

THE OXFORD HANDBOOK OF

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THE BRAZILIAN  
ECONOMY

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## CHAPTER 2

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# THE COLONIAL ECONOMY

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FLÁVIO RABELO VERSIANI

### 2.1. INTRODUCTION

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THE colonial period—from the arrival of the Portuguese in 1500 to independence from Portugal in 1822—encompasses roughly two-thirds of Brazilian economic history.<sup>1</sup> It could not fail to influence the further development of the country's economy.

A basic question, which has been analyzed from various perspectives, poses itself naturally: Why has the path of growth of the Brazilian economy—and of Latin American countries, in general—diverged so markedly from that of other countries colonized approximately in the same period, in particular the United States and Canada?

The beginning of that divergence is usually placed in the second half of the eighteenth century, and is associated with the onset of rapid productivity growth brought about by the industrial revolution. According to Angus Maddison's estimates, the Brazilian per capita gross domestic product (GDP) would have been 106% of that of the present-day United States in 1700; this percentage decreased to 51% in 1820. This suggests that the eighteenth century should be a focal point of attention in examining the evolution of the Brazilian economy.<sup>2</sup>

The emergence of industrialization in Western Europe in that period originated the pattern of international trade typical of the nineteenth century, characterized, schematically, by exports of industrial goods by some countries, especially in Western Europe and North America, and exports of raw materials and food products by less-developed economies, especially in Latin America and Asia. A branch of literature, pioneered by Raúl Prebisch (1949) and influential in Latin America in the second half of the twentieth century, emphasized the consequences of such patterns of trade for the future development of countries exporting primary goods. The specialization of resource-rich Latin American economies in primary production, even though advantageous in the short run—as demonstrated by the theory of comparative advantage—would have been detrimental to the long-run development of those economies, barring them from full access

to the productivity gains associated with industrial activities (on this literature and its extensions, see Baer 1962; Love 1994; Palma 2008).

Following that approach, authors as Furtado (1968 [1959]) sought to investigate the reasons that Brazil had not followed the path of industrialization in the eighteenth century, taking advantage of the windfall of gold and diamond production in that period. Furtado's answer stressed the lack of technical knowledge on the part of the Portuguese, resulting from the nonexistence of an industrial tradition in Portugal. A series of treaties with England, from the seventeenth century, had opened the Portuguese market to English manufacturers. The so-called Methuen Treaty of 1704 consolidated the wine-versus-textiles pattern of trade between the two countries, preventing Portugal from access to industrialization.

Prado (1971 [1942]) adopted a more general line of interpretation, which has gained increased favor more recently. Prado pointed out that the overall orientation of Portuguese colonization in Brazil induced policies and institutions adverse to the development, in the colony, of productive activities other than those profitable to the colonizing country—that is, the production of goods exportable to Europe. The influence of these policies and institutions was strongly imprinted on all aspects of Brazilian life, not only during the colonial period, but also to some extent after the country's independence from Portugal. The colonial heritage had significant effects on independent Brazil's economy and social structures, as well as on its institutions; it was a pervasive conditioning factor.

Prado's arguments have a modern touch, as they have points in common with the approach more recently adopted by economists and economic historians when examining the question of the income gap between nations. A common factor in those analyses is the central importance attributed to institutions, in line with Douglass North's pioneering work (North 1981, 1990). From this point of view, institutional patterns, favorable or unfavorable to economic development, would be the main factor explaining the divergent paths followed by the economies of the Americas (Coatsworth 1993; Engerman and Sokoloff 1997, 2012; García 1993).<sup>3</sup>

Differences in institutions have been associated, in this literature, with the different conditions under which colonization took place. Some authors see institutional patterns as "inherited" from the mother country. Accordingly, British norms and practices, considered more conducive to economic growth than those prevailing in the Iberian countries, would have been a decisive factor of superiority of the British colonies in the present-day United States, as compared to those in Latin America. As put by North, "[t]he evolution of North America and of Latin America differed radically right from the beginning, reflecting the imposition of the institutional patterns from the mother country upon the colonies and the radically divergent ideological constructs that shape the perception of the actors" (North 1990, 102).

A different approach sees institutions as evolving from the type of productive activity predominant in the initial period of colonization, conditioned, to a large extent, by the natural endowment of productive factors. Where production for exportation—such as sugarcane plantations—prevailed, institutions less favorable toward economic growth



would develop, especially with regard to property rights and the rule of law; the opposite would be true in regions where colonization was based on small, family-size farms (Engerman and Sokoloff 1997, 2012; see also econometric studies such as Rodrik et al. 2004).

Engerman and Sokoloff (2012), in particular, have argued that the divergent paths of development followed by the economies of North, Central, and South America were essentially defined by their initial factor endowments and climatic conditions. The natural environment determined the main type of productive activity in the process of colonization, and, in turn, influenced the institutional pattern that evolved in each case. In regions where natural endowments favored the development of large-scale agricultural production for exportation, as in Brazil, land distribution was very unequal, and slave labor prevailed. Those conditions, in turn, would have caused large inequalities in wealth and in political power, leading to an institutional framework unfavorable to economic development.

In what follows, we examine some institutional aspects of the Brazilian colonial period that seem particularly relevant in explaining later developments. It would appear that both inherited Portuguese institutions and those associated with geography and climate had a bearing on those developments.

After an overview of the colonial period (section 2.2), the following sections deal with the relationship between government and the private sector (section 2.3); slavery (section 2.4); and land distribution (section 2.5). The final section presents some concluding remarks.

## 2.2. THE COLONIAL PERIOD: AN OVERVIEW

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In the first decades after their arrival in 1500, the Portuguese, more interested in the profitable Eastern trade, were mainly concerned with retaining possession of their newfound lands.<sup>4</sup> Attempted occupation by other European powers—especially the French, in this initial period—was their main worry. From the mid-sixteenth century, the favorable prospects of sugar production led to a gradual increase in European settlers (almost exclusively Portuguese). It is supposed that their numbers grew from less than 5,000 in 1550, to around 30,000 in 1600 (out of a total population of around 100,000), and 100,000 in 1700 (out of a total of around 300,000). These totals include subjugated Indians and African slaves, the latter in increasing proportion. Portuguese settlers and slaves were mainly concentrated in the northeastern sugar-producing region (Pernambuco and Bahia captaincies) in the sixteenth and seventeenth centuries. Converted Jews (*cristãos-novos*) were a significant proportion of the settlers in that period.<sup>5</sup>

In the eighteenth century the population increased markedly, as the gold rush provoked large-scale migration from Portugal, as well as increased slave trade from Africa. This caused an upsurge in the population in the central-southern part of the

country, the main locus of mining activity. By the end of the colonial period, the population reached around 3.6 million, 30% of whom were African slaves, and was more or less evenly balanced between the Northeast and the Central-South. Settlement in the Amazonian basin was still very limited.

