

**The Origins of Economic Backwardness in Brazil: Colonialism, Slavery and
Dependency Reconsidered**

William Summerhill
Department of History, UCLA

Prepared for the Penn Economic History Forum. This paper is a rough draft providing preliminary results drawn from several draft book chapters. Please do not cite without permission. Comments appreciated: summerhill@ucla.edu

Abstract: Historians have long focused on dependency-based explanations of Brazil's relative economic backwardness in the nineteenth century. These stressed external ties as the main mechanism by which the economy remained small. An assessment of the chief components of Brazil's external economic ties fails to account for its relative backwardness. The Brazilian economy performed poorly because it was heavily burdened not by external dependency, but by high domestic transactions costs. High transactions costs made it difficult to do business in any sector of the economy, and most regions of the country. Two factors account for Brazil's high transactions costs: geography that hobbled exchange over distance, and institutions that obstructed exchange and investment by either restricting them to the point of exclusion, or making activities risky to the point of being wholly uncertain. Much of the failure to reduce the inefficiency of economic organization in the nineteenth century stemmed from the organization of politics and government during the Empire (1822-1889). Prominent among these was the absence of political arrangements that divided authority between upper and lower levels of government. Excessively centralized government failed to protect a common market, promote competition among provinces in the provision of local public goods, constrain arbitrary market interventions by the State, and eliminate incentives to cater to rent-seeking. Brazilians accordingly had to bear, and the economy exhibited, the resultant costs.

In the last three decades the historiography on the nineteenth-century Brazilian economy has grown considerably. Much of this work is actually rooted in empirically-focused social history, drawing on quantitative evidence. Relatively few of its results have been cast explicitly in terms of their implications for allocative efficiency and long-term economic growth.¹ This paper draws from this literature, as well as original research to shed new light on the origins of relative backwardness in nineteenth-century Brazil. External economic dependency has long been identified as the chief culprit in Brazil's poor economic performance. The first three sections below make explicit the main components of this view, and provide an empirical assessment of each. Colonial mercantilism, the institution of slavery, and neo-colonial economic ties are all found wanting as explanations for relative backwardness in Brazil. The fourth section turns to features that created high transactions costs across the economy. Political arrangements between 1822 and 1889 rendered inefficient economic organization persistent in Brazil. The consequences of these costs for static and dynamic efficiency were profound.

As a point of departure prevailing characterizations of the Brazilian economy are best considered in light of the economy's performance. Like most of Latin America, Brazil proved laggard. The economy grew negligibly at best for most of the nineteenth century. Direct measures of the level of gross domestic product per capita do not exist before 1900. There are, however, reliable indexes of long-term performance, based on sound and judicious methods of inference. These indicators, derived independently, tell a common story. Economic growth was poor during the Empire (1822-1889).² Brazil effected a transition to modern rates of performance only around 1900. In contrast to Spanish America, Brazil escaped the economically costly disruptions of internecine conflict and early nineteenth-century instability. Yet Brazil was also a remarkably poor performer by the standards of time. Whatever the magnitude of the gap in productivity between Brazil and advanced economies at the beginning of the nineteenth century, it widened considerably over the next one hundred years.

1. Mercantilism and Colonial Economic Organization

Before 1700 Brazil was one of the least important parts of Portugal's vast overseas empire. One of the largest gold strikes in history quickly propelled the colony to one of the most valuable of all Portuguese possessions. As the eighteenth century unfolded the resources that Brazil provided to Portugal became indispensable to both the crown and metropolitan merchants. So much so that Brazilian independence is widely blamed for

¹ The principal exception is Leff (cited below), who attempted a comprehensive interpretation of Brazilian economic performance over the long run, in light of the prevailing ideas in development economics at the time.

² Claudio Contador and Claudio Haddad, "Produto Real, Moeda, e Preços: A Experiência Brasileira no Período 1861-1979," *Revista Brasileira de Estatística* 36(1975):407-40; Nathaniel Leff, *Underdevelopment and Development in Brazil, 1822-1947* (London, 1982), 29-47.

Portugal's nineteenth-century economic decline. Historians of colonialism have long argued that exploitation of this sort made Brazil poor, and even created long-term underdevelopment. While this view has waned in the case of British mercantilism in its North American colonies, the argument has proven more durable for historians of Brazil.

There are two distinct variants of the hypothesis that Portuguese colonialism hampered the Brazilian economy. The first emphasizes the directly exploitative character of the overall colonial enterprise, one in which resources were siphoned off in the form of taxes and economic rents.³ Fiscal remittances went to the royal coffers, while rent-seeking opportunities created by the crown helped seal the allegiance of elites. The result was a self-sustaining array of ties of exploitation and privilege, emanating from the crown that ran through metropolitan and colonial merchants, to colonial planters, miners, and small-scale rural producers, extending all the way down to field slaves in Brazil. The second strand focuses not on the intensity of the colonial relationship, but instead on the way in which colonial status inserted Brazil into the larger Atlantic and world economy, and a particular division of labor on a global scale.⁴

This section assesses the economic effects of Portuguese colonialism in Brazil. It consciously sidesteps some recent works on economic aspects of the colonial relationship. A new generation of studies has pursued varied tacks to create new interpretations of the working of the colonial economy. One branch of this literature emphasizes the functioning of the imperial system as a whole.⁵ A second specifies and estimates the losses created for Portugal by the economic and political independence of Brazil.⁶ A third strand, the most interpretively innovative and empirically rich, poses a decisive break with both the older and simplistic dependentista assessments, and the more recent notion that there was a unified Atlantic economy, by emphasizing the colony's capacity to realize "endogenous" accumulation of wealth, and to follow a rhythm that

³ Stanley Stein and Barbara Stein, *The Colonial Heritage of Latin America* (Oxford: 1970); Andre Gunder Frank, *Capitalism and Underdevelopment in Latin America: Historical Studies of Chile and Brazil* (New York: 1967).

⁴ This conception would appear to be rooted in Wallerstein, but for Latin America specialists it more obviously and directly is tied to dependentista ideas; Fernando Henrique Cardoso and Enzo Faletto, *Dependency and Development in Latin America* (Berkeley: 1979). As a potential obstacle to growth the particular position of Brazil in the Atlantic economy, which persisted long after political independence, is a topic for the next chapter, which focuses on the nineteenth century.

⁵ Jorge Miguel Viana Pedreira, *Estrutura Industrial E Mercado Colonial : Portugal E Brasil (1780-1830)* (Lisboa: 1994).

⁶ For this debate see Pedro Lains, "Foi a Perda Do Imperio Brasileiro Um Momento Crucial Do Subdesenvolvimento Portugues?," *Penelope* 3 (1989); Jorge Miguel Pedreira, "La Economia Portuguesa Y El Fin Del Imperio Luso-Brasileño," in *La Independencia Americana: Consecuencias Económicas*, ed. Leandro Prados de la Escosura and Samuel Amaral (Madrid: 1993).

was not mechanically determined by external factors.⁷ While this section shares a number of concerns with these more recent works, it proceeds with the different goal of reconsidering a more fundamental question: how costly was Portuguese colonialism to Brazil? An earlier generation of historians stressed the limits to Brazilian development posed by metropolitan measures that extracted resources for Portuguese kings and elites.⁸ In their most intuitive and direct form arguments in this vein merely state that some array of factors that existed before independence determined the relatively low level of economic activity in Brazil.

Arguments that emphasize the colonial experience as an obstacle to economic growth have been articulated in myriad ways. In most cases, however, the mechanisms by which the economy was damaged were insufficiently specified, and hardly ever subjected to empirical tests. One way to get at this issue is to imagine a Brazilian economy that developed without Portuguese colonization. Such a counterfactual, requiring that we specify either a different colonizing power, or a manner of settlement in which European geopolitical rivalries and mercantilist practices bypassed Brazil altogether, is far too broad. The approach in this section is different: It takes Portuguese colonization and several centuries of colonial history as given. It then considers the hypothesis that mercantilist restrictions explain the gap between Brazil and more advanced economies. It thus specifies a more limited, yet more tractable, counterfactual: how much larger would have the Brazilian economy been in the absence of Portuguese policies that reduced allocative efficiency?

The section begins with an overview of the late colonial economy, and charts its decline in the second half of the eighteenth century. The second part of the section pursues an examination of Portuguese mercantilism. Until the arrival of King John VI in 1808 the standard practices and policies of European kingdoms toward their New World colonies prevailed in Brazil. Mercantilism involved a range of restrictions and impositions geared to extracting resources for the benefit of the Portuguese crown. Extraction did not depend solely on tax rates, but also on a wide array of property rights and privileges that were designed to boost the Crown's take from its colonial investment. In creating revenues for itself, the Crown generated deadweight losses from policies ranging from trade restrictions to monopolies.

⁷ Atlantic ties are deemphasized once colonial economic developments are seen as following their own logic. See João Luis Ribeiro Fragoso and Manolo Florentino, *O Arcaísmo Como Projeto : Mercado Atlantico, Sociedade Agraria E Elite Mercantil No Rio De Janeiro, C. 1790-C. 1840* (Rio de Janeiro: 1993); João Luis Ribeiro Fragoso, *Homens De Grossa Aventura : Acumulação E Hierarquia Na Praça Mercantil Do Rio De Janeiro, 1790-1830* (Rio de Janeiro: 1992).

⁸ Caio Prado Junior, *História Econômica Do Brasil* (São Paulo: 1967), pp. 54-55; Fernando Novais, *Portugal E Brasil Na Crise Do Antigo Sistema Colonial (1777-1808)* (São Paulo: 1989), pp. 57-92; Tulio Halperin Donghi, *The Contemporary History of Latin America* (Durham, NC: 1993), pp. 33-41.

Portugal most directly exploited Brazil through two well-defined channels. First, and most importantly, Portugal restricted Brazil's international trade. With a few exceptions, the crown required all Brazilian merchandise exports to pass through Portugal, irrespective of the final destination. Similarly, nearly all foreign goods imported by Brazil moved via Portugal. These strictures on colonial overseas commerce generated profits for Portuguese merchants in Lisbon and Oporto, incurred duties that accrued to the Treasury, and stimulated the service sector in the metropolis by creating business profits (shipping, insurance, commissions, and handling fees, for example) for metropolitan commercial interests, all at the expense of allocative efficiency in the colony. This lowered the prices that Brazilian producers received for their goods, raised the prices of imports for Brazilian consumers, and reduced the volume of trade. Second, the crown itself directly siphoned off resources and profits from the colony in the form of uncompensated fiscal extractions. Brazil was, in effect, required to hand over to Portugal what would have been its budget surplus (or, alternately, what it could have spent at home on social overhead capital). Fiscal remittance from Brazil subsidized the crown's activities in Europe and elsewhere in the empire. Jointly, trade restrictions and the fiscal burden reduced Brazilian gross colonial product.

The third part of the section examines other facets of Portuguese rule that comprised Brazilian economic organization. Portuguese law and policies created privileges, restrictions, and monopolies for fiscal and other purposes. In addition to the direct and indirect costs of mercantilist restrictions against direct trade, and fiscal extractions, Portuguese policies resulted in inefficient economic organization in Brazil, reducing colonial product and incomes. It is important to define what allocative inefficiency involves. Inefficiencies arise when private returns and social returns diverge excessively, in either direction. When private returns from undertaking a particular economic activity deviate from the returns the activity creates for the economy as a whole the resulting distortions create an inefficient allocation of resources, and reduce national income. Institutions play a critical role in the direction and size of the divergence between private and social returns. For entrepreneurs to undertake activities that are desirable from the perspective of the economy as a whole requires that their expected private returns exceed the gains from alternative uses of their resources. By the same logic, an activity whose private return not only exceeds that of other activities, but also the social rate of return, will have no trouble finding takers, and will degrade economic efficiency.

Economic institutions that result from fiscal policies and other state actions can either exacerbate existing distortions, or mitigate market failures. In colonial Brazil Portuguese laws and policies were economically costly for two reasons. First, they resulted in an overabundance of institutional obstacles to exchange and investment. Second, they failed to create institutions that could convert uncertainty into risk so that it could be appraised, priced, and traded in markets. The regulation of the economy for fiscal purposes and creation of monopolies undermined markets and degraded the allocation of resources, obstructing the mobility of labor and capital. The legal system exacerbated these problems. Jurisprudence and the organization of justice involved multiple, conflicting legal codes, and overlapping jurisdictions between judges and other

royal entities. It proves more difficult in these instances to estimate the direct and indirect costs of such policies. There is little doubt that they weighed heavily on the trajectory of economic growth in colonial Brazil, and were likely more important than the damage inflicted by mercantilist trade restrictions and fiscal extractions.

Late colonial economic decline

By the start of the nineteenth century Brazil was already significantly behind the United States. Productivity in Brazil, measured in terms of GDP per capita, was likely around one-third that of the North American republic.⁹ From what is known (or can be reasonably inferred) about population, natural resources, and European settlement there is little reason to expect Brazil to be poorer than the United States in the late eighteenth century. On the contrary, one might reasonably expect colonial British America to lag behind Brazil, given its late start. Like colonial British America, Brazil's interior was vast and populated mainly by nomadic and semi-sedentary indigenous peoples, characterized by the lack of large, hierarchical societies of the type found in central Mexico and the South American Andes. Both Brazil and British North America came to depend on the forced labor of enslaved Africans. And in both regions the bulk of the population of European and African descent was concentrated within a few hundred kilometers of the Atlantic coast. Much of the littoral in both colonies was bounded by mountains that raised the cost of commercial exploitation of the interior. Both regions occupied geopolitical positions in which the Spanish empire was a powerful and potentially hostile neighbor. While there were innumerable exceptions that made Brazil and the United States distinct in some way (climate, natural means of transport), by the early eighteenth century the principal difference between the two stemmed from the discovery of large gold deposits in Brazil in the late seventeenth century, chiefly in Minas Gerais. The United States had no counterpart to Brazil's 1690s gold boom until 1849. The exploitation of opportunities to extract precious metals in Brazil shifted capital and slaves into the interior, re-deploying them in relatively high-value activity. The gold boom was especially lucrative for the crown, the Church, and mining entrepreneurs. It created mixed wealth effects in the sugar producing regions, mainly through the large run up in slave prices in response to demand from the mining sector. Planters who needed to replace slaves, or expand operations, were hurt by gold boom.¹⁰ Yet other planters who

⁹ The last two decades have seen a growth industry in reporting revisions to estimates of Brazilian GDP per capita, going back as far as 1800. None of these new estimates involve new evidence; all depend on pioneering work done in the 1970s, and use extrapolations, adjustments for presumed differences in purchasing-power parity of currencies in early modern economies, and a heavy reliance on assumption. The result is a range of revised estimates so broad as to be meaningless (and so counterintuitive in some cases as to defy credulity). The extrapolation backward of GDP per capita, to 1807, using estimates of Brazilian economic growth that begin 1822, compares well with equally conjectural estimates built up from contemporary data. The derivation of the measure of national income used for 1800-1808 is elaborated in the income appendix.

