen, Garcia-Herrero and Nigrinis (2013) for deindustrialization and dependency in Brazil vis-à-vis China. While a statistical method would provide a stronger basis for evaluating theories as per Collier's 'Comparative Method' (1993). Given the nature of this thesis with its limitations of time and resources, would make it unfeasible to collect a large set of data that could aptly analyze all three mentioned theories. As this is a thesis that falls under Global Political Economy, it adopts a political economic framework which highlights how economic interests and incentives mold policy decisions and outcomes. More specifically it involves observing the dynamic interaction between structures, institutions and actors, to comprehend how decisions are made (DFAT, 2016).

2.1 Case Selection

Brazil and China were chosen as the two main cases due to growing economic ties between both countries. As accounted by Jenkins, China is Brazil's most important trading partner, accounting for 22 percent of total exports and 18 percent of Brazilian imports (WTO, 2019). Consequently, there is an equally growing concern over potential adverse effects on Brazil's economy based on this close relationship (Barbosa and Mendes, 2006; Jenkins, 2012).

In parallel to the above reasons, Brazil and China were also selected due to the novelty that is analyzing dependency and deindustrialization – theories which have their foundations set in North-South relations – from a South-South perspective.

2.2 Models and Data

This thesis' analytic approach rests on principles also found in political-economic discipline, most of which are qualitative. However, in order to widen the breadth of this thesis' academic reach, an empirical analysis is also applied. This permits the paper to reach a closer understanding and conclusion of whether China's influence over Brazil is in fact having a detrimental effect on the latter's manufacturing sector.

Data presented in this thesis is based exclusively on secondary literature, with little to no variation on data originally collected by researchers referenced in this thesis. The empirical analysis utilizes two expressions that verify the presence of both a Brazilian dependence on China (Ferchen, Garcia-Herrero and Nigrinis, 2013) and the level of deindustrialization via loss market share by Brazil to China (Jenkins, 2012). It is worth noting that the adopted expressions have also been used by their respective authors in a Sino-Brazilian context.

The China Export Dependency Index formulated by Ferchen, Garcia-Herrero and Nigrinis (2013) is used to analyze Brazil's dependence on China, and it is presented as:

$$\sqrt[3]{\frac{EXP_{i,j}}{EXP_j} \times \frac{EXP\ to\ China_{i,j}}{EXP_{i,j}} \times avg\ \left[\frac{IMP_{i,China}}{IMP_i}, \left(1 - \frac{EXP_{i,China}}{IMP_i}\right)\right]}$$

As explained by Ferchen *et al.*:

> " $\frac{EXP_{i,j}}{EXP_j}$ represent country *j*'s (in this case Brazil) exports of commodity *i* as a share of its total exports. This shows how concentrated are a country exports into one commodity (*i*).
>
> $\frac{EXP\ to\ China_{i,j}}{EXP_{i,j}}$ represents country *j*'s exports of commodity *i* to China divided by its total export of that commodity. This shows how dependent the world is on China to sell a particular commodity relative to other export markets.
>
> $avg\ \left[\frac{IMP_{i,China}}{IMP_i}, \left(1 - \frac{EXP_{i,China}}{IMP_i}\right)\right]$ = The average of 2 components: $\frac{IMP_{i,China}}{IMP_i}$ is the share of China's imports of commodity i in the global market. $\frac{EXP_{i,China}}{IMP_i}$ is 1 minus country *j*'s export market share of commodity *i*. This provides a measure of China's strength as a buyer or pricing power compared to the exporting country's strength as a seller. (2013:8)

On deindustrialization, Jenkins (2012) extends Batista's (2008) Constant Market Share (CMS) analysis. The equation below estimates the loss of market share by Brazil (H) to China (*C*) to a chosen product i is represented as:

$$\sum \Delta k_{Hci} = \sum \Delta k_{Hi} \times k^{t}{}_{Ci} - \sum \Delta k_{Ci} \times k^{t}{}_{Hi}$$

As explained by Jenkins:

> " k_{Hi} is the share of country H in total imports of good i by the destination market; k_{Ci} is the share of China in total imports of good i by the destination market; superscript t represents the initial year of the period. Summing over all products gives the aggregate loss of market share to China" (2012:37)

2.3 Limitations

The choice of Brazil and China has presented some limitation, mostly in the form of scarce literature. Most academic literature on ODI, deindustrialization and dependency reference North-South relations or in some cases ex-empires and post-colonies. In order to overcome this, the thesis cross-examined literature of other South-South relations, particularly on Chinese economic relations with developing states in Africa and in the South American region.

Literature on Sino-Brazilian political and economic relations is also somewhat limited, with a few dedicated researchers such as Jenkins (2012:2007) being readily available for analysis. Moreover, the current paper offers only a brief overview of Sino-Brazilian historical relations, this is also due to limited literature, particularly in the English language. To overcome this, this thesis translated available relevant literature from original Spanish, Portuguese, and Chinese sources.

Regarding the empirical analysis presented in this research, the values added to the expressions mentioned above have not been updated since their publication. Therefore, results may be considered "outdated". It is not in the interest or remit of this thesis to re-evaluate and update the values presented, their sole purpose is to explain and verify the level of dependency and deindustrialization between China and Brazil – if any- in the specific timeframe initially chosen by the original authors.

Chapter 3 – Sino-Brazilian relations: from 1949 to 2010: An Historical review

This section condenses - an otherwise exhaustive literature on Sino-Brazilian Relations - basic conceptualizations and historical milestones regarding trading relations between Brazil and China. The framework adopted here has been largely influenced by Danielly Silva Ramos Becard's paper, 'O Que Esperar das Relacoes Brasil-China?' (2011), in which a chronological approach was implemented. Works by Costa (2015) and Jose da Luz (2011) are also inserted in order to broaden the academic dialogue. The chronological layout will follow the periods 1949-1974, 1974-1990, 1990-2003 and 2003-2010 respectively.

It is worth nothing that the list of events provided hereinafter, are what this thesis considers to be the most relevant when conceptualizing historical Sino-Brazilian relations. As such, the events explored in this section are not to be interpreted as detailed descriptions of all historical Sino-Brazilian events. In short, the aim is to expand the contextual quality and understanding of current relations through pivotal historical occurrences in Sino-Brazilian relations[7]. What follows then after, is a critical analysis of the motives embedded in the years presented in subsection. Concepts outlining Brazil's pursuit for infrastructural and technological advancement and China's Belt Road initiative are also to be critically analyzed and serve as supplementary material to the discussion at hand. The intent behind exploring such concepts, is to allow for an alternate understanding of the advent of Sino-Brazilian relations.

3.1 Two soon to be giants meet, 1949-1975

Whilst most academics trace the advent of Sino-Brazilian relations back to the mid-1970s (Costa, 2015; Jenkins, 2015, 2012; Haibin, 2010), Becard breaks away from convention, suggesting that relations might have in fact begun shortly after the inauguration of the Republic of China in 1949 (2011). The years following 1949, as explained by Becard, saw China grow its interest towards the Latin American continent; wishing not to only expand their influence but also increase its security (2011). The need for expansive securitization is best understood under the lens of the Cold War and escalating containment policies imposed by the United States. A growing discontent and ideological dispute with the Soviet Union, might have also served as a catalyst for Sino-Latin American relations. From a Chinese perspective, it is then deduced, that China had two underlying objectives: secure a strategic location (securitization) and enter a potentially lucrative trade relation with the Latin American continent.

From a Brazilian perspective, its interests towards China were mostly manifested post the election of president Getulio Vargas (1931-1945 and 1951-1954) in 1951, who after publicizing policies which sought to distance Brazil from American corporatism and general dependence of European markets, optioned instead to venture into new territories and new trading partners (Pires and Paulino, 2011; Costa, 2015). Such policies transcended into Getulio Varga's successors, with President Joao Goulart (1961-1964) being the most notable. Goulart made his

[7] As well as highlighting certain trends that persist to this day.

mark in Sino-Brazilian relations history by becoming the first Brazilian president to visit the influential Oriental nation in 1961 (Becard, 2011; Costa, 2015). While Brazil's motivation towards establishing Sino-Brazilian relations situated mostly on economic incentives – contrasting China's occupation with securitization – it nonetheless strengthened the fabrics of Sino-Brazilian relations.