To administer the colony, Portugal attempted first to divide the territory into 14 *capitanias* (captaincies), granted to individuals who had distinguished themselves in the Eastern colonies, or had other kinds of court connection. The grantees were supposed to explore the captaincies with their own resources, or to raise capital under their own initiative. Only two captaincies had any economic success, mostly due to sugarcane cultivation: Pernambuco, in the Northeast, and São Vicente, in the South. All were eventually returned to the Crown.

In 1550, a central government was established in Bahia, transferred, in the eighteenth century, to Rio de Janeiro. However, the captaincy governors remained the most influential representatives of the Portuguese authority throughout the colonial period.

In relation to economic activities, the colonial period can be roughly divided into four parts, reflecting the main productive activities at different times. From 1500 to the 1550s, the exploration of brazilwood predominated. The decades from the 1560s to the 1690s were the era of sugar; during most of this period, Brazil was the world's largest producer and exporter. Production expanded rapidly up to the initial decades of the seventeenth century, and at a slower pace after that. Available estimates show the number of sugar mills increasing from 60 in 1570, to 346 in 1629, to 582 in 1710. The majority of those mills were in Pernambuco, although Bahia and, later, Rio de Janeiro were also centers of sugarcane cultivation and processing. In the second half of the seventeenth century, increased production of sugar in the French and British colonies in the Caribbean, favored by colonial preference and proximity to Europe, caused decreased demand for the Brazilian product (Furtado 1968 [1959], Chapters 4–6; Mauro 1997, 257; Schwartz 1984, 423).

A third period, from the last years of the seventeenth century to the 1770s, was the gold cycle, the first significant strikes having occurred in the 1690s. Gold extraction reached its peak from the mid-1730s to the mid-1760s (close to 14 tons per year, in those years), declining afterward; by the end of the century, it was less than one-third of that peak. The total amount of gold extracted in the eighteenth century was close to 900 metric tons, according to Noya Pinto's estimate (Pinto 1979, 114).<sup>6</sup>

Furtado (1968 [1959]) argues that consumption and investment expenses in the sugar economy were mostly directed to imports owing to the highly unequal income distribution, which caused a high propensity to consume imported articles; investment expenses, mostly sugar mill equipment and slaves, also led to expenditures abroad. Consequently, there was no significant market for internally produced goods—not even for agricultural foodstuffs, which were mainly cultivated within the confines of the sugar farms. On the contrary, the gold cycle brought about a substantial internal market. Gold extraction did not require large outlays; it was, in a way, a democratic activity, open to many individuals—although, of course, not all of them were successful miners. Accordingly, income distribution was much less unequal. Consumption from

the mining region fostered cattle raising and the cultivation of food staples in various areas to the north, west, and south of that region. The gold boom contributed significantly to economic integration of the country.

The question remains as to why, in spite of such stimulus of demand, an industrial sector did not develop in Brazil at the time. This crucial point will be dealt with in the next section.

After the decline of gold extraction, the fourth and final phase of the colonial period benefited from interrupted supplies of agricultural commodities from North and Central America, caused by the American wars of independence, the Napoleonic wars, and the Haitian revolution of 1791–1804. On the demand side, the growing need of the English textile industry for cotton was also a factor in what has been called an agricultural “revival” in this period.

The years from the 1770s to independence had previously been considered a period of economic stagnation (notably by Furtado 1968 [1959], Chapter 16). But more recent data for exports of agricultural goods in this period (sugar, rice, cotton, tobacco) have revealed a different picture (Alden 1984). The large number of slaves brought from Africa in these years also indicates increasing economic activity (see section 2.4).

## 2.3. COLONIAL GOVERNMENT AND THE PRIVATE SECTOR

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Portuguese colonial administration had elements in common with the way that Spain administered its American colonies: “a centralized form of government with power concentrated in the Crown [...] the institutions in the overseas colonies [being] denied any effective political voice” (Bernecker and Tobler 1993, 2). However, such similarity is more evident in the period after 1700. Before that, Portuguese control over private agents and institutions in Brazil was much less strict.

In fact, in the first two centuries of colonization, private initiative had a central role. Quoting Leroy-Beaulieu’s study on colonization, Gilberto Freyre writes that, in this initial period, there was a “complete absence of a regular and complicated system of administration” in Brazil; the colony was “not much governed” (*peu gouverné*, in the French economist’s words) (Freyre 1986 [1933], 26).

Capital for building *engenhos* (sugar mills), which required considerable outlay, came mostly from European sources. The Portuguese Crown built a few mills in the beginning; in general, however, it mostly offered land grants and tax incentives in order to attract investors. Some captaincy grantees built *engenhos*, as in Pernambuco: “Portuguese and foreigners with access to European credit were also among the first mill owners” (Schwartz 1985, 23). Transactions among private mill owners were frequent; in Bahia, “mills were actively bought and sold,” and the same was true in Pernambuco (Cabral de Mello 1997, Chapter 10).

In Pernambuco, funds from converted Jews (*cristãos-novos*), seeking to escape the Inquisition and attracted to a lucrative business, seem to have been important in financing the sugar business in the sixteenth and early seventeenth centuries. "The export sugar trade of Pernambuco was mainly in the hands of *cristãos-novos*, in connection with Jews in Amsterdam and Hamburg. Many of the *cristãos-novos* also owned sugar mills [. . .]" *Crístãos-novos* were also present in the Bahia sugar business (Gonsalves de Melo 1996, 26, my translation; for Bahia, see Pinho 1982).

In the southern captaincy of São Vicente, individual initiative was also prevalent. The numerous expeditions from São Vicente toward the interior of the colony, especially in the seventeenth century, with the purpose of capturing Indians as slaves, were carried out largely on the initiative of private individuals, without the prior approval of colonial authorities. In contrast to sugar production, which was restricted to those who could afford the initial investment in a mill and slaves, such expeditions—*bandeiras*—were democratically "accessible to all men, without distinction of class, function or profession." These expeditions were instrumental in expanding the territory of the colony far beyond the boundary dividing Portuguese and Spanish possessions in the New World, established in the Treaty of Tordesillas of 1494 (Ellis 2003, 308, my translation).

