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# **The End of Plantation? Coffee and Land Inequality in Early Twentieth Century São Paulo**

*Maria Lucia Lamounier and Renato Perim Colistete<sup>1</sup>*

## **Abstract**

This paper examines the concentration of land ownership in the leading coffee export region in the early twentieth century, the northeast area of the state of São Paulo, Brazil. Critics of the so-called plantationist perspective have rejected the classic view that large estates shaped colonial and nineteenth century Brazilian economy and society, arguing instead for a major role of small and medium-sized landholdings. We describe the size distribution of landholdings and estimate alternative measures of land concentration based on a detailed agricultural census of the state of São Paulo. We find that, despite variation across municipalities, large farms and latifundia controlled most of the productive resources in northeast São Paulo, resulting in high levels of inequality when compared to those of other agrarian societies in the past. These results contrast with the view of the critics of classic historiography and suggest that the large estate and high concentration of wealth were remarkable features at least in the most important coffee region in Brazil during the early twentieth century.

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## 1. Introduction

In the past few years, there has been a great deal of criticism to what has been called the “plantationist perspective” on Brazilian history. The main criticism aims at the classic view that large estates (plantations), monoculture and slavery shaped colonial and nineteenth century Brazilian economy and society. Scholars have argued that such a perspective paid nearly exclusive attention to the production of export crops, cultivated in large properties by an extensive use of land with employment of slaves.<sup>2</sup> In place of plantation, several scholars have turned their focus to the “*economia de abastecimento*” (or “internal economy”), examining the production of crops destined to the domestic market. As evidence shows that these products were cultivated by a varied class of landowners and laborers, a number of studies have challenged – successfully in most cases – the view of a Brazilian society split into two distinct, main classes of masters and slaves.<sup>3</sup>

A key aspect addressed by the critics of the plantationist perspective is the size of farm lands. They have argued that small and medium-sized landholdings were as much important as the large estates in colonial and nineteenth-century Brazil. Whereas plantations were typical in the production of export crops (such as sugar and coffee), small and medium properties were associated with the products for the internal market (maize, beans and manioc, for example).<sup>4</sup> In certain cases, export crops like tobacco in Bahia were also cultivated outside the typical plantation, which further demonstrates the mixed and complex nature of the export agriculture in Brazil. Moreover, as small and medium farms are acknowledged as being widespread, scholars have also argued that control over land was less concentrated and, implicitly, that the landholding structure was more “democratic” than the one based upon the large estates stressed by the classic historiography.<sup>5</sup>

There is little doubt that the research on internal market and smallness of land or slave holdings has added valuable knowledge on aspects of the Brazilian agrarian economy which were little explored by the sweeping historical syntheses of the 1940s and 1950s. However, it is also apparent that the critics of the classic works have often painted an exceedingly simplified (and sometimes inaccurate) picture of what is dubbed as the plantationist perspective and of the main

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<sup>2</sup> Linhares, “Subsistência”, Fragoso, *Homens*; Fragoso and Florentino, *Arcaísmo*; Barickman, *Bahian Counterpoint*. The main targets of the critics have been Prado Jr., *Colonial Background*, and Furtado, *Formação*.

<sup>3</sup> See, for instance, Linhares and Silva, *História*; Castro, “Beyond”; Fragoso, *Homens*; Graça Filho, *Princesa do Oeste*; Caldeira, *História*. As a matter of fact, there is an older tradition of studies on “*economia de abastecimento*”, although these have rarely been acknowledged by the more recent historiography. See for example Zemella, *Abastecimento*; Ellis, *Contribuição*; Holanda, “Movimentos”; Petrone, *Barão de Iguape e Lenharo, Tropas*.

<sup>4</sup> There is also a well-established literature on slave ownership that has shown the existence of a large number of small slaveholders, either related to the production of export crops or foodstuffs, for self-consumption and the internal market. See, for example, Luna and Costa, “Posse”, Schwartz, “Propriedade”; Marcondes, “Arte de Acumular”; Motta, *Posse*; Luna and Klein, *Evolução*.

<sup>5</sup> Barickman, *Bahian Counterpoint*, 194-5; Castro, *Beyond*; Caldeira, *História*.

issues at stake. First, Caio Prado Jr. and Celso Furtado, to take the most representative scholars of the classic historiography, divided the economy into two connected but distinct sectors: the large-scale agriculture (plantations) and the “subsistence agriculture”. For subsistence agriculture they meant the production for self-consumption and, in particular, the production for domestic markets, which included among others maize, beans, manioc, wheat and cattle, as well as goods which were also exported, such as sugar, cotton, tobacco and rice. Although Prado Jr. and Furtado’s analysis of the subsistence agriculture lacks detail, and in the case of Caio Prado Jr. it is marred by depreciative adjectives (“paltry”, “degenerate”, “precarious”), these authors did take in consideration and investigate the distinctive organizational features of this sector and its connections with the export-oriented agriculture – which was regarded as the most dynamic activity in the colonial and nineteenth-century economy.<sup>6</sup> It does not seem plausible to claim, as Bert Barickman and others have made, that classic historiography depicted Brazil solely “as a vast plantation – as an economy limited to the extensive and large-scale production of a few tropical staples”.<sup>7</sup>

Second, a central, though often neglected issue raised by the classic historiography was the role of large estates in generating a highly unequal distribution of wealth and political power in Brazilian society, which persisted from colonial times to the twentieth century. Small and medium landholdings were present in the classic descriptions of the Brazilian economy, for example in cattle raising, rice, tobacco, and foodstuffs, even though they were depicted as “auxiliary”, “dependent” and “subsidiary” to the export-oriented agriculture. Furtado even estimated that the export sector represented one fourth of the income in Brazil around 1800 and one sixth by 1850, implying a large domestic sector.<sup>8</sup> The key issue for the classic historiography was not that there were no small and medium farms integrated to markets in Brazil’s countryside, but that high inequality in the distribution of land and wealth in general deeply marked and had lasting consequences for Brazilian history. In their broad accounts of the Brazilian economy and society, both Caio Prado Jr. and Celso Furtado aimed at highlighting how the Portuguese settlement in the Americas contrasted with British colonization in North America, which was based on the production of relatively low-valued goods, a sizable number of free labor working in their plots of land and a lower concentration of wealth – a perspective similar to that of the groundbreaking work by Stanley Engerman and Kenneth Sokoloff.<sup>9</sup> From this perspective, to investigate the way land was distributed in different

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<sup>6</sup> Prado Jr., *Colonial Background*, 51-89, 133-194; Furtado, *Formação*, chaps 8-16.

<sup>7</sup> Barickman, *Bahian Counterpoint*, 1; Linhares, “Pecuária”.

<sup>8</sup> Furtado, *Formação*, 109.

<sup>9</sup> Engerman and Sokoloff, *Factor Endowments*.

periods and regions was seen as a vital step in an attempt to understand Brazil's social and economic development in the long run<sup>10</sup>

This paper deals with a traditional concern of classic historiography: how unequal was the distribution of land ownership in regions with a dynamic export agriculture in the past? As far Brazil is concerned, there still remains a significant gap in our knowledge about the level of land inequality from colonial times to the early twentieth century, even in presumably better known areas like the coffee economy in São Paulo. We examine the degree that large or small landholdings prevailed in a representative area of the most successful export-oriented agriculture in Brazilian history: the northeast region of the state of São Paulo during the booming years of the coffee economy. We concentrate in the early twentieth century, when São Paulo coffee production was already the largest in Brazil and the world over, whereas the northeast region was one of the biggest coffee producing areas in the state of São Paulo. We rely on data about 3,893 farmers in 1904-1905, as drawn from the *Estatística Agrícola do Estado de São Paulo*, a detailed census carried out by the Secretary of Agriculture of the state of São Paulo in 1905-1906.<sup>11</sup>

The following sections provide an overview of the coffee economy in São Paulo and of the basic issues to be addressed. Then we present new evidence on distribution of land in northeast São Paulo by using a set of quantitative measures. The final section summarizes the findings and conclusions.

## **2. Large and Small Farms in São Paulo Agriculture**

After Brazil's independency in 1822, both the parliament and provincial governments tended to favor land policies that preserved the large estate as the foundation of the agrarian organization, as the old institution of royal grants (*sesmarias*) had done throughout the colonial times.<sup>12</sup> The advantages of small landholdings in Western Europe and in the United States were sometimes raised by intellectuals, ministers of state and high bureaucrats of the imperial government, but they were not able to win over the landed interests of northeast and southeast Brazil which were firmly represented in the parliament. The settlement of smallholders by the Imperial government, mostly European immigrants, was successful only in the provinces of the south (Rio Grande do Sul and Santa Catarina) and one small region of the southeast (Espírito

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<sup>10</sup> Prado Jr., *Colonial Background*, 13-20; Furtado, *Formação*, chaps 3-5.

<sup>11</sup> São Paulo, *Estatística Agrícola*.