¹⁰ Stuart B. Schwartz, *Sugar Plantations in the Formation of Brazilian Society : Bahia, 1550-1835* (1985), p. 189.

already held large numbers of slaves saw their wealth increase, as did the merchants involved in the slave trade. The growth of mining activities also forged a variety of regional linkages to other activities that provided inputs and services for mining, including farmers, merchants, muleteers, and local textile producers.¹¹ Yet despite these similarities in natural resources, settlement patterns, European colonization, and slavery, Brazil still lagged the U.S. in terms of productivity, despite the windfall of the gold boom. The appearance of this gap makes clear that differences in colonial institutions and practices mattered.

Earlier in the eighteenth century the gap in GDP between the two countries may not have been as great as suggested by the crude estimates of Brazilian income that are available for the early nineteenth century. The gap between Brazil and British North America was likely less in 1750, or even 1700, than it was by 1800. This is because the second half of the eighteenth century was a period of economic decline in Brazil. Despite claims that Brazil enjoyed an “agricultural renaissance” in the late eighteenth century, based on a broad array of commodities, most indicators reveal growing economic weakness.¹² The most important component of this crisis was the breathtaking decline in the gold mining industry. The first column of Table 3.1 presents annual estimates of physical production of gold in Brazil, converted from a quinquennial basis, for the eighteenth century.¹³ The mining boom and bust has long been apparent in standard estimates of output. The weaknesses and limitations of these data are well known; built up as they are from reported shipments of gold, they miss output that circumvented the royal tax collectors in Brazil. Nonetheless the trends and inflection point they portray are likely accurate, and the magnitudes most certainly are not far off the mark. Between 1700 and mid century each passing decade saw evermore rapid increases in output. The amount of gold produced in 1700 was in the range of 1.5 metric tons. By the 1750s gold production had increased by an order of magnitude, exceeding 15 tons per year. Yet the 1750 level of output would not be seen again in the eighteenth century. By the late 1750s production not only stagnated, it began a decline that was as precipitous as earlier growth had been strong. By the late 1790s output had fallen to only a little more than four tons of gold per year.

¹¹ The purely local character of these linkages was limited; instead, the provisioning of the mines required inputs from surrounding captaincies; Myriam Ellis, *Contribuição Ao Estudo Do Abastecimento Das Areas Mineradoras Do Brasil No Seculo Xviii* (Rio de Janeiro: 1961); Mafalda P. Zemella, *O Abastecimento Da Capitania Das Minas Gerais No Seculo Xviii*, 2a. ed. (São Paulo: 1990).

¹² On the agricultural renaissance see, for example, Corcino Medeiros dos Santos, *O Rio De Janeiro E a Conjuntura Atlantica* (Rio de Janeiro: 1993).

¹³ Adapted from Virgilio Noya Pinto, *O Ouro Brasileiro E O Comercio Anglo-Portugues : Uma Contribuição Aos Estudos Da Economia Atlantica No Seculo Xviii* (São Paulo: 1979). Pinto’s gold output figures are based on fiscal indicators, which suffer from some well-known pitfalls. Brazilian gold arrivals in Europe indicate a roughly similar trend; Michel Morineau, *Incredibles Gazettes Et Fabuleux Metaux : Les Retours Des Tresors Americains D’apres Les Gazettes Hollandaises (Xvie-Xviii Siecles)* (London and Paris: 1985), pp. 474-6.

The growth and decline of the mining sector, when measured in physical output, gives an incomplete picture of the true underlying economic trends. Gold was not just a commodity, it was also Brazil's numeraire good—gold was money.¹⁴ As gold became more abundant with the passage of time, its value fell. Gold's ability to command other resources indicates the purchasing power of the sector's output. Accurately assessing the productivity of the mining sector between two points in time thus requires the conversion of measures of physical output into market terms. The rate at which gold exchanged for all other commodities is nothing more than the general price level. The rate at which gold exchanged specifically for the inputs employed in gold mining is an index of total factor productivity in the mining industry. Though the price history of Brazil has advanced considerably in the last several decades, there unfortunately does not yet exist an index of input costs in the mining sector (including the cost of capital), nor a regional commodity price index for eighteenth-century Minas Gerais. Two series of commodity prices provide a rough measure of the purchasing power of money in Brazil. One is the study by Dauril Alden of the prices of commodities for Salvador, Bahia; the other is the work on prices in Rio de Janeiro by H.B. Johnson.¹⁵ While neither provides full coverage for the eighteenth century, the two studies share eight commodities in common, and overlap around mid century.¹⁶ This permits the linking of the individual components, and the construction of an unweighted price index beginning in 1710.

Deflating the physical measures of the gold extracted—which somewhat counter intuitively is a nominal measure of the value of gold output—by this price index yields the real market value of Brazilian gold production. The second column of Table 3.1 presents the real value of the mining industry's output. The results of this manipulation do not reverse any inferences that historians have drawn from the physical measures of

¹⁴ Unlike Spanish America, Brazil did not have silver mines. Brazilian silver coinage often came from Spanish American coins. Brazil minted silver in the late eighteenth century by restriking pesos as 960 reis coins. There was also no paper money in the colonial era, though there may have been bills of exchange, and royal IOUs of various sorts. The earliest possible date for the appearance of a paper currency would have been the end of the eighteenth century, when apólices (shares) of the 1796 loan in Portugal were issued as both debt instruments and legal tender. Paper currency was not issued within Brazil until the arrival of John VI and the creation of the first Banco do Brasil in 1808.

¹⁵ Harold B. Johnson, "A Preliminary Inquiry into Money, Prices, and Wages in Rio De Janeiro, 1763-1823," in *Colonial Roots of Modern Brazil*, ed. Dauril Alden (Berkeley: 1973); Dauril Alden, "Price Movements in Brazil before, During, and after the Gold Boom, with Special Reference to the Salvador Market, 1670-1769," in *Essays on Latin American Price History*, ed. Lyman Johnson and Enrique Tandeter (Albuquerque: 1990). For the tradeables, the price trends in Brazil are unsurprisingly similar overall to those in Portugal; Vitorino Magalhaes Godinho, *Prix Et Monnaies Au Portugal, 1750-1850* (Paris: 1955).

¹⁶ The eight goods are manioc, beans, white sugar, olive oil, rice, dried beef, vinegar, and wheat.

production. On the contrary, they magnify them. The true economic extent of the boom was even stronger than historians have realized. The real value of production in the early decades of the century was lower than physical measures suggest, but grew more quickly, to a higher peak. Real output was as much as one-third higher than nominal production by the 1740s, and attained its acme in the 1750s. Correspondingly, the decline in the real value of gold output from the late 1750s through the end of the century was even worse than the physical output measures reveal. The market value of gold, adjusted for changes in the price level, fell even more quickly than physical production.

Overall the collapse in gold mining was stunning by the 1790s. By 1800 real gold output was only one-fourth of what it had been in the 1750s. The problem was obviously more severe than merely declining productivity; had the purchasing power of gold remained constant, physical output figures would equal real output, and even here the decline was dismal. This decline was not due to violent disruptions, as was the case for silver mining in early nineteenth century Spanish America. In Brazil the bulk of the decline was due to the rising cost of locating and exploiting new deposits of gold. By the late eighteenth century the collapse in what had previously been the leading sector of the colonial economy figured prominently in total economic activity. Assuming a fixed ratio between total gold production and the export of gold, if Brazil in the period 1801-1807 had seen levels of gold production equal to those of the 1750s, total gold exports would have been 400 percent of what they actually were.¹⁷

Similar tendencies over the eighteenth century are apparent in the prices of another key asset: slaves. Virtually every major activity in Brazil was relatively labor intensive. Agriculture, whether for export or for home consumption, required clearing, planting, and harvesting. Mining in the era before blasting required large amount of digging, the construction of sluices, and panning. The transformation phases of production in both sugar and gold were necessarily more capital intensive, but even these required large labor inputs. Labor was thus a key component of the bulk of Brazil's commercial production. Given that the indigenous population had been famously resistant to enslavement or even recruitment, enslaved Africans provided a large amount of the colony's labor input.

Slaves were traded openly and regularly in markets in Brazil. The price of a slave was nothing more than the capitalized stream of net earnings that the slave's labor would create for the slave owner. The temptation to use changes in the price of slaves to impute changes in labor costs is strong. The result, however, would be inaccurate. Slave prices change for a number of reasons beyond changes in the implicit wage. In particular, maintenance costs, the opportunity costs of investment in alternate activities, and changes in the prices of these goods that slaves produce can all lead to changes in the average price of slaves. A number of scholars have created series of slave prices for the

¹⁷ Gold output in the 1750s derived from Pinto, *O Ouro Brasileiro*; average annual exports of gold in 1801-1807 from Maria de Lourdes Roque de Aguiar Ribeiro, *As Relações Comerciais Entre Portugal E Brasil Segundo as "Balancas De Comercio," 1801-1821* (Lisboa: 1972), p. 130.

late colonial era. Laird Bergad has provided the most detailed measures to date, drawing from Minas Gerais. While these prices are from a single region, because the market for slave labor was well integrated within Brazil, the Minas slave prices faithfully indicate colony-wide trends. Figure 3.1 presents both the nominal and inflation-adjusted prices of adult male slaves from 1750 to 1808. Both series exhibit obvious decline, but the real price of slaves fell even more quickly, with a trend rate of change around negative one percent per year. Though gold mines relied heavily on slaves, the mining industry was not the only sector that depended on slave labor. The steep decline in the prices of slaves thus indicates more than just the decline of gold mining. The economy as a whole was in trouble in the second half of the eighteenth century.

Trade restrictions and fiscal remittances

A key implication of accounts that emphasize the colonial domination of Brazil's external economic affairs is that, absent the burden of Portuguese trade restrictions and fiscal extractions, Brazil would have escaped much of the cost arising from Portugal's policies. Estimates here suggest a somewhat different finding. There were obvious direct costs from colonial trade restrictions. But the unfettering of Brazil would have created relatively small gains. For the purpose of estimation, the costs of mercantilism can be defined in terms of the changes in trade regulations that actually transpired when João VI fled Napoleon's army and escaped to Brazil in 1808. The first was the opening of Brazilian ports to direct trade with other nations. The second was the stanching of the leakage of fiscal revenues to Portugal. What would have been the gain to Brazil from eliminating these two main features of the colonial domination at an earlier date?

The limited availability of data required to answer this question for the entire colonial era, or even at irregular intervals, restricts the focus here to the last decade or so before Brazil was opened to free trade in 1808. Historians enjoy access to rich primary sources on the late colonial trade in the form of the Portuguese *balanças*, which reported prices and quantities of goods traded within the empire, and between Portugal and other nations. The *balanças* begin as a systematic annual series in 1796, and have been utilized by several specialists on the history of the colonial trade.¹⁸ The estimates here draw on these figures. The first and second columns of Table 3.2 present the nominal value of Brazil's exports and imports, respectively, from 1796 through 1807. The third and fourth columns deflate these to 1807 values, using an unweighted index of the prices for the principal goods included in the colonial trade. In the last decade of restricted commerce, Brazil exported on average nearly 12 million milréis of merchandise per year.

The requirement that goods leaving or coming to Brazil pass through Portugal—paying duties, additional shipping charges, and transshipment fees-- extended to most, but not all of the Brazil's merchandise trade. There were several important exceptions.

¹⁸ Ribeiro, *As Relacoes Comerciais Entre Portugal E Brasil*; Novais, *Portugal E Brasil Na Crise Do Antigo Sistema Colonial (1777-1808)*; Jose Jobson de A. Arruda, *O Brasil No Comercio Colonial* (São Paulo: 1980); Corcino Medeiros dos Santos, *Relações Comerciais Do Rio De Janeiro Com Lisboa (1763-1808)* (Rio de Janeiro: 1980).

Goods destined to provision the army and navy were duty-free. Materials headed to the Royal Mint, which consisted mainly of gold, also entered Portugal duty free (the taxes on Brazilian gold having already been collected in Brazil). From 1800 to 1802 the crown issued licenças to selected British merchants, especially to those with a commercial presence in Portugal, permitting them to trade directly with specific Brazilian ports.¹⁹ Additionally, a certain amount of direct trade was permitted between Brazil and other parts of the Portuguese empire. The most noteworthy commerce in this regard was the trade in slaves between Africa and Brazil. Finally, where there are trade restrictions, there is sure to be contraband, which by its very nature defies measurement. The growing number of foreign merchant vessels that made port calls in Brazil for “repairs” and the like provides a hint of the smuggling that went on, but does not leave us with any way to reliably estimate the magnitude of illicit trade.²⁰ While the volume of smuggling was no doubt of second order importance, it would be a mistake to think of it as free of burdens by virtue of having been conducted directly. Goods smuggled would have still been involved in the deadweight losses created by mercantilism, since the market prices for these goods in Brazil were determined by trade restrictions.