What followed then after, may only be described as a diplomatic hiccup on Brazil's behalf, which resulted in an interruption of Sino-Brazilian economic and political development. The culprit lies mostly on the government of Castelo Branco (1964-1967), who after a successful military coup, was quick to ingrain an anti-communist sentiment into the Brazilian conscious. This was done in large to endear Brazil to western nations, in particular the United States (Wallerstein,1980). Thus, resulting in an immediate discontinuation of Sino-Brazilian relations (Becard, 2011). Although an abrupt ending to Sino-Brazilian relations during this period might have jeopardized recently established ties, an argument may be made around the hiatus in Sino-Brazilian relations as test of strength to previously established relations between Brazil and China.

Brazil continued to endure years of military oppression, however, a few key moments during the 1970s allowed Brazil and China to reignite its – albeit limited – economic and political relations. This was partly due, as suggested by Becard, in a decrease of revolutionary mandates from China going into Latin America, which until then were seen by Brazilian military officials as highly threatening (2011). What China imposed instead, were a series of diplomatic strategies, that saw its interaction with the Latin American continent be considerably less driven by a communist interventionist agenda and instead, more economically driven. On the Brazilian side, then president, General Ernesto Geisel (1974-1979), decided in 1975 to formalize the return of Sino-Brazilian relations (Costa, 2015). Below is an official extract, in which Ernesto Geisel, officiates the reestablishment of Sino-Brazilian political and trade relations:

"The Brazilian government has here decided to re-establish diplomatic relations with Beijing, recognizing that this republic is the sole and legitimate representative of the Chinese people; beyond in addition, it decided to take note of the position of the PRC government regarding Taiwan's as an inalienable part of its territory; and finally agreed that the establishment of relations was based on the Five Principles of Peaceful Coexistence developed by the Chinese diplomacy." (Pinheiro, 1993: 26)

3.2 A transition to the free-market and democracy, 1975-1990

Sino-Brazilian relations during the years between 1975 and 1990 witnessed perhaps the greatest and most pivotal of changes: Brazil's return to a democratic government and China's economic revolution via an adoption of free-market led policies. Becard notes that, although there were intentions on both sides to reconsolidate relations, however given the circumstances at the time, such task was considerably out of reach (2011). Such was the reality for most of the 1960s and early 70s, that is until monumental changes both in Brazil and China started taking place (Becard, 2011). The changes to which Becard refers to, concern seismic political

shifts in China, who after many years of infrastructural, industrial, and economic underdevelopment, forced itself to rethink domestic and foreign policies. In an almost coincidental manner, Brazil also found itself during drastic changes: the demise of its oppressive military regime and with it a return to democratic government. While the military regime did not officially end until the mid-1980s (Santarcángelo, 2019), major milestones were already being claimed by both countries. One of such milestones came after the first Acordo Comercial (Comercial Agreement) between China and Brazil in 1978 (Becard, 2011), which resulted in surmountable commercial improvements, where transactions went from US$ 19,4 million 1974 to US$ 202 million in 1979 (Becard, 2011)

What is vital to acknowledge here, is that the nature of these transactions was largely based on exchanges of Brazilian primary products to China. According to Becard's research (2011), [Brazilian] paper, cotton, sugar and soy represented around 50% of total exports to China during the 1970s, while 67% of Chinese exports to Brazil were chemicals and pharmaceutical products (manufactured goods). The nature of these transactions settled the foundation of economic trends later found in contemporary Sino-Brazilian relations, whereby Brazil assumes the role of a primary product export, while China that of a manufacturer and service provider. Returning briefly to the first exchanges between both countries, it is interesting to observe that although Brazil did not possess the technological capability and maturity it has today, nonetheless, its industry was marginally less competent than that of China's, thus leaving us to wonder 'why was that the case?'. In order to answer that, one must not look any further than the role the Unites States and the West, played in artificially impeding Brazilian industrialization through exhaustive competition and neo-liberal initiatives such as the ones found in the Washington Consensus, which favored the US and its western partners, in turn forcing Brazil into a golden straitjacket, where its choices for commercial freedom were limited[8].

Whilst the 1970s witnessed a resuscitation of Sino-Brazilian relations, as well as an amplification of commercial exchanges, Machado and Ferraz (2006) admit that interactions between both countries had not yet made a noticeable breakthrough. Although China with its economic enlightenment post 1979, and Brazil's own adoption of free-market principles and march towards democracy, Sino-Brazilian relations remained stagnant (Costa, 2015). That was to change however in the 1980s, with the redirection of Chinese foreign policies towards heightening interactions with Latin America (Becard, 2011). During this period, we see China's attempt in securing greater national interests and pursuit for South-South relations. The pursuit for greater South-South cooperation, led to the signature of over 20 bilateral agreements between China and Brazil, as well as numerous presidential visits from Joao Figuereido in 1984 and Jose Sarney in 1988 (Becard, 2011).

[8] This is a direct reference to Thomas Friedman's 'Golden Straitjacket' (date) metaphor (Friedman, 2012).

3.3 The intensification of Sino-Brazilian relations, 1990-2004

Costa (2015) posits that the 1990s marked the beginning of augmented Sino-Brazilian relations, a claim which is also acknowledged in the works of Becard (2011) and Barbosa and Mendes (2006). According to Costa, the intensification of this relationship is largely due to China's rapid economic development and the creation of a free economic zone in Latin America known as Area de Livre Comercio nas Americas (ALCA) (2015). ALCA was viewed by China as a key organization which allowed it to enter the Latin American market (Costa, 2015). During the same time, Brazil, under Itamar Franco's government, began seeing its domestic companies settle and invest in China, signaling the first few attempts of Foreign Direct Investment between both countries (FDI). The Companhia Brasilera de Projetos e Obras (CBPO) and Andrade Gutierrez were determined in acquiring large shares of the Chinese market for hydroelectric energy (Becard, 2011). The flight of capital from Brazil to China must be interpreted as an important feat for the Latin American country, since it exemplified the potential Brazilian companies had in competing abroad within the manufacturing and services industry. Thus, indicating a clear contrast to previous economic dynamics between Brazil and China until then[9].

Though Brazil was gaining ground in the manufacturing and services industry, the country faced increasing levels of unemployment and consumption of foreign, high value-added goods (Martins, 2011). Such effects were a byproduct of neo-liberal policies implemented almost a decade earlier. These policies were based primarily on strict budgetary controls and exchange rate appreciation. Andre Martins goes on to say that "formal unemployment was possibly the most negative outcome of the macroeconomic stabilization and structural reform programs implemented in 1990s Brazil under the aegis of neo-liberalism" (2011: 30).

China's involvement in the Latin American continent via economic and political expansionary initiatives resulted during the 2000s in a 70% increase in commercial activity between China and Latin American. Brazil was the largest benefactor, holding over 30% of exchanges (Costa, 2015). Becard's research shows that between 2000 and 2004, Brazilian goods being sold to China increased by 351,8%, while Brazilian purchases of Chinese products increased by 106% (2011). The nature of these exchanges, much like previous exchanges, lie mostly on Brazil exporting primary goods to China (except for provision of services found in the production of hydroelectric), with iron, steel and soy representing over 70% of total sales in 2004 (Becard, 2011). To that end, the paper suggests that due the nature of commercial activity between Brazil and China – up until this point – consisted of Brazil being mainly an exporter of primary products, China became accustomed to the role of primary products importer and industrialized and service exporter to Brazil. Thus, inhibiting Brazil greatly in any attempt of shattering commercial stereotypes were to be made.

