

Slavery in the Development of the Americas

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Introduction

I

Between the fifteenth and the twentieth centuries, the center of gravity of global economic activity shifted from the Old World toward the New, and, within the Americas, from the tropical and sub-tropical to temperate areas. During most of this long *durée* – from the sixteenth to the nineteenth centuries – there evolved an intensive form of slavery supported by the largest mass migration of coerced labor in recorded history. At the center of both the growth process and the extensive coercion lay a relatively limited number of plantation regions that focused on the production and export of what was from the consumers' point of view a few luxury items: sugar, the various hard liquors that sugar made possible, coffee, and tobacco.¹

The plantation complex was characterized by expansiveness, flexibility, and innovation; and because plantations relied on both sub-tropical climates and slave labor, the growth nodes of the New World remained largely outside the temperate zones, at least until 1850. Moreover, before 1800, the countries in the temperate areas that came closest to matching the economic performance of the sub-tropical slave economies were the ones that traded intensively with them. These included the colonial powers of the Old World that controlled the extensive plantation areas of the Americas. By contrast, after 1800 – following abolition of the transatlantic traffic in slaves and the

The authors would like to thank Stanley L. Engerman, Philip Morgan, David Richardson, Richard Salvucci, Mary Turner, and members of the Caribbean seminar of the University of London's Institute of Commonwealth Studies for comments on an earlier version of this Introduction.

¹ Sidney W. Mintz, *Sweetness and Power: The Place of Sugar in Modern History* (New York, 1985) argues that sugar provided a low-cost source of energy for workers before and during the industrial revolution that had the effect of increasing labor productivity. Any reasonable estimate of the share of sugar in the total diet and the incremental addition to physical activity that sugar made possible suggests that such an impact must have been trivial.

system of chattel slavery that it supported – rates of economic growth in the tropical areas lagged behind rates in the temperate zones.

In the late eighteenth century, Arthur Young remarked that coercive labor systems of varying intensity constituted the global norm everywhere outside the temperate North Atlantic region.² But there was no North–South economic development split of the kind that dominates modern discussions of global inequality. The mix of themes in the development of the Americas – wealth and poverty, coercion and freedom, shifts in the locus of economic power – have fascinated observers since Columbian contact. The research of the last forty years, in particular, much of it touched on and encapsulated in the papers in the present volume, has at once sharpened the paradoxes and offered new insights into understanding them.

The relative wealth of Central America and the Northern temperate zones, over the centuries since Columbian contact, was examined recently in several papers co-authored, appropriately enough, by Stanley Engerman who is the occasion of this volume. Engerman, Stephen Haber, and Kenneth Sokoloff drew attention to the fact that most European settlements in the New World began with the kinds of advantages that economic historians have traditionally seen as central to success.³ New World migrants had access to “vast supplies of land and natural resources per person.” Yet there was no doubt that, initially, the mainland possessions of the Old World latecomers – the English, the French and the Dutch – were of secondary, if not marginal economic interest. Indeed, before the arrival of Europeans these temperate regions supported a native population of much lower density than in the sub-tropical areas of the Americas.

The contrast in the economic performance of the tropical and temperate regions of the New World since 1700 is encapsulated by Sokoloff and Engerman’s data shown in Table 1. Data for the pre-1700 period are necessarily sparse, but it is perhaps not unreasonable to assume that incomes in the early Spanish Americas were higher than elsewhere, that this Spanish American advantage eroded thereafter, and that the major shifts toward greater inequality, this time in favor of the British North American mainland and Canada, came after 1700 rather than before. As Engerman et al. explain,

² See the discussion in Seymour Drescher, *The Mighty Experiment: Free Labor Versus Slavery in British Emancipation* (New York, 2002), pp. 14, 16, 18–19.

³ Stanley L. Engerman and Kenneth L. Sokoloff, “Factor Endowments, Institutions, and Differential Paths of Growth among New World Economies: A View from Economic Historians of the United States,” in Stephen Haber (ed.), *How Latin America Fell Behind: Essays on the Economic Histories of Brazil and Mexico, 1800–1914* (Stanford, 1997), pp. 260–304. A revised version, with additions of political and educational material, is Stanley L. Engerman, Stephen H. Haber, and Kenneth L. Sokoloff, “Inequality, Institutions and Differential Paths of Growth Among New World Economies,” in Claude Menard (ed.), *Institutions, Contracts and Organizations: Perspectives from New Institutional Economics* (Cheltenham, 2000), pp. 108–34.