Figure 3.2 illustrates how restrictions on the merchandise trade created losses. In the case of Brazil’s exports, goods that were forced to transit Portugal en route to consumer markets would have gone directly to other countries in the absence of trade restrictions. The requirement to pass through Portugal lowered the prices received by Brazilian producers, and also reduced the quantity of the good transacted. This created a deadweight loss equal to the area ABCD, which is the loss in producers’ surplus that results from the combined price and quantity effects. In the case of Brazilian imports from other countries, routing through Portugal raised the prices paid by Brazilian consumers, and reduced the quantity imported. This created a loss of consumers’ surplus that was directly analogous to the loss of producers’ surplus, and equaled the area EFGH. This framework is simple enough; it is a comparative statics assessment of the deadweight losses on imports and exports. The counterfactual scenario involved is sufficiently limited in its scope that it does not require a complete rewrite of Brazilian history, just the elimination of trade restrictions in the decade before Brazil’s ports were actually opened to direct trade with other nations.

Constructing estimates of the loss requires information not only on the prices and quantities of goods that actually entered into the trade, but also the prices and quantities that would have obtained if mercantilist restrictions had been eliminated. These depend in turn on the reduction in transport costs, duties, and transshipment costs that would accompany the elimination of trade restrictions, as well as the relative price elasticities of supply and demand for each commodity. All of these variables are unknown. Some can be inferred; for others the values depend on assumptions that, while fragile, are selected

¹⁹ Arruda, *O Brasil No Comercio Colonial*, pp. 319-20.

²⁰ Ernst Pijning, “A New Interpretation of Contraband Trade,” *The Hispanic American Historical Review* 81, no. 3-4 (2001); Jorge Miguel Viana Pedreira, “Contraband, Crisis, and the Collapse of the Old Colonial System,” *The Hispanic American Historical Review* 81, no. 3-4 (2001).

to both purposively bias the results and to render them comparable to similar estimates that have been built up for British America and New Spain. The first variable that must be estimated is the price that would have been received in Brazil had it exported directly, bypassing Portugal. Because the cost of moving the goods to the final market would be less, the price would be higher, as depicted in Figure 3.2. The export price that would have prevailed depended on the change in the total unit transaction costs that would accompany the elimination of trade restrictions. This had two further components. First was the reduction in transport costs. Second was the elimination of duties and fees in Portugal. The value of the first of these is unknown, and is excluded. This is equivalent to assuming that trade restrictions did not raise the cost of transport, despite the requirement for more circuitous routing. This assumption necessarily creates a downward bias in the estimates. The value of the duties and fees in Portugal can be measured with some precision from the data provided by Arruda. The *balanças* give two prices for each good: one that includes the duties and cost of shipment from Brazil to Portugal; and a second that includes duties and fees paid in Portugal, up to the point that the goods were placed on the ship for re-export. The difference between these two prices is the markup from passing through Portugal, and provides a lower bound on the unit cost of mercantilist restrictions.

Second is the quantity that would have been exported, in the absence of restrictions. This would differ from the actual quantity exported, unless the supply schedule were perfectly inelastic with respect to the producer's price. Third are the elasticities of the supply and demand functions for each good. The approach for exports is to assume that demand in European markets is perfectly elastic, while supply in Brazil was unit elastic.²¹ For the losses on imports, the analogous requirements are: 1) the quantities that would have been imported in the absence of restrictions; 2) the prices Brazilian consumers would have paid, and 3) the respective elasticities of the supply and demand schedules. This approach provides an estimate that tends toward an upper bound measure of Brazil's losses, despite the understated change in the unit transaction

²¹ For the general case, with constant-elasticity supply and demand schedules, the conventional measure of the deadweight loss from the requirement that exports pass through Portugal is:

$$L = \int_{P_{B0}}^{P_{B1}} Q_S dP_B$$

which with some manipulation simplifies to:

$\frac{Q_1 P_{B1}}{s+1} \left[\left(1 + \frac{t}{1+f} \right)^{\frac{d(s+1)}{s+d}} - 1 \right]$, where t the unit value of additional duties and transshipment costs through Portugal, f is the proportional direct freight rate, and s and d are the price elasticities of supply and demand respectively.

cost.²² It also provides an estimate that is directly comparable with those for British North America and Mexico.

The estimates of the cost to the Brazilian economy of Portuguese mercantilist restriction on foreign trade are built up on a commodity-by-commodity basis for the chief component of exports and imports. For exports these were: white sugar, brown sugar, cotton, tobacco, hides, rice, rum, and coffee. Together, these accounted for more than 80 percent of the value of all exports between 1796 and 1807. Importantly, gold is excluded from the estimates of the deadweight losses on exports because it largely comprised a means of payment. The losses for imports are calculated on butter, codfish, sailcloth, steel, iron ingots, and copper. To derive estimates of total losses, the losses on the specified goods are summed, and then the ratio of those losses to the total value exports is extended to all trade. Table 3.3 presents the results. For comparative purposes the table presents similarly derived estimates of the costs of mercantilist trade restrictions in the North American colonies of Britain, and in New Spain. The figures for Anglo-America come from a series of well-known studies that measured both the burden of the Navigation Acts, and the benefits of subsidies and security under George III.²³ For New Spain the estimates include both the losses from trade restrictions, and the estimated outflow of tax revenues (exclusive of any external benefits of Spanish governance, such as defense and the like).²⁴ For the Brazilian case the costs of mercantilism fall into two categories. Losses stemming from prohibitions on direct foreign trade comprise the first line of the Brazil estimates. The figure presented is an annual average for the period 1796 to 1807 (thereby reducing the impact of annual trade fluctuations), expressed in milréis of 1807.

The leakage of fiscal revenues from Brazil comprises the second cost category. The remittance figures in the table are an average for 1801 through 1803 (the only years for which these are available), also deflated to milréis of 1807. ²⁵ Like the costs of the

²² It thus tends toward a “least” upper bound estimate of the total loss.

²³ Robert Paul Thomas, “British Imperial Policy and the Economic Interpretation of the American Revolution,” *The Journal of Economic History* 28, no. 3 (1968), pp. 615-38; Peter D. McClelland, “The Cost to America of British Imperial Policy,” *American Economic Review* 59, no. 2 (1969), pp. 370-81; Peter D. McClelland, “The New Economic History and the Burdens of the Navigation Acts: A Comment,” *The Economic History Review* 26, no. 4 (1973); Joseph D. Reid, Jr, “On Navigating the Navigation Acts with Peter D. McClelland: Comment,” *The American Economic Review* 60, no. 5 (1970), pp. 949-55.

²⁴ John H. Coatsworth, “Obstacles to Economic Growth in Nineteenth-Century Mexico,” *The American Historical Review* 83, no. 1 (1978), p. 84; John H. Coatsworth, “Comentarios Al Ensayo De Enrique Cardenas. 'Algunas Cuestiones Sobre La Depresión Mexicana Del Siglo Xix',” *HISLA: Revista Latinoamericana de Historia Económico y Social* 3 (1984), pp. 99-101.

²⁵ Taxes were collected from, among other activities, diamond and gold mining, and brazilwood sales. The revenues reported are for all of Portugal's overseas possessions. Chief among these was of course Brazil, so that the inclusion of taxes from other colonies

trade restrictions, the fiscal burden is too large by construction, since it includes revenues from royal monopolies in colonies other than Brazil. To better render the costs of mercantilist restrictions comparable to other cases they are expressed on a per capita basis, where the population figure is an interpolation between census data for the 1780s and contemporary estimates for 1819. On a per-capita basis, the burden of colonial status came to a little more than one and a third milréis. Deadweight losses stemming from colonial trade restrictions, together with fiscal extractions, comprised eight percent of the colony's total output. The meaning that can be assigned to this figure depends on the measure one chooses. Colonial planters and miners would no doubt have preferred lower taxes on their produce, and merchants would have liked to trade directly with other countries. Brazilian consumers would have benefited from lower prices: for the same value of imports they would have received more. Eliminating mercantilist trade restrictions, and withholding tax remittances would have added eight percent to Brazil's colonial income in 1807. This would have done little to bridge the gap between Brazil and the advanced economies of the North Atlantic. On the other hand, the estimates of Table 3.3 are nothing more than a comparative static measure of the costs of trade restrictions and tax extractions. In the absence of mercantilism the Brazilian economy might have expanded more rapidly over time. The path of capital formation, productivity advance, and overall growth could have shifted upward if trade restrictions had not existed. There might well have been dynamic consequences that escape, and perhaps even exceed, the estimates of the static losses of trade restrictions. At the same time, the colonial economy was so heavily weighed down by a host of other institutional obstacles to growth that eliminating mercantilist restrictions one or even two centuries earlier could have made little difference. Colonial trade restrictions and tax remittances, costly as they were, directly accounted for relatively little of Brazil's economic backwardness by the start of the nineteenth century.²⁶ It comes as no surprise, then, that the opening of the ports to foreign trade in 1808 brought only limited stimulus to the economy.

Institutions and Colonial Economic Organization

Colonial Brazil was entirely bereft of a long list of factors that development economists hold as important for modern economic growth. The growth of finance and credit was hobbled by numerous deficiencies. To non-specialists it may seem flabbergasting that

does not overstate Brazil's tax burdend in the extreme; Adrien Balbi, *Essai Statistique Sur Le Royaume De Portugal Et D'algarve* (Paris: 1822), p. 305.

²⁶Note that the estimated benefits to Brazil of escaping mercantilism before 1808 are not the same as the costs borne by Portugal; these imply two different counterfactuals, measured from different sides of the Atlantic. Nor is it necessarily the case that the counterfactual gains from the end of mercantilist trade restrictions implied by the estimates here exhaust the actual economic consequences of Brazilian independence. For a discussion of these two issues, see Pedreira, "La Economia Portuguesa Y El Fin Del Imperio Luso-Brasileño,".

colonial Brazil had no banks.²⁷ Yet it is also noteworthy that colonial British America had no banks either.²⁸ Usury laws, which made it illegal to lend money at interest beyond the prescribed rate, were not repealed in Brazil until 1837, fully fifteen years after independence. The prohibition on charging a market rate of interest would seem to be more than sufficient to undermine the development of credit markets and hamper capital formation. Yet usury laws are nearly irrelevant where credit rationing prevails. In such cases the strength of the penalty that can be imposed in case of default, and not the interest rate a borrower promises *ex ante* to pay, determines the allocation of credit. Where lenders did seek to charge a risk premium, usury restrictions were notoriously easy to circumvent via off-the-books reductions in the principal at the time the loan is funded. Just as in Brazil, the financial markets of the early United States coexisted with usury laws well into the nineteenth century. Monetary policy was yet another area in which Brazil was already in trouble before independence. The creation of paper money in 1808 drove specie from circulation, creating price inflation and exchange rate depreciation. Independent Brazil inherited a badly devalued paper currency in 1822. Yet in British North America the colonists had, in the absence of sufficient specie, relied on paper money in the form of IOUs along with private currencies from an even earlier date than in Brazil. The colonial currency stock contained a large component of fiat money, and the revolutionary war led to high inflation. Worse still, under the articles of confederation each state issued its own paper money, so that the early nation had a common market but not a common currency.

The upshot of these brief comparisons is that problem that best Brazil were common elsewhere, including in countries where productivity had advanced well beyond that of late colonial Brazil. Remedying them---creating banks, eliminating usury limits, eschewing fiat money--might have helped reduce the gap between Brazil and the more advanced economies of the industrializing North Atlantic. But none of them, either in isolation, or even jointly, can explain why Brazil had already fallen behind by the end of the eighteenth century. This is because the principal obstacle to economic growth in the colonial era was not any single factor, but a combination of institutional features that, in the terms of North and Thomas, created inefficient economic organization.²⁹

The most important aspect of economic organization in colonial Brazil was Portugal's legal system. Nearly every feature of social, economic, and political life in Brazil fell under one part or another of Portuguese jurisprudence. The letter and functioning of the law mattered for business regulation and commercial disputes. The very definition of property rights (or lack thereof in many instances), as well as the administrative regulations governing their enforcement, along with the adjudication of

²⁷ It is telling that the main work on on the topic details nothing but failed proposals for banks, and has as its subtitle "Attempts at Banking Organization in Portugal and Brazil up to 1808."

²⁸ Jeremy Atack and Peter Passell, *A New Economic View of American History : From Colonial Times to 1940*, 2nd ed. (New York: 1994), p. 84.

²⁹ Douglass C. North and Robert Paul Thomas, *The Rise of the Western World: A New Economic History* (Cambridge, UK: 1973), pp. 1-8.

business conflicts, depended on legal codes, royal decrees, administrative guidance, and colonial regulations. The Portuguese legal system stood in sharp contrast to the body of common law that came to dominate in the Anglo-American world. Under the common law, judges crafted precedent-setting legal decisions in light of fundamental rights of citizens. Under Portuguese law, judges were mere bureaucrats who mechanically applied the existing codes to complaints. Since the provision of justice was one of the crown's chief duties, magistrates were appointed servants, royal officials who served at the pleasure of the crown, and who were evaluated principally in terms of their loyalty. Colonial Brazil thus operated from the outset under a legal system that modern social scientists have found to be wholly inadequate for the requirements of economic growth.³⁰

This would be straightforward enough except for the repeated efforts at codification, and the body of separate colonial rules, that by the late eighteenth century entailed several generations of laws, along with decisions, decrees, and colonial regulations. Portuguese law originated in late medieval codes first issued by the crown. Afonso V handed down the Afonsine ordenações supplanting canon law in 1480. The Manueline ordinances followed in 1521. The Hapsburg King Felipe III of Spain, who was also king of Portugal and Algarve (where he was Felipe II), implemented the Ordenações Filipinas in 1603, which prevailed through the rest of the colonial era in Brazil (and even well after independence in the area of civil law). Each new legal code, and each new colonial regulation, in theory supplanted its predecessor. But their application was further complicated by an overlapping set of colonial regulations, and the long list of carta régias, alvarás—authorizations or exceptions that were often intended to be temporary in nature, decrees, and directives that issued from Lisbon on a continuous basis. Within Brazil regulations for the colonies grafted additional requirements and procedures on top metropolitan law. The overlapping and conflicting sets of rules and regulations exacerbated uncertainty in business affairs, raised start up costs, restricted entry by new firms, and required economic agents to divert resources to socially costly efforts at mitigating risk, protecting privileges where they existed, and pursuing economic rents.³¹ The internal inconsistencies of the code fueled litigation over property disputes well into the nineteenth century.³² Litigation over questions of property and commerce was socially costly not just because of confusion and delay, because also because judges, rather than crafting decisions based on an assessment of harm, or even rewarding the party who would “bid” the most via a bribe, instead protected the interests of the King at

³⁰ Rafael La Porta et al, “Law and Finance,” *Journal of Political Economy* 106, no. 6 (1998).