So far it is clear that attempts were made by Brazil to diversify its exports to China, however, these were met by domestic and external barriers. While Brazil expanded its industrial presence in China and transitioned from a less fixed exchange rate to a floating one, allowing it to be

[9] Brazil up until then, still relied largely on exports of its primary products.

more competitive, it also confronted numerous setbacks. Amongst which were excessive tax burdens, increasing infrastructural deficit, timid foreign policies, corruption, and strong competition in the Chinese market to name a few (Becard, 2011). From a Chinese point of view, Becard acknowledges low interest rates, abundant credit, non-tariff barriers and subsidized Chinese products as a few of the variables that subdued any attempts made by Brazil as a means of diversifying further its exports (2011). In summation, under historical pretenses provided here, we observe a persistent continuation of trade imbalances between Brazilian and Chinese goods.

3.4 Brazil's left leaning president and the 2008 world crash, 2004-2010

In this final section on historical interactions between China and Brazil, the research looks at the period between 2004 to 2010, with a large emphasis placed on Brazilian economic and political developments. This specific period, as argued by this thesis, may be best interpreted as a columniation of preceding relations and an indicator for future Sino-Brazilian relations. While the present work recognizes the almost 10-year gap between the publication of this thesis and events taken place between 2004-2010, it nonetheless suggests that contemporary interactions remain largely unscathed – deviating only slightly via key economic and political shifts. Such shifts refer to external variables, such as the ascent of Jair Bolsonaro as Brazil's president and growing tensions between US and China under the trade war context. These changes will be assessed in later sections of this research and are to be evaluated as mutually exclusive factors which influence contemporary Sino-Brazilian relations.

Under the Sino-Brazilian context, the years between 2004 to 2010 were mostly dictated by policies implemented by Brazil, specifically under the tenure of Luiz Inácio Lula da Silva's presidency (2003-2010). The significance of Lula's presidency in Sino-Brazilian relations comes down to his amplification of trading settlements between the two countries, and implementation of economic policies which diversified Brazil's exports (Pereira de Melo and Filho, 2015). Becard and Vigevani and Cepaluni summarize Lula's government as being one which strived towards changing Brazil internally and externally, with the goal of being recognized as a key global trader (2011; 2007).

The ceremonious visit by President Lula da Silva to China in 2004, is seen by many, including Becard, as one of the most important in his career (2011). Those accompanying Lula's visit were nine state ministers, six governors and around 400 businessmen. The importance of this visit lies on the nine new bilateral trade agreements made between both countries, as well as 14 new business contracts (Becard, 2011). Such outcome revitalized commercial optimism in Sino-Brazilian relations, as well as sharply increasing Brazil's interest in China as a primary investor and consumer of Brazilian products (Becard, 2011).

Under the threat of negative structural impacts derived from imbalanced foreign trades, Lula and his administration, sought to implement industrial policies aimed at offsetting the wave of imported manufactures into Brazil (Pereira de Melo and Filho, 2015). According to Pereira de Melo and Filho, Lula focused primarily on two policies (2015). The first perpetuated macroeconomic initiatives of the previous administration, mainly floating exchange rates,

privatization, deregulation and trade openings. The second was enacted on March 31, 2014, which focused on increasing productivity, enhancing Brazil's capacity for innovation and expanding exports vis-à-vis imports (Pereira de Melo and Filho, 2015). However, the latter, according to Castro (2009), had limited impact on Brazil's overall ability to reach high levels of innovation, due largely to China's ever-expanding industrial sector and exports. All in all, Lula's administration 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" (Erber, 2011; Pereira de Melo and Filho, 2015: 68).

Chapter 4 - Evaluating Brazil's Manufacturing and Agricultural Sectors vis-à-vis China

4.1 Brazil's declining manufacturing sector

Worries over Chinese influence in the Brazilian manufacturing sector seem almost secondary to what Brazil is currently facing: an economic slump, a mishandling of COVID-19, entrenched corruption and an unstable president. However, as China's economy bounces back from its pandemic-induced hibernation, with industrial output growing 35.1% in January and February compared to the same months in 2020 (BBC, 2021), concerns over Brazilian deindustrialization return as China looks to the South American country for primary products such as soybean in order to satisfy an eager economy. According to a recent report by S&P Global Platts, Brazil's June soybean exports alone are expected to surpass 2020's level due to strong Chinese demand (Anand, 2021). In a separate report also by S&P Global Platts, China is likely to "import a record 100 million mt of soybeans in 2020-21, with over 60% shipped-in from Brazil" (Anand, 2021).

Historically, as demonstrated in the previous section, Brazil experienced in the last 15 years what can only be described as a 'commodity boom' largely stemming from China's soaring demand for raw materials to satisfy its intense levels of development and industrialization (Ferchen,Garcia-Herrero and Nigrinis: 2013). However, in the same period the share of manufactured goods in Brazil's shrunk considerably, thus raising questions over effects of increased trade exposure that may result in the primarization of the economy and growing dependency on Chinese demand for primary products (Jenkins, 2014; Paz, 2018). Concerns became more prominent after the 2008 global financial crisis, when industrial and trade policies, implemented in Brazil, "attempted to strengthen the import substitution strategy to protect domestic markets and to localize the productive chains" (Lin, 2018:149).

This section will focus primarily on Brazilian manufacturing between 1990 and 2014. Lourenço S. Paz, highlights that during this period, the share of manufacturing in the Brazilian GDP declined from 18% to 13% (2018). Between 2000 and 2014, import penetration in manufacturing expanded by 25%, while the Chinese share of such imports increased from 3% to 20% (Paz, 2018:77). Initially, as noted by Lin, China's trade expansion in Latin America was seen as a positive opportunity for countries like Brazil, since their export structures were mostly complementary, and "China's demand improved the trade terms of commodity exporting countries" (2018:148). Yet, as mentioned, this optimism quickly faded as much disapproval began to surface around China's growing demand for raw materials which many believe has incentivized an intensification of primary commodity production while leaving the manufacturing sector behind, thus causing the 'primarization' and 'deindustrialization of Brazil (Jenkins and Barbosa 2012; Jenkins 2014; Lin 2018).

In addition to exploring China's possible contribution to Brazil's declining manufacturing sector, this thesis also incorporates discussions surrounding Brazil's fragile domestic production when competing with Chinese manufacturing goods in their own market. This became particularly acute after the global financial crisis, as discerned by Lin, when industrial

and trade policies adopted in Brazil "attempted to strengthen the import substitution strategy to protect their domestic markets and to localize the productive chains" (2018: 149).

4.1.2 A closer look into Brazil's manufacturing sector

Academic research published by Rhys Jenkins, many of which have been used during the composition of this research, emphasize the process of deindustrialization in Brazil. In one his papers, Jenkins attempts to demonstrate Brazil's shrinking manufacturing sector by utilizing data from the mid-1990s until 2012 (Jenkins 2015). The data shows that the Brazilian manufacturing sector grew both in value added and employment from the late 1990s until 2008 (Jenkins 2015). The table below represent value added and employment in Brazil's manufacturing sector, where value added in real terms grew by more than a third between 1999 and 2008, while employment by at least 50 percent (Jenkins 2015).