TABLE 1. *Gross Domestic Product per Capita in Selected New World Economies, 1700–1997*

	GDP per Capita Relative to the USA			
	1700	1800	1900	1997
Argentina	–	102	52	35
Barbados	150	–	–	51
Brazil	–	50	10	22
Chile	–	46	38	42
Cuba	167	112	–	–
Mexico	89	50	35	28
Peru	–	41	20	15
Canada	–	–	67	76
United States	100	100	100	100
United States (in 1985 \$)	550	807	3,859	20,230

Source: Kenneth L. Sokoloff and Stanley L. Engerman, “Institutions, Factor Endowments, and Paths of Development in the New World,” *Journal of Economic Perspectives*, 14 (2000): 219.

while direct information on per capita incomes is lacking, patterns of migration, wages, anthropometric measures, and wealth-holdings all support the existence of this broad trend. In accounting for this pattern, many historians have emphasised differences in the institutions that settlers brought with them from the Old World. For example, the institutions that underpinned British colonial societies in mainland North America have been regarded as more conducive to economic growth than those brought from the Iberian countries.

By contrast, Engerman et al. focus on differences in factor endowments. They agree that political and economic institutions played a role, but argue that initial resource endowments in the various colonies of the New World were crucial in shaping the sorts of institutions that evolved and in accounting for relative economic performance over the long run. Thus, much of Latin America developed markedly unequal income distributions and social structures that gave elites a disproportionate share of power, as the environment favored latifundia and plantation agriculture. Inequality in turn inhibited economic growth. This emphasis on factor endowments, however, makes little distinction between the haciendas of Central America, on the one hand, which exported little across the ocean, and the plantation complexes, on the other, which for three centuries provided the cornerstone of trade in the Atlantic world. This approach is also broadly consistent with the view that from a twenty-first century perspective slavery had a malign impact on the long-run ability of societies to sustain productivity improvements and increase material welfare for all their inhabitants.

More has been written on the shape of New World societies as it was affected by the institutions the migrants brought with them and the

environment in which they found themselves than about any other single theme in the history of the settling of the Americas by the peoples of Europe and Africa. It would be presumptuous of us to claim for this volume anything other than a more nuanced balance between the roles of imported institutions on the one hand and pre-existing endowments on the other; but before attempting a re-assessment, it is worth noting that in fact the central question regarding institutions and resource endowments may be even sharper than our opening summary suggests. It was not only that the Spanish pulled into their empire the richest and most powerful part of the Americas in the years after 1492, they had themselves just formed the most powerful nation in Europe and were able to draw on the most advanced capital markets and technology that the late fifteenth century sub-continent had to offer. It is hard to imagine the early Portuguese and Spanish transoceanic explorations and imperial ventures without a northern Italian financing and knowledge base. In effect, Columbian contact brought together what were probably the centers of economic gravity of both Europe and the Americas. In the three centuries after Columbian contact, it is even more remarkable that it was not just in the Americas that the economic center of gravity shifted to the temperate areas farther north. The same process occurred in Europe also as Spain, Portugal, and the northern Italian cities fell behind the northwest Europeans. South of the equator a parallel if less pronounced shift occurred as Brazilian coffee and later still, cattle-based activities gained at the expense of the older sugar sectors of northeast Brazil.

What was even more striking in light of the significance of slavery and the plantation complex in the seventeenth and eighteenth centuries was the fact that slavery was an integral part of the social fabric of both conquering societies – the Iberian nations – as well as those of their major victims in the Americas – the Aztecs, Incas, and the Tupinamba peoples of what became Brazil. By contrast, slavery was much less prevalent among both the native populations in most of the temperate zones of the Americas and the smaller Caribbean islands, and among the northern European nations that began to impinge on their lands many decades after the early Spanish and Portuguese initiatives in the New World. In the Americas, the incidence of slavery was greatest among those peoples who had moved farther away from hunter-gatherer, or at least a semi-settled status that was most common in the temperate regions. Slavery was probably most prevalent among the Aztecs, though in the settled, relatively densely populated and temperate northwest, the Haida, Tlingit, and Nuu-chah-nulth societies had more than 15 percent of the population in slavery.⁴

⁴ Leland Donald, *Aboriginal Slavery on the Northwest Coast of North America* (Berkeley, 1997), pp. 17, 182–94; Orlando Patterson, *Slavery and Social Death: A Comparative Study* (Cambridge, MA, 1982), pp. 42, 52, 106–7, 123.