The colonial authorities, especially at the local level, were strongly under the influence of private interests. "[T]he colonial elites sought and found ways to make royal and municipal government responsive to their interests and goals" (Schwartz 1984, 498). The municipal councils (the *Senados das Câmaras*) were usually in the hands of locally dominant groups. As Freyre emphasizes, those councils "limited the power of the kings" (Freyre 1986 [1933], 27).

In 1549, the Portuguese Crown decided to establish in Bahia a general government of the colony, aimed at centralizing administration and taking back some of the powers previously granted to the captaincies. However, this move toward centralization had a limited effect in the sixteenth and seventeenth centuries. An example is the frustrated attempt of the first governor general, Tomé de Sousa, to impose his authority on the Pernambuco captaincy, where sugar production was starting to gain importance. He met with tenacious resistance from the headstrong *donatário*, Duarte Coelho, who complained bitterly to King João III: his powers and privileges should not be curtailed, but rather increased. The king complied, and Pernambuco was excluded from the governor general's jurisdiction, to the latter's great resentment. The following decades saw a tug of war between the successors of Sousa and Coelho; by the beginning of the seventeenth century, there could be no doubt that the Coelhos had been victorious (Holanda 2003, 140–141). During that century, "the Pernambucan governors [. . .] continued to free the captaincy from the power of centralized government in Bahia" (Dutra 1973, 60).

Meanwhile in the other successful captaincy, the São Vicente region, the governor general's authority would not prevail. The Jesuit missionaries wished to establish a village in the inland plateau, to facilitate their contact with the Indians, whose religious instruction they were intent on pursuing. Sousa refused them permission; he wanted to restrict colonization to the coastal area, in order to avoid diversion of productive resources away from sugar production. Nevertheless, the royal decision apparently

favoring the Jesuits, who were allowed to found, in 1554, what would become the present city of São Paulo (Holanda 2003, 144–146).

In fact, the governors general (who at times received the pompous title of viceroy) had their authority limited to the captaincy where they lived (Bahia, up to 1763, and then Rio de Janeiro); their privileges over the captaincy governors were little more than decorative (Holanda 2003, 154; Silva 1984, 482).<sup>7</sup>

In short, in the first two centuries of colonization, as long as the Crown received its taxes, “the planter class were [*sic*] given free rein.” This opened the way for an enlarged influence of powerful families and *caudilhos* (local chieftains), and eventually to conflicts among them, especially in the interior of the country. The seventeenth century, in particular, witnessed various struggles involving local *caudilhos* (Schwartz 1984, 499).<sup>8</sup>

### 2.3.1. Transformations in the Eighteenth Century

This situation changed drastically in the beginning of the eighteenth century: the Portuguese state became much more active and interventionist in the colony. Some writers have described this transformation in dramatic terms: “The colonial power [...] suddenly changes its attitude [towards rural rulers] in the obvious purpose of dominating and triturating them”; “The steamroller of royal administrative centralization was sharply felt, in the eighteenth century” (Oliveira Viana 1973 [1920], 191; Avellar 1983, 52, my translations).

The cause was the discovery of gold, which brought about the need to control its extraction, fight smuggling and, above all, to collect taxes. Significant gold mines were found in the last years of the seventeenth century; the discovery of diamonds, in 1730, further impelled the government to adopt strict controls.

Those controls could occasionally take the form of despotic and arbitrary measures. Examples include the expulsion of all goldsmiths from mining regions, or a similar measure directed to all free blacks and mulattos; the imprisonment of friars present in those regions, with no definite function (they were the main suspects of promoting gold smuggling); a prohibition of sugar mills being built in mining areas; varied restrictions on commerce with other regions; and so forth. Many of these measures were ineffective, and some were revoked; but most were clearly disruptive of private economic activity (Holanda 1985, 277–279, 290; Russel-Wood 1984, 566–567, 573–574, 578;).

A sign of augmented Portuguese authority was the creation of new royal captaincies and many *vilas* (municipalities) in the mining region in the first decades of the eighteenth century. New *comarcas* (judicial districts) were also established, and the presence of military forces was secured. Two companies of *tropa de linha* (professionally trained regular troops) were stationed in Minas Gerais in 1729 and 1739. *Milícias* (local auxiliary troops) multiplied throughout the mining areas (Russel-Wood 1984, 560–565).

The weight of colonial authority increased further in the second half of the eighteenth century, during the reign of Dom José I (1750–1777). In this period, the dominant figure

in the Portuguese government was Secretary of State Sebastião de Carvalho e Melo, Marquis of Pombal. Sometimes described as an enlightened despot, Pombal tried to increase the gains that Portugal could extract from Brazil, by far its most important colony at this time. This meant additional strengthening and centralization of the Crown's authority, with no concessions to local autonomy. The powers of town councils (*Senados das Câmaras*) were even further curtailed (Silva 1984, 479–482).

As mentioned earlier, gold extraction fell rapidly after the peak reached in the 1760s. The colonial authorities attributed such a decline to an increase in smuggling; accordingly, stricter procedures were adopted, in an attempt to guarantee the desired level of tax revenue. This was one of the causes of a frustrated insurrection in the captaincy of Minas Gerais, the main mining region, in the late 1780s.

During this period, Portuguese authorities viewed with alarm the spread of small workshops producing various kinds of textiles, especially in Minas Gerais. This was considered a dangerous diversion of resources away from activities profitable to the Crown—in particular, gold extraction. The development of a local source of income could also open the way to economic and political independence, as Antônio de Noronha, governor of Minas Gerais (1775–1780) warned at the time with some apprehension. Martinho de Mello e Castro, the influential Portuguese secretary of state in charge of the colonies (1770–1795), concurred with Noronha in his instructions to a new Minas Gerais governor in 1788: the installation of manufacturers in Brazil would bring forth “the gravest harm and most pernicious consequences” (Mello e Castro 1844 [1788], 18, my translation).

Besides, the fall in gold production had caused a decrease in imports from England, as the persistent deficit in the Portuguese balance of trade with that country had previously been compensated by remittances of Brazilian gold. The fall in imports from England made possible an increase in textile production in Portugal; the Brazilian workshops were thus undesirable competitors. In view of all those threats to the colonizing country, an *alvará* (royal decree) of 1785 prohibited fabrication of all types of textiles in the colony, excepting only coarse cotton goods for slave clothing or for packaging (Silva 1984, 494 ff).

