

REGIONAL SHIFTS IN BRAZILIAN SUGARCANE PRODUCTION:

WHY SUGARCANE MIGRATED SOUTH

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Abstract:

The Brazilian experiment with sugar cane began in Northeastern Brazil during the earliest days of the colonial period. Its cultivation followed the extension of the Portuguese Royal Authority to the present day state of Bahia and the founding of the city of Salvador in 1549. Salvador Bahia became the center of a very complex production and commercialization system that supplies sugar to regional, national and international markets. In 1980, Brazil overtook India as the top global sugarcane producer, title which it holds to this day. Sugar cane's versatility as a sweetener and a source of ethanol propelled its comeback to the helm of sugarcane producers. . Some of this success is due to the Brazilian government's support for viable fuel alternatives following the oil shocks of 1973.

Naturally, one would assume that in its pursuit to recapture the world market Brazil would have relied on the Northeast's tradition in sugar production. The statistics, however, indicate that sometime in the 1960s a regional shift occurred. São Paulo is now the leader in sugar production.

My research examines the question of how the Northeastern region lost its leadership to São Paulo, a state without any significant history in sugar production.

For this research, I employ a mixed-methods approach. I combine historical production data from several reputable governmental and private sources with information compiled during in-depth literature review and an interview with an individual knowledgeable about the circumstances of the local sugar industry. I examine the role that environment, globalization, and technological advances have played in the regional shift of Brazil's sugar production.

## Introduction

The Brazilian experiment with sugar cane began in Northeastern Brazil. Its cultivation followed the extension of the Portuguese Royal Authority to the present day state of Bahia and the founding of the city of Salvador in 1549. Spurred by the profitability of the crop in the Iberian and Atlantic islands, the Portuguese introduced and invested heavily in sugar in Bahia, making Brazilian sugar a staple in households around the world. Starting in the 17<sup>th</sup> century, the West Indies had outcompeted Brazil as the world leader in sugarcane production because of better relative position to consumer centers, technological advancements and the proliferation of sugar

beet in Europe<sup>12</sup>. To illustrate this last point, sugar beet accounted for less than 14% of the world market from 1851-1855. In 1890 it was closer to 61%<sup>3</sup>. Brazil, eventually regained its share of the world sugar market. In 1980, Brazil overtook India as the top global sugarcane producer, title which it holds to this day. Sugar cane's versatility as a sweetener and a source of ethanol propelled its comeback. Some of this success is due to the Brazilian government's support for viable fuel alternatives following the oil shocks of 1973.

Naturally, one would assume that in its pursuit to recapture the world market Brazil would have relied on the Northeast's tradition in sugar production. The region did, after all, benefit from a comparative advantage for the better part of three centuries. The statistics, however, indicate that sometime in the 1960s a regional shift occurred. São Paulo is now the leader in sugar production.

### Methodology

This research will examine this transition. I sought to answer the question of how the Northeastern region lost its leadership to São Paulo, a state without any significant history in sugar production before this century. For this research, I employ a mixed-methods approach. I combine historical production data from several reputable governmental and private sources with information compiled during an interview with the Superintendent of the Association of Bioenergy Producers in the State of Paraná (ALCOPAR), José Adriano da Silva Dias, about the circumstances of the local sugar industry. Additionally, I conduct a literature review of the leading experts on the topic of the historical development of the sugar industry. Through their

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<sup>1</sup> Pedro Ramos, "Os mercados mundiais de açúcar e a evolução da agroindústria canavieira do Brasil entre 1930 e 1980: do açúcar ao álcool para o mercado interno," *Economia Aplicada* 11(2007): pg. 560-61.

<sup>2</sup> Roberta Barros Meira, "Bangüês, Engenhos Centrais e Usinas: O Desenvolvimento da Economia Açucareira Em São Paulo e a sua Correlação Com As Políticas Estatais (1875-1941)" (Universidade de São Paulo, 2007), pg. 7.

<sup>3</sup> Tamás Szmrecsányi, "1914-1939 crescimento e crise da agroindústria açucareira do Brasil," in *Crisis and Change in the International Sugar Economy, 1914-1945 and the 1980s* (East Anglia University, Norwich, England 1986).

analysis, I examine the role that environment, globalization, and technological advances have played in the changing geographical foci of Brazil's sugar production.

### The Restrictions of Sugarcane Analysis

Tracking historical sugarcane production is a complicated task. When calculations are made about end of the year production, often the values come in the form of the final processed products that will be delivered for consumption, not the raw sugarcane production value. The most common figures are for centrifugal sugar production, non-centrifugal sugar production and ethanol production, and other derivatives of sugarcane such as alcohol (usually rum or cachaça). Falernum, bagasse and molasses are available from time to time. Figures that come in this form are usually out of datasets compiled by international agencies which focus more on trade than on evaluating production.

This is not to say that data for raw sugarcane production does not exist. In fact most of the figures in this paper are derived on data from national agencies like the Brazilian Institute for Geography and Statistics (IBGE) and the now defunct Sugar and Alcohol Institute (IAA), and fortunately for the purposes of this project, Brazilian sources have been sufficient. However, the existence of this incongruence can make comparisons, especially global and longitudinal comparisons, much more problematic. Furthermore, the existence of another source of sugarcane derivatives, sugar beet, adds another layer of difficulty to any analysis done on this particular product.

Of course, the variety that exists within this market is not the only thing that has complicated this study. The sporadic data collection has made analysis more challenging. The Sugar and Alcohol Institute (IAA) was faithful in keeping track of the industry's growth through their annual yearbooks which detail the progression for many decades. Yet, since the dissolution

of the organization in 1990 they have become much more difficult to access. To get an idea of production statistics from the 1930s onward, I have had to instead turn to the Brazilian Institute for Geography and Statistics (IBGE). The IBGE data sets are not as detailed as one would hope. For one, they do not have any information prior to 1940. After that date “O Censo Agropecuario” is conducted every 10 years until 1970, after which the Institute begins conducting it every five. It is not until 1990, and coincidentally the dissolution of the IAA, that the IBGE starts keeping annual tabulations of the sugar harvest through another survey, the “Pesquisa Agrícola Municipal.” Despite the gaps in data, it is still possible to appreciate the extent of the expansion of the industry which I will explore in more depth in the next section.

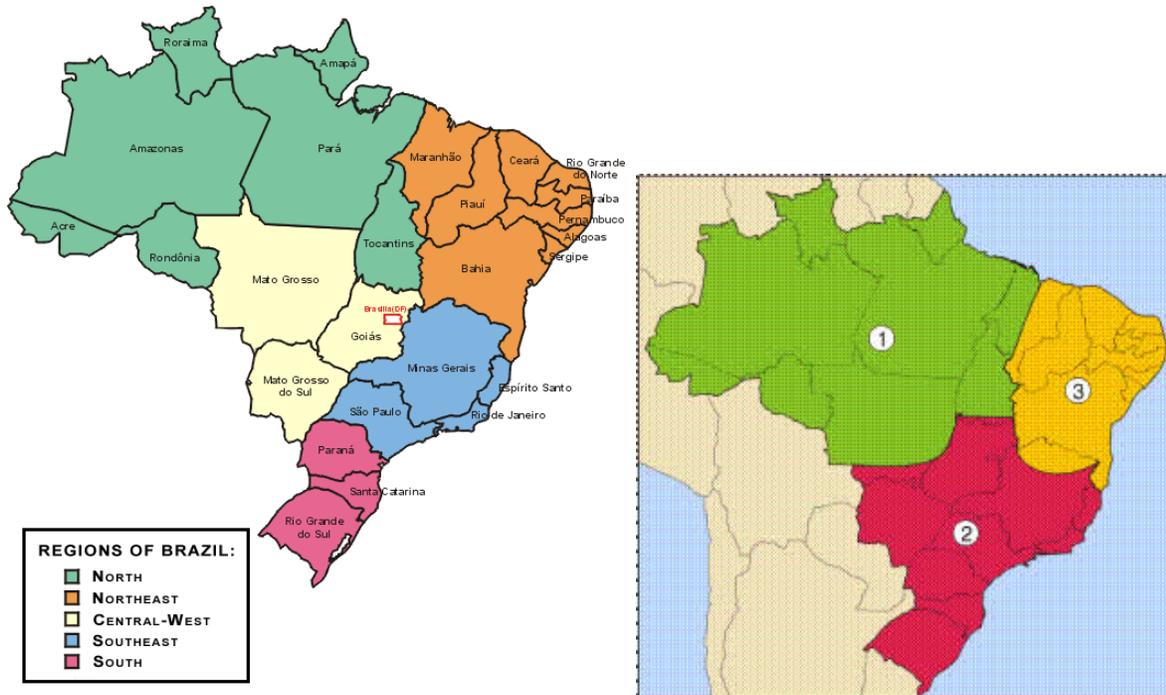
To conclude this section, there is a final inconsistency I should address for the sake of clarity. Throughout this paper I will be referring to the different regions in Brazil. Officially Brazil is divided into the 5 regions shown in the map below: North, Northeast, Central-West, Southeast and South<sup>4</sup>. For sugarcane production the two most important regions here are the Northeast and the Southeast, as is readily documented by all state agencies. However, there is another system of geographical division that was developed by Geographer Pedro Pinchas Geiger. This classification bunches up the traditional regions to create two macroregions, the North-Northeast (NNE) and the Center-South (CS)<sup>5</sup>. These regions, though not limited by state lines, are understood to be amalgamations of the North and the Northeast to create the NNE and the Central-West, Southeast, and South to make up the CS. These divisions generally respect the traditional separations with the notable exceptions of the far south of Tocantins and northern

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<sup>4</sup> Kit Sims Taylor, *Sugar and the underdevelopment of northeastern Brazil, 1500-1970*, University of Florida monographs : Social sciences no 63 (Gainesville: University Presses of Florida, 1978). pg. 4.

<sup>5</sup> Adriana Furlan, "Divisão do Brasil por critérios econômicos," <http://educacao.uol.com.br/geografia/regioes-geoeconomicas-divisao-do-brasil-por-criterios-economicos.jhtm>.