<sup>12</sup> On *sesmarias* and the land legislation in the nineteenth century, see Freitas Jr., *Terras e Colonização*; Vasconcellos, *Livro das Terras*; Lima, *Terras Devolutas*.

Santo), likely as a result of the need to protect the new nation's frontiers and the lack of a mobilized landed class in those regions.<sup>13</sup>

In the traditional agricultural areas where large-scale production had developed, there were several obstacles to the expansion of small farms.<sup>14</sup> Provincial governments usually eschewed promoting the settlement of smallholders even in the newly expanding regions of the agricultural frontier during the nineteenth century. Describing the transformation of Rio Claro into a big coffee county in mid-nineteenth century São Paulo, Warren Dean remarked that “[s]tanding on its head the image of society that served as ideology for the small-holders in English North America, the makers of policy in Brazil believed that only the rich and the well-born could be expected to display entrepreneurial qualities”. This despite the fact that small squatters in Rio Claro had been increasing and diversifying their production of foodstuffs for the market in the early decades of the nineteenth century, just before the massive arrival of coffee.<sup>15</sup>

Nevertheless, even with the absence of a homestead policy, smallholders occupied, cleared and cultivated land in the São Paulo's frontier throughout the nineteenth century as they had done before. With the coming of export crops like sugar and coffee, they faced however the threat of eviction by new owners who bought or just took over large plots of land. In such cases, small squatters were dispossessed and forced to move on with the frontier, whereas others were incorporated as dependent laborers (*agregados*) in the large farms. Others still succeeded in keeping their small tracts of land, but more frequently in areas which were beyond the interest of large landowners. The Land Law of 1850, which ruled that public land could be alienated only by sale, did not improve the lot of smallholders.<sup>16</sup> Similarly, their position in the agrarian economy changed only marginally with the arrival of European immigrants in São Paulo from mid-nineteenth century. The mass European immigration that started off more clearly from 1887 was mostly channeled to provide abundant labor for the large coffee estates.<sup>17</sup> The few official colonization nuclei spread in São Paulo countryside, with small plots sold in partial installments, settled no more than 933 families in 1908, for example.<sup>18</sup>

Smallholders lacking property titles were not alone in the agricultural frontier. Big squatters were able to take over huge tracts of land through their special connections with legal and political authorities. Land titles could be granted by an allegedly first occupation of public land (*terra*

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<sup>13</sup> Carvalho, *Le Brésil Méridional*; Smith, *Brazil*, chap. 17; Dean, “Latifundia”.

<sup>14</sup> Costa, “Colônias de Parceria,” 151-152.

<sup>15</sup> Dean, *Rio Claro*, 7-10; 12-4.

<sup>16</sup> *Ibid.*, chap. 1; Katzman, “Brazilian Frontier,” 275-8.

<sup>17</sup> Beiguelman, “Grande Imigração”; Holloway, *Imigrantes*, chap. 3; Dean, *Rio Claro*, chaps 1 and 6.

<sup>18</sup> São Paulo, *Relatório da Agricultura 1908*, Table 7.

*devoluta*) or simply by forging the documentation with the help of local officials and politicians. Most of these lands was partitioned in the following years, either by selling or by another round of squatting, but the remaining agrarian structure tended to preserve a disproportionate share of land in the hands of large farmers in comparison with that of smaller ones.<sup>19</sup> It was only from the early twentieth century that the growth of smallholdings seems to have been more substantial, as a result of immigration, increasing incomes and the relative decline of extremely large estates in both old and new agricultural zones. Colonization companies, for example, started to sell small plots of land in northwest and southwest regions of the state of São Paulo (and north Paraná) which had only been scarcely occupied by non-native population before 1900. In these plots, smallholders raised cattle and grew coffee and other products such as rice, cotton, corn and beans, depending on the localization, type of land and market opportunities.<sup>20</sup>

Coffee, therefore, was flexible enough to be grown in a variety of types and sizes of land. As a matter of fact, this was a feature of the coffee-export economies in Latin America as a whole. As Gudmundson has pointed out, “coffee was produced by a broad variety of social elements, from the peasantry to the plutocracy [...]. Indeed, of all of the major agricultural export activities developed in the region [Latin America] after mid-nineteenth century, coffee was perhaps the most reconcilable, in certain contexts, with small-scale landownership and cultivation.”<sup>21</sup> Besides, coffee production coexisted with different land structures. Thus, coffee plantations prevailed in certain regions, such as Guatemala, Central Colombia and El Salvador, in which there was also a significant sector of small and medium-size farms. In other areas, the spread of coffee was predominantly associated with small-scale and commercially-oriented farmers, such as in central Costa Rica, western Colombia, parts of Venezuela, and western Puerto Rico, although in such cases large properties were found side by side with smaller ones. Explanations for regional variation and predominance of large or small-scale production in one region have ranged from factor endowments to elites mobilization and political institutions.<sup>22</sup>

A major difficulty in the characterization of landholding patterns lies in the definitions, not least regarding what is understood as large or small and medium-sized farms. In order to ascertain which landholding structure predominates in one region it is necessary that a size classification of the farms – even though conventional and somewhat arbitrary – be adopted. A few attempts have been made recently to define the meaning of small, medium and large farms in specific regions in

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<sup>19</sup> Cobra, *Em um Recanto*; Dean, “Latifundia”.

<sup>20</sup> Monbeig, *Pioneiros*, 139-47; Holloway, *Imigrantes*, chap. 6.

<sup>21</sup> Gudmundson, “Peasant,” 221.

<sup>22</sup> Gudmundson, “Peasants”; Roseberry, “La Falta de Brazos”; Samper, “Significado Social”; Nugent and Robinson, “Are Factor Endowments Fate?”.

nineteenth century Brazil. Some have established categories of land size, as in the case of Minas Gerais.<sup>23</sup> Most references to land size, however, are difficult to generalize to other areas or are not associated with land tenure itself, but rather with the size of slave ownership. In some cases, the classifications suggested are too vague to be useful.

More importantly, although data on the number and average size of landholdings show important aspects of the agrarian structure, another quite different issue is the concentration of land ownership. Even the traditional picture of a smallholder coffee agriculture such as Costa Rica's, for example, is blurred when the concentration of land ownership is considered.<sup>24</sup> For the crucial issue of distribution of economic power and its long run implications, it is the concentration of land rather than the absolute number or average size of landholders that matters most. For São Paulo, for example, the very few works that have estimated land concentration either in the colonial period or in the nineteenth century have found a highly unequal distribution of land ownership, despite the great number of small farmers.<sup>25</sup>

### **3. The Coffee Economy in Northeast São Paulo**

The geographical area of this study is the northeast region of the state of São Paulo during the golden age of the coffee economy in the early twentieth century. This region comprised the *municípios* (municipalities) of Ribeirão Preto, Cravinhos, Sertãozinho, São Simão, Cajuru, Santo Antonio d'Alegria, Batatais, Nuporanga, Jardinópolis, Franca, Ituverava, Patrocínio do Sapucaí and Santa Rita do Paraíso (later Igarapava). Together they accounted for 9.3 percent of the population of the state of São Paulo in 1907, but their share in the total coffee production was much higher: 20.1 percent in 1905. Ribeirão Preto and São Simão were then the largest coffee growers in the state of São Paulo. At the time, São Paulo's Santos port made up 72.8 percent and 52.1 percent of Brazil and world coffee exports, respectively.<sup>26</sup>

Colonization of the northeast São Paulo dates to the early eighteenth century, when a locality situated farther north (Arraial Bonito do Capim Mimoso) started to commercialize salt and cattle to the recently discovered mines in Goiás and Mato Grosso and other neighboring regions. In 1805, that locality was established as a separate parish and then in 1824 as the municipality of Vila Franca do Imperador, named Franca in 1856. With the economic and population growth of the region, new districts and municipalities were created in the following years, such as Batatais (1839),

<sup>23</sup> Bergad, *Slavery*, 62-70; Saraiva, "Estrutura de Terras".

<sup>24</sup> Samper, "Significado Social".

<sup>25</sup> Canabrava, "Economia de Decadência"; "Repartição". See also Rangel, "Dilemas", and Nozoe, *Apropriação*.

<sup>26</sup> Calculated from Directoria Geral de Estatística, *Anuario*, 345-9; São Paulo, *Estatística Agrícola*; Graham, *Coffee*, 10-1. Export data refer to 1906.