As Prado noted, formal prohibitions, such as the 1785 decree, were only one aspect of a larger system of practices and institutions that guided the colonization of Brazil. That system fixed “the narrow horizons permitted to a colony established to supply a few agricultural commodities” (Prado 1971 [1942], 264). As noted earlier, those horizons had become much narrower in the eighteenth century, severely restricting the scope for private enterprise. Under such circumstances, the development of an industrial sector based on private investment would be a practical impossibility.<sup>9</sup>

### 2.3.2. Characteristics of Portuguese Colonial Administration

The increasingly centralized and coercive nature of the colonial policy in the eighteenth century should be considered in light of the peculiarities of the Portuguese system of



public administration. The legislation that would establish the guiding principles of colonial administration in Brazil was very confusing, and sometimes contradictory. It is worthwhile to quote Prado (1971 [1942], 349–350) at some length in that respect:

If we study the colony's administrative legislation, we find a mass of enactments, subject to continual modifications often of a contradictory nature, which appeared to be entirely unconnected and pile up with no guiding plan whatsoever. [. . .] The administrative organs and functions mentioned in one place disappear in another or appear under different names and in different forms; persons to whom authority had been delegated often received their instructions in the form of letters which became law, and which frequently established new rules or a different allocation of functions and competence from those previously in force. When a new administrative organ or function was created, the law made no attempt to harmonize it with existent bodies or functions; minute and often contradictory instructions were issued for the matter at hand, only the immediate needs being provided for.

During the period when the marquis of Pombal served as secretary of state, attempts were made to rationalize the institutional framework of colonial policy toward Brazil, but with little success. As Silva notes, "the intricate web of authority and overlapping functions so characteristic of the old regime did not disappear" (1984, 481).

Part of the explanation for this "chaotic jumble," in Prado's words, was that the legislation in force in the colony was in general merely copied from Portuguese laws and codes, with no attempt to adapt them to an entirely different context.

Such chaos had at least two noticeable consequences. The first was a widespread tendency for legislation to be applied differently in different circumstances, to be enacted repeatedly, or simply to be disobeyed. For instance, a law of 1681 prohibiting the construction of a sugar mill too close to another (an attempt to restrict supply, in a period of falling prices) was sometimes ignored or circumvented; although formally in effect until the nineteenth century, the law was considered to be dead in 1800, only to be reinstated in 1802 by a royal provision. Legislation limiting the placing, by creditors, of liens on sugar mills was enacted at least six times, from 1636 to 1700 (Schwartz 1985, 195–197).

A second, and more important, consequence was that, as written norms were often confusing and difficult to interpret, local authorities had considerable leeway when taking decisions in particular cases. According to Prado (1971 [1942], 352), the duties of a captaincy governor, for instance, "[. . .] were never clearly defined, and his authority and jurisdiction always varied widely from captaincy to captaincy and from governor to governor. They varied, above all, in accordance with the personalities and capabilities of the men appointed to the office."

In the eighteenth century, regulations and restrictions applied almost exclusively to mining, and to persons related to that activity. But the great majority of the population was in other trades; in relation to those, local authorities were largely autonomous (Holanda 1985, 295).

Such autonomy was enhanced by the frequent occurrence of local conflicts in the mining area. The increased number of authorities in the region—whose functions and jurisdictions were, as mentioned, rather ill defined—had to react quickly. Necessarily, they would often make decisions at their own discretion (Russel-Wood 1984, 570–571).

The autonomy of local authorities, the fact that their decisions were often contingent on their personalities and inclinations—all this fostered a situation clearly detrimental to the “rule of law.” Under such circumstances, it would undoubtedly be advisable for individuals affected by such decisions to be on good personal terms with the authorities. Thus, personal relations and contacts would be of primary importance; laws and rules would not be uniformly applied to all.

This brings to mind an argument developed in Buarque de Holanda’s influential study on Brazilian historical evolution (Holanda 1989 [1936]). Holanda’s analysis puts great emphasis on the importance of personal ties in Brazilian society. He argued that an “ethic rooted in emotion” (109) prevails in Brazilian culture, leading to a “system of relationships built essentially on direct, person-to-person connections” (97). This would hamper a “rigid application [. . .] of any legal prescripts” (113), and would cause reluctance to “accept a supra-individual principle of organization” (105, translations mine).<sup>10</sup>

This sort of behavior could lead, on the part of the authorities, to some difficulty in understanding “the fundamental distinction between the private and the public domains” (Holanda 1989 [1936], 105–106). This notion relates to Max Weber’s concept of patrimonialism; a public official who confuses private and public spheres is typical of the “patrimonial state,” which is antithetical to the “bureaucratic state” characterized by impersonal regulations and juridical guaranties afforded to all citizens (Weber 1968, esp. Chapter 12).

To some authors, notably Faoro (1958, 1975), patrimonialism—essentially, confusion between private and public spheres, leading to the use of state institutions for private benefit—has been a constant factor in Brazilian history, dominating the relations between the government and the private sector from colonial times to the present.

This is not the place to discuss Holanda’s or Faoro’s arguments. But it may be argued that the need to develop personal ties with the authorities, in colonial times, especially in the eighteenth century—a form of patrimonialism—could have influenced, or reinforced, the type of behavior described by those authors.<sup>11</sup>

The relevant point to be stressed here, however, is that such a lack of general, impersonal rules and procedures certainly had a strong dampening effect on private initiatives in the eighteenth century. As Weber writes, “the patrimonial state lacks the political and procedural *predictability*, indispensable for capitalist development, which is provided by the rational rules of modern bureaucratic administration” (Weber 1968, 1095; emphasis in the original). Even in the absence of the effective opposition of the Portuguese authorities, therefore, industrial investment would have been a doubtful possibility at that time.



### 2.3.3. Taxation

The methods adopted to collect taxes in the colonial period were an additional source of uncertainty and a disincentive to producers. In the gold cycle, the main tax was the *quinto*, the fifth part of the gold extracted, which was property of the Crown. The form of collecting the *quinto* varied greatly, not only in different periods, but also from one region to another. At least a dozen methods were tried. Gold was extracted from alluvial deposits, using very simple techniques; getting a good strike was a very uncertain proposition. The frequent changes in the form of taxation added a further element of uncertainty. Capitation (commonly a head tax on slaves, but sometimes falling on all shops and businesses of the region) was often adopted, in the hope of minimizing losses through contraband. It was a particularly unfair form of taxation, since it had little relation to the income derived from gold extraction; disincentive effects would be considerable (Russell-Wood 1984, 584ff.).