Minas Gerais<sup>6</sup>. It is this latter classification that is used by the industry to talk about sugarcane. I will be making references to both of these divisions types in several sections of the paper, but one should not get lost navigating



these distinctions. For the purposes of this paper, it is only important to identify the shift of production from the North to the South. We begin this analysis in the following section.

### Historical Evolution

The Northeast, particularly the Bahian Recôncavo (the area surrounding the Bay of Todos os Santos) was fated to become the hub of colonial Brazilian economic production. Its accessible ports and navigable waterways, which complemented the already relative proximity of the region to the colonial power, made it an ideal spot to settle<sup>7</sup>. By 1570, there were 60 sugar mills in operation in the region<sup>8</sup> and their significant output had cemented sugars dominance in

<sup>6</sup> Ibid.

<sup>7</sup> Mark A. Burkholder and Lyman L. Johnson, *Colonial Latin America*, 6th ed. (New York: Oxford University Press, 2008).

<sup>8</sup> Taylor, *Sugar and the underdevelopment of northeastern Brazil, 1500-1970*.

the colonial economy. Brazil's would remain the world's major producer of sugar into the early 18<sup>th</sup> century<sup>9</sup> and the crop would maintain its position as the national export until surpassed by coffee in the 1830s<sup>10</sup>.

The modern sugarcane industry in Brazil began in 1930, starting with the creation of the IAA, as the head regulatory body for the sugar industry<sup>11</sup>. With their creation, a government agency was specifically charged with controlling prices and dictating production. This centralized policy making would be instrumental in the evolution of the sugarcane industry up until the dissolution of the IAA in 1990.

Table 1

Brazilian Sugarcane Production 1940-2009		
Year	Production (MT)	Decade Growth Rate
1940	17,919,757	27.90%
1950	22,920,101	73.90%
1960	39,857,707	70.19%
1970	67,833,698	105.79%
1980	139,596,679	88.17%
1990	262,674,150	24.15%
2000	326,121,011	105.87%
2009	671,394,957	N/A

Source: IBGE: Censo Agropecuario 1940-1990, Pesquisa Agrícola Municipal 1990-2009

As the data shows, Brazil's produced 37 times more sugar in 2009 than it did in 1940. Brazil's growth in sugar production has always been positive, although the rate fluctuates from decade to decade, the average growth rate every decade is 71%, from which you can derive a figure of 7.1% per annum. However, a much more telling set of data to the question at hand is one done by region.

<sup>9</sup> Ibid.

<sup>10</sup> Burkholder Op. Cit.

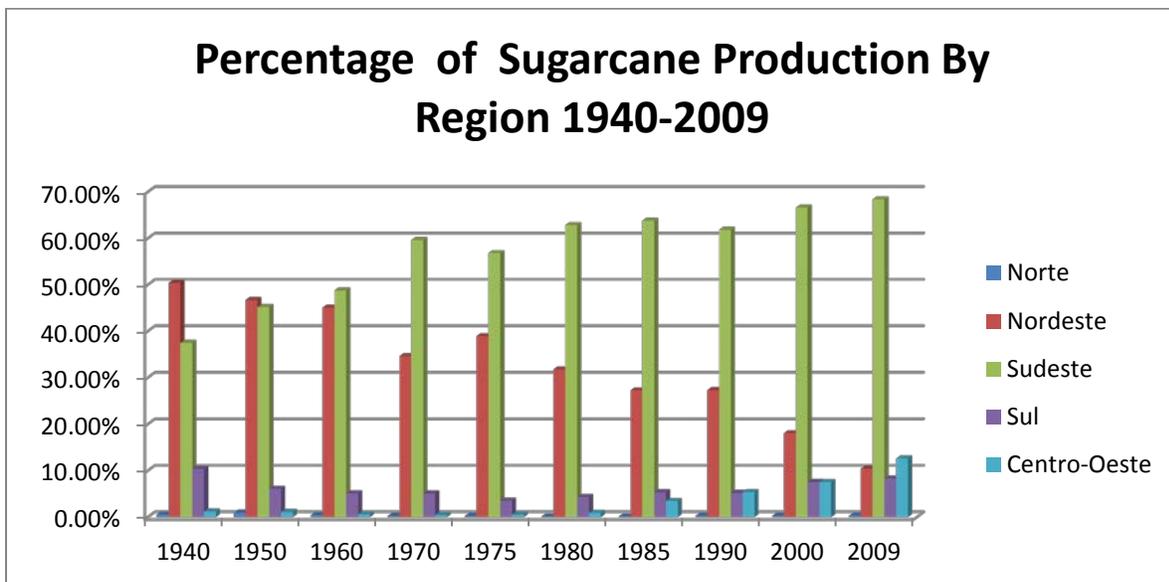
<sup>11</sup> Tamás Szmrecsányi, *O planejamento da agroindústria canavieira do Brasil, 1930-1975*, Economia & planejamento Série Teses e pesquisas (São Paulo: Editora HUCITEC : Universidade Estadual de Campinas, 1979).

Brazilian Sugarcane Production by Region 1940-2009										
Year	Production (MT)					Percent of National Production				
	North	Northeast	Southeast	South	Center-West	North	North east	South east	South	Center-West
1940	104188	9032994	6712928	1856264	213383	0.58%	50.41%	37.46%	10.36%	1.19%
1950	<b>213714</b>	<b>10703214</b>	<b>10350365</b>	<b>1398252</b>	<b>254556</b>	<b>0.93%</b>	<b>46.70%</b>	<b>45.16%</b>	<b>6.10%</b>	<b>1.11%</b>
1960	<b>174606</b>	<b>17963960</b>	<b>19434755</b>	<b>2047799</b>	<b>236587</b>	<b>0.44%</b>	<b>45.07%</b>	<b>48.76%</b>	<b>5.14%</b>	<b>0.59%</b>
1970	164533	23482759	40453151	3434897	298358	0.24%	34.62%	59.64%	5.06%	0.44%
1980	219824	44342126	87727603	6044192	1262934	0.16%	31.76%	62.84%	4.33%	0.90%
1990	784048	71689378	162444052	13630374	14126298	0.30%	27.29%	61.84%	5.19%	5.38%
2000	915508	58856060	217208153	24659973	24481317	0.28%	18.05%	66.60%	7.56%	7.51%
2009	2025877	70057439	459049493	55785334	84476814	0.30%	10.43%	68.37%	8.31%	12.58%

Source: IBGE: Censo Agropecuario 1940-1990, Pesquisa Agrícola Municipal 1990-2009  
 As can be appreciated in the tables, even since 1940, the major sugarcane producing areas were located in the Northeast and in the Southeast regions of the country.

From 1940 to 2009, growth in the two most productive regions was for the most part positive, with the Northeast presenting an average decade growth rate of 38% and the Southeast a more substantial 85%. The graph above shows the progression.

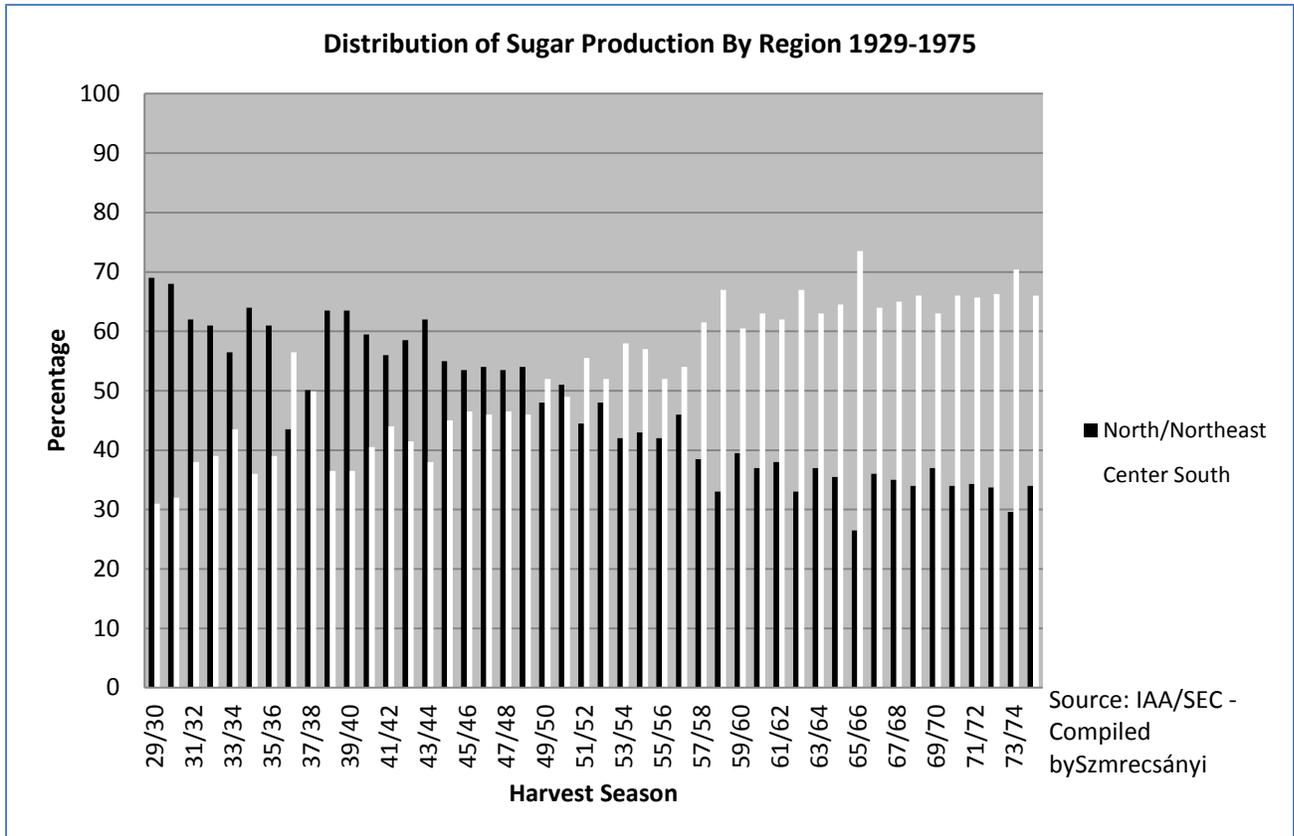
**Figure 1**



From these data sets, it is possible to conclude that the regional shift happened somewhere in the 1950s. In 1950, the Northeast was barely still producing more than the Southeast, owning up 46.7% of the national production to the Southeast's 45.1%. By 1960, the hub had shifted, as the Southeast produced roughly 3% more sugarcane than the Northeast. This transition has proved until the present, an irreversible trend.