³¹ Rent seeking activities, and rent provision on the part of the state, are especially costly, because they can exhibit increasing, rather than diminishing returns, and because they weigh heavily on innovation; see Kevin M. Murphy, Andrei Shleifer, and Robert W. Vishny, “Why Is Rent-Seeking So Costly to Growth?,” *The American Economic Review* 83, no. 2 (1993).

³² Litigants on both sides of property disputes repeatedly referred to the code in arguing their cases; Marcia Maria Menendes Motta, *Nas Fronteiras Do Poder: Conflito E Direito a' Terra No Brasil Do Seculo Xix* (Niteroi: 1998), pp. 98-111.

the expense of the colonial subjects. Absolutism prevailed in justice just as it did in taxation and trade.

The second area where Portuguese colonial policy created inefficient economic organization was the fiscal system. Not only did Portugal drain wealth from Brazil that was not compensated, it also imposed a complex set of taxes on all types of business activity. The magnitude of the direct fiscal effects of this system has already been estimated in the preceding section. Of interest here are the direct and indirect consequences of the fiscal structure as a whole. Royal revenues were levied in Brazil by taxation, and by state monopolies. Prominent among the taxes were those that inhibited Brazil's internal commerce, a problem often compounded by a system of multiple incidence in which goods paid taxes at various points in the process of production, distribution, and consumption.

By the late eighteenth century the colonists confronted a bewildering array of as many as several dozen different levies. Prominent among these was the tithe (*dízimo*), a tax of 10 percent on all agricultural and pastoral output.³³ Though tithe revenues belonged specifically to the Portuguese military Order of Christ, the king was grand master of the Order, so the tithe went to the crown (who then partially subsidized the church from the proceeds). Mining--including not only gold, but also precious stones and minerals--was burdened by the quinto real, which except for the 1730s and 1740s, was held at one-fifth of the output. Tolls on persons, and duties on merchandise, were collected upon entrance into the mining zones.³⁴ Later, the importation of slaves and animals into Minas Gerais was hit with yet another tax. Sugar engenhos and liquor distilleries incurred yet a different tax. Later in the eighteenth-century there were sales taxes on structures, and on the sale of Brazilian-born slaves (*ladinos*). All of these taxes came on top of the duties paid on the colony's exports and imports.

Equally, and perhaps even more damaging were an array of royal privileges that undermined allocative efficiency by creating market power where none would otherwise have existed. Care is warranted in assigning too much emphasis to the strictly monopoly aspect of these activities. In England, for example, the groundwork for the financial revolution of the late seventeenth and early eighteenth century involved a series of government monopolies. Monopolies created by the state that are administered by private agents can be seen as instances in which the state selectively assigns a property right in exchange for revenues, loans, or political support. The Bank of England, for example, enjoyed limitations on the issue of banknotes by competitors, in return for taking up a portion of the government's debt. The great trading companies enjoyed state-supplied protections against competition, also in return for taking a position in the government's debt. The details of the manner in which such privileges wed public and private interests in England made shares in the privileged companies especially desirable,

³³ Kenneth R. Maxwell, *Conflicts and Conspiracies: Brazil & Portugal, 1750-1808* (Cambridge, UK: 1973), pp. 65-67; C.R. Boxer, *Golden Age of Brazil, 1695-1750* (Berkeley: 1964), pp. 189-190.

³⁴ Pinto, *O Ouro Brasileiro*.

enhanced the credibility of the state's commitment to honor its debt, and contributed to the formation of the early stock market in London. None of the economically beneficial arrangements of the type that were built into the English monopolies were present in Brazil (nor in Portugal for that matter).

Portugal established two types of crown monopolies in Brazil.³⁵ The first were contracts awarded to individuals who sought the privilege of monopolizing a particular branch of commerce or production. The crown supplied these privileges in return for cash payments, often in advance. They thus were created for purely fiscal purposes, not out of some abstract belief in the merits of mercantilism more generally. Monopolies were auctioned or leased to private entrepreneurs who paid for the privilege of garnering what they hoped would be large monopoly rents from these sectors of activity. The second type consisted of companies that were formed to exploit privileges to engage in production and commerce in a particular region, including the importation and marketing of enslaved Africans, without fear of competition from unlicensed agents in the same region. These companies raised their initial capital by issuing equity shares in Portugal, paid profits to shareholders in dividends, and paid fees to the crown in the form of taxes. These are best thought of as enterprises geared to accelerating the growth of economic activity in particular regions of Brazil, with an eye toward improving the fiscal state of the royal treasury.

Monopolies over particular goods and branches of commerce had long historical roots in Europe. Spain, France, and Portugal all had royal monopolies for tobacco for example. In 1571 the Portuguese crown decreed that only Portuguese flagged vessels could be used in the colonial trade with Brazil; in 1711 foreign vessels could trade with Brazil but only incorporated in the Portuguese fleets. The Portuguese Junta do Tabaco first licensed the sale of tobacco in Portugal, and controlled its purchase and export from Brazil, from the 1630s until the 1820s.³⁶ The estanco was one of the most lucrative for the crown. Whaling in the Atlantic off the coast of Brazil was also reduced to a crown monopoly in 1614. The right to hunt whales, which were valuable mainly for the oil that could be used for illumination, went out for bids at regular intervals.³⁷ The royal government erected a series of stations, or *armações*, the only sites where whales were legally dressed and rendered, establishing control over the processing of the animals. Similarly, in the 1630s the production and trade in salt was monopolized specifically for the Estado do Brasil (at the time administratively separate from Maranhão in Brazil's north). The production of salt in Brazil was initially banned, and then later permitted for

³⁵ The manner and duration of monopoly contracts was similar to those for the tithe.

³⁶ Carl A. Hanson, "Monopoly and Contraband in the Portuguese Tobacco Trade, 1624-1702," *Luso-Brazilian Review* 19, no. 2 (1982); Catherine Lugar, "The Portuguese Tobacco Trade and the Tobacco Growers of Bahia in the Late Colonial Period," in *Essays Concerning the Socioeconomic History Brazil and Portuguese India*, ed. Dauril Alden and Warren Dean (Gainesville: 1977).

³⁷ Myriam Ellis, *A Baleia No Brasil Colonial* (São Paulo: 1969), pp. 35-6.

specific localities.³⁸ The result was outright shortages in Brazil, where salt was not only used as a condiment, but also an important input for the dried beef industry. Like the monopoly on whaling, the salt monopoly endured until 1801. Diamond mining in Brazil was made a crown monopoly in 1729, and access to diamond mining regions was controlled by royal officials. The monopoly persisted well past independence.

The fiscal and economic impact of these monopolies was predictable. For the crown, they raised sorely needed funds, both for current expenditures and for interest payments on the debt. For the contractors who held them, they offered attractive profits. But for the colonial economy as a whole, they created high prices for consumers, undersupply, and misallocated resources.³⁹ They created additional deadweight losses and delay, the benefits of which accrued to holders of the monopoly privilege. As institutions that comprised part of Brazilian economic organization, the monopolies created large private returns to their holders, and negative social returns to the economy as a whole.

The Marquês do Pombal created monopoly trading companies in the 1750s. These were partly designed to foster development in parts of Brazil where authorities believed there were economic opportunities that had not been tapped. They were also designed to foster development in a way that generated revenues for the royal treasury. The companies themselves were joint-stock firms with shares, organized by investors in Portugal that received privileges to control the commerce of whole regions of Brazil. There were two trading monopolies: the *Companhia Geral do Grão-Pará e Maranhão*, established in 1755, and the *Companhia de Pernambuco e Paraíba*, established in 1759. The companies monopolized every aspect of trade of their respective regions, to include most importantly slaves. The beneficiaries of these activities were the crown, which collected taxes on commerce that had not previously existed in those regions at that scale, and the companies, who by virtue of their privilege were able to pay themselves handsome dividends. Table 3.4 presents the dividends on the *Companhia Geral do Grão-Pará e Maranhão* in the 22 year that it operated with its monopoly in Brazil.⁴⁰ These profits, ranging between six percent and 19.5 percent for the year, were impressive by the standards of the time, especially when taken into account that sovereign debt paid dividends of between five and six percent.

Together, taxes and royal monopolies meant that colonial Brazil had a fiscal system that was in no way geared toward the needs of long-term economic development,

³⁸ Myriam Ellis, "O Monopólio Do Sal No Estado Do Brasil, 1631-1801: Contribuição Ao Estudo Do Monopólio Comercial Portugues No Brasil, Durante O Período Colonial" (PhD, 1955), *passim*.

³⁹ Complaints about the tobacco monopoly in the eighteenth century included claims that so many growers in Bahia were specializing in tobacco, in response to attractive prices paid by the Junta, that the production of foodstuffs had fallen off to the point that there were shortages.

⁴⁰ Antonio Carreira, *A Companhia Geral Do Grão-Para E Maranhão*, vol. 1 (São Paulo: 1988), pp. 77-79; Maxwell, *Conflicts and Conspiracies*, p. 260.

nor even the more immediate preferences of the colonists. The opportunity costs of the inefficiency of economic organization can barely be guessed; it was no doubt staggering. They are best considered in light of their plausible opportunity costs. The export of wealth via fiscal drainage siphoned off resources that, under a different set of institutional and political arrangements, could have been used to provide investments in social overhead capita. While movement in Brazil was deeply hampered by rugged terrain, the only efforts to improve transportation were made in areas where the crown needed to establish checkpoints for fiscal control. An effort at investing in a network of wagon roads in the mid eighteenth century, when transport technologies were still rudimentary, would not likely have created especially large social savings. But they would have better integrated local and regional markets, and placed the Brazilian economy on a better footing than it actually was in 1800. Similarly, expenditures on public education were virtually non-existent. Unlike Spanish America, Brazil did not even have a university. In a policy designed partly to wed native-born Brazilians to Portugal and properly acculturate them to the priorities of the metropolis, the children of the late colonial Brazilian elites received higher education at Coimbra. The reservation of education for the society's wealthiest served to limit occupational mobility, reduced the formation of human capital, and lowered the productivity of the labor force as a whole.

The costs of inefficient economic organization in colonial Brazil are impossible to estimate with precision. Yet there can be little doubt that they account for a large share of the gap in income and productivity between Brazil and the more advanced economies on both sides of the North Atlantic. Whether or not political separation from Portugal could have fostered more economic activity than it did is an issue addressed in the two chapters that follow. For a good many historians independence merely paved the way from colonialism to neo-colonial status, which was witnessed an insidious interplay of new and old obstacles to growth. Prominent among these was the extension and expansion of the plantation complex in Brazil, which rested on the twin legs of slavery and coffee.

2. Slavery and Agriculture

Of all the colonial institutions that persisted after independence the one that has attracted far and away the most attention from historians is slavery. Slavery persisted in Brazil longer than anywhere in the western hemisphere. Indigenous slavery was limited in scale, and in most places abandoned relatively early. Instead, enslaved Africans and their descendents formed the backbone of the Brazilian labor force for more than 300 years. The importation of newly-enslaved Africans to Brazil continued until the early 1850s.⁴¹ Slavery was abolished only in 1888.⁴² While the share of the population that was enslaved declined throughout the nineteenth century, until abolition most of Brazil's regions, and most of its high-value commercial agriculture relied on slave labor.

⁴¹ Leslie Bethell, *The Abolition of the Brazilian Slave Trade, 1807-1869* (Cambridge, UK: 1970).

⁴² Robert Edgar Conrad, *The Destruction of Brazilian Slavery, 1850-1888* (Berkeley: 1972); Robert Brent Toplin, *The Abolition of Slavery in Brazil*, 1st ed. (New York: 1972).

Among modern historians the hypothesis that slavery was an obstacle to Brazilian economic growth has taken several forms. For some slavery was one element of the bigger obstacle of economic dependency.⁴³ Large numbers of slaves were indeed held in activities that produced the export commodities believed to render Brazil excessively "dependent" on external markets. Yet large numbers of slaves were also found in diverse branches of the economy, and the majority of the slaves in the largest slaveholding province were not directly involved in production for export.⁴⁴ A survey of the historiography reveals that, separate from treating slavery as merely one part of a more holistic concept of dependency, slavery has been more directly seen as an obstacle to economic growth in three different ways: 1) slavery reduced static efficiency by unprofitably (and thus irrationally) misallocating resources; 2) it reduced dynamic efficiency by crowding out investment in other activities; and 3) it created a highly skewed distribution of wealth that fundamentally altered the entire path of institutional evolution in ways that undermined long-term economic development.

This section assesses these claims by crafting and applying a set of controlled counterfactuals using the available evidence. The principal finding is that there is little evidence to support these propositions, and a good deal that contradicts them. As insidious and brutally inhumane as the institution of human slavery was, it accounts for little of Brazil's relative economic backwardness.

Profitability and the microeconomics of slavery

The new social history of rural Brazil has done much to replace the caricatured portrayal of slaves as one-dimensional, passive pawns whose fates were wholly determined by grand forces beyond the control of any one individual. Increasingly historians find that the enslaved (as well as the free rural working classes) were proactive agents who behaved strategically, and negotiated the terms of their own existence. There is no real counterpart to this literature that provides us with a similarly nuanced portrayal of the business side of slave owners. Depictions of *fazendeiros* themselves remain, for the most part, simplistic cartoons. Often cast as vanity-obsessed buffoons, slave owners were held to be far more interested in securing prestige, and in consuming conspicuously, than they were in making profits or in accumulating wealth. In this view, planters adhered to slavery more or less mindlessly, while proving incapable of adapting to the changing

⁴³ Ciro F. S. Cardoso, "Sobre Os Modos De Produção Coloniais Da América," in *América Colonial*, ed. Theo Santiago (Rio de Janeiro: 1975), p. 110.