Table 1

Value Added and Employment in Brazilian Manufacturing, 1996–2012

	MVA (1995 Prices)	*Employment CNAE 1.0*	*Employment CNAE 2.0*
1996	45,911,200	5,049,534	
1997	47,055,954	4,914,978	
1998	44,777,907	4,800,839	
1999	43,943,873	4,914,857	
2000	46,444,097	5,222,670	
2001	46,769,328	5,358,896	
2002	47,908,995	5,458,908	
2003	48,796,563	5,867,228	
2004	52,929,873	6,285,933	
2005	53,591,036	6,309,552	
2006	54,108,301	6,639,889	
2007	57,140,712	7,108,656	7,310,120
2008	58,835,638		7,683,681
2009	53,697,120		7,714,297
2010	59,139,656		8,211,953
2011	59,214,765		8,430,333
2012	57,709,290		8,562,408

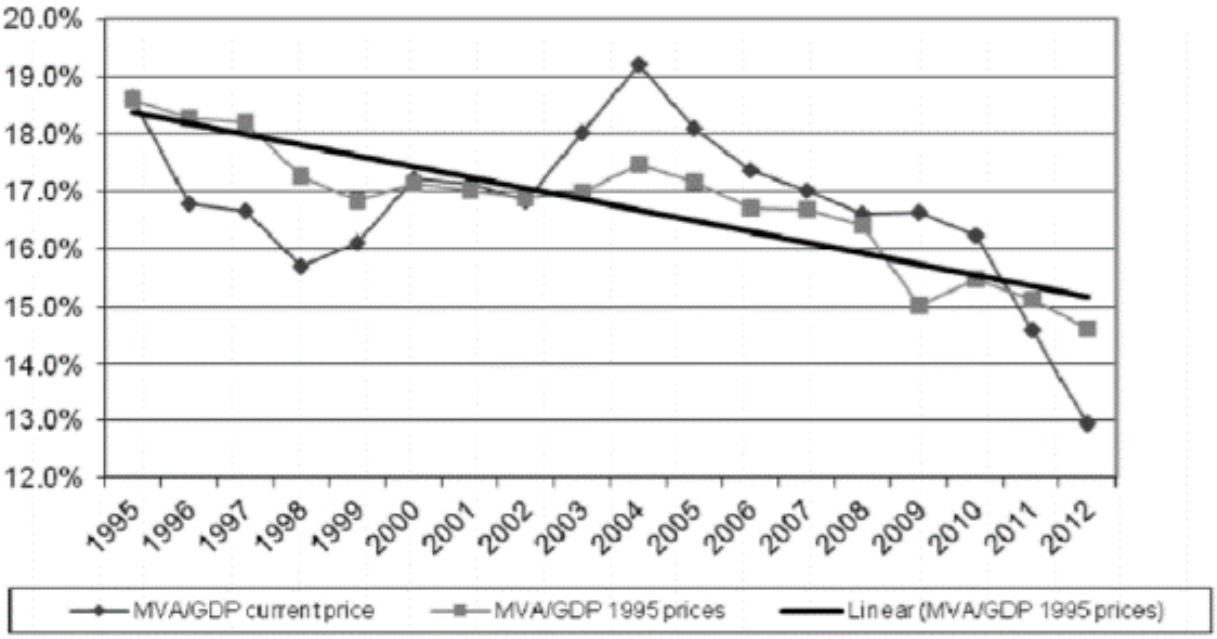
Source: IBGE (2015).
Note: MVA, manufacturing value added; CNAE, Classificação Nacional de Actividades Econômicas. CNAE 1.0 is based on the International Standard Industrial Classification, Revision 3, and CNAE 2.0 on ISIC, Revision 4.

Source:(IBGE, 2015; Jenkins 2015

Jenkins recognizes that although manufacturing value added in 2012 was below that of 2008, employment continued to grow, thus proposing that deindustrialization in this time was "relative rather than absolute" (2015: 48). Overall, there is little indication of a decline in manufacturing relative to employment over the years. However, when considering manufacturing as a share of GDP, the narrative changes slightly. Upon closer inspection, small manifestations of deindustrialization appear. As shown in Figure 5, since the mid-90s manufacturing as a share of GDP dropped 4 percent in constant prices and above 5 percent in current prices (Jenkins 2015).

Figure 5

Share of manufacturing value added in GDP, 1995–2012, current and 1995 prices

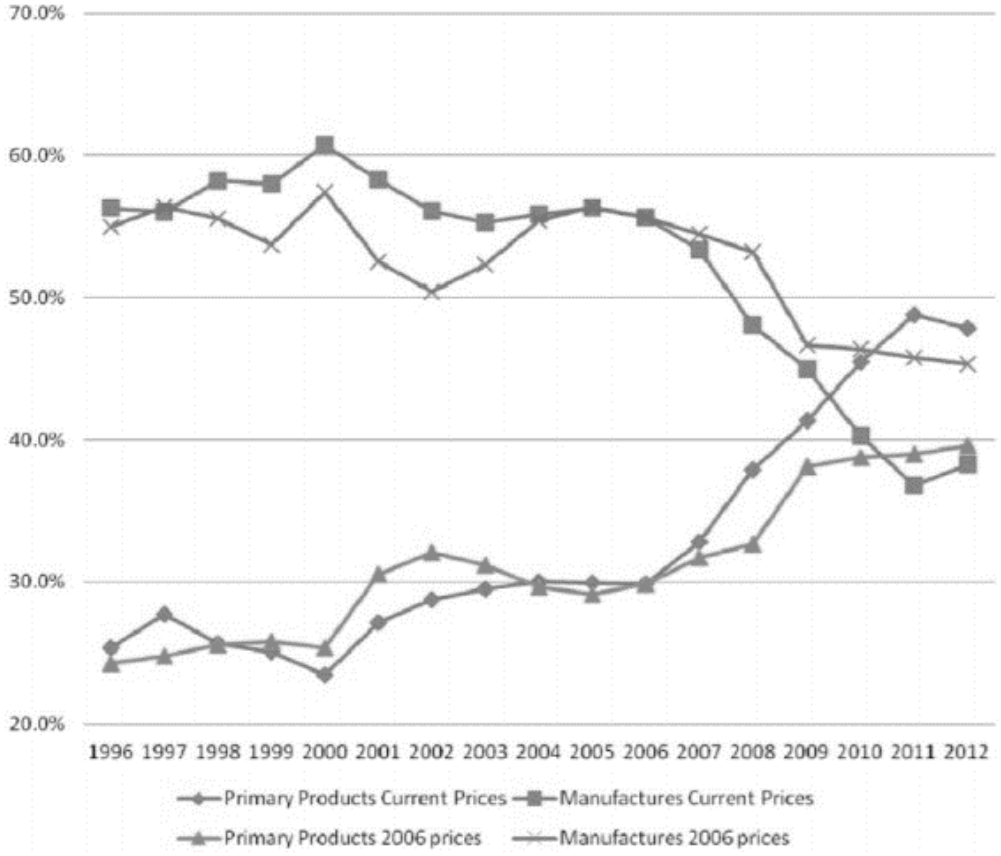


Source: data from IPEA 2013; Jenkins 2015

Jenkins correctly accounts that since 2004 "the decline has been particularly marked in terms of current prices, implying that increases in the price of manufactured goods have lagged behind those of other components of GDP" (2015:48). Interestingly and perhaps more relevant to this research, is that during the same period there has been an obvious shift in the structure of Brazilian exports from manufactured products to primary goods. As noted by Jenkins in Figure 6, this became evident more in terms of current prices due to the 'commodity boom' experienced by Brazil in 2002 until 2012, yet the share of primary goods increased while that of manufactured shrunk. Figure 7 confirms that this trend continues, where manufacturing value added as a percentage of GDP in Brazil was reported at 9.4 percent in 2019 according to the World Bank.