Although the IBGE's dataset gives us a general idea of when the transition occurred, getting a more thorough description is impossible due to the limited character of that data. Fortunately, an IAA/SEC data set compiled by Szmrecsányi gives us, to an extent, a clearer

picture of when during that decade, the transition actually occurred. It is important to note that the graph below is the distribution of sugar production, not of sugarcane production, meaning that the sugarcane that went into the production of alcohol and other sugarcane derivatives is excluded from the analysis.



The first time the Center-South (CS) overtook the North-Northeast (NNE) in sugar production, actually came far before the 1950. During the 1936/37 season, the CS produced 1,260,000 more sacks of sugar than the NNE, which in that year accounted for 56.5% of the national production. This tendency reversed itself during the next season, but it foreshadowed things to come. By the 1949/50 harvest, the CS had outcompeted the NNE once again, and although the latter would take back its title the following season, the balance had tipped indubitably in favor of the CS.

The CS continued its rapid expansion and had established its absolute hegemony garnering over 73% of the national sugar production by 1965.

This inclination has remained well into the present day. During the last two decades, the gap in between the two producing regions has become more pronounced. IBGE's Pesquisa Agricola Municipal indicates that from 1990-2010 that just the Southeast has produced no less than 60% of all of the sugarcane in Brazil. That region in particular has experienced optimal rates of growth in the last 20 years, achieving at times annual growth exceeding 17% and rounding out at an average rate of 5.6%. The Northeast has not been so fortunate. Its growth rate since 1990 has not kept pace with the southern expansion and has oscillated wildly with noticeable years of negative growth in 1992, 1995, 1998 and 2004. At the close of 2009, the Northeast had mustered an average growth rate 1.2% over the last 2 decades.

The center-south region which includes the states of Minas Gerais and São Paulo was the country's largest producer of sugar cane during the 2009/2010 harvest. USDA estimates place contribution from the CS region to be around 530 million tons, about 10 times the estimated contribution from the North-Northeast Region which was expected to crush only 63 million tons of sugarcane<sup>12</sup>.

National estimates reveal similar trends. Statistics compiled jointly by the São Paulo Sugarcane Agroindustry Union (UNICA) and the Brazilian Ministry of Agriculture, Livestock and Supply (MAPA) show that in the 2008/2009 harvest year the CS region produced almost 27 million metric tons of sugar compared to the NNE's production of only 4.3 million tons. The top three producing states (São Paulo, Paraná, and Minas Gerais) are all in the CS region and produced together a total of 24 million tons. The state of São Paulo by itself accounted for 63%

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<sup>12</sup> U.S Department of Agriculture, "Sugar: World Production Supply and Distribution," in *Commodity and Country Analysis*, ed. Foreign Agriculture Service (2009), pg. 2.

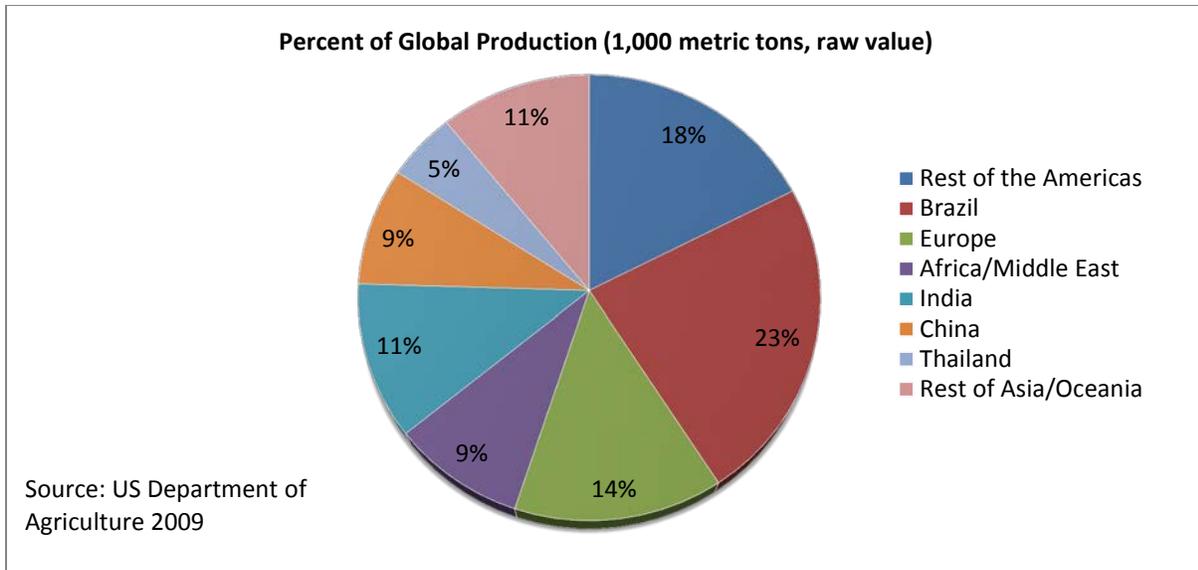
of the national production. Where does this leave the Northeast? The numbers put them significantly behind. The majority of the sugar produced in the Northeast comes from the states of Pernambuco and Alagoas, but even then their production barely surpasses 10% of the national production. Bahia, home to the original capital of Brazil, now stands relegated to 13<sup>th</sup> out of the 18 sugar producing states.

Interestingly enough, the difference was not this drastic until very recently. In the same data set compiled by UNICA and MAPA, production in the 1990/1991 harvest is shown to be only slightly higher in the CS. In that year, 40% of the sugar from Brazil was produced in the NNE. Now, the state of São Paulo produces more in a year than the Northeast does combined.

In the world market, Brazil reigns dominant. Sugar cane's versatility as a sweetener and a source of ethanol propelled its comeback, as the Brazilian government searched for viable fuel alternatives following the oil shocks of 1973<sup>13</sup>. As of November 2009, the United States Department of Agriculture reports that Brazil accounts for 23% of the world production of sugar with a total production of 35.8 million tons, outpacing the combined production of both of its next closest competitors, India (17.3 million) and China (13.2 million), by a significant margin.

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<sup>13</sup> UNICA, "Setor Sucreenergético - Histórico," <http://www.unica.com.br/content/default.asp?cchCode=>.



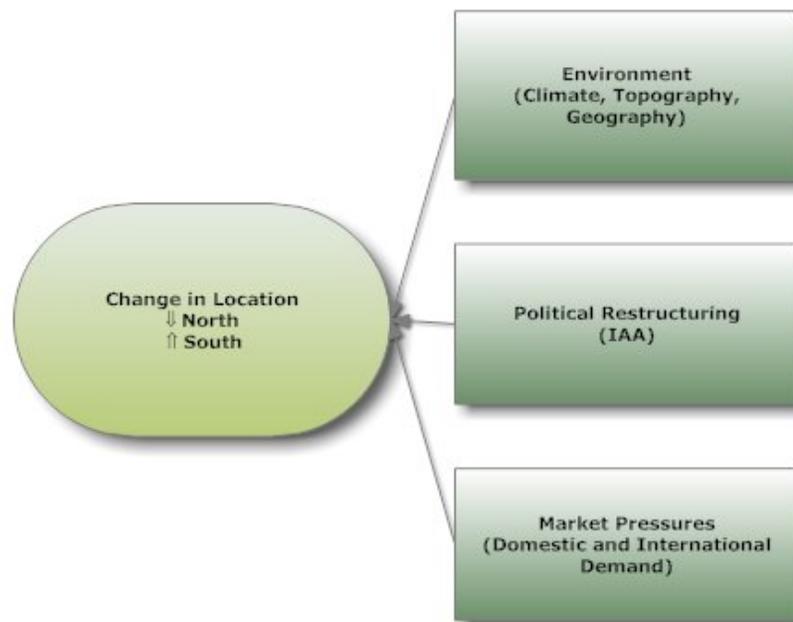
What accounts for this transition?

I have developed a causal model to explain the shift of sugar production from the North to South. The essence of this model is captured in the following paragraph derived from Szmrecsányi’s work on the planning of the industry.

*“Aside from making up the majority of the domestic market, São Paulo is by far, the state that produces the most sugarcane and sugar in Brazil. Its superiority over other producing areas is due as much to favorable environmental conditions (topography, soils and climate) for the mechanization of the sugarcane industry and obtaining high levels of agricultural and industrial production, as to the physical and socioeconomic infrastructure that contributes in making it the most economically developed State in [Brazil]<sup>14</sup>.”*

<sup>14</sup> Szmrecsányi 1979 Op Cit.

It is possible to glean from this paragraph that Szmrecsányi believes there are two considerations to focus on when viewing the comparative advantage of the Southern portion: the environment and the physical/socioeconomic infrastructure. I include the environmental component directly in my model, but I split his discussion of the physical/socioeconomic infrastructure into two parts: market pressures and political restructuring. Below is the proposed causal model.



For what remains of this paper, I will discuss these causal factors in more depth.

### Location, Location, Location

The Northeastern Brazilian backlands has inspired legends of its' inhospitableness, quite literally. Os Sertões, also known by its English, Rebellion in the Backlands, is a Brazilian masterpiece that narrates the real-life military campaign against the settlement of Canudos in 19<sup>th</sup> century Bahia. Although the book is famed for the drama of the armed theater it depicts, the picture of drought and poverty that it paints reflects the harsh climatic realities of the region that

ring true even today. The Northeast suffers from recurring and perpetual droughts. The affected areas include the states of Bahia, Ceará, Paraíba, Piauí, Rio Grande do Norte, Sergipe, and most significantly, the Northeastern sugar powerhouses, Alagoas and Pernambuco. This region has

achieved such a reputation for its droughts, that it has received the denomination of the “Polygon of Drought<sup>15</sup>.” The following map shows the expansive area the droughts affect.