São Simão (1865), Cajuru (1865), Ribeirão Preto (1871), Santa Rita do Paraíso (1873, later Igarapava) and Sertãozinho (1896).<sup>27</sup> Travelers crossing the region in the early nineteenth century recorded the production of foodstuffs, rough cotton fabrics, hats and firearms, although they pointed out that its most dynamic activity was the export of livestock to other regions in São Paulo and Brazil.<sup>28</sup> In 1836, the northeast area (then formed by Franca only) produced 5.5 percent of manioc flour, 4 percent of maize and 3 percent of tobacco of the province of São Paulo. But it was in livestock that the region stood out: 20.1 percent of sheeps, 10.3 percent of cattle and 9.4 percent of pigs raised in São Paulo. Production of coffee was negligible at the time in the northeast region and remained so by the middle of the century.<sup>29</sup>

Coffee started to be cultivated in São Paulo from the end of the eighteenth century in the northern coast and the Paraíba Valley, reaching Campinas in the central zone of the state by the mid-1830s. In the following decades, coffee spread further to the countryside, including the northeast area of the state. The expansion of the coffee frontier was greatly stimulated by the development of a railway network built up by private owned railway firms, such as the Paulista and Mogiana companies. São Simão (1882), Ribeirão Preto (1883), Batatais (1886), Franca (1887), Sertãozinho (1899), Ituverava (1903) and Igarapava (1914) were some of the *municípios* in the agricultural frontier of northeast São Paulo reached by the railway lines in the end of nineteenth and early twentieth centuries.<sup>30</sup> From the 1880s, a new wave of European immigrants started to arrive to work in the farms and cities of São Paulo. The northeast region of the state received 22.6 percent (8,052) of the registered immigrants (35,631) entering São Paulo by the Immigration House (*Hospedaria dos Imigrantes*) in 1905. Ribeirão Preto was the largest recipient of immigrants in the state of São Paulo at the time.<sup>31</sup>

The arrival of coffee had a direct impact on land markets, with widespread speculation and a dramatic increase in land prices. The price per hectare of fertile land in the municipalities of Batatais and Nuporanga rose twelve times between the decades of 1850 and 1890.<sup>32</sup> Scholars have pointed out, however, that the outcomes on the landholding structure differed significantly across the northeast region of the state of São Paulo. Ribeirão Preto, for example, is well known in the historiography by its huge plantations and legendary landowners, such as Henrique Dumont, Francisco Schmidt and Martinho Prado Jr. Although small and medium farmers were able to

<sup>27</sup> IBGE, *Enciclopédia*, 128-6, 323; Garavazo, “Riqueza,” 31-41; Brioschi, “Fazendas”.

<sup>28</sup> D’Alincourt, *Memória*, 39, 43, 48-9; Cazal, *Corographia*, 200-1; Saint-Hilaire, *Viagem*, 119, 136, 143-4.

<sup>29</sup> Müller, *Ensaio*, 124-9; Oliveira, *Quadro Estatístico*; São Paulo, *Província*.

<sup>30</sup> Pinto, *História*, 36-58; Saes, *Ferrovias*, chaps 1-2; “Estações Ferroviárias do Brasil”.

<sup>31</sup> São Paulo, *Anuario Estatístico 1905*, 38-43.

<sup>32</sup> Bacellar, “Rede Fundiária,” 111.

occupy or buy land, the consolidation of large tracts of land predominated in the wake of coffee expansion. By the end of the century, coffee cultivation was mainly undertaken in large estates by farmers with large amounts of capital.<sup>33</sup>

Franca, on the contrary, has been described as an example where small family farms dominated the landscape. The fact that it was an old settlement area inhabited by farmers with little resources, specialized in the supply of foodstuffs and livestock to the domestic market, as well as lacking the best soils for coffee growing, are the reasons usually cited to explain the alleged preponderance of small landholdings based on family labor in Franca.<sup>34</sup> In the next sections, we will gather evidence that will help to assess these views proposed by historiography.

#### 4. Landholding Structure and Size Distribution

The source of our empirical analysis is the census carried out by the Secretary of Agriculture of the state of São Paulo in the early twentieth century, the “*Estatística Agrícola e Zootécnica do Estado de São Paulo no Ano Agrícola de 1904-1905*”.<sup>35</sup> This census provides detailed data on farms, including the name of their owners, the size of properties, the cultivated area, and the crop production at the time of the inquiry. There are 3,893 farmers in the thirteen municipalities which constitute what has been defined here as the northeast region of the state of São Paulo. Since we are interested in measuring size and concentration, we have put together the properties of individual farmers when they owned more than one farm in a municipality.<sup>36</sup> We also classify the municipalities according to regions in order to facilitate analysis. Thus the thirteen *municípios* of northeast São Paulo are ordered under four regions: Ribeirão Preto, Cajuru, Batatais and Franca. The descriptive statistics are shown in Table 1.

Table 1 - Descriptive Statistics of Total Landholding Area in São Paulo Northeast Region, 1904-1905

<i>Regions and Municipalities</i>	Number of Farmers	Average Area (alq)	Median Area (alq)	Standard Deviation	Coeff. of Variation	Min. Area (alq)	Max. Area (alq)
<i>Ribeirão Preto</i>	882	164	20	789	4.8	1	13,988
Ribeirão Preto	243	201	21	743	3.7	1	8,000
Cravinhos	83	181	80	395	2.18	3	2,600
São Simão	291	112	22	287	2.56	2	2,500
Sertãozinho	265	183	12	1,195	6.53	1	13,988
<i>Cajuru</i>	726	49	12	193	3.91	.5	3,000
Cajuru	499	60	14	230	3.87	.5	3,000
Santo Antônio d’ Alegria	227	27	10	40.7	1.52	1	300

<sup>33</sup> Gifun, *Ribeirão Preto*, chaps 5 and 7; Zamboni, “Processo,” 206-7; Marcondes, “Café,” 181-4.

<sup>34</sup> Tosi, Faleiros and Teodoro, “Crédito”; Oliveira, *Economia*; “Resistência”.

<sup>35</sup> São Paulo, *Estatística Agrícola*.

<sup>36</sup> As the municipality is the unit of interest here, we take into account one farmer’s properties in each *município* only. It means that the following indicators subestimate land concentration, since an individual could own properties in more than one municipality. From now on, we will refer to “farmers” and “farms” as representing the same unit.

<i>Regions and Municipalities</i>	Number of Farmers	Average Area ( <i>alq</i> )	Median Area ( <i>alq</i> )	Standard Deviation	Coeff. of Variation	Min. Area ( <i>alq</i> )	Max. Area ( <i>alq</i> )
<i>Batatais</i>	1,173	213	80	745	3.5	1	17,000
Batatais	405	136	21	332	2.44	1	4,000
Jardinópolis	261	93	8	649	6.99	2	10,000
Nuporanga	507	336	160	977	2.91	10	17,000
<i>Franca</i>	1,112	146	60	333	2.28	.25	4,000
Franca	381	152	80	302	1.99	3	3,155
Ituverava	252	177	60	411	2.32	1	4,000
Patrocínio do Sapucaí	108	189	102	284	1.5	2	2,150
Santa Rita do Paraíso	371	107	25	314	2.95	.25	3,500
<i>Northeast São Paulo</i>	3,893	152	39	591	3.88	.25	17,000

Source: São Paulo, *Estatística Agrícola*.

Note: *alq* = *alqueire paulista*. 1 *alqueire* = 5,98 acres, 2,42 hectares or 24,200 square meters.

As we see from the basic statistics, the figures vary significantly amongst municipalities and regions. The number of farmers ranged from 507 in Nuporanga to 83 in Cravinhos, while the average area of properties was also the highest in Nuporanga (336 *alqueires*) and the lowest (27 *alqueires*) in Santo Antônio d'Alegria. The average farm size is always much higher than the median, indicating an asymmetric distribution, skewed to the right, that is, with few large values of land size relative to the small ones. The standard deviation and the coefficient of variation show that heterogeneity of land size in localities such as Jardinópolis and Sertãozinho was well above that, for instance, in Patrocínio do Sapucaí and Santo Antônio d'Alegria. The minimum area starts from 0.25 *alqueire* to huge farms with more than 1,000 *alqueires* – the largest being one property in Nuporanga with 17,000 *alqueires*. All these measures suggest asymmetry and coexistence of small and very large farms, but we need further evidence to evaluate the distribution of landholding.

The first way we have to assess the degree of inequality in northeast São Paulo is by the traditional size classification of land ownership. As we saw, recent literature on Brazil's agrarian structure has argued that the role of small and medium-sized farms was greater than previously assumed by classic historiography. However, we noted that a precise definition of what should be classified as small, medium and large farms is lacking in most of the literature.