Figure 6

Share of primary products and manufactures in Brazilian exports, 1996–2012, current and constant 2006 prices



Source: data from IPEA 2013; Jenkins 2015**.**

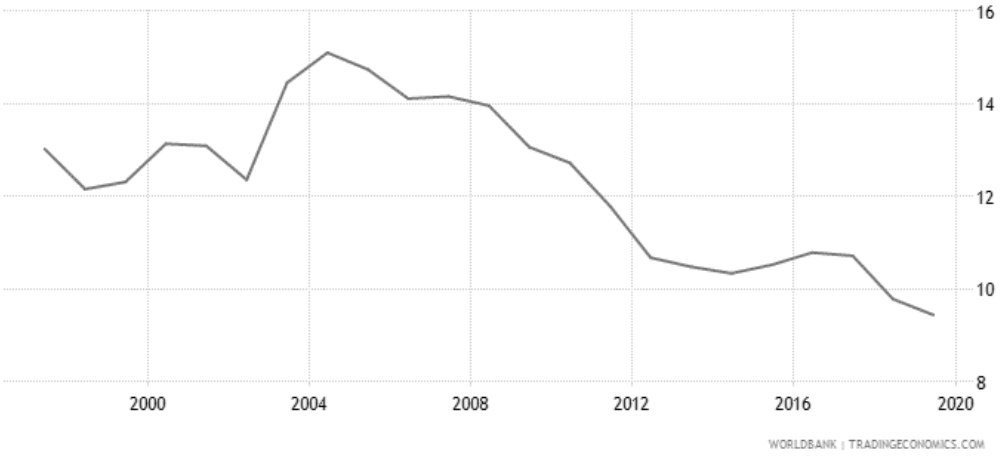


Figure 7. Share of manufacturing value added in GDP, 2000–2019 (data from World Bank 2020)

4.1.3 Development of Brazilian policy towards its manufacturing sector

In order to best understand Brazil's current manufacturing downtrend, a closer look into policy development is needed. Juan Santarcángelo's book 'The Manufacturing Sector in Argentina, Brazil, and Mexico: Transformations and Challenges in the Industrial Core of Latin America' (2019) provides a concise overview of the changes in Brazilian economic policy over the years. Together with Lourenço Paz's work on China's effect on the Brazilian manufacturing sector (2019), both sources supplement the details necessary to best understand the trajectory of Brazilian economic policy.

During the 1970s and 1980s Brazil was regarded as a 'closed' economy, due to the installment of high import tariffs and several non-tariff barriers (NTBS), yet by the late 80s this began to change (Paz, 2019). In 1988, import tariffs were cut to a level resembling that of domestic levels, in an effort to become more of an 'open' economy (Paz, 2019). However, as noted by Paz (2019) and Kume (2003), such measures were not impactful enough since NTBs still existed within the Brazilian economy, thus negatively affecting imports.

With the arrival of the Fernando Collor de Mello as Brazil's new president in 1990, came a series of economic policies aimed at securing Brazil's place in the world market via structural change in the foreign currency market, such as easing the flow of FDI to name a few (Paz, 2019). While Collor de Mello's presidency came to an abrupt end in 1992 due to an impeachment trial on charges of corruption, Brazil's quest on becoming a more 'open' or rather liberal economy persisted with the inauguration of Itamar Franco's presidency (1992-1994).

Itamar inherited an economy that was in crisis, where inflation rates were at 951.962% in 1992 and 2,075.888% in 1994 when he resigned from office (World Bank, 2021). Already in the 1980s it was obvious that Brazil was falling behind in the race towards globalization, the economic crisis simply exacerbated it (Baumann,2001). In order to combat high inflation and stabilize the economy, Itamar consulted then Finance Minister Fernando Henrique Cardoso who later took the presidential seat in 1995 (Santarcángelo, 2019). Cardoso launched what became known as the *Real* plan, a stabilization plan to eliminate inflation (Mollo and Saad-Filho, 2006).

When considering the Brazilian manufacturing sector, the *Real* plan was more than a tool to subside inflation, it also 'consolidated the neoliberal transition' which ultimately would affect all facets of the Brazilian economy (Mollo and Saad-Filho, 2006: 103). Policies included high interest rates, financial, trade and capital account liberalization, the privatization or closure of state-owned productive and financial enterprises, fiscal and labor market reforms, de-indexation, currency overvaluation and the closure of several state agencies and departments (Mollo and Saad-Filho, 2006: 103). It is therefore safe to conclude that high inflation together with its antidote, the *real* plan, were key moments in getting Brazil to 'open' its economy and whole heartedly adopt neoliberal policies.

It was during this period that Brazil also witnessed a significant reduction in NTBs, with nominal tariff reductions being scheduled to be implemented between 1990 and 1994 (Paz, 2019). Paz notes that the reduction in tariffs were implemented faster than expected, thus

bringing a quicker than anticipated change to Brazil's economic structure (2019). Brazil's protection of the manufacturing sector shrunk rapidly, from average tariffs of almost 40% in 1989, to 17% in 2000 (Paz, 2019; Kovak, 2013; Kume *et al*. 2003, 2008; Abreu 1996). Such tariff cuts had a long- lasting effect in the economy: "manufacturing imports grew by more than 200% between 1990 and 2000, and import penetration in manufacturing almost tripled, going from an initial level of 5.7% in 1990 to 14% in 2000 (Paz, 2019: 6). While it is true that manufactured imports grew, Brazil's domestic manufacturing sector also became more competitive due to a process of rationalization of their production (Baumann, 2001). For Baumann, with the eradication of inflation, the returns on investment became relatively high, due to lower costs of equipment and "progress made in overcoming the technological backwardness of the sector thanks to the new equipment installed" (2001:157). Overall, this resulted in an increase industry productivity, although, as Baumann points out, also made the "sector more capital-intensive" (2001:157) [10].

Changes in the manufacturing sector also came about during the GATT/WTO's Uruguay Round of negotiations (between 1986 and 1993), where tariffs imposed on manufactured goods by developed nations dropped from an average 18% to 8% by the end of decade (Paz, 2019). As a result of this, Brazil's manufacturing exports increased more than 70% between 1990 and 2000 (Paz, 2019). Another factor to consider when discussing Brazilian manufacturing polices is the devaluation of the *real* in the late 90s and early 2000s. Manufacturing output during this period expanded considerably, with the help of a devalued *real* and significant FDI inflows (Mollo and Saad-Filho, 2006). However, as noted by Mollo and Saad-Filho, majority of FDI inflows were being directed to manufacturing production and services for domestic consumption, rather than "much-needed exports" (2006:109).

4.1.4 Chinese influence over the Brazilian manufacturing sector

Under the tenure of Lula da Silva and Dilma Rousseff's PT administrations, Brazil ventured further in economic and trade policy changes, many of which favored China. In 2004, the Brazilian government decided to give China market economy status, which in turn reduced Brazil's ability to impose safeguards, countervailing duties and anti-dumping measures on Chinese exports (Paz, 2019). Interestingly, in the same year Lula launched policies whose objectives were to increase productivity and innovation in the manufacturing sector, while expanding exports vis-à-vis imports (Pereira de Melo and Filho, 2015). However, Pereira de Melo and Filho are quick to mention that this new 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 (2015:67).

[10] "According to estimates by Bonelli and Fonseca (1998b), the annual increase in total factor productivity rose from an average of 1% in the 1980s to 2.1% in the 1990-1997 period. According to Neri and Camargo (1999), industrial production increased by 10% between 1991 and 1995, while employment in the industrial sector went down by 22% over the same period, resulting in a 40% increase in labor productivity." (Baumann, 2001:157).

The aftermath of the 2008 crisis deeply affected Brazilian industrial and trade policies as well China both in the short-term and long-term (Lin 2018). In order to absorb the shock, both China and Brazil adopted expansionary fiscal measures to sustain domestic growth, with the former changing from a 'prudent fiscal policy and tight monetary policy' to a 'positive fiscal policy and moderately easy monetary policy' with a stimulus package of RMB 4 trillion in 2008 (Luo and Zhang 2010; Lin 2018: 152). Brazil on the other hand, focused heavily on sustaining and protecting domestic demand, where previously an emphasis was placed on international competitiveness and exports (Lin 2018).

Moreover, as observed by De Oliveira, the Productive Development Policy inaugurated in 2008 which began life as a way of upgrading industrial pattern of investments, quickly became a list of anti-cyclical measures to finance large national companies such as Petrobras (2017; Lin 2018).
This resulted in China becoming the largest exporter to Brazil. Since 2009 China passed the US to become Brazil's number one trade partner (Oliveria, 2018). According to Bonelli and Pessoa (2013), Brazil's shrinking manufacturing sector is a direct byproduct of low cyclical growth rates, greater economic openness, and deregulation most of which come from this period. However, as identified by Pereira de Melo and Filho (2015), such arguments fail to consider Brazil's dangerous return to primary production, which is often associated with China's growing demand for primary goods (Pereira de Melo and Filho 2015; Jenkins *et al.* 2015, 2012).