Recently, the droughts have become more intense due to a process of desertification that is altering the region.

Driven by rampant deforestation, over-intensive soil use and bad irrigation practices<sup>16</sup> desertification has increased the temperature of the region and made water shortages more common. According to a report by the Ministerio de Meio Ambiente, from 1936 to 1989 the surface of the polygon

increased from 672,281.98 km<sup>2</sup> to 1,085,187 km<sup>2</sup><sup>17</sup>. That same report officially labels certain land as an Area Susceptible to Desertification (ASD). 86.11% of those areas are located in Northeastern Brazil.

<sup>15</sup> Luiz Carlos Parejo, "Desmatamento e políticas ineficazes são agravantes," UOL, <http://educacao.uol.com.br/geografia/ult1694u381.jhtm>.

<sup>16</sup> Edneida and Solange Fernandes Soares Coutinho Rabêlo Cavalcanti, "Desertification in the Northeast of Brazil: The Natural Resources Use and the Land Degredation," *Sociedade & Natureza*, no. Special Issue (2005).

<sup>17</sup> Secretaria de Recursos Hídricos, "Programa de Ação Nacional de Combate à Desertificação e Mitigação dos Efeitos da Seca Pan-Brasil," ed. Ministério do Meio Ambiente (2004).

These expansive deserts have put the North at a geographic disadvantage in comparison with the Southeast. In an interview with Jose Adrian da Silva Diaz, the Superintendent of ALCOPAR, pointed out that the unpredictability of water supply, coupled with more acidic soil conditions, makes the Northeast a less competitive place to grow sugarcane. He noted that this was evidenced by the higher productivity of Southern farms, which produce 85 tons of sugarcane per hectare compared to 35 tons per hectare in the Northeast.

However, Silva Diaz did not stop there in explaining the comparative disadvantages the Northeast has in terms of geography. He clarified how the topographical conditions in the Northeast mentioned by Szmrecsányi, prevents the efficient mechanization of the growing process. “The manufacturers of the machines we use in our plantations specify that for the most efficient results, there should be no more than a 12% incline and a 12% decline in the terrain. The Northeast does not have that compared to the Center-South. The Center-South is much more flat.” He is not alone in this assessment. Indeed, USDA notes how the “hilly” landscape increases production costs in the North-Northeast<sup>18</sup>. If there is one area, nonetheless, in which the North has a better location it is in shipping “The Northeast has much better trading portfolio than us,” Silva concedes,.

To further explore these advantages, we look to a report commissioned by the Brazilian Government’s Ministério da Agricultura, Pecuária e Abastecimento (MAPA) in 2009 which outlines these in a much more detailed fashion. This report, although intended as a tool for identifying areas of potential sugarcane expansion, provides us with insight into what agronomists consider the most propitious environment for growing and harvesting sugarcane. For one, the report confirms that slopes provide an important obstacle to mechanization and

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<sup>18</sup> Christine Bolling and Nydia Suarez, "The Brazilian Sugar Industry: Recent Developments," ed. U.S Department of Agriculture, Sugar and Sweetner Situation & Outlook (2001).

present a significant comparative disadvantage. This disadvantage is so big that MAPA excludes hilly regions from consideration as potential areas of expansion.

Of course a rugged landscape is not the only environmental consideration. Soil quality and climate are arguably much bigger determinants of how successful a yield will be in any given year. The report outlines what these criteria are as well. For climate, the optimal conditions are an average annual temperature that is greater than 19° C, a water deficiency that is no greater than 200 mm and a freeze risk of less than 20%. The specifics of what these criteria are for soil are a little less clear, but it is enough to say for the purposes of these essays that the authors divide it into 4 categories: Preferential, Regular, Marginal and Inadequate. The intersection in between these criteria, that is to say climate and soil conditions, is further analyzed and from these an adequacy rating of high, medium or low is reached<sup>19</sup>.

The results of the study are unsurprising and fall in line with the observations made by Silva Diaz. Additionally and interestingly enough, it should be mentioned that the report does an evaluation on the whole Brazilian landscape and does not avoid evaluating land that is already used for harvesting sugarcane (except for some regions in the Southeast which are excluded because these locations have been previously documented). This allows us a unique opportunity to observe what real differences exist in between environmental conditions in the North and South.

All in all, Brazil has 64.7 million hectares (ha) that are adequate for sugarcane cultivation<sup>20</sup>. Of those 64.7, 19.3 million ha are of high productive potential, 41.2 are of medium potential and 4.3 million have a low potential for productivity. The Northeast accounts for 7.9% of this area, while the Center-West and Southeast account for 47% and 35% respectively.

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<sup>19</sup> Secretaria de Recursos Hídricos Op. Cit.

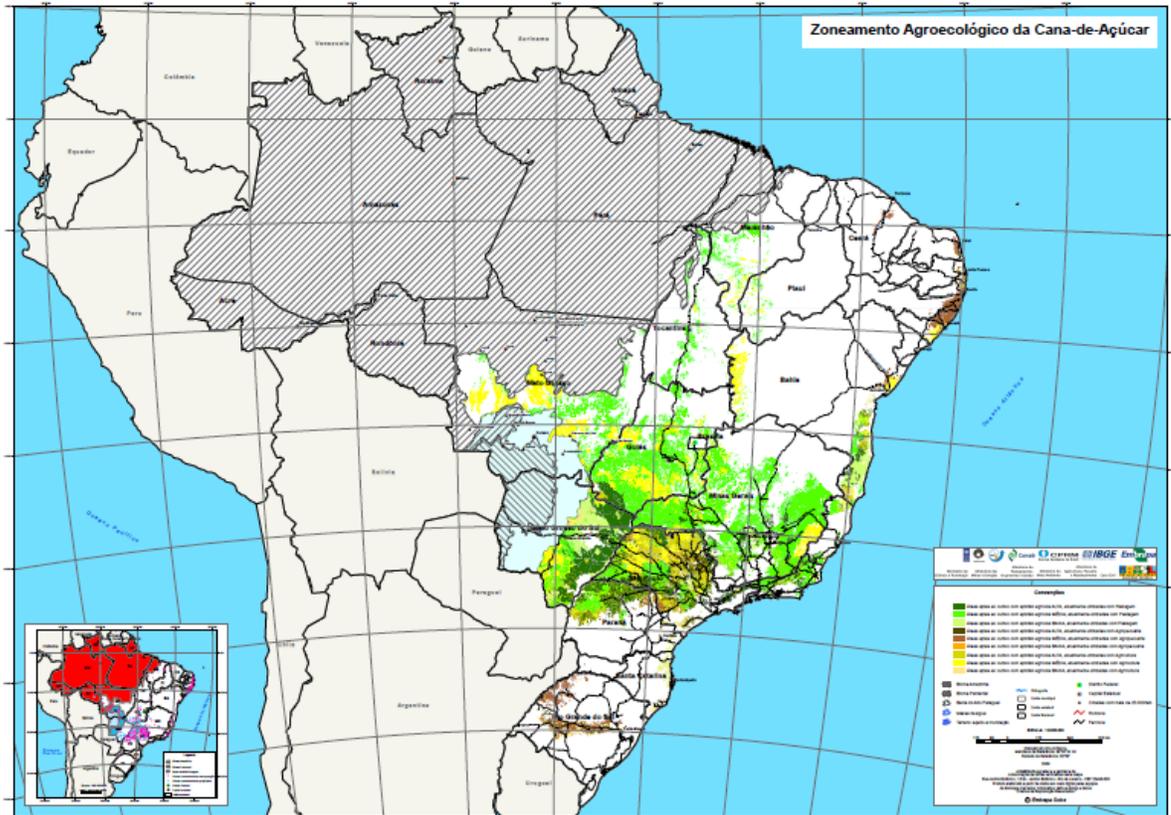
<sup>20</sup> Ibid Pg. 9

Already, and despite the copious amounts of sugarcane currently present in the region, it is readily clear that the potential for expansion is still much higher in the South than the North. In furtherance of this point, it should be remembered that in the case of the Southeast, swaths of land that are currently used in sugarcane production in the states of Goiás, Minas Gerais, Mato Grosso, Mato Gross do Sul, Paraná, and São Paulo, are excluded from this evaluation.

However, this only speaks to total land. What about quality? The results are no different in this regards. Of the roughly 5 million ha that Northeastern cane-cutters could expand to, only 400,000 of those are of high quality<sup>21</sup>. Even if you were to include the Northern sector into the evaluation, zero hectares of high quality land are available for sugarcane harvesting. This is in stark comparison to Center-West and the Southeast where high quality land accounts for 24% and 39% respectively of their total expansion potential. Even a cursory glance at the map prepared during the report provides us with a visual image of the stark contrasts that exists in crop potential in the two areas.

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<sup>21</sup> Ibid.