The Spanish could draw on the largest resources of any European power in the late fifteenth century thanks in part to their long struggle with Islam and the resulting greater familiarity with slavery compared to other western European nations. They were the first to arrive in the Caribbean, and the first to take advantage of the great riches they found. Among the earliest “commodities” that Columbus brought back to Spain was one hundred Indian slaves. How extraordinary at first glance then, that the Caribbean remained an economic backwater for a century and a half after contact, and that when it did develop it was in the face of Spanish opposition. Hispaniola exported no sugar to Europe until the late seventeenth century (and by then the exporting area was French); and Puerto Rico and Cuba exported none until the second half of the eighteenth century. Instead, the Spanish quickly came to treat the Caribbean islands as defensive bulwarks to their main imperial activities as they moved west to the most economically advanced and most densely populated part of the Americas. There they assumed control of pre-existing state superstructures. Indeed, the incidence of slavery was likely unaffected by the Spanish takeover. Why?

Part of the answer is transportation costs and, after that, factor endowments. For almost two centuries after 1492, the cost of moving goods from Central America and the Western Caribbean to Europe was so great that only the highest value products – gold and silver – could warrant the freight.⁵ First looting and then mining precious metals characterized Spanish activities. The first produce sold in Europe from Central America that paid its own freight was probably exotic woods from what became Honduras.⁶ These activities required labor, usually Native American and coerced; but the Spanish, like all Europeans, were certainly prepared to change the nature of coerced labor as it was practiced in the late fifteenth century, either in the Americas or Europe. Slavery may have been extensive in the pre-contact Central Americas, but the domestic and ceremonial uses of slaves by Aztecs and Mayas contrasts sharply with the intensive use of slaves as a source of labor which came after contact.⁷ Yet, even though the Indian labor, which was

⁵ By the late seventeenth century gold could be carried across the Atlantic twice – once from its source in Africa to the Americas and again from the Americas to consumers in Europe – for a shipping charge that amounted to less than one percent of its value in Africa. See David Eltis, “The Relative Importance of Slaves in the Atlantic Trade of Seventeenth Century Africa,” *Journal of African History*, 35 (1994): 240.

⁶ There were many other products carried to Europe from the Spanish Americas, but in all cases they were freighted in vessels whose main purpose was to carry high-value and low-volume metals. Freight rates for such items were inevitably low and few if any could have made the transatlantic crossing without “piggy-backing” on gold and silver.

⁷ Robert D. Shadow and Maria J. Rodriguez-Shadow, “Historical Panorama of Anthropological Perspectives on Aztec Slavery,” in Barbro Dahlgren de Jordán and Maria de los Dolores Soto de Arechevalta (eds.), *Archeologia del Norte y del Occidente de Mexico: Homenaje al Doctor J. Charles Kelley* (Mexico City, 1995), pp. 299–323.

the mainstay of the silver mines, was coerced, it was not for the most part enslaved. Moreover, the fact is that the number of laborers – free and mita – employed in the production of silver in New Spain and Peru even at peak export periods was very small compared to the number of slaves that were to be found later on sugar plantations.

The work force in the mines of New Spain in the late sixteenth and early seventeenth centuries was below 10,000, and its counterpart in Potosí was perhaps double this in 1603, though a larger mita draft sustained this number.⁸ The combined workforce of say 30,000 can be compared to the hundreds of thousands of slaves in the plantation complexes of the Americas a century after their establishment. Thus gold and silver deposits and a relatively abundant native population shaped the activities of the Spanish as they would have shaped the activities of any European group faced with the same options. It is hard to conceive of the English Elizabethan maritime adventurers behaving much differently from the conquistadors. The privateering activities of Providence Island, “the other Puritan colony,” and later, early Jamaica, suggest that given the same opportunity, Francis Drake may have behaved no differently to Hernando Cortes (and a New England in Central America may have been no different from the historical New Spain).⁹