In an article published in 1935, Caio Prado Jr outlined a classification of landholding based on typical property relations of farms and social and economic features of São Paulo agriculture. Small farms were defined as based on family labor, without engaging outside workers; medium farms employed outside labor but the owners occasionally or even regularly worked on the land; and large farms counted exclusively on hired labor. Prado Jr. then related these sociological categories with a quantitative classification of farms, although acknowledging that such an association would be elusive and somewhat arbitrary. Small properties were defined as those up to 25 *alqueires*; medium ones between 26 and 100 *alqueires* and large properties above 100

*alqueires*.<sup>37</sup> These are relatively high intervals which were meant to fit with the huge territorial extension and low demographic and economic density of São Paulo and Brazil.<sup>38</sup>

The existence of vast tracts of occupied and non-occupied land in São Paulo led Sérgio Milliet to reformulate the original classification adopted by Caio Prado Jr. Milliet pointed out that the class of properties above 100 *alqueires* included farms with distinct features that recommended an additional category. Estates between 101 and 500 *alqueires* could be properly defined as large farms, whereas those with more than 500 *alqueires* would be better characterized as latifundia, the very large estate widespread in Brazil and most of Latin America.<sup>39</sup>

The Prado Jr.-Milliet classification is not without problems, as they were careful to recognize. Caio Prado Jr.'s assumption that small holdings only engaged family labor is hard to reconcile with historical evidence, since farms with up to 25 *alqueires* seem to have often employed one or a few more workers in their premises.<sup>40</sup> In the same way, Milliet's notion of latifundium has no sociological features which could distinguish it from the class of large farms. Milliet does not refer to the traditional concept of latifundium as very large estates with archaic methods and under-utilized land – either because he saw such features as implicit in his definition or because he rejected that latifundium would be necessarily associated with such features.

Despite these problems, the Prado Jr.-Milliet typology is a useful scheme which can help describe landholding patterns of the coffee economy in São Paulo, especially when complemented with other quantitative measures presented in the next section. The four-size classes reflect a vast territory filled with huge areas of unexploited private and public land of a barely populated countryside by the early twentieth century. As illustration, the upper limit of 25 *alqueires* (60.5 hectares or 149.5 acres) for the smallholding class is greater than what is usually reported as typical small properties in the US antebellum South.<sup>41</sup> In the same vein, Jacques Lambert's definition of latifundium as comprising more than 2,500 acres (418 *alqueires*) in Latin America is below the lower limit (500 *alqueires*) of the Prado Jr.-Milliet classification.<sup>42</sup> Even though the size classes were regarded as too high, it is a further assurance that our analysis does not overestimate the concentration of land ownership in São Paulo coffee economy.

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<sup>37</sup> As already mentioned, 1 *alqueire* equals 5,98 acres, 2,42 hectares or 24,200 square meters.

<sup>38</sup> Prado Jr., "Distribuição," 692-3.

<sup>39</sup> Milliet, *Roteiro*, 70. Latifundio is usually defined as very large states characterized by monoculture, archaic methods of production and under-utilized land. See, for example, Lambert, *Latin America*, chaps 3-4; Guimarães, *Quatro Séculos*.

<sup>40</sup> In northeast São Paulo, 1,297 out of 1,705 small properties employed 1 or more laborers. Small farmers employed 10 workers on average (median = 9). Calculated from São Paulo, *Estatística Agrícola*.

<sup>41</sup> See Gallman, "Influences," 552.

<sup>42</sup> Lambert, *Latin America*, 61.

We may first start considering the distribution of the number of farmers according to the Prado Jr.-Milliet typology in Table 2. Small farmers represented no less than 43.8 percent of all landowners in northeast São Paulo. The share of medium (28.8 percent) and large (22.8 percent) farmers was significantly lower, and more so that of latifundists – only 4.5 percent of the total landowning class. A look at the figures of the *municípios* is also revealing. The percentage of small farmers ranged from 2.8 percent in Nuporanga to 74 percent in Santo Antônio d’Alegria. Perhaps surprisingly in view of what has been stated by historiography, Franca had one of the lowest shares of small farmers (10.5 percent) among the municipalities. The large majority of landowners in this *município* was made up by medium (50.1 percent) and large (34.9 percent) farmers – whereas the share of latifundists (4.5 percent) was the same as the northeast region average. Also surprising, perhaps, is that small farmers represented 53.9 percent of the landowners in Ribeirão Preto, the place of the kings of coffee. The share of latifundists (7.8 percent) in Ribeirão Preto was higher than the regional average, but its relative number of medium (19.8 percent) and large (18.5 percent) farmers was well below the regional average as well as the figures in Franca.

Table 2 – Number and Percentage of Farms by Size Class, Northeast São Paulo, 1904-5

Regions and Municipalities	Small	Medium	Large	Latifundium	Total
<i>Ribeirão Preto</i>	487 (55.2)	196 (22.2)	160 (18.1)	39 (4.4)	882 (100.0)
Ribeirão Preto	131 (53.9)	48 (19.8)	45 (18.5)	19 (7.8)	243 (100.0)
Cravinhos	25 (30.1)	24 (28.9)	29 (34.9)	5 (6.0)	83 (100.0)
São Simão	150 (51.5)	73 (25.1)	61 (21.0)	7 (2.4)	291 (100.0)
Sertãozinho	181 (68.3)	51 (19.2)	25 (9.4)	8 (3.0)	265 (100.0)
<i>Cajuru</i>	506 (69.7)	173 (23.8)	36 (5.0)	11 (1.5)	726 (100.0)
Cajuru	338 (67.7)	125 (25.1)	25 (5.0)	11 (2.2)	499 (100.0)
Santo Antônio d’Alegria	168 (74.0)	48 (21.1)	11 (4.8)	0 (0)	227 (100.0)
<i>Batatais</i>	424 (36.2)	271 (23.1)	405 (34.5)	73 (6.2)	1,173 (100.0)
Batatais	217 (53.6)	76 (18.8)	86 (21.2)	26 (6.4)	405 (100.0)
Nuporanga	14 (2.8)	153 (30.2)	298 (58.8)	42 (8.3)	507 (100.0)
Jardinópolis	193 (73.9)	42 (16.1)	21 (8.0)	5 (1.9)	261 (100.0)
<i>Franca</i>	288 (25.9)	483 (43.4)	288 (25.9)	53 (4.8)	1,112 (100.0)
Franca	40 (10.5)	191 (50.1)	133 (34.9)	17 (4.5)	381 (100.0)
Ituverava	40 (15.9)	139 (55.2)	58 (23.0)	15 (6.0)	252 (100.0)
Patrocínio do Sapucaí	19 (17.6)	35 (32.4)	46 (42.6)	8 (7.4)	108 (100.0)
Santa Rita do Paraíso	189 (50.9)	118 (31.8)	51 (13.7)	13 (3.5)	371 (100.0)
<i>Northeast São Paulo</i>	1,705 (43.8)	1,123 (28.8)	889 (22.8)	176 (4.5)	3,893 (100.0)

Source: same as Table 1.

Notes:

a) farm size according to the classification by Prado Jr., “Distribuição”, and Milliet, “Roteiro”:

small farms = between 0 and 25 *alqueires*

medium farms = between 26 and 100 *alqueires*

large farms = between 101 and 500 *alqueires*

latifundia = more than 500 *alqueires*

b) 1 *alqueire* = 5,98 acres, 2,42 hectares or 24,200 square meters.

As we have seen, however, the major point of interest for the analysis of land concentration is the relative area controlled by landowners. Table 3 presents the share of total land area in

northeast São Paulo in the early twentieth century according to the Prado Jr.-Milliet typology. Now we can see that the share of small farms (2.8 percent) was only a tiny fraction of total agricultural land in 1904-1905. Medium farms also held a relatively meagre share, with 11.4 percent of the agricultural area. Large farms and latifundia controlled most of total agricultural area – 33.1 percent and 52.6 percent, respectively. These figures show that a high number of small properties did not translate into a more “democratic” land tenure structure in northeast São Paulo during the early twentieth century.

Table 3 - Percentage of Total Farm Land by Size Class, Northeast São Paulo, 1904-5

<i>Regions and Municipalities</i>	Small	Medium	Large	Latifundium	Total
<i>Ribeirão Preto</i>	3.4	8.0	24.0	64.6	100.0
Ribeirão Preto	2.5	5.7	16.1	75.8	100.0
Cravinhos	1.3	9.9	40.1	48.7	100.0
São Simão	5.7	13.9	44.5	35.9	100.0
Sertãozinho	3.5	5.8	14.1	76.5	100.0
<i>Cajuru</i>	13.2	25.1	19.4	42.4	100.0
Cajuru	10.7	21.1	17.2	51.1	100.0
Santo Antônio d’Alegria	25.7	44.5	29.8	0	100.0
<i>Batatais</i>	1.5	7.5	36.6	54.4	100.0
Batatais	3.6	7.4	35.3	53.8	100.0
Nuporanga	0.2	7.1	39.4	53.4	100.0
Jardinópolis	5.9	10.5	20.6	63.0	100.0
<i>Franca</i>	2.1	17.5	38.9	41.6	100.0
Franca	1.2	19.7	44.4	34.7	100.0
Ituverava	1.5	19.2	30.7	48.6	100.0
Patrocínio do Sapucaí	1.6	9.6	50.3	38.6	100.0
Santa Rita do Paraíso	4.3	16.3	34.2	45.3	100.0
<i>Total Northeast region</i>	2.8	11.4	33.1	52.6	100.0

Source: same as Table 1.

Notes: same as Table 2.