The most general tax was the tithe, charged on all types of production. Collection was generally farmed to contractors, the *dizimeiros*. This involved additional distortions. Collection was often made at intervals of three years, and was evaluated at the prices of the third year, possibly higher than the three-year average, thus increasing the value of the tax to be paid. The producer had to pay in money, which could be a serious problem if his production had not yet been sold, or if it sold at lower prices than those used in the evaluation. Should the producer be unable to pay, his property could be confiscated. Traveling through the province of Goiás, at the end of the colonial period, the French naturalist Saint-Hilaire found that it was difficult to buy food provisions; fearing the *dizimeiros*, farmers cultivated only what their families would consume, or what they could in advance be certain of selling (Prado 1981 [1942]; Saint-Hilaire 1975 [1847], 118).

In short, the colonial system of taxation was a source of uncertainty as well as a disincentive. Gold and diamond extraction could eventually be very profitable to individual miners; however, the general environment of insecurity, uncertainty, and patrimonialism would effectively block any possibility of private investment leading to the diversification of productive activities.

## 2.4. SLAVERY

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Brazil was the main destination of the Atlantic slave trade. Data available in the last decade have enabled a better understanding of the time profile of the trade, especially in the case of Brazil.<sup>12</sup> According to that data, of the estimated 10.7 million African slaves who disembarked in the Americas from the sixteenth to the nineteenth centuries, 4.9 million came to Brazil. Of those, 3.6 million arrived in the colonial period.

The reasoning that relates institutional traits of the colonial period to factor endowments and climate conditions is certainly relevant in the case of slavery. When the

good prospects of sugar production for export became apparent in the first years of colonization, the use of slave labor seemed a natural solution. Labor requirements of sugar production under the plantation system—previously adopted by the Portuguese on the island of São Tomé—were high. Attracting free laborers from Portugal, with its very small population, would be much too expensive, in comparison with the possibilities offered by enslaving Indians and by the African slave trade (in which the Portuguese were already experienced).

The increasing profitability of the sugar business and the fact that Africans were more accustomed to working in agriculture made for a decrease in the utilization of enslaved Indians; by the end of the sixteenth century, African slaves prevailed. In the transatlantic slave trade, males outnumbered females, frequently in a proportion of two men for each woman. This was apparently influenced not only by preference on the part of buyers, but also by the relative price of male and female slaves in the African market. The gender imbalance caused the slave population to have a negative rate of growth; more slaves had to be imported merely to maintain the size of the labor force, which of course reinforced that imbalance. This process continued and intensified with the large demands for labor in the gold boom, and later in the agricultural revival of the final decades of the colonial period.<sup>13</sup>

Table 2.1 shows the number of slaves who disembarked in Brazil from Africa. It is noteworthy that, after the end of the gold boom, slave imports increased markedly. There are indications that the upsurge in agricultural production in those years, absorbing an intense flow of forced migration from Africa, involved not only an expansion of agricultural exports, as mentioned earlier, but also production for internal consumption.

Agricultural production that had previously developed to satisfy demand from the mining regions found an alternative market in the city of Rio de Janeiro—the main urban center of the colony—after the end of the gold boom. Rio also became, toward the end of the colonial period, a hub of interregional commerce. Brown's (1986) detailed study of internal trade centered in Rio de Janeiro in this period shows exchanges taking place between regions as far apart as Rio Grande do Sul, in the extreme South, and Pernambuco, in the Northeast. "Areas which were either inappropriate for export production or too far away to sustain high transport costs began to be drawn into an

**Table 2.1 Slaves Disembarked in Brazil in the Colonial Period**

Subperiod	Main Productive Activity	No. of Slaves (Thousands)	Annual Average
1561–1690	Sugar	671	5,200
1691–1770	Gold	1,419	17,700
1771–1821	Agricultural "revival"	1,552	30,400
Total		3,642	

Source: Estimates in *Voyages: The Trans-Atlantic Slave Trade Database*. <http://www.slavevoyages.org>.

internal network which supplied entrepôt cities and plantations” (Brown 1986, 670). Evidence in this direction is also present in works by Fragozo and Florentino (Fragoso 1992, 104–106, 134 ff; Fragozo and Florentino 2001).

It is common to find in the literature an association between Brazilian slavery and large-scale agricultural production for export. Slave labor was certainly a central element in sugar or coffee plantations; however, evidence brought to light in recent periods has revealed that slavery played a larger role in the Brazilian economy and society.

For one thing, the use of slave labor was widespread in practically all types of productive activity; “it became clear that slave labor was present in all areas of the economy, either producing for external or for internal markets” (Luna and Klein 2004, 198, my translation). People of all stations of life had slaves. An extreme example comes from a charity hospital in Rio de Janeiro, the *Santa Casa de Misericórdia*. The hospital received slaves for medical treatment, charging their owners for the cost. In some cases, however, the owner could not afford the payment, and left the slave in the hospital. The cost of maintaining those abandoned slaves strained the finances of the institution; it was decided, then, that slave owners classified as “indigents” would be exempt from payment for the treatment of their slaves. A provision to this effect was introduced in the hospital’s regulations (Soares 1958, 48).

The idea that most slaves belonged to large holdings should also be subject to qualification. Sugar farms generally had many slaves (not unfrequently more than one hundred, especially in the earlier period), but average holdings were quite small, reflecting the large number of smallholdings.

For instance, data from five localities in the gold-mining region, in different points of the gold cycle in the eighteenth century, show that the average size of slave holdings is, at most, seven. Out of a total sample of 14,500 slaves, more than three-quarters (76%) belonged to holdings smaller than 20, and more than one-half (57%) to holdings of fewer than 10 slaves (Luna 1981).