There is nevertheless a strong sense that Spain missed opportunities exploited by the English and French. Spaniards laid claim to all the Americas west of the line established by the treaty of Tordesillas, and they had the option of developing Barbados, which had no indigenous population, as well as what became St. Domingue. They already had an establishment in Trinidad and indeed there is a record of a slave ship with several hundred slaves on board disembarking its human cargo there in 1606.¹⁰ The Spaniards were a major presence on all the Greater Antilles. They were even producing sugar in Cuba as early as the mid sixteenth century and, later in the century, had extensive sugar estates in New Spain, some staffed with African slaves.¹¹ Silver was perhaps the preferred option of all those coming to the New World, and as firstcomers, the Spanish found it easier to exercise that option. Yet

⁸ Peter J. H. Bakewell, *Miners of the Red Mountain: Indian Labor in Potosí, 1545–1650* (Albuquerque, 1984), p. 182; Jeffrey A. Cole, *The Potosí Mita, 1573–1700: Compulsory Indian Labor in the Andes* (Stanford, 1985), pp. 15–17, 29. The mita labor was divided into three shifts each of which in the original formulation of Viceroy Francisco de Toledo, worked one week in three.

⁹ Karen Ordahl Kupperman, *Providence Island, 1630–1641: The Other Puritan Colony* (Cambridge, 1993).

¹⁰ Vincent T. Harlow (ed.), *Colonising Expeditions to the West Indies and Guiana, 1623–1667* (London, 1925), p. 125.

¹¹ Ward J. Barrett and Stuart Schwartz, “Comparación entre dos Economías Azucareras Coloniales: Morelos, México y Bahía, Brasil,” in Enrico Florescano (ed.), *Haciendas, Latifundios y Plantaciones en América Latina*, (Mexico City, 1975); Ward Barrett, *The Sugar Hacienda of the Marqueses del Valle* (Minneapolis, 1970).

there was nothing obvious preventing the Spanish emulating the late seventeenth century Portuguese and encouraging the production of both precious metals and sugar in their possessions.¹² Instead the Spanish produced sugar in the Americas solely for local consumption. In the sphere of migration, over 200,000 Spanish arrived in the New World in the century and a half after Columbus, yet three times as many left the British Isles in a similar number of years after the mid seventeenth century, most of them heading to the plantation regions and under indenture – an institution particularly well adapted to long-distance migration and peculiar to French, German, and English migration.

Did the Portuguese seize the opportunity that the Spanish missed? The template for a New World sugar industry was well established in the Mediterranean for centuries prior to contact. The sugar complex (coerced labor, monoculture for long-distance export markets, and large capital inputs) moved out of the Mediterranean in the fifteenth century and over the course of two or three generations established itself first in Madeira and then São Tomé in the Bight of Biafra. In the middle of the sixteenth century the Portuguese island of São Tomé supplied most of the sugar consumed in Europe. As late as the 1640s Dutch vessels were bringing large quantities of São Tomé sugar into Amsterdam in apparently successful competition with sugar grown in Dutch Brazil. Sugar production for export to Europe was first established in northeast Brazil probably in the 1530s.

Transportation costs and factor endowments go some distance in explaining the trading patterns. For example, the location of northeast Brazil combined with the prevailing wind and ocean current systems of the North and South Atlantic meant that this region was the part of the Americas closest to African sources of labor and European markets for sugar. The voyages from Portuguese Bissau and Cacheu, in Portuguese Guinea, to Pernambuco, and from Pernambuco to Lisbon, were among the shortest of all transatlantic routes. However, others from Angola to southeast Brazil and Bahia, and later from the Bight of Benin to Bahia were far shorter than any routes from Africa to the Caribbean and North America. In addition, most of the Brazilian Atlantic coastline was on the preferred route from the East Indies to Europe. Two implications follow. First, as already noted, Brazil, not Spanish America, was the first locus of an American plantation complex. Second, slaves in Brazil would be cheaper than elsewhere in the Americas and, as Herbert Klein and Francisco Vidal Luna (Chapter 4) demonstrate, even in the nineteenth century they were to be found in a wider range of occupations than in other slave societies.

¹² An argument might also be made that the Spanish turned to sugar only after their silver-producing possessions won independence. Yet the major reforms to land tenure and opening slave supplies actually pre-date Latin American independence by more than 30 years.