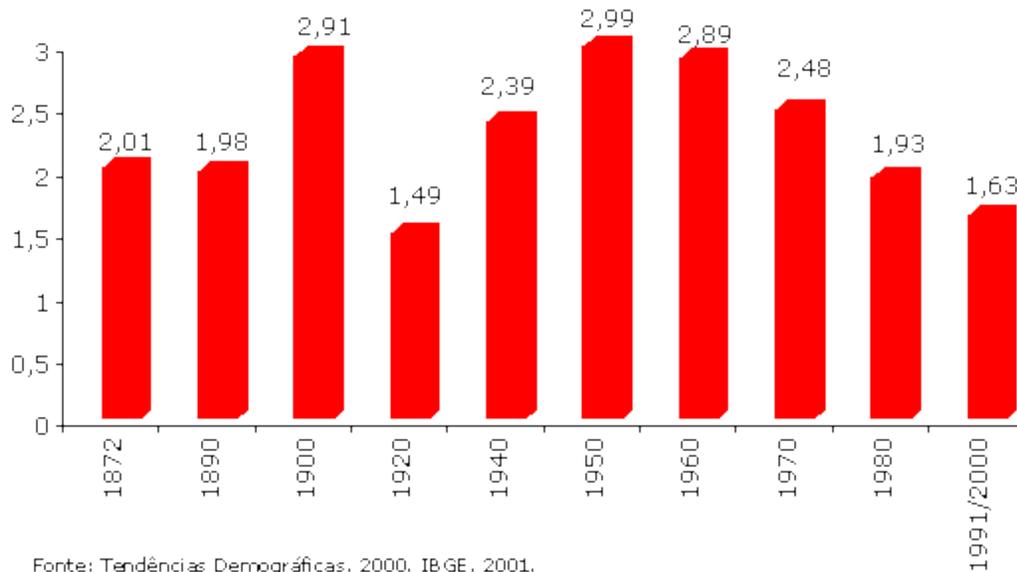


### Demographic Transition and Global Conflict

During the last one hundred years Brazil has grown tremendously. Since the 1900s Brazil's total population has expanded 10 times, making it the world's 5<sup>th</sup> most populous country only behind China, India, the United States and Indonesia<sup>22</sup>. Like other Latin American countries, most of this growth came in the 1950s and 60s when the region was experiencing rates of 2.8%. Brazil's own annual growth rate peaked in the 1950s, averaging almost 3% that decade. As of the 2010 Census, Brazil is estimated to have a population of 190 million.

<sup>22</sup> Central Intelligence Agency, "Country Comparison: Population," <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2119rank.html?countryName=Brazil&countryCode=br&regionCode=sa&rank=5#br>.

Taxa média geométrica de crescimento anual - 1872/2000



Fonte: Tendências Demográficas, 2000. IBGE, 2001.

More significant to our analysis has been the growth of the different regions. Just like there has been a significant change in the geographic concentration of sugar production, Brazil has undergone a dramatic geographic shift in where the majority of its citizens live. When the first census was conducted in 1872, 4.6 million people lived in the Northeast, almost 600,000 more than lived in the Southeast. By the end of the 19<sup>th</sup> century that was no longer true and in the 1950s when the observed shift in sugar production occurred, that 600,000 person surplus had turned into a 4 million person deficit<sup>23</sup>. What had been a 46% share of the population had shrunk down to a 35% share. As of the 2010 Census, the Southeast has 80 million people or 42% of the total population. The Northeast had only 27<sup>24</sup>%.

Now this shift in population may not have been as relevant to sugarcane had it not been for two interrelated factors: the destination of consumption and the war. During that point in time sugarcane production was turned inward, that is to say, it was almost solely for internal

<sup>23</sup> Instituto Brasileiro de Geografia, "Estatísticas do Século XX."

<sup>24</sup> Instituto Brasileiro de Geografia e Estatística, "Características da População," <http://www.ibge.gov.br/ibgeteen/pesquisas/demograficas.html>.

consumption because Brazilian sugar simply was not competitive globally. USDA export data reveals that at the beginning of the 2<sup>nd</sup> World War, sugar exports made up 4.6% of the available sugar. By 1945 it had fallen to a meager 1.5%. Even by 1970, the highest percentage of sugar exports had not even surpassed 20%, meaning that in any given year during that period, domestic consumption of sugar accounted for an excess of 80% of total sugar production. Where does the war fit into this? Aside from shedding light on the strategic importance alcohol held due to petroleum shortages, the Second World War brought with it the policy of unrestricted submarine warfare.

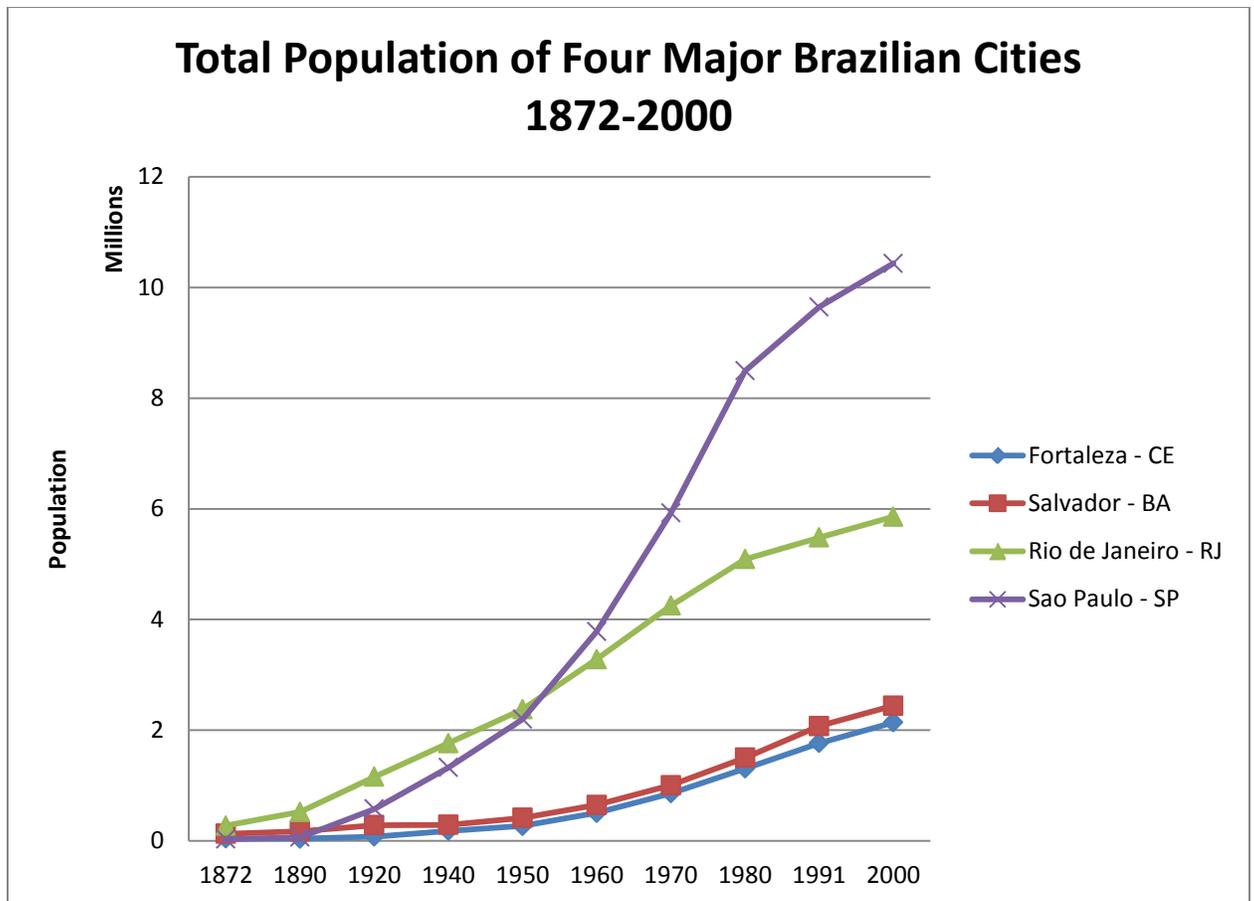
The war, more than anything, presented a logistical hurdle for sugar producers. The entrance of Brazil into the Second World War on the Allied side in January of 1942 at the Rio de Janeiro Conference made Brazilian mercantile vessels the target of German submarine warfare<sup>25</sup>. Most mercantile exchange in the country, especially that in between the North and South, happened by sea, and so the threat of attack caused a huge disruption in the available supply of sugar to the Center-South. The danger was not exaggerated. During World War II, 33 Brazilian vessels taking a little less than 1,000 lives in the process. 5 of those (Baependi, Araraquara, Aníbal Benévolo, Itagiba and the Arará) were attacked on the coast of Brazil as they were traveling the very sea route which was used to be bring sugar southward<sup>26</sup>. It was this disruption that played the key role in the expansion of sugarcane production into the South. Faced with a looming scarcity, production quotas which were allotted for the north were given to southern producers . Their proximity to the main centers of consumption made their transportation costs much lower, and this advantage would reflect itself in later years.

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<sup>25</sup>, (!!! INVALID CITATION !!!); Thomas E. Skidmore, *Brazil : five centuries of change*, 2nd ed. (New York: Oxford University Press, 2010); *ibid*.

<sup>26</sup> Manoel Thomaz Castello Branco, *O Brasil na II Grande Guerra* (Rio de Janeiro: Biblioteca do Exército, 1960). pg. 56.

Urbanization may also have played a role in aggravating the shift. In no other place has population shift been as striking as it has been in cities. Brazil is a nation of city dwellers. Today, 81% of all Brazilians live in the urban centers of the nation. In the 1950s only 36% of all Brazilians lived in cities, compared to the 64% that lived in the country. However, that 36% were very clearly concentrated in the Center-South region, mainly in the cities of São Paulo and Rio de Janeiro. Consequently, most sugar was destined for the coffee shops and baked goods of the inhabitants of those cities. As time passed, this trend towards urbanization became more distinct and can clearly be observed in the growth of the major cities of Brazil. Predictably, 4 of the 5 largest cities in Brazil are located in the Southeast and Northeast. Below is a graph of their population growth. Notice the stark differences in between Northeastern cities (Salvador and Fortaleza) and cities in the Center-South (Rio de Janeiro and São Paulo), especially looking at how the gap has grown in the last 50 years.



Source: IBGE

#### *The Politics of Sugarcane: State Interventionism's' Legacy*

It is impossible to have a discussion about sugarcane production in Brazil and not talk about the heavy hand the state has had in shaping its transformation. Indeed, it is unlikely that Brazil would be at the top of the sugar world without their guidance.

State direction of sugarcane cultivation started being discussed seriously near the end of the XIX century. Sugar beet had become popularized as a source of sugar during the Napoleonic era when a counter-embargo imposed by England had forced the French to find alternatives to satisfy the colonial demand for sugar. They succeeded in their quest and became the first major

producer of sugar beet worldwide<sup>27</sup>. Soon, continued state support and subsidies expanded beet sugar to account for 61% of the global. Such accelerated expansion had also affected the supply of sugar in such a way, that global demand was exceeded.