The distribution of land showed significant variation across regions and *municípios* in northeast São Paulo, but the only region in which small farms had some importance in terms of occupied area was Cajuru, with 13.2 percent of the total farm land. In all other regions smallholders usually held no more than 3.5 percent of farm land, although some municipalities like Jardinópolis (5.9 percent) and São Simão (5.7 percent) showed slightly higher percentages. Even most of the *municípios* of the Franca region follow this overall pattern, again contrary to what historiography has argued. Franca, for example, had only 1.2 percent of the total agricultural area owned by small farmers, a percentage even lower than recorded in Ribeirão Preto (2.5 percent), the place famous by its coffee barons and huge plantations.

The other size classes showed more geographical variation than observed in smallholdings. Medium farms were particularly important in Cajuru (25.1 percent) and Franca (17.5 percent) regions, so that *municípios* like Santo Antônio d’Alegria (44.5 percent) and Franca (19.7 percent)

exhibited relatively high shares of total farm land occupied by this size class. The Ribeirão Preto region, in turn, is noticeable by its quite low share of medium-size properties – just 5.7 percent in Ribeirão Preto and 5.8 percent in Sertãozinho, for instance.

Large farms and latifúndia also showed substantial variability across regions. Ribeirão Preto and Sertãozinho were the places with the most widespread presence of latifúndia – 75.8 percent and 76.5 percent of the total area. These figures were much higher than those observed, for example, in Franca and Patrocínio do Sapucaí (34.7 percent and 38.6 percent, respectively). Yet even in the region where latifúndia were more prevalent (Ribeirão Preto), one *município* (São Simão) had a much smaller area (35.9 percent) occupied by these very big farms. In other regions, large farms (that is, between 100 and 500 *alqueires*) had a more balanced participation when compared to latifúndia, in particular in the region of Franca. The *municípios* of Franca and Patrocínio do Sapucaí showed a higher percentage of large farms than *latifúndios* (44.4 and 50.3, respectively), such as happened with the cases of São Simão (44.5) and Santo Antônio da Alegria (29.8) (Table 3).

Despite the variation of land structures in different geographical areas, the dominance of big landholdings was a remarkable feature of northeast São Paulo in the early twentieth century. Together, large farms and latifúndia spread over 91 percent and 88.6 percent of total agricultural area in the regions of Batatais and Ribeirão Preto, respectively. Their main *municípios* are illustrative of the prevalence of big properties – Ribeirão Preto (91.9 percent) and Batatais (89.1). Regions with a relatively lower share of latifúndia were also the reign of big properties, such as Franca (80.5 percent). A similar pattern is found in municipalities like Nuporanga and Franca, with 92.8 percent and 79.1 percent of the land held by large farms and latifúndia, respectively. The only exception is Santo Antônio d’Alegria in the Cajurú region, whose big landholdings totaled just 29.8 percent of the farm area (Table 3).

Although the size distribution indicates a high degree of concentration of land ownership, there are at least two major problems with the typology adopted: first, it does not provide a precise measure of land concentration as it relies on arbitrary size classes; second, it is based on total farm land, when for our purposes a more relevant measure would be what was effectively produced in the farms, such as the cultivated land and other similar measures. The next section presents additional estimates on land concentration in an attempt to avoid these problems.

## 5. Land Concentration

Table 4 shows estimates which offer a more precise view of inequality in land ownership in northeast São Paulo during the early twentieth century. A key statistical measure used to summarize

the degree of inequality among farmers is the Gini coefficient of concentration, which ranges between 0 (perfect equality) and 1 (perfect inequality), so that the closer the coefficient is to 1, the more unequal is the distribution of land. Gini estimates refer only to the owners of land recorded in the 1904-1905 agricultural census, not considering therefore the remaining rural population which included colonists, tenants and other forms of hired labor on which the official statistics did not provide specific information. Thus the figures should be taken as lower-bound estimates of land concentration, as the inclusion of landless workers would rise inequality indicators. We also calculate the share of total farm land owned by the largest 5 percent and 20 percent, as well as the smallest 50 percent of farmers, as complementary indicators of concentration. As the latter measures are relative to the land size in each region and municipality, we need to take into account the values of land area owned by farmers. Aside from Gini coefficients, we also present alternative measures of concentration. To save space, percentiles of farm land and other measures of concentration are provided in the Appendix.

Table 4 – Concentration of Total Farm Land, Northeast São Paulo, 1904-5

Regions and Municipalities	Share of largest 5 percent	Share of largest 20 percent	Share of smallest 50 percent	Gini Index
<i>Ribeirão Preto</i>	66.3	86.4	3.0	0.838
Ribeirão Preto	65.3	87.9	2.1	0.847
Cravinhos	45.1	70.7	7.9	0.703
São Simão	42.6	73.3	5.4	0.730
Sertãozinho	80.5	88.8	1.8	0.911
<i>Cajuru</i>	57.5	79.2	5.7	0.769
Cajuru	62.5	82.2	4.9	0.794
Santo Antônio d' Alegria	29.8	62.2	9.8	0.628
<i>Batatais</i>	50.9	75.1	5.8	0.743
Batatais	47.4	81.3	3.0	0.777
Nuporanga	46.5	65.2	14.5	0.618
Jardinópolis	75.1	90.7	3.3	0.880
<i>Franca</i>	41.6	70.5	10.1	0.674
Franca	36.4	61.6	15.2	0.575
Ituverava	43.3	66.1	10.4	0.669
Patrocínio do Sapucaí	28.9	62.8	11.2	0.599
Santa Rita do Paraíso	51.6	79.4	4.3	0.779
<i>Northeast São Paulo</i>	52.7	79.5	4.1	0.773

Source: same as Table 1.

The distribution of farm land shows trends similar to those of the size-class typology of the previous section. More than one-half of the land was owned by the largest 5 percent of farmers, whereas only 4.1 percent were held by the smallest 50 percent in northeast São Paulo. The Ribeirão Preto region presents the highest concentration, with 66.3 percent of land held by the largest 5 percent of farmers and 3.0 percent by the smallest 50 percent. Franca was the region with the lowest participation of the top largest farmers – 41.6 percent, compared to 10.1 percent of land owned by

the bottom-half rural producers. High concentration is also demonstrated by the upper-middle landowners group of largest 20 percent: their share reached 79.5 percent in northeast São Paulo and 86.4 percent of the farm land in the Ribeirão Preto region, as compared with the 70.5 percent of the Franca region (Table 4). As we have noted, however, these figures must be seen in perspective, since the typical land size by each of these categories was very different across regions. Thus, for example, the largest 5 percent of farmers in the Ribeirão Preto region (corresponding to the 95<sup>th</sup> percentile of the distribution) owned a minimum of 420 *alqueires*, whereas the same top group in the Cajuru region was constituted by farmers with 144 *alqueires* at least (see Table 1A, in the Appendix).

Sertãozinho and Jardinópolis were by far the *municípios* with the highest shares of the top 5 percent (80.5 percent and 75.1 percent) of farmers. As for the largest 20 percent group, Ribeirão Preto (87.9 percent), Cajuru (82.2 percent), Batatais (81.3 percent) and Santa Rita do Paraíso (79.4 percent) showed nearly as high shares as Jardinópolis (90.7 percent) and Sertãozinho (88.8 percent). The *municípios* of Patrocínio do Sapucaí (28.9 percent), Santo Antônio d'Alegria (29.8 percent) and Franca (36.4 percent) exhibited the lowest participation of the top 5 percent of farmers. The area owned by the smallest 50 percent of farmers was higher in Franca (15.2 percent) than in any other *município*, followed by Nuporanga (14.5 percent) and Patrocínio do Sapucaí (11.2 percent).

Still, Table 4 shows another interesting fact: although municipalities like Santo Antônio d'Alegria, Franca and Ituverava exhibited relatively low shares of the top 5 percent of farmers, their top 20 percent controlled more than 60 percent of total land, indicating a major presence of upper-middle farmers in these localities. Even more important, *municípios* like Franca and Ituverava had a high threshold for their upper landholding class: the percentile distribution shows that the largest 20 percent of farmers (the 80<sup>th</sup> percentile) in Franca, for instance, owned a minimum of 184 *alqueires* – above that in Ribeirão Preto (133 *alqueires*). The same feature can be observed for other municipalities such as Patrocínio do Sapucaí (243 *alqueires*) and Ituverava (200 *alqueires*). In fact, the top 5 percent of landowners (95<sup>th</sup> percentile) in the Franca region had a higher minimum area (500 *alqueires*) than that in the Ribeirão Preto region (420 *alqueires*). The Batatais region was the one with the highest minimum area (95<sup>th</sup> percentile) corresponding to the largest 5 percent of landowners (600 *alqueires*) (Table 1A, Appendix). Thus, a relatively lower percentage of the top 5 percent of farmers does not imply that small landholdings predominated in one locality.