In the main sugar-producing area of the province of Bahia, then the chief sugar exporter of the colony, a sample of more than 22,000 slaves in 1817 showed a similarly low average size of holdings: 10.4. Four in 10 slaves belonged to holdings smaller than 20, and one-fourth to holdings of fewer than 10 slaves. Nearly one-half of the sample (48%) corresponded to holdings of sugar-mill owners, with a much larger average size (66 slaves per owner) (Schwartz 1982).<sup>14</sup>

Data still unpublished from research by the present author (in collaboration with José O. Vergolino), based on a sample of 258 inventories of descendants’ estates from all regions of the province of Pernambuco (the sugar-production coastal zone, the cattle-raising and cotton-producing backlands, and the capital city of Recife), in the period 1800–1820, point in the same direction. Slave ownership was present in 90% of the inventories; the total number of slaves was 2,617, an average of 10 slaves per owner. The proportion of slaves in holdings of fewer than 20 (89% of the inventories) was 43%; that in holdings smaller than 10, 28%. The modal (most frequent) holding was that of just one slave. At the other extreme, 42% of the slaves belonged to only 11 individuals, each of them holding, on average, 100 slaves.

Another example comes from a census of the São Paulo province in 1804. The number of slaves in the province was 43,949; the average holding was six. Fully 73% of the slaves were in holdings of 20 or less, and 50% in holdings of 10 or fewer slaves (Luna and Klein 2003, tables 5.2, 5.4).

One important result of such wide diffusion of slave ownership from the colonial period is that most Brazilians considered slavery, until late in the nineteenth century, to be a normal, unquestioned aspect of daily life. According to Joaquim Nabuco—himself one of the most vehement and combative opponents of slavery—“[Brazilian] society, at all levels, had as much perception and conscience of the anomaly of slavery as it had of the motion of the Earth” (Nabuco 1975 [1897–1899], 602). No doubt, this helps to explain why Brazil was the last Western country to abolish slavery. Abolitionism became an influential movement only in the 1880s; slavery was finally abolished in 1888. The social basis of support for the forced-labor regime was not restricted to the Brazilian upper classes.

## 2.5. LAND OWNERSHIP

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Land ownership was highly unequal from the beginning of the colonial period; land was made available in large tracts (*sesmarias*), without payment, to those having the means to explore them. This system was in force until the end of the colonial period.

Land concentration went hand in hand with wealth concentration and, certainly, concentration of political power in the hands of a few. In fact, it was a self-reinforcing process. To obtain a *sesmaria*, the petitioner had to show that he was able to explore it; this essentially meant that he had to prove the possession of a sufficient number of slaves (or the capacity to buy them). In other words, he had to be a man of means (rarely, a woman). In addition, he had “to count on [...] personal relations, to make good his petition” (Holanda 1985, 296, my translation). Conversely, extensive land properties could open the way to increased wealth and increased power. In the words of Furtado, the structure of land property was no less than “a system of power” (1982, 107).

Some authors have associated the pattern of land distribution in the colonial period, in countries like Brazil, with the predominant productive activity at the time. Engerman and Sokoloff (2012), in particular, have related the unequal distribution of landholdings to economies of scale in the production of certain agricultural products—sugar, in the case of Brazil (Engerman and Sokoloff 2012, 39, 42 n.14, 331).

However, a closer examination of historical facts shows that a causal relation linking sugar cultivation to large landholdings is a doubtful proposition in the Brazilian case. The typical size of *sesmarias* was much larger than could be justified by the technical requirements of sugar production. In fact, it would seem that economies of scale in sugarcane plantations were not large; there are many examples of cane being cultivated in relatively small plots.

The supply of sugarcane to be processed in the typical sugar mill (*engenho*) came in large part from independent planters, the *lavradores*. Many *engenho* owners in the colonial period did not plant cane at all. In a report sent to Holland, in 1640, the Dutch councilor van der Dussen gave detailed information on the 166 *engenhos* existing at the time in four of the six captaincies under Dutch domination at the time (Pernambuco, Itamaracá, Paraíba, and Rio Grande do Norte). Sugarcane to be processed came mostly from *lavradores* (69.8% of the total). The average area of *engenhos* was rather small: 43.5 hectares; the area cultivated by each *lavrador* averaged 8.3 hectares.<sup>15</sup> Those numbers should be viewed as approximations; Dussen himself suggests that production reported by *engenho* owners and *lavradores* should be increased by one-third (Dussen 1981 [1640], 163–164). However, even if the preceding areas are doubled (or tripled), they would still be quite out of proportion with the average area of *sesmarias* granted.

Other findings point in the same direction. Schwartz finds that the average area cultivated by each *lavrador* in a large Bahia *engenho* in 1626 was 6.1 hectares. According to him, “there was no need of extensive holdings and *lavrador* agriculture was probably highly intensive” (Schwartz 1973, 163).<sup>16</sup> The same author gives data for 35 Bahia *engenhos* in 1785, in which the average number of *lavradores* was 4.1. Of the total number or slaves, 40% belonged to *lavradores*, who possessed on average 10 slaves; the average holding of the *engenho* owners was 61 (Schwartz 1985, table 11-1, 306).

*Lavradores* were generally allowed to occupy a plot on the lands of the *engenho* owner, but some had their own land. The canes they harvested had to be brought swiftly to the *engenho*, otherwise the sugar content was reduced. The resulting sugar was divided between the *engenho* owner and the *lavrador*. The average number of *lavradores* per *engenho*, in various regions and periods, was three to five; they usually owned five to ten slaves (Cabral de Mello 1997, 430; Dussen 1981 [1640]; Schwartz 1985; Tollenare 1978 [1818]).<sup>17</sup>

Data for a later period also show sugar farms much larger than the cultivated portion. After visiting the important *Engenho Salgado* in Pernambuco in 1816, the French trader Tollenare verified that, out of a total area of 8,700 hectares, only about 370 hectares were effectively cultivated; woodland and pastures occupied the remaining area (Tollenare 1978 [1818], 56–57).

Considering the available evidence, it would be difficult to justify the size of land grants in the colonial period by reference to the land requirements of sugar cultivation. Noncultivated areas could be related, to some extent, to sugarcane production; pastureland was required for the numerous oxen needed on a typical sugar farm, firewood was necessary for the sugar-mill furnaces, and so forth. However, the disproportion between the size of sugar farms and the cultivated area—as in *Engenho Salgado*—seems too large. It is necessary to look for another explanation.

A careful study by Nozoe (2008) allows a close examination of *sesmaria* granting in the province of São Paulo from the sixteenth century to the nineteenth. This can be taken as a good sample of land distribution practices in the entire colony. It should be noted that sugarcane cultivation was important in the São Paulo area in the first period

of colonization, and also during the “agricultural revival” of the late eighteenth century and the first decades of the nineteenth.