⁴⁴ Work on Minas Gerais, where most slaves were used in non-export activities in the nineteenth century, has considerably complicated the view that slavery and export agriculture were inherently bound together; see Amílcar Martins Filho and Roberto B. Martins, "Slavery in a Nonexport Economy: Nineteenth-Century Minas Gerais Revisited," *The Hispanic American Historical Review* 63, no. 3 (1983); Robert W. Slenes, "Os Múltiplos De Porcos E Diamantes: A Economia Escrava De Minas Gerais No Século XIX," *Estudos Econômicos* 18 (1988).

circumstances and economic environment. As part of a broad indictment of planter irrationality in nineteenth-century Brazil prominent historians have, over the years, averred that Brazilian slavery was either unprofitable, or stifled efficiency gains in agriculture.⁴⁵

Such claims are striking, and might even be compelling support in favor of the hypothesis that slavery was unprofitable, had any of them been derived from properly executed assessments of profitability. None were, and even the premise underpinning them is erroneous. The hypothesis of planter irrationality can be rejected on the basis of what is now ample evidence in favor of the profitability of slave holding. Inhumanity and economic irrationality did not go hand in hand. On the contrary, the very inhumanity of slavery had a brutally simple economic logic. Moreover, there is nothing inherently incompatible about the slave owner's goal of "status," on the one hand, and the profit-seeking required for wealth accumulation. In the Brazilian countryside, the very process of constructing an enduring personal image of prestige and power required tremendous wealth, which in turn required that investments be profitable.

Estimating the profitability of slaveholding (or alternatively slave purchases) requires information on four variables:⁴⁶ the average market price of the slave, the expected stream of annual revenue generated by the slave's labor; the annual maintenance cost to the slave owner, and the expected life of the slave (or of the institution of slavery itself, once the abolition process was underway). Evidence on slave prices is abundant.⁴⁷ Much harder to locate, given the dearth of plantation records, are

⁴⁵Fernando Henrique Cardoso, *Capitalismo E Escravidão No Brasil Meridional : O Negro Na Sociedade Escravocrata Do Rio Grande Do Sul*, 5a. ed. (Rio de Janeiro: 2003), pp. 186-205; Emília Viotti da Costa, "O Escravo na Grande Lavoura," in Sérgio Buarque de Holanda, ed, *História Geral da Civilização Brasileira* tomo 2, vol. 3 (São Paulo, 1969), 177; J. H. Galloway, "The Last Years of Slavery on the Sugar Plantations of Northeastern Brazil," *The Hispanic American Historical Review* 51, no. 4 (1971), p. 604; Octavio Ianni, *Racas E Classes Sociais No Brasil*, 2. ed. (Rio de Janeiro: 1972), pp. 30-33; Toplin, *The Abolition of Slavery in Brazil*, p. 10; Warren Dean, *Rio Claro: A Brazilian Plantation System, 1820-1920* (Stanford: 1976), p. 123; Emilia Viotti da Costa, *Da Senzala Á Colonia*, 2. ed. (São Paulo: 1982), pp. 204-210.

⁴⁶ where the profitability is the internal rate of return, i , equating the discounted stream of net earnings (revenues from the slave's labor, R , minus the slave's maintenance, C) to the price of the slave:

$$P = \sum_0^T \left(\frac{(R_t - C_t)}{(1+i)^t} \right)$$

⁴⁷ Time-series of the prices of slaves are provided in Katia M. de Queiros Mattoso, Herbert S. Klein, and Stanley L. Engerman, "Trends and Patterns in the Prices of Manumitted Slaves: Bahia, 1819-1888," *Slavery and Abolition* 7, no. 1 (1986); Miekio

actual earnings from slave labor. As a substitute investigators have used the earnings from renting slaves. Systematic data on slave rentals exist only for the city of Rio de Janeiro. Extensive work in slave demography provides a basis for estimating the longevity of slaves.⁴⁸ On the basis of rental rates, maintenance costs reported by contemporaries, slave prices, and estimated life expectancies, slaveholding was profitable in Rio de Janeiro up through the very eve of abolition.

Rio de Janeiro was not exceptional, because Brazilian regional markets for slaves were well integrated. Figure 4.1 presents, by way of example, the prices of adult male slaves on the coast, in Rio de Janeiro, and upcountry, in Minas Gerais. The differences in the prices are slight (and indicate the transaction cost of moving a slave from one region to the other), and the series move together nearly perfectly. Prices of slaves in one region indicated the opportunity costs of slaveholding in other regions. From the northeast to the south center, *fazendeiros*, *senhores de engenho*, and even small farmers not only made money on their slaves, but also typically made more than they would have on alternative investments.⁴⁹ Until the late 1880s slave owning was a virtually sure bet when it came to making money. Slave holding was risky but remunerative.⁵⁰

Slavery was profitable to slave owners because slaves were exploited in the narrowest possible economic sense. Irrespective of slave agency, resistance, opportunities for slaves to market a surplus cultivated on provisioning grounds in the countryside or to rent out their own skills in the cities, the chance to purchase their own freedom, or to seek recourse to the courts, the bulk of the economic benefit produced by slaves accrued to their owners. The private returns to the slave from their labor was not just lower than the social benefits, but also lower than the value of the marginal product

Nishida, "Manumission and Ethnicity in Urban Slavery: Salvador, Brazil, 1808-1888," *The Hispanic American Historical Review* 73, no. 3 (1993); Laird W. Bergad, *Slavery and the Demographic and Economic History of Minas Gerais, Brazil, 1720-1888* (Cambridge: 1999); Pedro Carvalho de Melo, *A Economia Da Escravidao Nas Fazendas De Cafe: 1850-1888* (Rio de Janeiro: 1984), p. 104.

⁴⁸ Melo, *A Economia Da Escravidao*, pp. 287-322.

⁴⁹ Helio Oliveira Portocarrero de Castro, "Viabilidade Econômica Da Escravidão No Brasil: 1880-1888," *Revista Brasileira de Economia* 27 (1973); Jaime Reis, "Abolition and the Economics of Slaveholding in Northeast Brazil," *Boletim de Estudos Latinoamericanos y del Caribe* 17 (1974); Jaime Reis, "Brazil: The Peculiar Abolition," *Ibero-Amerikanisches Archiv* 3 (1977); David Denslow, "The High Importation to Stock Ratio for Slaves in Northeast Brazil," ms. 1975; Melo, *A Economia Da Escravidao*.

⁵⁰ Melo, *A Economia Da Escravidao*, p. 279. Rates of return on slaveholding were double the yield on the government's long term debt; see William R. Summerhill, *Inglorious Revolution: Political Institutions, Sovereign Debt, and Financial Underdevelopment in Imperial Brazil* (forthcoming, 2008), chapter 4. High rates of return did not mean that slavery was uniquely profitable; they indicated greater risk on the part of the slave owner, comparable to that from owning equities of Brazilian companies.

of the slave's labor. Freedmen would never choose to work under such circumstances. Only the imposition, through law and threat of bodily harm, of the requirement that people work under such conditions could such a labor arrangement be sustained. The economic essence of slavery stemmed from the definition and enforcement of a property right in humans. Because the right was durable, persisting for the entire life of the slave, each slave embodied a capitalized stream of labor services. Slave purchases were investments in an asset that generated earnings for the owner for years into the future. Expropriation of the fruits of their labor denied all but a handful of Brazilian slaves the opportunity to accumulate wealth, and enriched the slave owning class. But such exploitation accounts for little to none of Brazil's poor performance in the nineteenth century.

“Capitalists without capital” and the macroeconomics of slavery

The fact that slaveholding was profitable, or even statically efficient, rules out slavery as a factor in the relatively low *level* of GDP per capita at one particular point in time. It does not, however, rule out slavery as an obstacle to economic *growth*. To infer a positive aggregate impact on the economy from evidence on the private profits enjoyed by the slaveholding class is a potential fallacy of composition. It is possible, for example, that even in the absence a horrible and costly civil war to end slavery, the sum of the actions of tens of thousands of profit-seeking slaveholders could still have negative effects on real capital formation. Where slave values were rising, slave owners enjoyed increasing wealth. To the extent that the capital gains implicit in rising slave prices satisfied the slave owners' desire to hold wealth, they had no need to invest in physical capital. The framework for assessing the extent to which real investment was “crowded out” by the growth of the wealth embodied in slaves borrows from investigations of the U.S. case.⁵¹ High profits on slaves, rising slave prices, and the expanding slave population left the U.S. south with a physical capital stock that was lower than it would have been otherwise. The increase in the value of the stock of slaves satisfied slave owners' demand to hold wealth, and prevented them from undertaking investment in alternatives where their funds would have formed physical capital. In Ransom and Sutch's words, slave owners were “capitalists without capital.”

The thorniest assumption in Ransom and Sutch analysis is that the rising wealth embodied in slaves reduced capital formation, *dollar for dollar*. Even accepting this assumption for the case of Brazil, the hypothesis that nineteenth-century economic performance was poor because the wealth represented by slaves reduced capital formation cannot be accepted. In Brazil, unlike the United States south, the slave population actually shrank over the nineteenth century. Without a positive net natural rate of reproduction, Brazil relied on continued imports of enslaved Africans just to replenish the labor force. After 1850 and the cutoff of the slave trade the slave population entered irreversible decline. Since the stock of wealth represented by slaves is simply the product of the size of the slave population, and the price of an “average” slave,

⁵¹ Roger Ransom and Richard Sutch, “Capitalists without Capital: The Burden of Slavery and the Impact of Emancipation,” *Agricultural History* 62, no. 3 (1988).

for this stock to increase required that the prices of slaves rise by an amount large enough to offset the decline in the slave population. The price of slaves increased in an accelerated fashion after the cutoff of the slave trade in 1850 (see Figure 4.1), so that despite a declining number of slaves the value of the stock of wealth represented by the slave population may well have increased over this brief interval. Nonetheless, the 1850s saw vibrant commerce, and a wave of formation of real capital in new firms and farms, which was far from the crowding out one might expect. More importantly, with time the decline in the slave population swamped any transitory increase in slave prices, so that the overall stock of wealth represented by slaves fell. If the theory held, what one would expect to find would be *crowding in*, not crowding out of investment in physical capital over the nineteenth century.

Slaveholding, inequality, and underdevelopment

Slavery might still pose large, unanticipated negative consequences for the economy, despite its profitability and static efficiency. Conditions that are efficient at a particular point in time can “lock in” a set of arrangements and structures that, at a later date, are revealed to be sub optimal. Undoing or overcoming these consequences may prove impossible; deriving their origins can still enhance understanding about long-term processes of economic change. Modern Brazil is infamous for its highly unequal distribution of wealth and income. When compared with Rome in 70 A.D., the United States in the nineteenth century, Britain in 1688, and a variety of modern cases from around the world, the most unequal distribution of income in recorded history was that of Brazil in 1980.⁵² For a variety of reasons that have been debated (still inconclusively) by development economists, this extreme inequality of income and wealth is a persistent feature of Brazilian society. At first blush, inequality in the late twentieth century is unsurprising: a rapidly growing population, abundant labor, poor financial institutions, and severe distortions created by twentieth century policies conjoin to keep the returns to capital high, and the returns to labor low. Yet, more distant factors play a role as well, and slavery contributed to creating long-term inequality through several channels. The most obvious is the combined effect of 1) slaves being classified as property, while 2) simultaneously being deprived of acquiring wealth themselves. Though historians have found instances in which Brazilian slaves accumulated savings, and even purchased their freedom, the reality is that most slaves spent all of their lives reduced to the condition of property. When a large share of the population is owned by another group, without compensation, a highly unequal distribution of wealth mechanically results. Even in those cases where slaves attained their freedom, they usually entered the labor market at the lowest rungs of the occupational ladder.

Economists have recently focused attention on the relationship between inequality and economic growth. In contrast to the older view, pioneered by Kuznets, in which worsening inequality was a transitory condition necessary for modern economic growth, the newer work views inequality as a persistent condition that is inimical to growth. In

⁵² Raymond Goldsmith, “An Estimate of the Size and Structure of the National Product of the Early Roman Empire,” *Review of Income and Wealth* 30, no. 3 (1984).

the spirit of these evolving views, Engerman and Sokoloff erected a grand interpretive edifice that purports to explain long-term patterns of economic growth and underdevelopment in the Americas.⁵³ Differences in the level of per capita income across western hemisphere economies boil down to one key variable: how factor endowments (the ratios of land, labor, and capital) determined the extent of inequality. Importantly, slave societies figured among the most extreme unequal of all.

In the Engerman and Sokoloff argument inequality in the past is not measured by reference to standard indicators, such as the Gini index, but rather by a general set of qualitative characteristics (the existence of slavery, or a large indigenous population), or elements that are actually institutional in nature (voting laws, the extent of public education). The more appropriate test would involve actual measures of inequality. Wealth, and various proxies for wealth, can be inferred from census materials and probate records. Interpreting these figures is complicated, however, by the way in which slaves are treated. This is especially true for the estimates that measure the distribution of slave owning. Slaves of course were potential holders of wealth who in practice had none. These measures treat slaves as assets that comprise someone else's wealth.⁵⁴ They are thus only rough guidelines to the underpinning inequality of wealth, and they must be used with caution.⁵⁵

The hypothesis that nineteenth-century Brazil had differentially high levels of inequality is tested here by reference to actual measures of the distribution of wealth and assets. Table 4.1 reports scattered measures of wealth inequality for various places in Brazil in the late eighteenth and the nineteenth centuries. Measures closer to zero indicate a more equitable distribution of wealth. Measures closer to one indicate a

⁵³ There are several articles. For the most complete statement see Stanley Engerman and Kenneth Sokoloff, "Factor Endowments, Inequality, and Paths of Development among New World Economies," *Economia* 3, no. 1 (2002); for a differing view that stresses institutions rather than factor endowments see Douglass North, William Summerhill, and Barry Weingast, "Order, Disorder, and Economic Change: Latin America vs. North America," in Bruce Bueno de Mesquita and Hilton Root, eds., *Governing for Prosperity* (New Haven: 2000).

⁵⁴ To illustrate the ambiguity introduced by this problem, consider two cases. In the first case, slaves in the population are counted as potential wealth holders who have no wealth. In the second case, slaves are counted as wealth, but not potential wealth holders, with each slave owner holding an equal number of slaves. When measured by the gini index, inequality in the first case is higher than in the second case. But this is simply a result of the definition of who is being counted as a wealth holder, and what is being counted as a source of wealth. The gini coefficients in the two cases are obviously not comparable.