The Gini coefficient, a summary measure of inequality of the entire distribution, reached a value of 0.773 for all landholdings in northeast São Paulo. Gini coefficients of two or more

distributions can be compared and ranked only under certain conditions.<sup>43</sup> As regions and municipalities in northeast São Paulo show cases in which such conditions do not apply, the calculated Gini indexes are not always unambiguous as to the classification of specific landholding structures as more or less concentrated. Generalized Entropy inequality measures are presented along with Gini coefficients in the Appendix, in order to save space (Tables 4A, 5A and 6A). The Ribeirão Preto region had the most unequal land structure (Gini = 0.838), whereas the Franca region showed the lowest inequality index (Gini = 0.674) in northeast São Paulo.<sup>44</sup> Sertãozinho (0.911), Jardinópolis (0.880) and Ribeirão Preto (0.847) were the *municípios* with the highest Gini indexes, but the ordering does not follow necessarily these values since the alternative inequality measures show different conclusions as regards Sertãozinho and Jardinópolis. The same is true about the municipalities with the lowest Gini coefficients: Franca (0.575), Patrocínio do Sapucaí (0.599), Santo Antônio d'Alegria and Nuporanga (0.618) (Table 4A, Appendix).<sup>45</sup>

Another interesting fact is that relatively low Gini indexes did not imply the presence of smaller properties. In Franca and Patrocínio do Sapucaí, for example, the size of properties in both lower (between 10<sup>th</sup> and 50<sup>th</sup> percentiles) and upper (between 50<sup>th</sup> and 90<sup>th</sup> percentiles) classes of landowners was consistently higher than in Ribeirão Preto and Sertãozinho. Only in the top percentiles was that the Ribeirão Preto region's big landowners left their distinctive mark on land inequality of northeast São Paulo. In Ribeirão Preto, for instance, the 95<sup>th</sup> and 99<sup>th</sup> percentiles jumped to 900 and 2,898 *alqueires* respectively, higher than 457 and 1,530 *alqueires* recorded in Franca. Sertãozinho, the *município* with the highest Gini coefficient, registered 4,500 *alqueires* in its 99<sup>th</sup> percentile (Table 1A, Appendix).

Overall these indicators reinforce the previous finding, according to which a very high degree of concentration of land ownership was a key feature of northeast São Paulo, even though there were considerable differences in the inequality measures across regions and municipalities. Similar Gini inequality indexes for land ownership were registered for other coffee-growing regions in the Americas, such as the district of Yauco in Puerto Rico – 0.750 in 1897.<sup>46</sup> Still, such levels of

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<sup>43</sup> Comparison and ranking are possible when the underlying Lorenz curves of two or more distributions do not cross, that is, when their values lie entirely above or below the others. Otherwise, the Gini coefficient is not an unambiguous measure of the relative standing of each distribution, so that an evaluation of the ranking will require an additional set of inequality measures. Atkinson, *Economics*, 54-6.

<sup>44</sup> As shown by Table 4A in the Appendix, the Generalized Entropy indexes converge with the Gini coefficients in both cases.

<sup>45</sup> For instance, the GE(2) index, which is more sensitive to land size differences at the top end of the distribution, shows the lowest inequality for Patrocínio do Sapucaí (1.112), followed by Santo Antônio d'Alegria (1.145) and Franca (1.965). See Table 4A, Appendix.

<sup>46</sup> Bergad, *Slavery*, 69.

inequality were greater than in other coffee producing areas based on smallholdings, notably in Colombia and Costa Rica.<sup>47</sup>

Total land owned by farmers is an important dimension of land inequality. Yet farm lands were only partially cultivated and sometimes had a minor area devoted to subsistence or commercial crops.<sup>48</sup> Vast tracts of farm lands could be used for pasture or left fallow because of poor soil conditions, lack of capital, scarcity of labor or just for speculative purposes. Cultivated land, that is, the land that was effectively in crop production, is an important measure of economic status and wealth and therefore a further aspect to be considered in our analysis. Table 5 presents inequality indicators for cultivated land in northeast São Paulo.

Table 5 – Concentration of Cultivated Land, Northeast São Paulo, 1904-5

Regions and Municipalities	Share of largest 5 percent	Share of largest 20 percent	Share of smallest 50 percent	Gini Index
<i>Ribeirão Preto</i>	49.5	80.1	5.0	0.761
Ribeirão Preto	48.8	78.2	4.4	0.762
Cravinhos	34.0	63.7	10.6	0.643
São Simão	39.1	74.4	6.1	0.720
Sertãozinho	67.9	86.0	6.2	0.822
<i>Cajuru</i>	36.3	60.0	18.2	0.560
Cajuru	40.0	64.5	17.1	0.597
Santo Antônio d' Alegria	14.5	42.9	22.1	0.405
<i>Batatais</i>	33.9	65.6	10.7	0.643
Batatais	44.8	67.5	11.7	0.620
Nuporanga	37.1	64.7	15.8	0.585
Jardinópolis	39.8	78.2	5.7	0.737
<i>Franca</i>	37.7	67.1	13.0	0.616
Franca	35.9	69.9	13.1	0.646
Ituverava	35.6	63.1	21.6	0.556
Patrocínio do Sapucaí	28.7	54.0	31.0	0.508
Santa Rita do Paraíso	32.5	63.1	19.5	0.568
<i>Northeast São Paulo</i>	55.9	82.4	4.4	0.757

Source: same as Table 1.

The landed elite exerted greater control over cultivated land than over total farm land: 55.9 percent by the largest 5 percent and 82.4 percent by the largest 20 percent of farmers in northeast São Paulo. At the same time, the smallest 50% kept practically the same area as they had in total farm land, by around 4%. Again the Ribeirão Preto region stands out with the highest share (49.5 percent) of cultivated land held by the largest 5 percent of farmers, while the Batatais region had the lowest participation (33.9 percent) of the top farmers. The share of the largest 20 percent continued

<sup>47</sup> Roseberry, "Introduction", 5-7; Samper, "Significado Social".

<sup>48</sup> Cultivated land represented 28.5 percent of total farm land in northeast São Paulo in 1904-1905, although there was huge variation in the shares among *municípios*: for example, 65.2 percent in Cravinhos, 64.9 percent in Ribeirão Preto and 56.8 percent in São Simão, compared to 4.9 percent in Nuporanga and 10.8 percent in Franca. Calculated from São Paulo, *Estatística Agrícola*.

high, even in *municípios* with a relatively low participation of the largest 5 percent, such as São Simão (74.4 percent), Franca (69.9 percent) and Nuporanga (64.7 percent) (Table 5). As expected, the meaning of these categories in terms of land size was quite different among localities. The minimum size of the top 5 percent of farmers (95<sup>th</sup> percentile) was, for instance, 200 *alqueires* in the Ribeirão Preto region compared to 16 *alqueires* in the Cajuru and 44 *alqueires* in the Franca regions (Table 2A, Appendix).

Contrary to what was observed in total farm land, upper-medium landowners in the Ribeirão Preto region had consistently larger cultivated areas than those in other regions. As an illustration, the largest 20 percent of farmers (the 80<sup>th</sup> percentile) in Cravinhos owned a minimum of 100 *alqueires* of cultivated area whereas in Franca they owned 15 *alqueires* and in Ituverava 7 *alqueires*. The explanation lies in the fact already mentioned that Ribeirão Preto was the region with the highest proportion of cultivated area in northeast São Paulo. Besides, the top largest landowners (95<sup>th</sup> percentile) was much greater in Ribeirão Preto region than in others: 200 *alqueires* in the Ribeirão Preto region compared to 44 *alqueires* in the Franca region and 70 in the Batatais region, as can be seen in Table 2A, Appendix.

Land Gini index in northeast São Paulo declines slightly when the cultivated area is taken into account (0.773 to 0.757), with more substantial differences among regions and *municípios*. The Ribeirão Preto region (0.761) shows again the highest, and the Cajuru region (0.560) the lowest Gini coefficient for cultivated land. As for the municipalities, Sertãozinho (0.822) and Ribeirão Preto (0.762) had the highest Gini coefficients, but not all alternative indexes move in the same direction.<sup>49</sup> The lowest Gini coefficients were registered for Santo Antônio d'Alegria (0.405) and Patrocínio do Sapucaí (0.508). Interestingly, Franca was the only municipality whose cultivated land Gini was substantially higher (0.646) than the farm land index (0.575) (Tables 4 and 5).

These coefficients suggest that inequality in the ownership of cultivated land in northeast São Paulo was very high even when it is compared to other geographical areas with a plantation-like social and economic structure. As illustration, the cotton region of the U.S. Antebellum South (Gini index = 0.575) showed higher concentration of improved land than the North (Gini index = 0.427 on average) in 1860, but its Gini coefficient was still much lower than the level recorded in Northeast São Paulo (0.757). The largest 5 percent of farmers controlled 31.7 percent of improved

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<sup>49</sup> According to the GE(2) index, inequality of cultivated land was higher in São Simão (4.297) than in Ribeirão Preto (3.807). See Table 5A.

land in the U.S. Cotton South in 1860, against 55.9 percent by their counterparts in northeast São Paulo in the early twentieth century.<sup>50</sup>

As northeast São Paulo was one of the most important coffee regions worldwide by the early twentieth century, another relevant indicator to be evaluated is a more direct measure of coffee production capacity such as coffee trees – was their distribution as unequal as in total farm and cultivated land, as seen above? Table 6 shows the results.