Nozoe’s sample of 1,367 documents of land concession (*cartas de sesmaria*) for the period 1568–1822 shows that the average size of the *sesmarias* granted was 9,700 hectares (not far from the size of *Engenho Salgado*). Land distribution was highly unequal; the aggregate area of the 91 land grants larger than 50,000 hectares amounted to more than 4.5 million hectares, more than one-third of the area given to all 1,367 grantees (13.3 million ha). The Gini index was 0.54, computed for *sesmarias* granted; but Nozoe argues that it would be much higher if computed for the total area received by individual grantees, since multiple grants to the same person (or to members of the same family) were common.

As could be expected, individuals identified by titles such as *dom*, *doutor*, or *desembargador* (judge of the court of appeals) were granted larger than average *sesmarias*; the same was true for military officers and religious dignitaries. Some of the largest grants were given to men who had distinguished themselves as explorers of the interior and discoverers of gold mines.

Nozoe also examines the structure of land distribution in São Paulo toward the end of the colonial period, based on a sample of 8,717 registries of rural properties from all areas of the province in 1818. He finds that the average size of landholdings (445 ha) was less than 5% of the average size of *sesmarias* granted, revealing a strong process of fragmentation, mainly through purchase. Having traveled through São Paulo in 1819, Saint-Hilaire mentions the existence of about two hundred small *engenhos* in the region of Itu and Campinas; only in the largest of those did the number of slaves reach 20 (Saint-Hilaire 1976 [1851], 110, 175). The “agricultural revival” apparently caused a wave of land acquisitions in São Paulo by sugar producers. The fact that *engenhos* were so small in this area is another indication that economies of scale were not important in the sugar business in the colonial period.

The pattern of fragmentation of *sesmarias* in small properties (by purchase, and also by inheritance) at the same time that others were kept at the original size—causing an increase in the inequality of distribution—seems to have been common. In Escada, one of the main sugar-producing municipalities of Pernambuco, Eisenberg (1974, 130) found in the 1850s (after independence) that half of the 84 sugar plantations had less than 995 hectares, while the 13 largest ones, with more than 3,000 hectares, accounted for fully 70% of the cultivated land. A similar picture is described by Mattoso, also in the mid-nineteenth century, for the parish of Santiago do Iguape in the sugar area of Bahia; the average size of farms was only 313 hectares, but a single sugar estate, with 5,600 hectares, covered one-fourth of the area of the parish. This confirms that small sugar farms were economically viable—while a few powerful individuals maintained their prestige and power as large landholders (Kátia Mattoso, cited in Nozoe 2008, 213).

On the other hand, the inequality of distribution increased markedly. The Gini index for land distribution in 1818 for the province as a whole was 0.84; in the cattle-raising area, it was as high as 0.94. The 436 largest properties, 5% of the sample total, had no



less than 71% of the total area. As Nozoe points out, a similar process of concentration occurred also in the Brazilian Northeast.

No doubt, the consequences of the practice of granting large, sometimes immense *sesmarias* went far beyond the colonial period. But its initial purpose was unrelated to the needs of *engenho* owners, since, as argued earlier, the economics of sugar cultivation would not require such large tracts of land. The introduction and ample diffusion of that practice seem to have originated from a combination of three elements: the Crown's desire to occupy its dominion; the sheer vastness of the available lands; and the inadequate transplantation to the colony of a formal system of land distribution conceived under very different circumstances.

The desire to populate the colony was impelled, especially in the sixteenth century, by the perennial Portuguese fear of losing their colony to other powers, particularly the French (and in the seventeenth century, the Dutch). Considering the abundance of land, to provide a tract to anyone who wished to settle in it would seem a logical solution. This idea of granting land with the purpose of stimulating occupation of the colony was sometimes made explicit, as in a royal decree of 1590. Occupation was the main thing; whether or not the land would be cultivated was a secondary consideration (Costa Porto n.d., 66, 94).

The granting of *sesmarias* was an old Portuguese institution, regulated since the fourteenth century. It was first established in a situation of scarcity of wheat, and, consequently, increasing prices. The authorities, verifying the existence of uncultivated land, would intervene, either forcing the owners to make their properties productive, or distributing land, as *sesmarias*, to those willing to cultivate it. The basic objective was to increase production; if the land was kept unutilized, it could be confiscated. The size of *sesmarias* was, in such a comparatively small country, not a particularly open question, and small properties were the rule.

Following their time-honored practice of adopting in Brazil the same policies and institutions of their own country, the Portuguese did not introduce any relevant change to the fourteenth-century legislation on *sesmarias*. The requirement of land cultivation was maintained, but rarely was enforced; in any case, enforcement would have been difficult, given the size of the colony and the restricted human resources of the colonial administration.

On the other hand, nothing was determined up to the end of the seventeenth century as to the size of *sesmarias* to be granted. The unsurprising result, as seen earlier, was the granting of huge stretches of land to influential persons. Extensive *sesmarias*, especially in good locations on the coast, were frequently fractioned to be sold in smaller tracts, or rented out. Even after a size limitation was fixed, in 1695–1697, it was not always obeyed; larger *sesmarias* were still granted in the eighteenth century (Costa Porto n.d.; Nozoe 2008).

We may conclude that the factor-endowment argument, as a determinant element of land distribution, does not seem to apply in the Brazilian case. The highly unequal distribution of land in colonial Brazil was not a consequence of the decision by the Portuguese to implement sugarcane cultivation in their American possession, taking

advantage of the very favorable natural conditions. The main cause was their desire to occupy—the sooner the better—a very extensive territory subject to the ambitions of other European powers, and the adoption to this end of an institution indiscriminately transplanted from the mother country.

On the other hand, whatever its cause, the institutional framework that led to unequal land distribution certainly had adverse long-run consequences in many ways. Inequality in wealth has a tendency to perpetuate itself, via the larger influence of the wealthier in government and in politics.

Land distribution can also influence the structure of demand and, indirectly, the structure of production. Land occupation based on family farms—as in the British North American colonies—“will foster a more equitable distribution of incomes, which in turn fuels a demand for a broad range of goods and services [. . .], thus inducing investments in other sectors of the economy” (Garcia 1993, 73). Such stimuli would not have been present when land was handed out in vast *sesmarias*.

## 2.6. CONCLUDING REMARKS

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The fact that the Brazilian economy could not benefit from the productivity gains made possible by the industrial revolution in the eighteenth century may largely be attributed, as argued earlier, to practices and institutions characteristic of the Portuguese colonial policy at the time. In this sense, it may be said that such policy was instrumental in establishing an initial divergence between the Brazilian growth path and that of the early-industrializing countries of Western Europe and North America.