⁵⁵ This is not a flaw in these measures; it attests to their construction for a purpose different than that in the text. In Schwartz' study the Gini indices test a hypothesis that slaveholding was more concentrated in areas where sugar production predominated. In the case of some of the other estimates, they only implicitly test hypothesis that the observed distribution is different from 0 or 1.

distribution of wealth that nearly completely unequal. The table divides the Gini indices into two types: indices of the distribution of slaves alone, and indices of the distribution of wealth more broadly defined. Several areas of potential bias naturally emerge in manipulating the data to create the indices. For example, inference is complicated by whether households or units that had no wealth (or slaves) at all are included in the original calculations. Truncation of the cases reduces the degree of inequality; inclusion of households with no wealth or slaves raises the measure of inequality. Estimates of inequality in Brazil have largely been answers in search of questions. The descriptive purposes to which they lent themselves did not involve the types of rich, causal arguments that occupied Engerman and Sokoloff. The possible biases in the construction of the Brazilian figures have thus not been controlled for in a way that permits definitive insights from comparison with the United States. Here they do, however, serve an especially valuable purpose, since for the specific case of Brazil they provide a way to operationalize and test the core mechanism for Brazil that Engerman and Sokoloff put forth to explain the poor economic performance of slaveholding regions.

The Gini indices reveal that the extent of inequality varied in Brazil with place and time, and with the particular resource that is being measured. Measures of the distribution of slaves, as an asset or component of total wealth, are more abundant than are measures of the distribution of wealth. For Bahia in 1777 Schwartz found a wide range (0.23-0.77) of Gini indices by district, while for São Paulo as a whole Luna and Klein derived a Gini of slave holding of 0.53.⁵⁶ For Bahia as a whole in 1816-1817 Schwartz found a Gini of 0.59.⁵⁷ For Minas Gerais in the 1790s inequality in slaveholding was around 0.54.⁵⁸ The comparable figure for the US south in 1790 was actually slightly *higher* than these for Brazil, at 0.6.⁵⁹ In São Paulo in 1829 the Gini of slave owning was 0.6, while in 1830s Bahia Barickman found higher figures in sugar growing (0.74), and lower Ginis in tobacco cultivation (0.52).⁶⁰ In the US in 1830 the inequality of slaveholding was between these two, and nearly identical to that of Minas Gerais, at 0.597.⁶¹ These similarities persisted. In 1860s Minas Gerais the inequality of

⁵⁶ Schwartz, *Sugar Plantations in the Formation of Brazilian Society : Bahia, 1550-1835*, p. 443; Francisco Vidal Luna and Herbert S. Klein, *Slavery and the Economy of São Paulo, 1750-1850* (Stanford: 2003), p. 127.

⁵⁷ Stuart B. Schwartz, "Patterns of Slaveholding in the Americas: New Evidence from Brazil," *The American Historical Review* 87, no. 1 (1982), p. 82.

⁵⁸ Bergad, *Slavery and the Demographic and Economic History of Minas Gerais*, p. 207.

⁵⁹ Lee Soltow, "Economic Inequality in the United States in the Period from 1790 to 1860," *Journal of Economic History* 31, no. 4 (1971).

⁶⁰ Luna and Klein, *Slavery and the Economy of São Paulo, 1750-1850*, p. 127; Bert J. Barickman, "The Slave Economy of Nineteenth Century Bahia: Export Agriculture and Local Market in the Reconcavo, 1780-1860" (PhD, Illinois, 1991).

⁶¹ Lee Soltow, "Economic Inequality in the United States in the Period from 1790 to 1860," *The Journal of Economic History* 31, no. 4 (1971).

slaveholding hovered still around 0.54; for the U.S. south it was higher, at 0.603.⁶² Measures of the inequality of wealth overall are far more difficult to come by. It is nonetheless telling that for the province of Rio de Janeiro in the 1870s, the Gini index for wealth was 0.855; for the United States it was nearly identical, at 0.83.⁶³

That slavery was an important feature of the economy did not mean that nineteenth-century Brazil had levels of inequality that were disproportionately higher than those of richer countries. This exercise, necessarily based on fragmentary figures from the Brazilian side, reveals that the extent of inequality in the US and Brazil was remarkably similar in the late eighteenth and nineteenth centuries. The inference is that inequality, whether defined broadly based on total wealth, or more narrowly in terms of slaves, had no clear bearing on the low levels of GDP per capita that persisted after independence.

3. Neo-colonialism: trade and investment

Neo-colonialism has been stressed as a main culprit in the "development of underdevelopment" in nineteenth-century Brazil. Indeed, one widely accepted impression is that foreign economic ties so distorted the course of events in Brazil that the country would have been better off had it maintained economic autarky, immunizing itself from world product and capital markets. In this view, Brazilian underdevelopment came about via its two main links to the rest of the world economy: trade in agricultural products, and foreign investment. Brazil experienced a sustained increase in real exports in the nineteenth century. Coffee, sugar, and cotton were grown predominantly on large plantations using slave labor. Hides, cacao, rubber, tobacco, and South American tea (maté) were also major exports, produced with free and slave labor in varying proportions. Virtually the entire exportable production of Brazil was in the hands of Brazilians. Unlike Mexico, or Central America, relatively little of Brazil's resources came to be owned by foreigners.⁶⁴ While foreign-owned firms bought up and exported Brazil's agricultural commodities, the number of exporting houses was sufficiently large to prevent collusion and price setting.⁶⁵ The most frequently cited mechanism through which Brazil lost out by exporting primary products was its terms of trade with the rest of the world. The terms of trade are simply an index of the rate at which Brazil exchanged

⁶² Bergad, *Slavery and the Demographic and Economic History of Minas Gerais*, p. 208; Soltow, "Economic Inequality in the United States,".

⁶³ Ricardo Antonio Rocha Silveira, "The Distribution of Wealth in Brazil: The Case of Rio De Janeiro, 1870's to 1980's" (PhD, University of California, Berkeley, 1985); Lee Soltow, *Men and Wealth in the United States, 1850-1870* (New Haven: 1975).

⁶⁴For a synthetic overview and comparison of Latin America's export economies in the nineteenth century, see Robert Cortes Conde, "Export-Led Growth in Latin America, 1870-1930," *Journal of Latin American Studies* 24(1992):163-179; idem, *The First Stages of Modernization in Spanish America* (New York, 1974).

⁶⁵For a detailed study of the organization of coffee exporting in nineteenth century Brazil see Joseph Sweigart, *Financing and Marketing Brazilian Export Agriculture: The Coffee Factors of Rio de Janeiro, 1850-1888* (New York, 1987).

exports for imports. Should the prices that Brazil received for its exports fall, or not rise as quickly as the prices it paid for its imports, then its terms of trade worsened. National income would be smaller than if the terms of trade remained constant, or improved. Empirical evidence reveals that Brazil's terms of trade fluctuated, but did not worsen over the course of the century. Estimates of Brazil's terms of trade have been constructed in a number of different fashions.⁶⁶ Taking as the best available indicator the prices paid for all Brazilian exports relative to the prices that Brazil paid for imports from its leading trading partner (Great Britain), and then properly adjusting them for the cost of overseas shipment, reveals no such worsening of the terms of trade between 1850 and 1913. Indeed, by exporting more in the absence of worsening terms of trade, the Brazilian economy gained.⁶⁷ A bilateral assessment (using only the prices that Brazil received for its exports to Britain, instead of all exports) shows that both Brazil and Britain enjoyed improving terms of trade with each other. Such a result is no anomaly; it arises from the productivity gains in shipping that reduced the costs of trans-Atlantic transport in the nineteenth century. Although these estimates still merit revision, they concord with other studies in the conclusions that one may derive. Exporting primary products did not work against the Brazil. Moreover, even though the terms of trade favored Brazil's agricultural exports, they did not drive the country's own internal terms of trade against manufactures. In the last decades of the Empire, and first decades of the Republic, the agriculture-industry terms of trade within Brazil fluctuated without trend.⁶⁸ Importantly, because its income terms of trade (the terms of trade index, multiplied by an index of the volume of exports) grew steadily, Brazil's capacity to import desperately-needed capital goods increased as well.

The second channel of neo-colonial exploitation identified by historians is foreign investment. In Brazil there was relatively little foreign investment in the first half of the nineteenth century. Foreign merchants invested modest sums in commercial operations in Brazil's principal ports. Most funds raised by the state in London before 1850 remained in Europe and were spent for military purposes. Despite the fact that newly independent Brazil did not default on its overseas loans (unlike its republican neighbors in Spanish America), it too was viewed as a risky arena for direct investment. When foreign investment did pick up in Brazil around mid century, Britain was the source of most funds. To the extent that "informal empire" in Brazil existed at all, it was due chiefly to Brazil's demand for large, capital intensive projects and financial services after 1850. Sufficient loanable funds for these activities were not forthcoming at home. In the second half of the nineteenth century British investors concentrated their investments in Brazil on government loans, railroad companies, and banks. None of these investments in Brazil generated especially high rates of return for British shareholders. Indeed, none

⁶⁶ Carlos Manuel Peláez, "The Establishment of Banking Institutions in a Backward Economy: Brazil, 1800-1851," *The Business History Review* 49, no. 4 (1975); Leff, *Underdevelopment and Development*.

⁶⁷ Reinaldo Gonçalves, "Evolução das Relações Comerciais do Brasil com a Inglaterra: 1850-1913," *Texto de Discussão* No. 1, UFRJ, 1982.

⁶⁸ Luis Catão, "A New Wholesale Price Index for Brazil During the Period 1870-1913," *Revista Brasileira de Economia* 46(1992):519-33.

of Britain's investments abroad brought unusually large profits.⁶⁹ The British-owned San [sic] Paulo Railway was "the most profitable British railway enterprise in Brazil or anywhere else in Latin America."⁷⁰ Its profits were nonetheless modest in comparison with Brazilian-owned railroads in the same state, such as the Paulista and the Mogiana.⁷¹

No accounting identity equates Britain's putative gains from "informal empire" to income leakages that were experienced by economies on the "periphery," such as Brazil, that received large shares of Britain's overseas investment. What Britain earned on investments does not imply an equivalent loss to Brazil. Historians have long hinted at myriad indirect costs arising from these investments, and it is a widely shared assumption that they made a big difference. Few have specified the manner in which those costs came about. As a result, testable implications or propositions about the nature and magnitude of the "hidden" costs of foreign investment in Brazil can only be evaluated in terms of their observable, or at least readily inferable, components. Whether or not it was prudent for Brazil to bear costs from such investments depends ultimately on the magnitude of the benefits that Brazil garnered from them. To the extent that foreign investments created benefits that were unappropriated by project owners abroad, they raised national income.

Remitted profits and interest comprised the direct costs of foreign investment. Benefits from foreign investments vary with the sector of activity. Although relatively few assessments yet exist, the hypothesis that foreign investment proved costly to nineteenth-century Brazil founders quickly in the face of the available empirical analysis. British subscriptions to Brazilian government bonds provided the State with resources that it otherwise would not have had, and which enabled it to support the development of infrastructure, fight a costly war against Paraguay, and, of course, engage in its fair share of squandering public funds through the pork-barrel projects typical of all governments. To the extent that British banking in Brazil had indirect effects, it created modest net gains, not costs. All things else being equal, additional banks operating within Brazil simply increased the supply of loanable funds, made arbitrage possible where it had previously not existed, and improved the efficiency with which capital was allocated among activities by aiding in the integration of financial markets. Investments in Brazilian railroads by the British brought only modest profits to shareholders, but generated large gains to Brazil by saving resources that had previously been tied up in costly overland transport activities. While an exhaustive account of the many consequences and linkages from foreign investment in Brazil remains to be written, it is worth stressing that the few case studies to date reveal gains in excess of costs.

⁶⁹Lance Davis and Robert Huttenback, *Mammon and the Pursuit of Empire* (Cambridge, UK, 1988).

⁷⁰J. Fred Rippy, *British Investments in Latin America, 1822-1949* (Minneapolis, 1959), 154.

⁷¹William R. Summerhill, "Market Intervention in a Backward Economy: Railway Subsidy in Brazil, 1854-1913," *Economic History Review* 51, no. 3 (1998).

4. Institutions and Transactions Costs in the Nineteenth Century

The chief cause of persistent relative backwardness in nineteenth-century Brazil was the high cost of transacting. Transactions costs are the resources required to facilitate exchange across space and over time. Simply put, nineteenth-century Brazil was an expensive place to do business, and as a result, relatively less business was done. The transactions costs that weighed in nineteenth-century Brazil fell into two categories: those required to overcome distance, and those arising from the need to commit resources for a period that permits them to be employed most productively. In short, affordable transport, and institutions that facilitated contracting among agents in the economy, were the two indispensable ingredients for growth. In both respects Brazil was seriously deficient. Institutional arrangements and technologies that determined the costs of transacting gave rise to inefficient economic organization. A poor record of per capita economic growth for much of the century resulted.

For settlements in close proximity to the coast transport posed little difficulty. Brazil's gold and diamond boom of the seventeenth century created for the first time substantial populations in the interior of São Paulo and Minas Gerais. Natural means of shipment were scarce in the interior. Like much of the New World, Brazil possessed a rich resource endowment. Unlike the United States, however, it lacked a favorable endowment of interior waterways that would provide producers and consumers with inexpensive transport. The difference this made was striking. To exploit and commercialize the interior meant that freight had to travel over Brazil's coastal mountain range on the backs of mules, or at best, on wagons or carts, through the middle of the nineteenth century. River travel over long distances was feasible only in the Amazon and on sections of the Rio São Francisco. In both regions natural resources and the climate did not favor settlement or cultivation. Other waterways actually compounded the transport problems, since they had to be traversed. The regions of Brazil possessing the best agronomic endowments, such as the Paraíba valley, the plateau of western São Paulo, the highlands of Minas Gerais, were poorly served by natural trade routes.