Table 6 – Concentration of Coffee Trees, Northeast São Paulo, 1904-5

Regions and Municipalities	Share of largest 5 percent	Share of largest 20 percent	Share of smallest 50 percent	Gini Index
<i>Ribeirão Preto</i>	43.2	75.9	5.0	0.743
Ribeirão Preto	46.5	79.1	4.2	0.766
Cravinhos	35.0	65.6	8.4	0.649
São Simão	32.6	69.0	7.0	0.677
Sertãozinho	64.3	87.9	4.4	0.836
<i>Cajuru</i>	39.3	66.8	10.9	0.646
Cajuru	45.1	73.9	7.2	0.706
Santo Antônio d' Alegria	10.5	38.4	27.9	0.326
<i>Batatais</i>	34.5	70.8	8.3	0.673
Batatais	35.4	73.1	8.7	0.678
Nuporanga	31.0	66.6	12.6	0.640
Jardinópolis	22.6	53.9	11.9	0.583
<i>Franca</i>	27.0	69.1	11.0	0.646
Franca	31.6	69.2	10.1	0.653
Ituverava	27.4	54.1	11.8	0.583
Patrocínio do Sapucaí	20.0	57.6	11.7	0.584
Santa Rita do Paraíso	34.8	69.3	10.5	0.645
<i>Northeast São Paulo</i>	50.2	83.5	5.5	0.764

Source: same as Table 1.

Coffee trees concentration is roughly similar to what was recorded for cultivated land. The landed elite controlled one-half of the coffee trees while the bottom 50 percent farmers grew only 5.5 percent of the trees in northeast São Paulo. The Ribeirão Preto region leads the way with 43.2 percent of the trees held by the largest 5 percent and just 5.0 percent by the smallest 50 percent of farmers. In the other end of the spectrum was the Franca region: 27 percent of coffee trees grown by the top 5 percent and the 11 percent by the smallest 50 percent of farmers. Nonetheless, there is more convergence between regions when we take the largest 20 percent, for example in Franca region (69.1 percent) and Ribeirão Preto region (75.9 percent). Upper-middle farmers continued to have a key role in regions with a smaller participation of the largest 5 percent of farmers. Once more Sertãozinho stands out as the *município* with the highest share (64.3 percent) of the top 5

<sup>50</sup> Wright, “Economic Democracy”, 73-4. Similar results are obtained by comparing the shares of total farm land in Tennessee and northeast São Paulo. See Soltow, “Land Inequality,” 283. The concept of “improved land” employed by Gavin Wright is only roughly comparable with that of “cultivated land”, since the former may comprise other conditions of land – for example, when it is cleared but not yet sowed.

percent of landowners and only 4.4 percent of coffee trees owned by the bottom-half farmers. The lowest share held by the top largest farmers are found in Santo Antônio d'Alegria (10.5 percent), Patrocínio do Sapucaí (20 percent) and Jardinópolis (22.6 percent). A similar ranking is found for the largest 20 percent, except for Patrocínio do Sapucaí, which had a higher share (57.6 percent) than Ituverava (54.1 percent). The mass of smallest owners had higher shares of coffee trees in Santo Antônio d'Alegria (27.9 percent) and Nuporanga (12.6 percent) (Table 5).

The number of coffee trees owned by each class of farmers was also very different: for example, in the Ribeirão Preto region the minimum size of the top 5 percent of farmers (95<sup>th</sup> percentile) was 400,000 coffee trees, a much higher figure than that in the Cajuru region (30,000 coffee trees). In fact, the *municípios* of Ribeirão Preto, Cravinhos and São Simão in the Ribeirão Preto region tended to have a greater number of coffee trees in nearly all classes of the distribution, with the exception of Jardinópolis in the Batatais region (Table 6A, Appendix).

Inequality in coffee trees ownership as measured by the Gini index reached 0.764 in northeast São Paulo. While the Ribeirão Preto region showed the highest Gini coefficient (0.743), the result is not as unambiguous regarding the least unequal in coffee trees ownership – Cajuru and Franca regions had the same Gini coefficient (0.646), but the alternative indexes point to Franca as the region with the lowest inequality.<sup>51</sup> Sertãozinho (0.836), Ribeirão Preto (0.766) and Cajuru (0.706) were the municipalities with the highest indicators of coffee trees concentration – and not only with regards the Gini coefficient. The lowest inequality index of coffee trees ownership was registered in Santo Antônio d'Alegria (Gini = 0.326), which was again rather atypical in relation to other *municípios* in northeast São Paulo.

## 6. Conclusions

The main conclusion of this study is that a high degree of inequality prevailed in northeast São Paulo's agriculture in the early twentieth century, regardless the concepts and measures utilized. The size-class distribution showed that most of the land was owned by large farmers and latifundists, with only a minor fraction of the area controlled by small and medium-sized landowners. This result contrasts with what has often been argued by the historiography which draws its conclusions from the number of farmers and the average size of properties. That the number of small and medium farmers was far greater than that of larger landowners did not lead to a more "democratic" landholding structure in northeast São Paulo at the time.

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<sup>51</sup> GE(0), GE(1) and GE(2) for the Franca region were 0.826, 0.830 and 1.523, respectively; the same indexes for the Cajuru region were 0.849, 0.932 and 2.762, respectively (Table 6A, Appendix).

This finding is corroborated by the estimates on inequality. Both percentile shares and alternative measures of total land farm, cultivated land and coffee trees concentration indicate that the landed elite controlled most of the productive resources in the coffee economy of the region studied. In particular, a class of upper-middle landowners were important in nearly all municipalities and regions, even in those with relatively lower inequality among farmers. In others, very big landowners held sway and led to extremely high inequality indexes. The bottom half of farmers had some importance only in a few municipalities, but even in these exceptional cases their share was always below one third of the land area or coffee trees.

We have to stress that these conclusions apply only to a region that cannot be regarded as representative of the state of São Paulo and, even less, of Brazil as a whole, at least until land concentration in other geographical areas during the nineteenth and early twentieth century is more fully investigated. Further research on land inequality is a necessary step in an attempt to understand the way that the distribution of wealth and political power shaped institutions and long-run development in Brazil. Still, the evidence presented in this study already indicates that the classic view that large estates were the central institution of Brazilian agriculture and gave rise to a highly unequal distribution of land (and wealth) fits well with the most important coffee export region in the early twentieth century.

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## Appendix

Table 1A – Distribution of Total Farm Land by Percentiles, Northeast São Paulo, 1904-5 (area units in *alqueires*)

Regions and Municipalities	10 <sup>th</sup> percentile	25 <sup>th</sup> percentile	50 <sup>th</sup> percentile	75 <sup>th</sup> percentile	80 <sup>th</sup> percentile	90 <sup>th</sup> percentile	95 <sup>th</sup> percentile	99 <sup>th</sup> percentile
<i>Ribeirão Preto</i>	4	9	20	100	120	250	420	2500
Ribeirão Preto	4	6	21	119	133	250	990	2898
Cravinhos	6	10	80	150	200	325	550	2600
São Simão	8	12	22	100	150	258	350	2000
Sertãozinho	3	6	12	40	60	160	350	4500
<i>Cajuru</i>	2	5	12	30	40	80	144	800
Cajuru	2	5	14	35	45	80	175	1500
Santo Antônio d'Alegria	2	4	10	27	40	80	100	220
<i>Batatais</i>	4	10	80	200	220	380	600	3000
Batatais	3	6	21	130	160	308	653	1500
Nuporanga	70	90	160	273	300	453	960	3800
Jardinópolis	3	5	8	30	50	100	250	1200
<i>Franca</i>	7	25	60	140	177	300	500	2000
Franca	25	42	80	155	184	280	457	1530
Ituverava	20	40	60	150	200	320	600	2000
Patrocínio do Sapucaí	20	33	102	213	243	440	760	1060
Santa Rita do Paraíso	3	6	25	70	100	220	465	1500
<i>Northeast São Paulo</i>	4	10	39	120	153	280	500	2150

Source: same as Table 1.

Note: Percentiles refer to values that divide the observations (total farm land in this case) into 100 equal parts (that is, into groups of 1%), ordered from lowest to highest values. A specific percentile corresponds to a value below which lies a certain percentage of the ordered observations. The 50<sup>th</sup> percentile (or 2<sup>nd</sup> quartile) corresponds to the median. 1 *alqueire* equals 5,98 acres, 2,42 hectares or 24,200 square meters.