4.1.5 Calculating Brazilian manufacturing loss

To objectively analyze China's effect on Brazilian manufacturing, the thesis looks to Jenkins (2012) while extending Batista's (2008) Constant Market Share (CMS) analysis. The equation below estimates the loss of market share by Brazil (H) to China (*C*) to a chosen product *i* and represented as:

$$\sum \Delta k_{Hci} = \sum \Delta k_{Hi} \times k^{t}{}_{Ci} - \sum \Delta k_{Ci} \times k^{t}{}_{Hi}$$

It is important to note, as cautioned by Jenkins, that the CMS "provides a useful way of attributing losses of market share between countries, it should be noted that the decomposition is based on accounting identities, and one should therefore be careful in making any causal inferences from it" (Jenkins, 2012: 37).

Table 2 presents a clear trend in which Chinese competition in the manufacturing sector is affecting Brazilian exports to third markets. Brazil's export to US has been hit the hardest, while the EU it is only from 2004 that Brazil starts losing exports to China. Jenkins correctly observes that Brazil began losing exports to the US in 2001, when China joined the WTO (2012). While Brazilian manufacturing exports have been affected by Chinese competition, thus legitimizing minor fears around de-industrialization and Brazil's declining manufacturing sector, one should not exaggerate the effect this has had on Brazilian industry (Jenkins and Barbosa, 2012). As Jenkins and Barbosa carefully point out, the major part of Brazilian manufacturing production is for the domestic market and exports account for only around a

fifth of total output, “so that a loss of 5 per cent in exports represents a reduction in only 1 per cent in industrial production” (Jenkins and Barbosa, 2012:77).

Table 2

Brazil’s Loss of Exports to China in the US and EU Markets, 1996–2009 (%)

	US		EU	
	Total	Manufacturing	Total	Manufacturing
1996–2001	-0.5	-0.7	0	-2.5
2001–2004	-6.1	-9.6	-0.1	-0.3
2004–2009	-3.1	-5.3	-2.1	-5.9

Source: Author’s own elaboration based on USITC and COMEXT data.

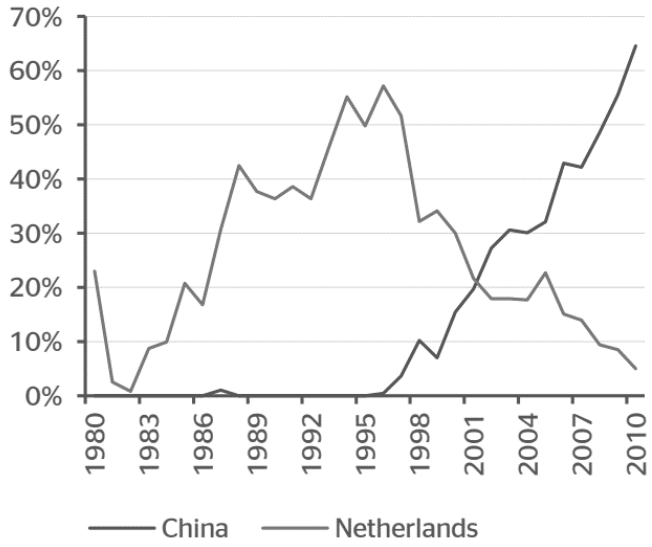
Source: Jenkins, 2012.

4.2 Brazil’s growing agricultural sector: a look at soybean agribusiness

Brazil, together with the United States, have held more than 80% of total world exports of soy for the last four decades (Ferchen, Garcia-Herreo and Nigrinis, 2013). A position Brazil still holds. Historically, Brazil’s import concentration on the demand side fell from its peak in the 1960s, only increasing again in the late 90s (Ferchen, Garcia-Herreo and Nigrinis, 2013). According to a paper commissioned by BBVA titled ‘Evaluating Latin America’s Commodity Dependence on China’ (2013), the pick-up in soy production in Brazil was directly correlated to a change in Chinese demand. Almost 20 years ago, China’s demand for soy stood at 6%, due to a policy of self-sufficiency, however this changed as its population began to demand more of the commodity (Ferchen, Garcia-Herreo and Nigrinis, 2013). With that change in demand and a booming economy, China quickly became Brazil’s most important market for soybean, surpassing the US in 2009 as Brazil’s number one trade partner (Oliveira, 2018). Figure 8 below shows the historical process of China becoming the number one market for Brazilian soy.

Figure 8

Brazilian exports of soybean to main partners (Share %)



Source: Data UN Comtrade; BBVA, 2013.

Discussions around Brazil's growing agricultural sector as a share of GDP complement those presented under section **4.1** (Brazil's declining manufacturing sector). Criticism surrounding China's increasing demand for agricultural goods from Brazil, overlap in sentiment with those of Brazil's alleged shrinking manufacturing sector. In 2016, China consumed almost one-third of total international soybean trade, half of which came from Brazil (Oliveira and Schneider, 2016). As a result of this growing appetite, Chinese agribusiness investment began to flood Brazil's market, particularly in the soybean agribusiness, as a method of gaining control over the flows and profits of the international soybean trade (Oliveira, 2018). Such initiative prompted a wide range of discussions. In one hand, there are those who see this as a positive trade development (H. Oliveira, 2010; Zou, Long and Hu, 2010). While others see it as "neocolonial 'land grabs' that displace 'peasants', cause environmental degradation, and deindustrialize the Brazilian economy" (Oliveira, 2018:114; Grain, 2008; Jenkins and Barbosa, 2012).

Expanding on the apprehension of Chinese dominance over Brazil's soy market, Gustavo de L. T. Oliveira argues that such worry is unfounded and vastly disproportionate. In his research, he demonstrates how Chinese investment in soy production in Brazil is considerably smaller in comparison to that of the Global North (Oliveira, 2017). With that in mind, it is the intention of this thesis to carefully weigh all arguments presented here to objectively assess China's role in Brazil's growing soy industry and indirectly the shrinking manufacturing sector.

4.2.1 Chinese investment in Brazilian soy

The Financial Times recently ran a piece focusing on Brazil's dependency on agriculture as a means of buffering its recent economic and political complications (Harris, 2021). Agriculture as an activity account for 22 per cent of GDP, providing somewhat of a 'safety-net' for an economy that struggled with a ruinous recession five years prior (Harris, 2021).

Historically, agriculture in Brazil has always been a matter of pride and of huge economic importance, tracing back to colonial times under Portuguese rule. The recent uptake in agricultural activity, particularly in soybean production is often associated with China's meteoric rise (as discussed consistently throughout this thesis). As such, significant attention has been placed towards 1) Brazil's dependence on Chinese demand (Jenkins *et al.*) and 2) China's growing control over Brazilian agribusiness (Oliveira *et al.*).

When discussing issues around Chinese investment and supposedly 'growing' control over Brazil's agribusiness, Oliveira's research provides significant insight into current reality of China's involvement in Brazil (2018). Based largely on data found on the National Network of Information about Investments (RENAI) of the Brazilian Ministry of Development, Industry and Foreign Trade, Oliveira admits that the databank only provides publicly announced investments (2018). Therefore, unable to capture large flows of investments. However, the data Oliveira does manage to find suggests that Chinese companies invest significantly less than their US, EU and Japanese counterparts as shown in table 3.