Yet Portuguese, or more precisely, Brazilian dominance in sugar did not endure, although its economy did reemerge under different circumstances and with a different product – coffee – in the nineteenth century. Between 1650 and 1790 three additional sugar complexes appeared – the English, the French, and the Dutch – as well as two other plantation economies based on secondary crops. The Portuguese, who were supplying almost all Europe’s sugar before the Dutch assault on Brazil in the mid seventeenth century, accounted for about 10 percent in 1770,¹³ despite having had access for 250 years to the lowest cost African slaves and the most land suitable for sugar. Indeed, Brazilian sugar exports did not again claim an increasing share of world markets until first, the ex-slaves of St. Domingue removed the colony from competition for those markets, and second, the British abolished the slave trade to their colonies and then slavery itself, thus hobbling their own ability to compete.

The appearance of other plantation complexes also followed, in part, the logic of transportation costs and factor endowments. The first complex outside Brazil was in Barbados, the closest Caribbean island to Africa and Europe. Dominated initially by tobacco grown using white labor, the island switched to sugar between the early 1640s and 1660, and gradually began relying on black slaves. As early as 1655, Barbados planters were claiming to “ship out yearly as many Tunns of goods as ye King of Spain doth out of all his Indian Empires.” The British plantation sector later expanded to the Leeward Islands (Nevis, Antigua, Montserrat, and St. Kitts), slightly further west, and then to Jamaica in the western Caribbean. By the early eighteenth century, before Jamaica had become the leading British producer of sugar, British Caribbean exports had surpassed those of Brazil as a whole.¹⁴

Under French control, the second plantation complex developed more gradually and followed the same westward shift, with Martinique playing the role of Barbados in the eastern Caribbean and St. Domingue, the role of Jamaica further west. Sugar dominated here also, although by the late eighteenth century, the plantations were producing more coffee, indigo, and cotton than any other polity in the Americas. If initial growth was slower, the end result was far more spectacular. The French islands out-paced both Brazil and the British Caribbean by the mid eighteenth century, and, at the outbreak of the rebellion in 1791, were likely producing more than the rest of the plantation Americas combined.

Three other smaller plantation economies emerged in this period. Lorena Walsh (Chapter 3) describes a vibrant export-oriented tobacco culture developing on the Chesapeake; and James Irwin (Chapter 9) documents the rise

¹³ Seymour Drescher estimates the Brazilian share of Atlantic sugar markets c. 1800 at 10.8 percent (*Econocide: British Slavery in the Era of Abolition* [Pittsburgh, 1977], p. 48).

¹⁴ Thomas Povey, “Book of Entrée of Forreigne Letters,” British Library, Add. Mss., 11,411, f. 9; David Eltis, *The Rise of African Slavery in the Americas* (Cambridge, 2000), pp. 198–99.

in wealth in the region, which was based, as well, on an equally vibrant but less export-oriented mixed-crop economy. Far removed, initially, from the regions where transporting slaves from Africa was profitable,¹⁵ the Chesapeake grew tobacco, relying at first on white indentured labor. But once supplies of these workers tightened and capital markets improved, transatlantic slave traders were able to extend their range north and west of the eastern Caribbean. In 1770, despite several decades of an active slave trade and natural slave population growth, the Chesapeake had only half the slave population of the British Caribbean, and produced less than one-quarter the value of exports of the island colonies. Another plantation economy, this under Dutch control, originated in Suriname, which was taken from the English in 1664. The complex spread westward, encompassing other parts of the South American mainland – Demerara, Berbice, Essequibo – and including a small eastern Caribbean foothold on St. Eustatius. As Pieter Emmer (Chapter 2) points out, Dutch preoccupation with much larger interests in the East and aggressive British and French pre-emptive moves in the Caribbean inhibited the Dutch plantation empire and the complex remained centered on the South American mainland producing at its peak, in the late eighteenth century, about one-quarter the output of the British slave system. In the eighteenth century a third complex appeared in the low country regions of South Carolina and, later, Georgia. Based on rice and, to a lesser degree, indigo – the latter thriving in a protected British market – this area was perhaps the most prosperous of the minor plantation complexes on the eve of U.S. independence.¹⁶