In an effort to modernize their regrettably uncompetitive mills (*engenho*), the Imperial government attempted to “import” the novelty of *engenhos centrais* from Europe, an innovation from the traditional *bangüês* – short for *engenhos bangüês* - whose large plantations depended on slave and animal labor to harvest and transport the sugarcane that would be turned into unrefined sugar through the most rudimentary techniques<sup>28</sup>. It is from these *bangüês* that the iconic image of the powerful sugar baron arose, with all of its sociocultural implications for Brazil.

*Engenhos centrais* would take a different production approach than the traditional *bangüês* of old. They would introduce a refinement more akin to that of a steam-powered factory, with centrifugal capacity, that is to say the ability to produce white sugar. The key was in the division of labor. *Engenhos centrais* would spend their time refining; producers growing and harvesting the cane. Furthermore, it was seen as an opportunity by the imperial government to attract foreign investment that had had positive experiences in European refining.

The experiment was short-lived. The *engenhos centrais*, per agreements with the government that guaranteed their subsidies and interest rates, had restrictions on their ability to hold land and use slave labor in their production<sup>29</sup>. *Bangüês*, having no such restrictions, were able to outcompete them in terms of labor costs since they had no need for the specialized labor needed to run the more modern machines. Moreover, the nobility-like status afforded to the owners of *bangüês* provided them two additional advantages: one, the ability to exert political

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<sup>27</sup> Ramos, "Os mercados mundiais de açúcar e a evolução da agroindústria canavieira do Brasil entre 1930 e 1980: do açúcar ao álcool para o mercado interno," pg. 561.

<sup>28</sup> Ibid pg. 562

<sup>29</sup> Manuel Correa de Andrade, "Espaço e tempo na agroindústria canavieira de Pernambuco," *Estudos Avançados* 15(2001): pg. 272.

pressure on regional governments to implement policy favorable to traditional producers and two, as the primary cultivators of sugarcane, the ability to set the terms of exchange, or not exchange at all, for *engenhos centrais* in desperate need of raw sugarcane<sup>30</sup>. Ramos attributes the continued existence of this remnant power-structure as an especially important determinant of the failed *engenho central* system<sup>31</sup>.

Despite the failure to modernize cultivation, the experiment had left little doubt in anyone's mind that the separation of the cultivation of sugarcane and its refinement was unfeasible for Brazil. Subsequently, private owners started combining the superior steam-powered processing of the *engenhos centrais* with the vast land holdings of the *bangüês* to bolster their productive capacity<sup>32</sup>. These agroindustrial complexes known as *usinas* and would come to dominate the industry, and as we will see, also augured the dislocation of the dominance the northeast had over sugarcane cultivation<sup>33</sup>.

The failure of the *engenhos centrais* meant that the expansion of sugarcane production for competition globally would be no more than a fabulous ideation for a couple of decades. It was not until the dawn of the First World War that an opportunity presented itself for Brazil to once again engage in production for export. Due to the land conflict on the European continent, beet production fell precipitously. Accounting for over 50% of the 20 million metric tons of sugar produced globally at the dawn of the war; by the end of the conflict in 1919 only 3.4 million metric tons of sugar from beet was produced in the 1919/20 harvest, accounting for only 22.2% of the worldwide production of the sweetener<sup>34</sup>. Sugarcane producers in Brazil jumped at the unexpected competitiveness of their product abroad, expanding production aggressively and

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<sup>30</sup> Barros Meira Op. Cit. 112

<sup>31</sup> Ramos Op. Cit. 562

<sup>32</sup> Kit Sims Op. Cit 29

<sup>33</sup> Andrade Op. Cit. 272

<sup>34</sup> Szmrecsányi, "1914-1939 crescimento e crise da agroindústria açucareira do Brasil," 1986.

sending as much sugar abroad as possible. They had doubled their total production by then end of the decade and were exporting about a fifth of it to war ravaged Europe. At the height of the exporting boom during the 1921/22 harvest, Brazil exported 4.2 million sacks to Europe, or 29.3% of the total amount produced nationally<sup>35</sup>.

Nobody in Europe grew accustomed to sugar made in tropical Brazil. With ceased aggressions, sugar beet started making a comeback. Only 3 years after their record exporting years, Brazilian sugar exports figured 0.3% of national production; and production kept increasing. The 1929/30 harvest refined four times more sugar than it had only 20 years early. This presented a serious problem for growers. Brazil was producing far more sugar than was being consumed domestically – a permanent excess between 45-60 thousand metric tons annually representing 20% to 30% of the harvest<sup>36</sup>. This perpetual overproduction led to unpredictable and immediate fluctuations in prices accompanied by a more worrying long-term decline in market value<sup>37</sup>. It warrants mentioning that this tendency for overproduction was a global phenomenon, and was already a process foreseeable before the Great War. It was greatly exacerbated by the return of sugar beet to the marketplace and the protectionist measures of the time that made exporting a less profitable enterprise. In Brazil, Ramos attributes the expansion to an optimistic prediction of the growth expected in the consumer base in the Center-South<sup>38</sup>. Szmrecsányi would add to that take that is was a combination of advancements of the capacity on existing mills and plantations and – primarily he would say – to the expansion of the number of usinas in the country from 187 in 1910 to 302 in 1930, an expansion which as we will see

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<sup>35</sup> Ibid.

<sup>36</sup> Ramos Op. Cit. pg 141

<sup>37</sup> Szmrecsányi 1979 Op Cit. pg.165

<sup>38</sup> Ramos Op. Cit. pg 141

occurred primarily in the states of Rio de Janeiro and São Paulo<sup>39</sup>.

The Revolution in 1930 brought with a new policy of state intervention as a solution to the protracted overproduction. There is debate in the literature whether or not industry leaders were as enthusiastic about the intervention as the government was. Szmrecsányi and Gabriel Guimarães both argue that the intervention was initiated at the producers own request, especially those from the Northeast<sup>40</sup><sup>41</sup>. Gnaccarini, Ramos and Queda state that there was an eventual acquiescence to the government policy, but not without some opposition, especially from Southern producers<sup>42</sup>. Barros herself sees it as the extension of a newly expressed predilection by the state for intervention, which in this case became absolutely necessary for the survival of the industry.

Whatever the case was, Decree 20,401 was approved in September of 1931 with the approval of producers, marking the beginning of state direction of the sugarcane industry in the modern era. Ramos would sum up the State's objectives up until the extinction of the IAA in 1990.

*“[State intervention] had as its first and foremost objective the reaching of an equilibrium in between production and internal consumption, taking organizational responsibility for any excesses. To accomplish this, they used a methodology proposed by Willcox, which would set quotas on productions for every producer (of cane and sugar). Later on, this intervention was expanded to address the problematic*

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<sup>39</sup> Szmrecsányi 1986 Op. Cit.

<sup>40</sup> . Szmrecsányi 1979 Op. Cit pg. 169

<sup>41</sup> Barros Meira Op. Cit. pg. 39

<sup>42</sup> Ibid pg. 39

*relationships in between the stakeholders of the sugarcane enterprises of Brazil*  
(Translation by author).”<sup>43</sup>

Decree 20,401 compelled producers to contribute 10% of their total production to mandatory fund in order to stabilize prices. States that produced more than their own demand would be allowed to export up to 200,000 sacks of sugar. States which could not produce enough to satisfy their own demand, which at this point in time included most Center-South states, would instead have to pay 5,000R per sack they brought it, instead of having to make the 10% contribution. That money would then be distributed proportionately among the exporting states<sup>44</sup>. Although, this policy represented a subsidy for the Northeast, there were no limitations on the expansion of production in the Center-South. Ultimately the lack of any sort of provisions of this nature made the decree ineffective, as it failed to secure the support of Northeastern producers who feared the loss of the internal market as well<sup>45</sup>.

The next step in this process was the creation of Comissão de Defesa da Produção de Açúcar (Commission for the Defense of Sugar Production) or CDPA for short, through the adoption of Decree 20,761 in July of 1931. The newly created agency’s most important role would be to regulate prices by systematizing existing procedures governing the stocks that regulated the internal supply of sugar, and exporting any excesses at dumping prices. They would also be in charge of implementing a \$3,000 real tax on every sack of sugar created by the

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<sup>43</sup> Ramos Op. Cit. pg.568

<sup>44</sup> Szmrecsányi 1979 Op. Cit pg. 172

<sup>45</sup> Barros Meira Op. Cit. pg. 191

usinas<sup>46</sup>. The policies did have immediate positive effects on prices in Brazil. Prices in 1932 increased from \$38,500 reals per sack in March to \$40,500 reals in June<sup>47</sup>.

Once again the measures did not have the intended results. Far from reducing overproduction, it increased during this time. Stability in prices made the industry more lucrative than before and brought more individuals in. Moreover, since the CDPA handled excess through cheap exportation, the brunt of the burden of the exportation policy was carried by usinas that were overproducing, namely those in the Northeast. Gileno de Carli, a future president of the IAA and respected scholar on cane production in Brazil wrote:

*“When the harvests are so voluminous as a result of unforeseen droughts, Pernambuco bleeds by sending a majority share of its production abroad at low prices, an unfortunate circumstance only shared by Alagoas...it is apparent that Pernambuco, far from having conserved its national market, is losing it day by day (translation by author).<sup>48</sup>*

The status quo could not stand. If things continued the way they were going then the problem of overproduction would not be solved. Furthermore under the Vargas regime, which derived a fair amount of patronage from Northeastern planters, the current situation could not continue. From these difficulties came decree 22,789 which formally created the IAA in 1933. Carlos Gabriel Guimarães, the sugar academic, believes that its creation was seen as the

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<sup>46</sup> Ibid pg. 92

<sup>47</sup> Szmrecsányi 1979 Op. Cit. 175

<sup>48</sup> Barros Meira Op. Cit. pg. 194

definitive solution by the Vargas government to the issue of expanding sugarcane production in the Southeast<sup>49</sup>.