The concern over China's increasing involvement in Brazil's agricultural sector, particularly in soybean agribusiness began in late 2000s (Silva & Costa, 2012). During this time, a few Chinese companies such as Shandong Rainbow Chemical and Tide Group began registering in Brazil to commercialize their agrochemicals domestically (Oliveira, 2018). However, such method as shown in chapter 1 on FDI (*see* pg. 8) takes a long time and as Oliveira asserts, "provides no guarantee of market share in Brazil (2018:117). As a way of overcoming this issue, companies such as Nutrichem/Chongqing Huapont Pharm purchased a 7.5% share in the CCAB Agro in 2012, still the deal collapsed in 2015 with Nutrichem attempting to establish independent operations in Brazil in 2018 (Oliveira, 2018).

These are just a few of the examples of Chinese companies investing or attempting to enter the Brazilian market. While the rate in which such business interactions occur between Brazil and China continue to increase, they remain significantly smaller in comparison to recent investments announced by predominantly North economies as shown in Table 4.

Table 3

Top 29 foreign investors in Brazilian agriculture: 2010 – 2013 in million USD

Origin	2010	2011	2012	2013	Total
US	1056	1058	2183	3275	7572
UK	154	1091	1510	207	2962
Luxemburg	790	1044	389	511	2734
Switzerland	373	358	586	1377	2694
Chile	537	709	633	561	2440
France	472	553	664	664	2353
Netherlands	319	280	304	576	1479
Br. Virgin Islands	277	224	201	193	895
Panama	187	160	168	164	679
Portugal	156	133	134	130	553
Japan	70	189	157	136	552
Italy	145	125	126	123	519
Denmark	139	119	120	117	495
Argentina	137	109	121	131	498
Canada	176	119	43	74	412
Germany	93	92	92	90	367
Jersey	0	0	0	171	171
Uruguay	45	38	39	38	160
Australia	21	19	38	40	118
Bermuda	8	7	7	49	71
India	0	19	19	18	56
South Korea	7	6	6	6	25
China	6	5	5	5	21
Cayman Islands	6	5	5	5	21
Spain	4	3	3	3	13
Colombia	3	3	0	0	6
Isle of Man	0	2	2	0	4
Mexico	1	1	1	1	4
Norway	0	1	0	0	1

Source: Elaborated by the author from Central Bank of Brazil, Foreign Capital Census.

Source: Oliveira, 2018.

Origin	Seed and soy production[a]	Soybean processing[b]	Silos and warehouses[c]	Port and railroad[c]	Total
Japan	7	–	3.932		3.939
France	30	9	667	2.000	2.706
Netherlands	–	36	–	2.463	2.499
Algeria	–		2.150		2.150
USA	959	389	30	96	1.474
China	300		27 (2.100 cited in 2011, retracted in 2012)		327
Hong Kong	–	200	–	–	200
UAE	–	–	–	171	171
Russia	–	–	117	–	117
Portugal	–	58	–	–	58
Argentina	26	–	–	–	26

[a]Acquisition of farmland, equipment, and other production costs cited by companies that have soybeans as one of their main products.
[b]Soybean crushing and biodiesel production facilities when soybean is cited as the main feedstock, and their directly associated silos and warehouses.
[c]Total investment when soybeans are among the main commodities stored/traded through this infrastructure.
Source: Elaborated by the author from RENAI 2009 to 2015.

Source: Oliveira, 2018.

Specific to the case of soybean investment, Oliveira only cites one major investment, that of Hong Kong-based Pacific Century Group's minority-stake participation in CalyxAgro's 27,397 (Oliveira, 2018). This is in contrast to investments made by Cresud/Brasilagro (Argentina), SLC Agricola (Brazil), El Tejar (Argentina), TIAA-CREF (US), Multigrain AG/ Xingu Agro

(Switzerland), and V-Agro (Brazil), who together acquired more than 750,000 ha of land in Brazil since 2008 (Oliveira and Hecht, 2016).

Within the case studies explored by Oliveira, two themes appear to be consistent, 1) Chinese investments are always significantly smaller in comparison to US, EU, Japan and Argentina and 2) they often fail. In his later examples, Oliveira explores the partnership by Zhejiang Fudi Agriculture Company with the Beidahuang/Heilongjiang State Farm company (2018). Both companies purchased a 600 ha farm in Rio Grande do Sul and a 16,000 ha in the state of Tocantins between 2007 and 2008 (Oliveira, 2018). After encountering numerous issues, they decided to sell majority stake to the Chongqing Grain Group (CGG) in 2011, who then proceeded to shift focus "to agricultural commodity imports and agricultural production investments within China itself" (Oliveira, 2018: 118). The CGG has been a topic of many discussions, within political and economic circles, particularly after the group announced plans of purchasing 200,000 ha of land to farm soy in the state of Bahia (Staufer, 2014). It was during this announcement in 2010 that the Brazilian government decided to impose greater restrictions on foreign acquisition of farmland (Oliveira, 2018). Facing significant losses due to CGG's Brazilian subsidiary Universo Verde Agronegocios and land occupations led by the Landless Rural Worker's Movement (MST) resulted in the Chinese owners leaving the country in 2013.

Oliveira highlights yet another example, which he suggests carries some sinophobic undertone and characterized as 'Chinese land-grabbing' by Brazilian and Western newspapers. The case involved Sahne Hopeful Grain and Oil Co., and the central government-owned China National Agriculture Development Group (CNADG) between 2009 and 2010 (Maisonnace and Carazzai, 2011). CNADG abandoned negotiations involving the state of Goias, "after the legal restrictions on acquisitions of farmland by foreigners in 2010, and the *Folha de S. Paulo* reported that Sanhe Hopeful was planning a $7.5 billion USD investment in warehouses and farmer finance in Goias in the next 10 years, expecting in exchange direct purchases of six million tons of soybean" (Oliveria 2018: 119; Maisonnave and Carazzai, 2011). The announcement, according to sources, was greatly exaggerated and distributed widely across major Brazilian and Western newspapers such as the *Financial Times* and *New York Times* to name a few (Oliveira, 2018; Hearn, 2012; Barrionuevo, 2011; Powell, 2011).

All in all, Oliveira confirms here through case studies and empirical evidence that China is in fact investing in Brazil's soybean agribusiness, in accordance to the Chinese government's outward investment policy (*see* pg.30). However, majority of investments are in much smaller scale when compared to those made by companies in the US, EU, Japan and Argentina. Moreover, since the increase of Brazilian legislative activity in protecting domestic production, Chinese investments often end in failure. That said, Oliveira confirms that while difficult, China still persists, where "agroindustrial capital is in fact taking place through transnational M&A's designed to challenge the hegemony of oligopolies from the Global North, reflecting much more the commercial logic of the latter than the presumed political logic of farmland acquisitions" (Oliveira, 2018: 126). Thus suggesting that, although more cautious, China's plans in securing its soybean and perhaps its control in Brazil is not baseless, but significantly less insidious and smaller in scale compared to the ones conducted by Global North nations.