In the postcolonial period, an elastic supply of land, a consequence of the colonial system of land distribution, tended to discourage initiatives to increase the productivity of land. The rapid expansion of coffee production in the second half of the nineteenth century and the first decades of the twentieth was brought about mostly by increases in cultivated area; planters had no incentive to invest in land productivity (Furtado 1968 [1959], Chapter 28). In general, the growth of agricultural production in Brazil, up to at least the mid-twentieth century, was largely the result of area expansion, rather than increases in production per unit of area.

The colonial distribution of land in large tracts also had a lasting effect on the supply of unskilled labor. As land was appropriated by a limited number of favored individuals from the early periods of colonization, the growth of the landless population was mainly absorbed in the large landholdings, especially cattle farms. Free laborers—including ex-slaves—settled in those farms under various institutional arrangements, commonly as cattle hands growing their subsistence crops in small lots. To the landholder, additional dwellers had near-zero opportunity cost, given the vast size of the typical property; they were useful not only as a cheap source of labor but also, on occasion, as bodyguards in regions where conflicts were frequent and authorities scarce.



Furtado (1982) argues that the existence of this growing mass of rural laborers, with very low productivity and income levels, exerted a long-run downward pressure on urban wages, with important effects on the inequality of income distribution. In a broad perspective, the development of the postcolonial Brazilian economy up to the first decades of the twentieth century could be stylized in terms of the classical Lewis (1954) model. An elastic supply of labor would further disincentivize the search for productive methods that would increase general productivity.

Slavery, a basic institution of the colonial period, was a dominant element in Brazilian life for longer than three and a half centuries, and left an enduring mark on various aspects of the country's present-day economic and social structure—certainly, on the configuration of income distribution.

Portuguese colonial policy, frequently confused and disorganized, increased the importance of personal ties in the relations between authorities and the public. This hampered an impersonal application of rules and laws, increased uncertainty, and was certainly unfavorable to private initiative. To what extent this established a pattern of behavior that persisted beyond the colonial period is an open question.

To sum up, institutions of Portuguese colonization related to land, labor, and the public sector were decisive in shaping the development of the colonial economy, and influenced later developments in various ways and degrees. Some of those institutions—such as slavery and, in part, the system of land distribution—were a consequence of the form of colonization adopted by the colonizing country. Nevertheless, institutions transplanted from Portugal, often with no attempt to adapt them to very different conditions, were also important in this context.

## NOTES

1. This chapter had the benefit of Stanley Engerman's careful reading and detailed criticism. I received also valuable comments and suggestions from Stuart Schwartz, Iraci Costa, Nelson Nozoe, José Vergolino, and participants in a seminar at the Universidade de São Paulo. I wish to thank all of them; of course, any defects and interpretations are my own.
2. Computed from numbers in Maddison (2001, Table 2–22a). For explanations on how those numbers were determined, see Maddison (2001, 249–250); Gallman (1972).
3. It may be noted that Adam Smith had already stressed the importance of institutions in the development of colonies: “political institutions of the English colonies have been more favorable to the improvement and cultivation of [. . .] land than those of [the Spaniards, Portuguese and French]” (Smith 1991 [1776], 509).
4. For more details on this topic, see Furtado (1968 [1959], Parts 1–3).
5. Population estimates in this and the next paragraph draw on IBGE (1990, 30ff.); Marcílio (1984); Alden (1963); Simonsen (1977, 217); Quirino (1966).
6. To compare, the estimated amount of gold sent to Spain from its American colonies, in the period 1500–1660, was about 180 tons; silver remittances were much larger, close to 17,000 tons (Hamilton 1970, 42). Considering the average bimetallic ratios at the time (Hamilton 1970, 71, 123), that amount of silver would be equivalent, in monetary terms, to something like 1,600 to 1,700 tons of gold. Those numbers indicate that Brazilian eighteenth-century

gold corresponded roughly, in value, to one-half of the precious metals brought to Europe from the Spanish colonies in the sixteenth and seventeenth centuries.

7. The Count of Sabugosa, viceroy from 1720 to 1735, “repeatedly complained that governors of Minas Gerais failed to keep him informed of events in the mining areas and did not accord him due respect” (Russel-Wood 1984, 569).
8. On conflicts among family groups, see Oliveira Viana (1973 [1920], Chapter 11).
9. A striking example of the restrictions imposed on the colony in the eighteenth century is the fact that a printing shop opened in Rio de Janeiro in 1747 was promptly closed by the Portuguese authorities—lest it should produce subversive material. Only in 1808 was a printing establishment allowed to function in Brazil. In contrast, books had been published in the Spanish colonies since the sixteenth century (Holanda, 1969 [1936], 86).
10. For Holanda, the typical Brazilian would be a “‘cordial man’ in the etymological sense of the adjective; of the heart, heartfelt—an individual to whom emotions are an essential attribute of behavior” (Holanda 1989 [1936] Chapter 5).
11. Analyzing the central role of the government in the Brazilian economy in recent periods and the practices of clientelism and political patronage in the relation between the government and the private sector, Lazzarini (2011, 40, 117–120) refers to Faoro’s thesis, concurring that institutional traits inherited from the colonial period are hard to change.
12. The large database on the transatlantic slave trade (Eltis et al. 1999) has since been revised and enlarged, and is available in *Voyages: The Trans-Atlantic Slave Trade Database*, <http://www.slavevoyages.org> (cited henceforth as *Voyages*).
13. On the economics and demography of Brazilian slavery, see Klein and Luna (2010).
14. The sample is for the Bahian parishes of Santo Amaro and São Francisco.
15. Sugarcane production was measured in *tarefas*; estimates of cultivated area are based on a ratio of 0.44 hectares per *tarafa* (Schwartz 1973, 163; see also Schwarz 1985, 113–114). Dussen’s report has data on cane produced by 387 *lavradores* in 91 *engenhos*. The preceding proportion of cane produced by *lavradores* is based on twenty-four *engenhos* for which production by *engenho* owners and by *lavradores* is given separately. The average area of *engenhos* was also computed from this smaller sample. Original data in Dussen (1983 [1640], 141–176).
16. The author points out that average *lavrador* holdings were in fact larger, probably due to extensive tracts of non-arable land, a system of fallowing, and so forth.
17. The large number of *lavradores* in *Engenho do Conde* (Schwartz 1973) was atypical.

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