A simple example reveals the extent of the burden posed by terrain. Rugged topography in Brazil created high overland transport costs that reduced the extent and integration of product markets. In the 1880s in the interior of Minas Gerais freight still moved on the backs of mules. The cost to carry one ton of freight (iron ingots) for 100 kilometers overland came to 80 milréis. A trip of a little more than two hundred kilometers doubled the forge price of the most common variety of farmer's iron.⁷² Coastwise freight shipment of Rio de Janeiro cost less than 50 réis per ton kilometer, or about one-sixteenth the upcountry rate. Shipment along a short but navigable stretch of the Paraíba river cost only a little more than 100 réis per ton kilometer in 1884, about one-seventh of the overland freight charge in Minas. Had Brazil's interior been served by navigable waterways a ton of iron ingots in Minas Gerais could have been carried more

⁷²"A Indústria Mineral na Província de Minas Gerais," *Annaes da Escola de Minas* 2 (1883):23-102

than 1400 kilometers before transport costs would double the price at the forge.⁷³ If the regions of Brazil that suffered a lack of navigable waterways had experienced such a reduction in transport costs, the aggregate consequences would have been profound, namely: better integration of product and labor markets, regional specialization, extended margins of agricultural cultivation, reduced risks of shortages, more intensive internal trade, and improvements in information and communications that improve the allocation of mobile factors of production. National income would be much larger, and the productivity gap between Brazil and the advanced industrializing nations of the North Atlantic would have been reduced significantly.

These effects are not merely conjectural. The process of railroad development that began during the Second Reign provided key regions of Brazil with precisely this kind of reduction in transport costs. By the end of the Empire, railroads had reduced real unit freight costs to less than one-fourth of pre-rail overland rates. And by the end of the century railroads had reduced freight charges in the interior nearly to the level that Minas Gerais would have enjoyed if it had possessed navigable rivers. In 1887, only 33 years after the completion of Brazil's first railroad, the social savings on railroad freight services were proportionately much greater than those provided by the railroad in the U.S. at a similar stage of development. In Brazil, the consequences of declining transport costs for market integration were dramatic. The local variance in coffee prices in São Paulo in 1854 had been reduced by one half by 1906. In 1913 a conservative estimate of social savings shows that railroads accounted for at least 20 percent of the productivity gains that Brazil enjoyed from 1885 to 1913.⁷⁴ Had Brazil possessed rivers and canals like those in the eastern United States, and not had to await railroads, transport costs could have been reduced much earlier. The country's economic backwardness would have been far less severe.

Even if Brazil had been able to avoid the high costs of transport much earlier, it still confronted a wide variety of other transactions costs imposed by the institutional environment. Laws and regulations discouraged new enterprises, and other policies and practices that would have promoted business failed to materialize. These created strong disincentives for businessmen, fazendeiros, and capitalists to undertake investments and productive activity. The expected private gains from risk-taking and entrepreneurship were, often enough, just too low. As a result, businesses that would have created employment and profits never got off the ground. The enduring divergence between private and social rates of return forestalled potential improvements in economic organization. Policies that dampened economic growth stemmed not from a weak dependent State, but from a strong, centralized one.

⁷³C.F. Van Delden Laerne, *Brazil and Java. Report on the Coffee-Culture in America, Asia, and Africa* (London, 1885), 153.

⁷⁴For a detailed analysis of this and other consequences of railroad development in Brazil see William R. Summerhill, *Order against Progress: Government, Foreign Investment, and Railroads in Brazil, 1854-1913* (Stanford: 2003).

In early nineteenth-century Brazil, political independence eliminated the formal structures of the Portuguese colonial rule. In terms of political institutions and organization, Brazil's new leaders eliminated many of the vestiges of an operative "colonial heritage." Constitutional monarchy prevailed, marked by a system of representative government, and an electoral franchise on par with many western European countries. Even though the formal apparatus of colonialism was gone, new codes and regulations did little to free up resources, promote exchange, or encourage investment and production. Additionally, new institutions constrained material progress in new ways. Tight government control of financial institutions capped the growth of banking in Brazil, stifling the creation of efficient capital markets that would have benefited agriculture and manufacturing.⁷⁵ Provincially-chartered banks of issue never evolved in Brazil. The few banks that did arise found their operations severely limited by central government regulations. Such polices effectively limited Brazilian banks to only the most basic commercial operations. In the 1840s, Rio de Janeiro possessed a population equal to roughly two-thirds that of New York City, but its banking capital was less than five percent of that in New York.⁷⁶ As a result, well into the Second Reign most loans to rural producers came through merchants and non-institutional financial intermediaries. Capital markets remained personalized and inefficient, improving only slightly with loosened strictures on banking and the issue of notes in the 1860s and 1870s.

Bound up with the difficulties of obtaining rural credit, and the absence of policies to ameliorate them, was the failure to adequately define and enforce property rights in land. Throughout the Imperial era Brazil lacked an effective means of privatizing the public domain. The land law of 1850 did little to improve the situation, effectively preserving secure access to land only for the most powerful in society, and rendering everyone else's hold on land rather tenuous.⁷⁷ Given the difficulties of obtaining clear title, and mortgage laws that favored debtors, land was of little use for collateralizing loans. Certainty of ownership came about only through the security of possession. Establishing that security implied legal expenditures, or outlays on sharecroppers and hired hands that could be relied upon to defend the occupant's claim to property with force if necessary. Either way, the additional cost of securing property reduced the gains to agricultural investment. For rural producers whose access to land was less certain still, the incentive to make improvements to properties was indisputably reduced.

⁷⁵ Peláez, "The Establishment of Banking Institutions in a Backward Economy: Brazil, 1800-1851,"; William R. Summerhill, *Inglorious Revolution: Political Institutions, Sovereign Debt, and Financial Underdevelopment in Imperial Brazil* (forthcoming), chapter 6.

⁷⁶ Bernardo de Souza Franco, *Os Bancos do Brasil* (Rio de Janeiro, 1848), 23-26.

⁷⁷ Warren Dean, "Latifundia and Land Policy in Nineteenth-Century Brazil, *Hispanic American Historical Review* 51(1971):606-625; José Murilo de Carvalho, *Teatro das Sombras: A Política Imperial* (Rio de Janeiro, 1988), 84-106; Emília Viotti da Costa, *The Brazilian Empire: Myths and Histories* (Chicago, 1985), 78-93.

The institutional gap reached far beyond the agricultural sector. For almost 30 years after independence Brazil failed to elaborate commercial laws and regulations that made contracts enforceable and assigned responsibility and liability in business affairs. Commerce operated within a legal framework comprised by a hodgepodge of European business laws and a few draft Brazilian guidelines. Brazil's first commercial code, adopted in 1850, established a legal basis for contracts and their enforcement, but with respect to business organization made provision only for partnerships and joint ventures.⁷⁸ The simple incorporation of limited-liability companies required the approval of the Emperor's Council of State. Legislation passed in 1860 in the wake of the financial crisis of 1857 erected further obstacles to incorporation, and effectively eliminated all issue of bank notes by any institution other than the Treasury.⁷⁹ Free incorporation of joint-stock companies prevailed in Brazil only in 1882.⁸⁰

Together, these institutional features weighed heavily on the efficiency of factor markets, raising start-up costs to prohibitive levels, rendering contracting costly, and made it difficult for agents to respond to new opportunities by erasing the potential gains from joint-stock companies which might have taken advantage of scale economies. Ironically, the market for slave labor was likely the most efficient of the country's factor markets. Even there, taxes established by various provinces in the early 1880s with the intention of restricting the forced migration of slaves into the south-central provinces, and thus slow the growing geographic concentration of the slave population, served to misallocate labor by region and sector of economic activity. Final abolition in 1888 pulled the rug out from under such misallocation. The newly freed rural workers in post-emancipation Brazil likely had neither the information nor the encouragement of former slave owners to relocate to regions where wages were highest. Brazil's transaction to more rapid economic growth would make heavy use of European immigrant workers.

Beyond these burdens, from the side of product markets there were further obstacles to inter regional commerce, integration, and specialization, in spite of transport improvements during the Second Reign. For the entire post-independence period Brazil witnessed a stunning array of taxes on inter provincial trade within Brazil.⁸¹ Although

⁷⁸W.R. Swartz, "Codification in Latin America: The Brazilian Commercial Code of 1850," *Texas International Law Journal* 10(1975):347-356; Lei 556, *Collecção das Leis do Império do Brasil*, tomo 11 (Rio de Janeiro, 1850).

⁷⁹Brasil, Ministerio da Fazenda, *Relatório* (Rio de Janeiro, 1861).

⁸⁰Lei 3150, 4 November 1882.

⁸¹For discussions of the taxing of imports by provinces see Brazil, *Livro do Centenário da Câmara dos Deputados (1826-1926)* (Rio de Janeiro, 1926), 281-287; Agostinho Fernandes Bezerra, "Política Tributária Estadual: A Questão da Tarifas Internas na Primeira Republica (1889-1930)" (M.A. thesis, Universidade de São Paulo, 1984); Evaldo Cabral de Melo, *O Norte Agrário e o Império* (Rio de Janeiro, 1984), 247-285; Eugene Ridings, *Business Interest Groups in Nineteenth-Century Brazil* (Cambridge, UK, 1994), 183-191; Guilherme Deveza, "Política Tributária no Período Imperial," in Sérgio Buarque de Holanda and Pedro Moacyr Campos, eds. *História Geral da Civilização Brasileira, Tomo II, Declínio e Queda do Império* (São Paulo, 1971), 72-3; Serzedelo

strictly unconstitutional, such taxes were designed not only to supplement provincial revenues, but also to protect constituent-producers of various goods and crops from outside competition.⁸² The open flouting of the Imperial State's fiscal regime and protections on the common market on the part of Brazil's provinces was clearly apparent by 1860, and simply increased through the Second Reign, enduring even into the First Republic.⁸³

The persistence of inter-provincial tariffs, along with the bulk of the institutional obstacles to economic growth outlined here, stemmed from the Brazilian Empire's political organization. Unlike Spanish America, independent Brazil by and large escaped the widespread, violent upheavals associated with "state building." Brazil was a genuine exception in the nineteenth century, by Latin American standards. It enjoyed precisely the kind of remarkable political stability, and representative government, that is normally considered a prerequisite for modern economic growth. Nonetheless, Brazil's Emperors and Parliament failed to elaborate the laws and policies required to improve economic organization. Because the lengthy delay in modernizing Brazil's economic institutions was rooted in the formal structure of government, inefficient economic organization is a question of constitutional political economy.

While the Constitution of 1824 provided for elected representation, it also centralized governmental authority. The "federal" interregnum during the Regency (1831-1840) saw a partial division of that authority between the central government and the provinces through the Additional Act of 1834, which created weak provincial assemblies, and vested provinces with the responsibility for undertaking internal improvements. This devolution of these powers to the provinces stopped well short of constitutional federalism. Importantly, the central government's authority to make economic policy remained unlimited. All federal-like political arrangements in Brazil were contingent: with the central government gave it could also take away. The structure of political authority in the Empire remained solely at the discretion of the highest level of government, namely the emperor and parliament. Without durable decentralization, the most beneficial consequence of federalism--the induced competition among lower political units to attract mobile factors of production--never materialized.⁸⁴ Because the "federal" provisions of Brazil's Additional Act were contingent, and in no way constrained central government power by dividing its authority with the provinces, it also failed to sustain a common market. Provincial authorities were relatively free to engage

Correia, *O Problema Econômico no Brasil* (Rio de Janeiro, 1903; reprint 1980); 31-34, 297-317.

⁸²*Constituição Política do Império do Brasil*, Título IV, Capítulo II, Artigo 36. The Additional Act of 1834 reiterated this restriction on provincial powers to tax; Lei 16, 12 August 1834, Artigo 12.

⁸³Visconde do Uruguay, *Estudos Práticos Sobre A Administração das Províncias no Brasil*, tomo 1 (Rio de Janeiro, 1865), 254-323.

⁸⁴ Barry R. Weingast, "The Economic Role of Political Institutions: Market-Preserving Federalism and Economic Development," *Journal of Law, Economics, & Organization* 11, no. 1 (1995).

in political "trades" with the central government on a variety of issues in order to meet the demands of rent-seeking constituents within the province. A key issue that escaped central intervention was the erection of trade barriers among the provinces. Because the possibilities for institutional transformations in Brazil were so heavily determined by central government, changes were by and large arbitrary, erratic, and required tremendous political resources at the national level to effect. Government intervened in the economy in ways that served to seal and maintain political pacts, instead of upholding the common market. Constituents' demands for public goods and targeted subsidies were translated into distributive policies by the parliament, which took as its primary objective the goal of electoral support. The principal institutional features of the Brazilian economy were thus rooted in the character of the State.

Two additional observations on government are worth making. First, the State in "dependent" economies is often viewed as being dominated by a national elite that sells out authority and control in order to gain access to foreign capital. Such characterizations of capital-rich foreigners dominating public policy in resource-rich peripheries are not limited to dependentista views. Under certain assumptions, government may indeed give up control over policy in return for revenues, and financiers are particularly favored in the exchange.⁸⁵ Yet the dependentista view of the State bears little resemblance to nineteenth-century Brazil. The testable implication of these models is that capital (be it foreign or domestic), because it is the most mobile factor of production, gains disproportionate control over policy. Empirically, this view quickly founders. The largest sector of foreign investment in the nineteenth century was railroads. There, the Brazilian government offered guaranteed dividend for investors, but it closely monitored and regulated those profits, along with the rates charged to transport freight and passengers.⁸⁶ Foreign-owned railroads generated a large social surplus for Brazil. The Brazilian state successfully captured the bulk of that surplus for the benefit of Brazilians, namely landowners, slave owners (until 1888), and consumers.

Finally, though perhaps no less important, when Brazil's monarchy was overthrown in 1889 it was replaced soon thereafter by a nominally federal system. Although the First Republic did not meet the strict criteria of market-preserving federalism, key improvements were apparent. Export revenues accrued to state-level governments, at last giving them the fiscal resources needed to supply their own regional and local public goods. The authority to dispose of public lands and enforce property rights similarly devolved to the states. These measures encouraged competition among the lower units of government for geographically mobile factors of production (labor and capital), and improved allocative efficiency. Effecting such an institutional transformation at the level of national government contributed to much-improved economic growth by the turn of the century.