The relative importance and broad structure of the later plantation complexes are suggested by Table 2. The thirteen British continental colonies were exporting slightly more than their British Caribbean counterparts in 1770, but they were doing so with a population that was more than four times greater. If we take into account only the white population, per capita exports from the British Caribbean were thirty-seven times greater than those from the British mainland. Moreover, nearly 30 percent of the exports of the thirteen colonies went to the Caribbean, a much larger share than the sugar islands shipped to the mainland.¹⁷ The Caribbean sugar islands could have found alternative sources for the provisions they obtained from the Northern Colonies far more easily than the Northern Colonies could have located a

¹⁵ It is significant that the first African slaves to arrive in the Chesapeake were pirated from a Portuguese vessel heading for Spanish America and probably intended for work in the silver mines. See Engel Sluiter, “New Light on the ‘20 and Odd Negroes’ Arriving in Virginia, August, 1619,” *William and Mary Quarterly*, 54 (1997): 396–98.

¹⁶ Russell R. Menard, “Slavery, Economic Growth, and Revolutionary Ideology in the South Carolina Low Country,” in Ronald Hoffman et al. (eds.), *The Economy of Early America: The Revolutionary Period, 1763–1790* (Charlottesville, 1988), pp. 244–74.

¹⁷ Calculated from James F. Shepherd and Gary M. Walton, *Shipping, Maritime Trade, and the Economic Development of Colonial North America* (Cambridge, 1972), pp. 94–5.

TABLE 2. *Exports and Populations of Export-Producing Areas of Selected Areas of North and South America in 1770*

	Total Exports (million £ sterling)	Total Population (thousands)	White Population (thousands)	Per Capita Exports (millions £ sterling)	White per Capita Exports
Danish Caribbean	0.215	29	3	7.4	71.7
Dutch Americas*	0.573	100	5	5.7	114.6
British Caribbean	2.669	479	45	5.6	59.3
French Caribbean	3.819	458	46	8.3	83.0
All the plantation Caribbean**	7.276	1,066	98	6.8	74.2
New England	0.496	581	566	0.9	0.9
Middle colonies	0.609	556	521	1.1	1.2
Upper South	1.169	650	398	1.8	2.9
Lower South	0.534	345	189	1.5	2.8
All thirteen colonies	2.808	2,132	1,719	1.3	1.6

Note: *Excludes Curaçao, Saba. **Excludes the Spanish Caribbean.

Sources: Population data from John J. McCusker and Russell R. Menard, *The Economy of British America, 1607-1789* (Chapel Hill, 1985), pp. 103, 136, 153, 172, 203, 600, 712, except for St. Eustatius which is from Stanley Engerman and B. W. Higman, "The Demographic Structure of the Caribbean Slave Societies in the Eighteenth and Nineteenth Centuries," in Franklin W. Knight (ed.), *The UNESCO General History of the Caribbean*, 5 vols., 3 (Kingston, 1997): 49. Export estimates from David Eltis, "The Slave Economies of the Caribbean: Structure, Performance, Evolution and Significance," in *ibid.*, 113-14, and James F. Shepherd and Gary M. Walton, *Shipping, Maritime Trade, and the Economic Development of Colonial North America* (Cambridge, 1972), pp. 95-6.

substitute market. Indeed, it is easier to imagine the dramatic growth of trade in the Atlantic region without the northern colonies, than without plantation America. A comparison with the plantation Caribbean as a whole reveals even more dramatic contrasts. In 1770 the Caribbean exported, in value, two and one-half times more than the North American mainland, with a population that was only half that of the thirteen colonies; and per capita exports for whites were £74, as opposed to £1.6 on the mainland.