The IAA was structured in a complicated closed bureaucracy that could independently make decisions about the industry. In many ways, the IAA would function similarly to CPDA. It would be the body to take charge of any excesses, and either turn them into ethanol or export them<sup>50</sup>. But an innovation was in Article 8 of the IAA's charter specifying that "in May or September of every year, the Institute will verify the existing stocks of sugar in the country, and make estimates on the commencing season's harvest, and from there fix, according to their evaluation, the quotas of sugar and alcohol to be produced."<sup>51</sup> The charter was explicit in saying that any production that exceeded these quotas would be confiscated without remuneration to the producer. Additionally, one more advancement worth highlighting was a prohibition of the installation of any new usinas, engenhos, bangüês without prior approval from the IAA. Further amendments made to the charter included specifications that closed usinas would redistribute their share of the quota to producers in the same state (Article 59) and any reductions or increases in the quota by the annual study would be divided equally among all producers in the state (Article 60)<sup>52</sup>.

The IAA, though not always the most efficient agency, did have a long last-effecting effect on the stability of prices in the industry – prices that adequately drew the balance in between consumers' needs and supplier profit – and exerted a functioning control over all producing agents. The problem of overproduction in Brazil would not be solved until the sixties when the embargo on Cuba opened up a U.S market ravenous for sugar, and when Cuban exports

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<sup>49</sup> Ibid pg. 195

<sup>50</sup> Szmrecsányi 1979 Op. Cit. Pg. 182

<sup>51</sup> Ibid pg. 184

<sup>52</sup> Ibid pg. 185

to Soviet Union proved to be insufficient to satisfy the Soviet demand<sup>53</sup>. Despite, their failure to counteract this problem immediately, their newly acquired power in the central-planning of the economy meant that they would become crucial intermediaries in the tug-of-war in between the south and north.

One piece of legislation that should be discussed before embarking on a conversation about how the central-planning of the economy help transfer the loci of production from the north to the south is the Estatuto da Lavoura Canavieira (The Cane Cultivation Statute) passed through Decree n. 3855 on November 21<sup>st</sup>, 1941 but did not reach its final form until the 1944 Decree 6969<sup>54</sup>.

The advent of central-sugar planning, as was mentioned before, brought with it stability in the price stability that spurred investment. Far from reducing production, regulation took the risk out of producing sugar. Usineros jumped on the opportunity and reminiscent of the sugar barons of old started buying as much land to add to their industrial processing of sugar, vertically-integrating the production process as much as possible. This ongoing process upset suppliers that grew sugarcane independently to sell to usinas, a group that included small producers, as well as the descendants of the *senhores-de-engenhos* (sugar lords) that owned the traditional plantations and had opted to specialize in production. This process of centralization by the usinas is denominated the “Triumph of the Usinas” by Taylor Sims and exemplified by an anecdote offered by Fernando de Azevedo:

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<sup>53</sup> Tamás Szmrecsányi and Eduardo Pestana Moreira, "O desenvolvimento da agroindústria canavieira do Brasil desde a Segunda Guerra Mundial," *Estudos Avançados* 5(1991): pg. 65.

<sup>54</sup> Adelino Brandão, *Cana de açúcar : álcool e açúcar na história e no desenvolvimento social do Brasil*, 1a. ed., Movimento cultural brasileiro (Brasília, Distrito Federal: Horizonte Editora : Em convênio com o Instituto Nacional do Livro, Fundação Nacional Pró-Memória, 1985). pg. 216.

*The numbers demonstrate a progressive reduction of relative participation by sugar suppliers in almost all the producing states, except for Bahia and Sergipe. Supplier participation started decreasing little by little from 1929-1930 to 1940-41, falling at the Bulhões Usina from 64,856 [metric] tons in 1930 to 7,622 [metric] tons in 1940, representing a fall of 100% to 15% of the total [raw material supplied]<sup>55</sup>.”(Translated by author)*

Indeed, Szmrecsányi notes that from 1912 to 1940, usinas went from producing 47.4% of all Brazilian sugar to a commanding 73.4% share, effectively turning sugarcane cultivation into an agroindustry instead of an agricultural pursuit<sup>56</sup>.

This clear monopolization of sugar production by Usineiros did present a threat to traditional suppliers' way of life, and correspondently, agriculture strikes began rallying around the issue. Following the populist tendencies of the Vargas dictatorship and fearful of the societal instability continued demonstrations - especially in the Northeast - could elicit, the Statute addressed various social concerns in regard to traditional suppliers, among them education, food security, family assistance and of course standards regulating the purchases in between suppliers and refiners<sup>5758</sup>. Most importantly, the Statue mandated that usineiros acquire at least 40% of their raw materials from traditional suppliers, a segment of the statute passed over the energetic protests of usineiros<sup>59</sup>. Ultimately, the Statute failed to protect small and traditional producers. Although there were explicit stipulations governing

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<sup>55</sup> Fernando de Azevedo, *Canaviais e engenhos na vida política do Brasil : ensaio sociológico sobre o elemento político na civilização do açúcar*, 1a. ed. (Rio de Janeiro: Instituto do Açúcar e do Alcool, 1948). pg. 208.As cited in Barros Meira

<sup>56</sup> Szmrecsányi 1986 Op. Cit.

<sup>57</sup> Brandão Op. Cit. pg. 217

<sup>58</sup> Barros Meira Op. Cit. pg. 245

<sup>59</sup> Sim Taylor Op. Cit. 74

the amount of cane that had to be purchased by usinas, there were few limitations on the quantity of land that could be absorbed by them. As a result, the process of centralization of sugarcane production continued. This centralization, as we will see, might have played in role in the displacement.

Returning more plainly to the subject of quotas, the first set of quotas clearly reiterated the traditional Northeastern state hegemony over sugarcane production. Northeastern states were given 62.8% percent of the sugar production nationwide. Pernambuco and Alagoas were given the lion's share in the Northeast, with 37.6% and 11% respectively. Regardless the Southeast was not ignored; São Paulo and Rio de Janeiro received 34.3% percent by themselves emphasizing their growing influence on the internal market<sup>60</sup>.

As the years passed, that share of the quotas kept on falling. The 1944/45 harvest saw increases in the quotas for the Center-South increase from 39.9% to 46.8% and then to 49.2% in 1957.<sup>61</sup> The first formal admission in changes to the geographic distribution of quotas, occurred in 1946 when a decree explicitly stated that future quotas were no longer going to be determined by national necessities and would instead become subordinated to regional demands, as pointedly expressed by Art. 3 Decree 9827: "Any future increases in quota allocations will be distributed *among the states proportionately to their own demand*<sup>62</sup>." That development continued steadily and by the time that the oil shocks in 1973 started the Pro-Alcoól initiative, the IAA was favoring the Center-South when allocating funding for ethanol refurbishing in usinas<sup>63</sup>.

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<sup>60</sup> Szmrecsányi 1979 Op. Cit. pg. 194

<sup>61</sup> Ibid pg. 216 and 250

<sup>62</sup> Ibid. pg. 216

<sup>63</sup> Pery Francisco Assis Shikida and Carlos José Caetano Bacha, *Evolução da Agroindústria Canavieira Brasileira de 1975 a 1995*, 1999 (1999), agroindústria canavieira; neoschumpeterianos e neocorporativismo; paradigmas. pg. 76.

It is hard to say whether or not the defense policies of sugar had an explicit leaning favoring one region over the other. Short from having access to primary documents that are housed in Brazil or destroyed or even being able to per in someone's though process, it is doubtful we ever be able to know. Most academic literature, however, seems to agree that at least initially the central plan was intended to preserve Northeastern hegemony. As was previously noted, Smzrecsányi believes that the protection of the northeastern sugar markets as a priority for Vargas' populist Estado Novo policies, an evaluation shared by Barros Meira. Sims Taylor argues that "it was the northeastern producer's political power, not a comparative advantage in cane farming and processing that guaranteed him a place in the southern market<sup>64</sup>." On several occasions, the IAA's presidency articulately and energetically defended the need to preserve the sugar industry in the Northeast. Gileno Dé Carli, the IAA's 9<sup>th</sup> president, maintained:

*"What would be of the Brazilian sugar industry were it not for the zoning of sugarcane production by the Federal Government, thus preventing São Paulo from becoming a sugar exporter to the detriment of secular sugar zones? Historical, social, economic and human reasons impeded the dislocation of all sugar production in the country to the states of São Paulo and Rio de Janeiro, the two giant centers of attraction. If it were not for [our policies], the desert would reach the Atlantic in the Northeast or the tropical brush would have soon reached the coconut groves once again<sup>65</sup>." (Translation by author)*

At one point, the first president of the IAA – Leonardo Truda – argued in front of a group of producers in São Paulo, that the loss of the internal market for northeastern producers would

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<sup>64</sup> Sims Taylor Op. Cit pg. 78

<sup>65</sup> Gileno dé Carli, *Gênese e evolução da indústria açucareira de São Paulo* (Rio de Janeiro, : Irmãos Pongetti, 1943). pg. 206-07.

affect the national economy negatively, and consequently represent the loss of an important market for Center-South products<sup>66</sup>.

Policies accompanied the rhetoric in some respects. The implementation of quotas was developed to limit excessive cane production, particularly from the rapidly expanding Southeast. This was also true of the strict regulations governing reallocations of quotas due to closures of usinas and the installation of new usinas which inherently worked to preserve the status quo. The whole implementation of the Cane Cultivation Statute occurred to address an issue that affected, with the exception of Rio de Janeiro and Minas Gerais, predominately northeastern states. As a matter fact, São Paulo had almost no investment in the issue. The organization of their labor force was entirely different than other states because of local industrialization due to coffee. As De Carli observes, São Paulo had no supplier problem. They only started paying attention once the IAA required them to get 40% of their cane from suppliers that did not exist in the region, a stipulation that they protested as a ludicrous inefficiency<sup>67</sup>.