4.3 Calculating Chinese Dependency

In this last section of the soybean agribusiness, the thesis looks at the China Export Dependency Index formulated by Ferchen, Garcia-Herrero and Nigrinis (2013) to analyze Brazil's dependence on China and it is presented as:

$$\sqrt[3]{\frac{EXP_{i,j}}{EXP_j} \times \frac{EXP\ to\ China_{i,j}}{EXP_{i,j}} \times avg\left[\frac{IMP_{i,China}}{IMP_i}, \left(1 - \frac{EXP_{i,China}}{IMP_i}\right)\right]}$$ [11]

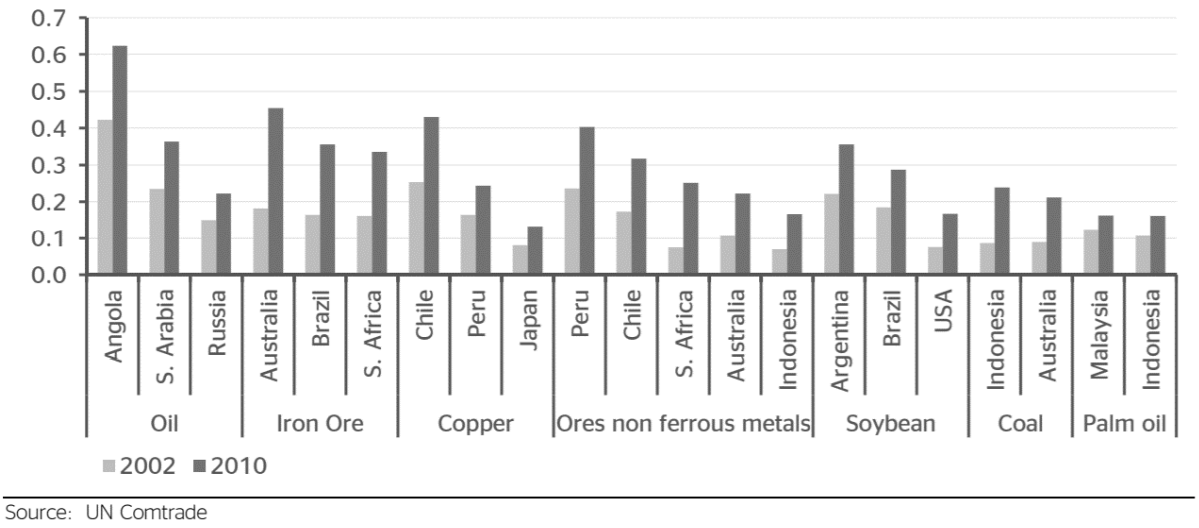
The index above was created in order to assess how vulnerable Latin American commodity exporters are to shifts in Chinese demand. This stems from discussions presented in Chapter 1.4 on dependency (*see* pg.20), on concerns over potential adverse effects of Chinese demand for raw materials (Ferchen, Garcia-Herrero and Nigrinis, 2013). Specific to the case of Brazil is China's growing demand for Brazilian raw materials such as soybean and iron and the 'excessive' imports of cheap Chinese manufactured goods. Which in turn have fueled debates around dependency and de-industrialization (Ferchen, Garcia-Herrero and Nigrinis (2013).

When the data is inserted, it is evident that dependency as a whole on Chinese demand has increased compared with 2002 as per Chart 1. However, what becomes clear is how less dependent Brazil actually is to China when compared to other countries, particularly when observing the soybean sector. Therefore, although China imports a lot of soybean from Brazil, that does not necessarily result in Brazil being dependent on those exports. Moreover, in Nestor Castañeda's paper**,** New Dependency?: Economic Links between China and Latin America (2017), he affirms that the last 20 years witnessed a significant increase in Chinese imports in the region, but it still does not reach that of the US and the European Union – a similar pattern observed under FDI in agriculture from Western nations in Brazil as per chapter *4.2.1* (see pages 39-41). Returning briefly to Ferchen's *et al.* research, they conclude that just because China imports a lot of soybeans, that does not immediately result in Brazil being economically dependent on those exports (2013). The case brought forward by them is that, while it is true that South American commodity exporters are somewhat dependent on China, countries in the region and their overall GDP growth rates are far less dependent – exports to China are worth less than 2% of GDP in Brazil (Ferchen *et al.*, 2013). Therefore, according to Ferchen *et al.* claims around Brazil being dependent on China are at best inconclusive - while there is evidence of Chinese capital penetration, it pales in comparison to those of European and US investments (2013). Finally, although Latin American and Chinese ties, specifically Sino-Brazillian, continue to strengthen, recent data on Latin American exports to China show that it is still the case that they represent a small proportion of the total regional exports – around 10% of the total in 2014 (Castaneda, 2017).

[11] See Chapter 2.2 Models & Data for details on major components.

Chart 1

Exports dependency to China index (0 no dependency - 1 absolute dependency



Source: UN Comtrade; Ferchen *et al.*, 2013

Conversely, from the discussions presented thus far, it is likely that both hopes and anxieties tied to Brazil's increasing economic relation with China will persist, as Brazil continues to grow its commodities market. This notion is further augmented when considering Brazil's recent export figures, where its exports to China over the first six months of 2020 amounted to USD 34 billion, twice the amount over the same period in 2015 (Wilson Center, 2020). While exports to the Unites States and Mercosur dropped 32 and 29 percent, respectively, compared to 2019 (Wilson Center, 2020). A research conducted by the Wilson Center, titled "Pandemic Makes Brazil Even More Reliant on China" (2020), attests the COVID-19 pandemic emphasized the chronic issues around Brazil's shrinking manufacturing sector and growing reliance on commodities. The chairman of Brazil Foreign Trade Association (AEB), José Augusto de Castro, is quoted stating "in commodities, Brazil has productivity. Whatever the price or exchange rate, Brazil will be competitive. With favorable demand and exchange rates, as we have now, Brazil sells at ease, with no worries" (Wilson Center, 2020).

While this is reminiscent of concerns expressed by Brazilians in the early years of Sino-Brazilian relations, seen by many as a projection of Sinophobia (Maisonnace and Carazzai, 2011), the increased intensification of trade relations is undeniable, as per more recent data. That is not to say however, that Brazil and its commodities are dependent on China. Inserting the most recent data onto the China Export Dependency Index, could potentially be one method in which to scrutinize Brazil's dependency on China.

Conclusion

The structure of Brazilian foreign trade has altered significantly in recent years. A conscious effort has been placed on favoring commodities over manufacturing, resulting in relative deindustrialization as a share of the manufacturing sector in GDP. A growing number of critics associate Brazil's declining manufacturing sector with China's rise as its principal trade partner. Many agree that China's rise has presented Brazil with new challenges to its economy, particularly when considering the unbalanced nature of Sino-Brazilian trade relations, represented in the form of Brazil's continued path towards primarization that is not favorable to its industrial sector. However, such claims, as showcased in this thesis, tend to be exaggerated, thus triggering a sense of Sinophobia.

Debate amongst economists and politicians in Brazil around the country's exponential growth of commodity exports and growing dependence on China began to gain currency in recent years. As a result of China's increasing presence in Brazil, superfluous anti-China views proliferated, consolidated both at right and left ends of the political spectrum. The truth is that, while noteworthy, the penetration of Chinese capital in Brazil is still limited. Brazil remains heavily reliant on Western and Japanese creditors, therefore China's investment in manufacturing is only modest. As for commodities, while Brazil continues to satisfy China's increasing appetite for soy and other primary goods, the dependency factor remains relative and inconclusive, where in 2012 exports to China represented less than 2% of GDP in Brazil (Ferchen *et al*. 2013).

In attempting to answer this thesis' question, 'To what extent is China to blame for the declining share of Brazil's manufacturing sector?', instead of finding a clear association between China's growing presence in Brazil and Brazil's declining manufacturing sector, what it found was the persistence of structural asymmetry and weak policy coordination in Brazil. China's influence over Brazil is undeniable, and in many aspects harmless, but only if Brazil becomes complacent. As argued by Jenkins, implementing protectionist policies is no longer a viable option and one that will likely result in disagreements within the WTO (2012). Protecting domestic production from Chinese goods will pose no threat to Chinese competition in third markets (Jenkins, 2012). In order to avert the process of deindustrialization, Brazil needs to increase its manufacturing productivity via intentional and active industrial policies focused on promoting technological change and improving skill levels. Other solutions brought forward by researchers such as Jenkins, also call out to Brazil becoming more competitive in regional markets such as Latin America, where it has been consistently losing ground to China (2012).

All in all, the manufacturing sector in Brazil remains relatively competitive, despite endemic issues in the shape of inefficient and antiquated industrial policies. The thesis also does not deny China's increasing presence in Brazil and the challenges it comes with it. However the trade relation between China and Brazil should not be categorized as harmful towards Brazil. In fact, the robust Sino-Brazilian political and economic cooperation analyzed in this thesis, showcases a bilateral relationship that has overcome a variety of obstacles over the last five decades and has become somewhat of a model for present and future South-South relations.

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