⁸⁵ Robert Bates and Da-Hsiang Donald Lien, "A Note on Taxation, Development, and Representative Government," *Politics and Society* 14 (1985); Adam Przeworski and Michael Wallerstein, "Structural Dependence of the State on Capital," *American Political Science Review* 82(1988):11-29.

⁸⁶ Summerhill, *Order against Progress*.

Conclusions

Historians have long focused on dependency-based explanations of Brazil's relative economic backwardness in the nineteenth century. These stressed external ties as the main mechanism by which the economy remained small. The assessments of the chief components of Brazil's external economic ties provided in sections 1, 2, and 3 fail to account for the Brazilian economy's relative backwardness. Rather, the economy performed poorly over the nineteenth century not because it was heavily burdened by dependency, but by high transactions costs. High transactions costs made it difficult to do business in any sector of the economy, and most regions of the country. Two factors account for Brazil's high transactions costs: geography that hobbled exchange over distance, and institutions that obstructed exchange and investment, either restricting them to the point of exclusion, or making these activities risky to the point of being wholly uncertain. Much of the failure to reduce the inefficiency of economic organization in the nineteenth century stemmed from the organization of politics and government during the Empire (1822-1889). Prominent among these was the absence of political arrangements that divided authority between upper and lower levels of government. Excessively centralized government failed to protect a common market, promote competition among provinces in the provision of local public goods, constrain arbitrary interventions in the economy, and eliminate incentives to cater to rent-seeking. Brazilian accordingly bore, and the economy exhibited, the resultant costs.

Table 3.1—Brazilian Gold Output, 1700-1799

Year	Gold		1747	14.812	8,311,306
	Production (tons)	Real Gold Output			
1700	1.47		1748	14.812	7,178,721
1701	1.47		1749	14.812	7,098,273
1702	1.47		1750	15.76	8,906,583
1703	1.47		1751	15.76	7,582,559
1704	1.47		1752	15.76	6,572,751
1705	1.47		1753	15.76	6,384,032
1706	4.41		1754	15.76	6,861,316
1707	4.41		1755	12.616	6,632,491
1708	4.41		1756	12.616	6,246,717
1709	4.41		1757	12.616	5,576,060
1710	4.41	1,671,593	1758	12.616	5,329,711
1711	6.5	2,257,518	1759	12.616	4,982,529
1712	6.5	2,233,475	1760	10.499	4,500,104
1713	6.5	2,168,815	1761	10.499	5,306,836
1714	6.5	2,073,793	1762	10.499	4,971,221
1715	6.5	2,091,817	1763	10.499	4,365,539
1716	6.5	2,028,234	1764	10.499	4,433,203
1717	6.5	2,200,683	1765	9.759	4,393,372
1718	6.5	2,609,190	1766	9.759	4,187,860
1719	6.5	2,638,328	1767	9.759	4,223,539
1720	6.5	2,250,079	1768	9.759	4,422,343
1721	7.6	2,252,426	1769	9.759	4,708,162
1722	7.6	2,550,946	1770	8.779	4,273,704
1723	7.6	2,984,515	1771	8.779	4,105,241
1724	7.6	3,308,121	1772	8.779	4,157,067
1725	7.6	2,736,235	1773	8.779	4,206,992
1726	8.5	3,272,753	1774	8.779	3,913,080
1727	8.5	3,401,677	1775	8.118	3,736,369
1728	8.5	3,482,191	1776	8.118	3,543,905
1729	8.5	3,452,389	1777	8.118	3,312,527
1730	9	3,530,419	1778	8.118	3,297,092
1731	9	3,595,475	1779	8.118	3,338,060
1732	9	3,473,705	1780	6.284	2,532,845
1733	9	4,206,201	1781	6.284	2,539,893
1734	9	4,023,994	1782	6.284	2,632,166
1735	14.134	4,321,858	1783	6.284	2,654,209
1736	14.134	5,671,690	1784	6.284	2,529,661
1737	14.134	7,136,214	1785	4.911	1,888,342
1738	14.134	7,431,093	1786	4.911	2,036,454
1739	14.134	8,818,060	1787	4.911	2,209,778
1740	14.147	8,347,487	1788	4.911	2,222,804
1741	14.147	7,431,177	1789	4.911	2,235,984
1742	14.147	7,319,990	1790	4.51	2,065,630
1743	14.147	8,011,429	1791	4.51	1,697,192
1744	14.147	7,781,076	1792	4.51	1,440,293
1745	14.812	7,232,885	1793	4.51	1,421,043
1746	14.812	8,332,561	1794	4.51	1,402,301

1795	4.399	1,430,623
1796	4.399	1,482,561
1797	4.399	1,394,094
1798	4.399	1,413,758
1799	4.399	1,467,519

Sources: see text.

Table 3.2—Brazilian Exports and Imports to Portugal, 1796-1807

YEAR	EXPORTS (CURRENT PRICES)	IMPORTS (CURRENT PRICES)	EXPORTS (PRICES OF 1807)	IMPORTS (PRICES OF 1807)
1796	11,474,864	6,982,356	11,919,271	7,252,774
1797	4,258,823	8,525,780	4,326,105	8,660,472
1798	10,816,561	10,668,177	10,106,482	9,967,839
1799	12,584,505	15,800,939	11,298,352	14,186,062
1800	12,528,092	9,432,157	11,098,615	8,355,932
1801	14,776,707	10,680,060	14,839,195	10,725,224
1802	10,353,245	10,151,660	13,089,568	12,834,705
1803	11,332,291	9,928,505	12,607,612	11,045,846
1804	11,199,923	11,383,279	11,160,703	11,343,417
1805	13,948,659	9,505,256	12,889,746	8,783,664
1806	14,153,762	8,426,098	13,805,825	8,218,962
1807	13,927,799	6,952,957	13,927,799	6,952,957

Sources: see text.

Table 3.3--COST OF MERCANTILIST RESTRICTIONS

COLONY	COST (MILLIONS)	COSTS PER CAPITA	COSTS AS PERCENT OF COLONIAL INCOME
BRITISH NORTH AMERICA (1775)	0.48 Dollars	0.26 Dollars	0.30
NEW SPAIN (1797-1820)			
Trade Burden	7.2 Pesos	1.2 Pesos	3.00
Tax Burden	<u>10.1 Pesos</u>	<u>1.68 Pesos</u>	<u>4.20</u>
TOTAL	17.3 Pesos	2.88 Pesos	7.20
BRAZIL (1796-1807)			
Trade Burden	2.82 Milréis	1.00 Milréis	6.00
Tax Burden	<u>0.96 Milréis</u>	<u>0.34 Milréis</u>	<u>2.04</u>
TOTAL	3.78 Milréis	1.34 Milréis	8.04

Sources: see text.

Table 3.4—Dividend Rates for the Companhia Geral do Grão-Pará e Maranhão

Year	Dividend Rate
1755	19.5
1756	19.5
1757	19.5
1758	19.5
1759	19.5
1760	6
1761	7
1762	8
1763	9.5
1764	9.5
1765	10
1766	11
1767	8.75
1768	11.5
1769	11.5
1770	11.5
1771	11.5
1772	11.5
1773	11.5
1774	11.5
1775	8.33
1776	8.33
1777	8.33

Source: see text

Table 4.1—Distribution of Slaves and Wealth

Year	Locale	Gini Index	Type of Wealth
1788	Bahia	0.23-0.77	Slaves
1788	Rio de Janeiro	0.35	Slaves
1816-1817	Bahia	0.59	Slaves
1829	Sao Paulo	0.6	Slaves
1777	Sao Paulo	0.53	Slaves
1850s	Minas Gerais	0.73	Land
1790s	Minas Gerais	0.54	Slaves
1830s	Minas Gerais	0.54	Slaves
1850s	Minas Gerais	0.52	Slaves
1860s	Minas Gerais	0.54	Slaves
1835	Bahia (Sao Goncalo dos Campos parish)	0.52	Slaves
1835	Bahia (Santiago Iguape parish)	0.74	Slaves
1790	US South	0.6	Slaves
1830	US South	0.597	Slaves
1850	US South	0.595	Slaves
1860	US South	0.603	Slaves
1800	Kentucky	0.8	Wealth of free males
1860	Kentucky	0.8	Wealth of free males
1860	US All	0.832	Total Wealth
1860	US South	0.843	Total Wealth
1798	US All	0.588	Real Estate
1860	US All	0.657	Real Estate
1870s	Rio de Janeiro province (Corte, Niteroi, Petropolis)	0.855	All
1870	United States	0.83	All

Sources: See text.

Figure 3.1—Average Price of Adult Male Slave in Minas Gerais, 1750-1808

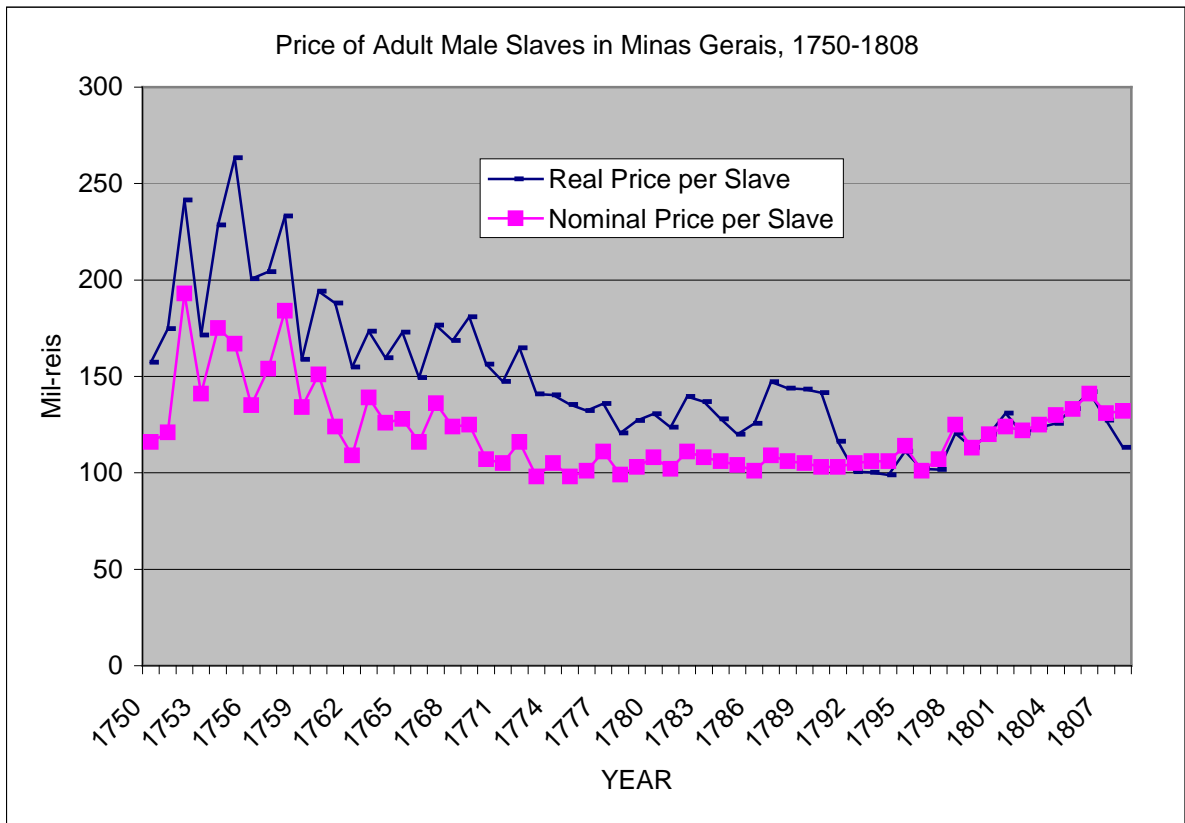


Figure 4.1—Prices of Adult Male Slaves in Rio de Janeiro and Minas Gerais, 1835-1888

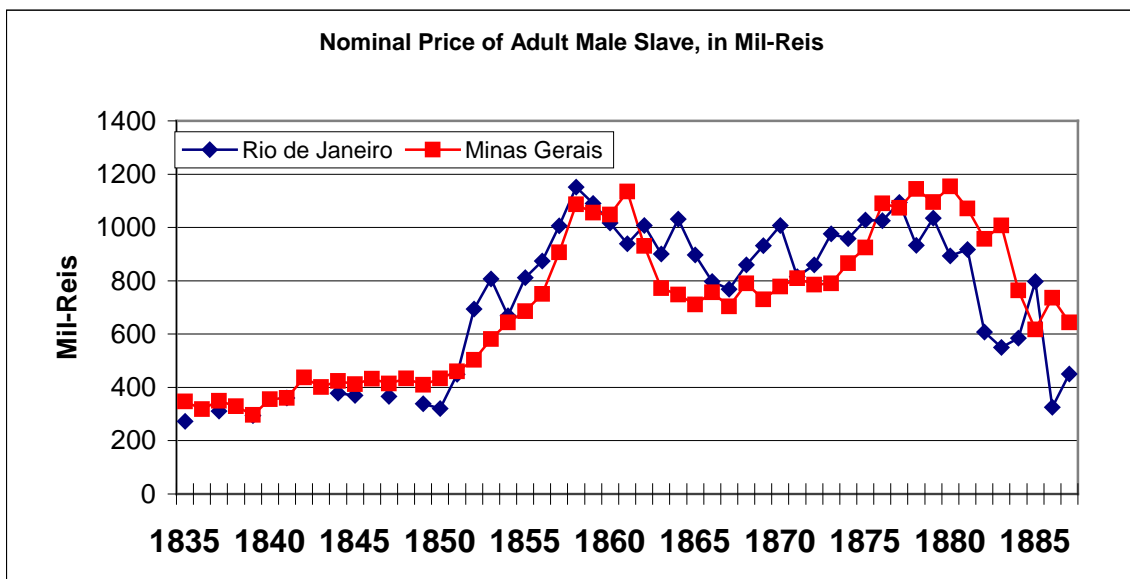


FIGURE 3.2 - DEADWEIGHT LOSSES OF MERCANTILIST TRADE RESTRICTIONS