Table 2A – Distribution of Cultivated Land by Percentiles, Northeast São Paulo, 1904-5 (area units in *alqueires*)

Regions and Municipalities	10 <sup>th</sup> percentile	25 <sup>th</sup> percentile	50 <sup>th</sup> percentile	75 <sup>th</sup> percentile	80 <sup>th</sup> percentile	90 <sup>th</sup> percentile	95 <sup>th</sup> percentile	99 <sup>th</sup> percentile
<i>Ribeirão Preto</i>	3	5	11	45	66	125	200	890
Ribeirão Preto	2	4	14	50	78	126	250	1111
Cravinhos	4	8	40	95	100	195	280	1055
São Simão	4	8	12	50	80	150	200	500
Sertãozinho	2	4	8	15	21	50	100	890
<i>Cajuru</i>	1	2	3	5	6	10	16	48
Cajuru	1	2	3	5	6	12	20	62
Santo Antônio d'Alegria	1	2	3	6	6	9	10	18
<i>Batatais</i>	2	4	6	15	20	45	70	140
Batatais	2	4	8	19	25	50	70	130
Nuporanga	2	5	6	10	15	22	50	180
Jardinópolis	1	2	4	15	20	51	95	182
<i>Franca</i>	2	2	4	10	11	20	44	100
Franca	2	3	5	11	15	35	50	150
Ituverava	2	2	3	6	7	13	19	77
Patrocínio do Sapucaí	3	5	10	15	15	20	60	100
Santa Rita do Paraíso	2	2	4	7	9	18	26	76
<i>Northeast São Paulo</i>	2	3	6	15	20	50	95	250

Source: same as Table 1.

Note: same as Table 1A.

Table 3A – Distribution of Coffee Trees by Percentiles, Northeast São Paulo, 1904-5 (number of coffee trees)

Regions and Municipalities	10 <sup>th</sup> percentile	25 <sup>th</sup> percentile	50 <sup>th</sup> percentile	75 <sup>th</sup> percentile	80 <sup>th</sup> percentile	90 <sup>th</sup> percentile	95 <sup>th</sup> percentile	99 <sup>th</sup> percentile
<i>Ribeirão Preto</i>	5,000	10,000	23,000	100,000	140,000	260,000	400,000	1,500,000
Ribeirão Preto	4,000	8,000	26,000	110,000	150,000	250,000	500,000	2,112,700
Cravinhos	7,000	15,000	60,000	160,000	171,000	340,000	435,000	1,800,000
São Simão	9,000	16,000	24,250	100,000	160,000	300,000	390,000	1,000,000
Sertãozinho	3,000	5,000	15,000	30,000	43,600	150,000	278,000	1,580,600
<i>Cajuru</i>	1,000	2,000	5,000	10,920	13,000	21,250	30,000	100,000
Cajuru	750	1,500	3,500	10,000	12,600	25,000	40,000	160,000
Santo Antônio d'Alegria	2,500	5,000	8,125	12,500	14,500	15,000	21,250	27,250
<i>Batatais</i>	2,400	5,000	12,000	35,000	50,000	96,750	150,000	320,000
Batatais	2,000	4,000	8,000	23,000	30,000	75,000	118,000	208,000
Nuporanga	4,000	6,000	20,000	41,000	60,000	110,000	200,000	335,548
Jardinópolis	6,000	15,000	30,000	100,000	130,000	174,000	220,000	600,000
<i>Franca</i>	2,000	4,000	8,000	20,000	26,000	50,000	100,000	170,000
Franca	2,500	4,000	8,000	24,500	30,000	67,500	100,000	240,000
Ituverava	2,000	4,000	11,000	24,000	30,000	50,000	80,000	140,000
Patrocínio do Sapucaí	2,000	4,000	12,500	23,500	28,000	45,000	100,000	180,000
Santa Rita do Paraíso	2,000	3,000	5,000	15,000	18,000	36,000	60,000	151,000
<i>Northeast São Paulo</i>	2,000	5,000	12,000	32,000	50,000	120,000	200,000	500,000

Source: same as Table 1.

Note: same as Table 1A.

Table 4A – Indexes of Inequality for Total Farm Land Land, Northeast São Paulo, 1904-5

Regions and Municipalities	GE(0)	GE(1)	GE(2)	Gini
<i>Ribeirão Preto</i>	1.764	1.971	11.510	0.838
Ribeirão Preto	1.946	1.834	6.817	0.847
Cravinhos	1.192	1.052	2.341	0.703
São Simão	1.177	1.184	3.262	0.730
Sertãozinho	2.322	2.841	21.247	0.911
<i>Cajuru</i>	1.287	1.591	7.629	0.769
Cajuru	1.413	1.705	7.462	0.794
Santo Antônio d'Alegria	0.815	0.726	1.145	0.628
<i>Batatais</i>	1.423	1.364	6.120	0.743
Batatais	1.583	1.282	2.977	0.777
Nuporanga	0.693	1.022	4.215	0.618
Jardinópolis	1.954	2.594	24.368	0.880
<i>Franca</i>	0.999	0.989	2.596	0.674
Franca	0.606	0.738	1.965	0.575
Ituverava	0.862	1.012	2.683	0.669
Patrocínio do Sapucaí	0.735	0.669	1.122	0.599
Santa Rita do Paraíso	1.503	1.403	4.341	0.779
<i>Northeast São Paulo</i>	1.458	1.503	7.537	0.773

Source: same as Table 1.

Note: GE indexes are Generalized Entropy measures. GE(0) is the mean logarithmic deviation; GE(1) the Theil's T index, and GE(2) is half the square of the coefficient of variation. GE(0) is more sensitive to differences at the bottom of the distribution; GE(2) is more sensitive to differences at the top of the distribution; GE(1) puts equal weight to differences in the entire distribution. Gini index is explained in the text. See Cowell, "Measurement," 109-10; "Measuring," chap. 3.

Table 5A – Indexes of Inequality for Cultivated Land, Northeast São Paulo, 1904-5

Regions and Municipalities	GE(0)	GE(1)	GE(2)	Gini
<i>Ribeirão Preto</i>	<i>1.295</i>	<i>1.369</i>	<i>4.816</i>	<i>0.761</i>
Ribeirão Preto	1.360	1.307	3.807	0.762
Cravinhos	0.941	0.805	1.488	0.643
São Simão	1.112	1.205	4.297	0.720
Sertãozinho	1.479	2.055	12.065	0.829
<i>Cajuru</i>	<i>0.551</i>	<i>0.741</i>	<i>2.311</i>	<i>0.560</i>
Cajuru	0.631	0.841	2.534	0.597
Santo Antônio d'Alegria	0.289	0.273	0.324	0.405
<i>Batatais</i>	<i>0.792</i>	<i>0.834</i>	<i>1.749</i>	<i>0.643</i>
Batatais	0.728	0.743	1.443	0.620
Nuporanga	0.615	0.743	1.642	0.585
Jardinópolis	1.225	1.111	2.325	0.737
<i>Franca</i>	<i>0.678</i>	<i>0.788</i>	<i>1.677</i>	<i>0.616</i>
Franca	0.781	0.845	1.690	0.646
Ituverava	0.529	0.684	1.510	0.556
Patrocínio do Sapucaí	0.463	0.520	0.882	0.508
Santa Rita do Paraizo	0.557	0.674	1.384	0.568
<i>Northeast São Paulo</i>	<i>1.184</i>	<i>1.483</i>	<i>8.080</i>	<i>0.757</i>

Source: same as Table 1.

Note: same as Table 4A.

Table 6A – Indexes of Inequality for Coffee Trees, Northeast São Paulo, 1904-5

Regions and Municipalities	GE(0)	GE(1)	GE(2)	Gini
<i>Ribeirão Preto</i>	<i>1.268</i>	<i>1.222</i>	<i>3.626</i>	<i>0.743</i>
Ribeirão Preto	1.404	1.340	4.170	0.766
Cravinhos	0.974	0.827	1.551	0.649
São Simão	0.972	0.907	1.829	0.677
Sertãozinho	1.683	1.902	8.597	0.836
<i>Cajuru</i>	<i>0.849</i>	<i>0.932</i>	<i>2.762</i>	<i>0.646</i>
Cajuru	1.044	1.116	3.251	0.706
Santo Antônio d'Alegria	0.206	0.175	0.180	0.326
<i>Batatais</i>	<i>0.953</i>	<i>0.869</i>	<i>1.563</i>	<i>0.673</i>
Batatais	0.937	0.908	1.806	0.678
Nuporanga	0.824	0.769	1.257	0.640
Jardinópolis	0.728	0.609	0.889	0.583
<i>Franca</i>	<i>0.803</i>	<i>0.810</i>	<i>1.500</i>	<i>0.646</i>
Franca	0.826	0.830	1.523	0.653
Ituverava	0.649	0.611	0.894	0.583
Patrocínio do Sapucaí	0.727	0.639	0.996	0.584
Santa Rita do Paraizo	0.773	0.827	1.576	0.645
<i>Northeast São Paulo</i>	<i>1.326</i>	<i>1.401</i>	<i>5.831</i>	<i>0.766</i>

Source: same as Table 1.

Note: same as Table 4A.