Beyond rhetoric, however, there is no question that some IAA policies were disadvantageous to Northeastern production. The creation of the IAA added quotas to their regulatory arsenal but did not alter the prevailing structure of getting rid of excesses through exportation. As previously discussed, this policy was extremely detrimental to northeastern states that frequently had to import a sizable quantity of their harvest abroad at sacrificial prices. Quotas, although they did limit production, gave time for Southeasterners to modernize their operations, so it was not entirely time lost<sup>68</sup>. Moreover, the IAA was formulated to look at a national problem set, not just look out for the interest of the northeastern producers. It was also a political organization looking to garner the most political support possible for, at least at this

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<sup>66</sup> Barros Meira Op. Cit. pg. 234

<sup>67</sup> Barros Meira Op. Cit. pg. 234

<sup>68</sup> Ibid pg. 238

moment, was the Vargas regime.<sup>69</sup> In that way, they tried to balance what they gave everyone, maintaining tenets of fairness, while implementing policies that would please everyone. It just so happened that what was given benefitted the Center-South, more than it helped the Northeast. After all, the policy of exportation did have advantages for the Northeast since it meant price stability; it just was not their best option in the long run.

Really, the event that altered the make-up of policies that favored one region over another, far more in this respect than any covert political favoritism, was the outbreak of the Second World War. Because of the difficulties already discussed with maritime supply operations, the IAA found itself in a position where they had to choose in between potential scarcities and rationing in the big urbanities in the South or restructuring quotas to give the Center-South a bigger share that could satisfy demand locally. The government chose the latter and several measures to that effect (Ordinance 17/42, Resolution 069/43, and Decree 6368). The last of these started with the adoption of recommendations by the Federal Council on External Commerce to “suspend restrictive measures...and the liberation of the installation of new factories, as long as the effects of the war lasted,” by the President of the Republic<sup>70</sup>. The passage of Decree 9827 in 1946 binding quotas to regional demands instead on national demand represented to final impetus to cement this transition. Additionally, the fall of Vargas’ Estado Novo in 1945, which was seen to favor the interest of Northeastern growers, might have made it more feasible for the association of Southeastern producers to push their agenda forward. We should take a moment to clarify nonetheless, that the passages of these policies did not by

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<sup>69</sup> Ibid pg. 244

<sup>70</sup> Szmrecsányi 1979 Op. Cit. pg. 210

themselves cause the transition; they merely encouraged a process that was already taking its course<sup>71</sup>.

Two final considerations should be touched upon regarding the political process of the dislocation or not of production to the Southeast: Did the structure of the IAA lend itself to regional favoritism? And how does the rise of the usinas play into this whole process?

A superficial examination of the structure of the IAA reveals no visible structure that would discriminate against a particular region. The IAA was composed of several specialized bodies which managed data collection, implementation of regulations and exporting strategies. At the head of these of sections was an Executive Council composed of eight representatives, four from government agencies (Ministry of Agriculture, Ministry of the Interior, Ministry of Labor and the Bank of Brazil and four elected by the representatives of the states producing more than 200,000 sacks of sugar annually. These eight delegates would then among themselves choose a President and a Vice-President, which was for many years usually the representative from the Bank of Brazil. Later, after passage of the Sugar Cane Cultivation Statute, this structure would be modified to include representations from five governmental organizations, adding the Ministry of Transportation the list, and expanding industry representation to eight with 4 delegates given to usinas, three to suppliers and one to bangüeseiros (owners of traditional engenhos).<sup>72</sup> This analysis is certainly limited in nature. However, as was said lack of access or the nonexistence of primary sources documenting an institutional bias make it difficult to reach a definite conclusion on this matter.

This is not the case when it comes to the centralizing power of the usinas. As was noted earlier there was a clear tendency to centralizing production within these factory-like units. As

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<sup>71</sup> Ibid pg. 218

<sup>72</sup> Ibid pg.

can be observed above, the IAA made no differentiation in representation in between usinas, suppliers and bangüeseiros in their original 1933 charter, allowing representatives from states producing more than 200,000 sacks of sugar annually to choose their representatives. At this point in time usinas already had a majority share of production in those states<sup>73</sup>. Even when the IAA bureaucracy was reorganized to allow representation from other suppliers through the Cane Cultivation Statute, the Usina had larger representation. Moreover and to reiterate, the Cane Cultivation Statute did little to prevent the further acquisition of land by the usinas and in some cases larger usinas would take over smaller ones<sup>74</sup>. Furthermore, Barros Meira observes that the way regulation was implemented hurt small producers that - having an undefined legal status - were subject to fines or closure if discovered to be acting illegally.<sup>75</sup> This would have made the entry cost into sugar production more costly in both economic and understanding of the bureaucratic process.

The centralizing power of usinas was especially true in São Paulo, Brazil's biggest producing state in the last decade. Having a differentiated labor force than the rest of country due mostly to the industrial infrastructure left by coffee in the region in the late 20<sup>th</sup> century, almost all of São Paulo's sugar expansion came from an also increasing usina base. De Carli would go as far as to call it an "agroindustrial unit,<sup>76</sup>" and it is not uncommon when looking at literature in reference to the sugarcane industry for them to use the term neocorporatism in reference to their leaders of industry. Neocorporatism refers to the "strategic interactions (a game in between opponents) that can produce of variety of results or arrangements depending on the historic

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<sup>73</sup> Szmrecsányi 1986 Op. Cit.

<sup>74</sup> Kit Sims Op. Cit pg. 75

<sup>75</sup> Barros Meira Op. Cit. pg. 238

<sup>76</sup> Ibid pg. 227

conditions in which these organizations developed<sup>77</sup>.” A key term in this discussion is the “orchestration” of interests through repeated and deliberate interactions. A more in depth look at this component of the political game is beyond the scope of this paper, and would merit additional study at another opportunity<sup>78</sup>.

### Conclusion

To summarize, sugarcane production was traditionally located in Northeastern Brazil because it was closest to Europe. Eventually they lost their competitiveness to other nations, including Java and France, partially due to the emancipation of slaves in Brazil in 1888, partially because of technological backwardness. World War 1 was a boon to sugarcane worldwide, as the production of sugar beet stalled due to the fighting and a bad series of harvests. Brazil took advantage and started exporting. Once the war ended, demand fell and Brazil found itself with a capacity to produce more than was needed. The surplus in sugar caused massive price fluctuations and crisis in the industry leading producers to ask the government for their intervention. The state created the IAA whose main mission was to control overproduction by setting quotas and exporting/dumping excesses. Most agree that it originally had some northeastern bias, but that is a debate that has not been entirely settled. Although the stability created by regulation of overproduction led to more predictable prices - an outcome the Nordestinos and Paulistas wanted - it also put the north in a situation where the Northeasterners were exporting their excess for cheap and the Sulinos were getting the benefit of higher prices for their nascent sugar production. As the industry expanded in the South, the advantage they had in terms of distance to local markets and infrastructure left over from coffee production started bearing fruit. World War Two forced the IAA to give quotas that were originally allotted to the

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<sup>77</sup> Maria Sylvia Macchione Saes, *A racionalidade econômica da regulamentação no mercado brasileiro de café*, 1a. ed., Selo universidade (São Paulo, SP, Brasil: Annablume : FAPESP, 1997). As cited in Assis and Caetano pg. 88-89

<sup>78</sup> Assis and Ceatano Op. Cit. pg. 88-89.

North to South due the difficulties in getting it to the ports in the Center-South because of the German policy of unrestricted submarine warfare. São Paulo exploded. This was it for Northeastern hegemony of sugarcane in Brazil. Once ethanol became a priority for the Brazilian government during 1973 oil crisis, the better equipped Paulistas received most the subsidies to retool their factories. This was the final admission by the state that São Paulo was the new King of sugarcane in Brazil.

Gnaccarini touches upon some other advantages that the South had over the North that I did not have time to develop in this essay:

*“The growth of Paulista industrialization, brought about by the profits of coffee harvests, the importation of machines, equipment and technical assistance was facilitated for the usineros; the consumer market was bigger in São Paulo than it was in other states because of the growth of the industrial economy in the state; the Paulista usinas had a stronger economic sector in refining and marketing, in addition to having a more complete infrastructure, including transport, insurance and banking coverage, which reduced production costs. The industrial park of Paulista usinas belonged, for the most part, to a few but strong capitalist groups, with a dominant position in refining and sugar marketing; the state had better financing and banking options that were less onerous; the sugar defense policy granted usineros paulistas a favorable policy in regards to freights, storage, port and insurance overheads; usineiros paulistas had almost not stocking expenditures; and finally the northeastern sugar harvests have a biological delay compared to the Center-South, a prejudicial factor given that the*

*northeastern production faced an accumulation of large stocks of cane from the Center-South states at the beginning of their own harvest.<sup>79</sup>”*

The shift in sugarcane production from the North to the South happened in the early years of the 1950s. The transition seems to have been caused for the most part by the favorable geographical conditions in the Center-South which make production cheaper, as well as by the proximity to domestic consumers markets which lower transportation costs. Political interventions did play a role in the shift, but short of having access to personal primary documents, it is hard to prove there was a prolonged bias in favor of one region. In terms of the favorable geographic conditions, the lack of available water, climate and higher slopes seem to be the biggest determinant of what is a propitious environment to plant sugar, an environment which is more widely shared by the Center-South.

It is also clear that the Second World War provided the Center-South with a brief window of time during which they could make these advantages real. Since the Northeast had its primary maritime shipping lines compromised by German U-boats, consumers turned to more local sources of production to fulfill their sugar needs, and the government obliged. In this shift it is important to note that around this time an intense process of urbanization was beginning giving burgeoning metropolitan giants like Rio de Janeiro and São Paulo, much more influence than other urban spots in the country.

It was the confluence of these two factors that were most important to the decline of North as the king of sugar. Interestingly enough, just as this research has settled many questions, it has also opened new avenues of exploration. Subjects for further research could include a more in-depth look how the centralized planning of the industry was influenced by regional or

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<sup>79</sup> Ibid pg. 227

capitalistic interest groups in the spirit of neocorporatism. It would also be interesting to take a closer look at why the process of liberalization that started in the 1980s seems to have been such a boon to the expansion of sugarcane production.

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