These comparisons highlight the sharp difference between the Caribbean and mainland economies. The Caribbean was an export-based economy that used slave labor, where whites were in supervisory or entrepreneurial roles. By contrast, the continental colonies can be better characterized as a white farm economy with a significant, although subsidiary, plantation component producing for the export market.¹⁸ Moreover, even in the Chesapeake,

¹⁸ The mainland economies produced many crops other than plantation produce and had a smaller proportion of adult males in their workforce. If we were to include only the Upper

which in 1700 was less diversified than it was later to become and had a population whose age and sex structure was more in accord with that of Barbados, per capita exports were £2 to £2.25 compared to a Barbados figure of £7.3.¹⁹

Finally, we might note that the slave economies of eastern Brazil began to expand once more after the late seventeenth century, as sugar production in the traditional areas was supplemented by major gold discoveries in Minas Gerais. Unfortunately, there are no reliable estimates of gold output during this period, much less a per capita export estimate for either free or slave population. For Bahia, the leading sugar-producing area by this period, there is a crude 1700 per capita export estimate of between £3 and £4.²⁰ In a sense, Bahia shared elements of both the Chesapeake and Barbados. Like the former, it was home to a substantial white population, either not connected to the export economy, or producing tobacco; but like Barbados, Bahia's main crop was sugar. It is of interest, then, that its export ratio falls between that of the Chesapeake and that of Barbados, and, as we might expect, is closer to the ratio of the English area, which had more tobacco and greater crop diversity.

Per capita export differentials do not necessarily correspond to differentials in per capita income and wealth. Income and wealth estimates are much more problematic than the trade figures; nevertheless, the recent research suggests that trends in income and wealth in North America were broadly consistent with the trade patterns. Pre-nineteenth century income estimates exist only for the mainland colonies and one British sugar island, Barbados, albeit the dominant island in the Caribbean at the time. In 1774, per capita income in the southern mainland colonies is estimated to have been in the range of £10.4–12.1²¹ – not very different from that calculated for the Middle Colonies and for New England. But, if the upper and lower South, and, indeed, the plantation sectors of these regions, could be separated out, the difference would no doubt be greater.²² By contrast, per capita

and Lower South regions involved in the export economy and, in addition, standardised for age and sex, then the differences, though still striking would be somewhat less sharp.

¹⁹ In terms of per capita exports and ratio of whites to total population, the Dutch Americas should, perhaps, be grouped with the French and British Caribbean. In terms of size, however, they belong with the minor systems of the Upper and Lower South.

²⁰ There are no population data for Bahia in 1700. A reliable census taken in about 1724 indicates a total population of 79,864. Slave arrivals at Bahia from Africa in the first quarter of the eighteenth century were at least 180,000, and free migration from Portugal was also strong, though perhaps most migrants, both slave and free, moved on to other regions (Stuart B. Schwartz, *Sugar Plantations in the formation of Brazilian Society* [Cambridge, 1925], 88, 343). If we assume a population of 60,000 in 1700, per capita exports are £3.79.

²¹ Alice Hanson Jones, *The Wealth of a Nation to Be: The American Colonies on the Eve of the Revolution* (New York, 1980), p. 63.

²² See the discussion in John J. McCusker and Russell R. Menard, *The Economy of British America, 1607–1789* (Chapel Hill, 1985), pp. 264–65.

income in Barbados in the late seventeenth century has been estimated at £16 in 1665–66. It grew at just under 1 percent per annum for the balance of the century reaching £21 in 1699–1701 (1697 = 100). The 1699–1701 estimate is £19 in 1774 prices. Thus, at the end of the seventeenth century average income was already two-thirds greater in the leading Caribbean sugar island, Barbados, than in either the southern mainland colonies or the thirteen continental colonies as a whole.²³ Needless to say, this income was not evenly distributed. Philip Morgan (Chapter 10) describes the conditions of most slaves in early America as typical of the European poor.

Per capita exports, which provide the foundation of the Barbados estimates, continued to grow strongly to 1770, and given the evidence in Table 1, it seems unlikely that the income gap between the Caribbean and the mainland colonies narrowed in the generations prior to the American Revolution. Richard Sheridan's per capita wealth estimates for Jamaica put that island on a par with the mainland colonies in the early 1770s, but a recent reworking of Sheridan's estimates suggests that per capita wealth in the island was more than half as great again, even without including wealth holdings of non-whites.²⁴ Inferring income from wealth has its pitfalls, but if this new wealth estimate is accepted, Jamaica likely held the same position relative to the mainland colonies in 1774, as Barbados held in 1700. Throughout the New World, descendants of New World migrants were materially better off, on average, than those who remained in the Old World; and while perhaps the Spanish American advantage had disappeared by 1774, the highest per capita incomes were to be found in the Caribbean, not on the North American mainland. Indeed, there is little evidence of income or wealth convergence between the two regions before the 1770s.

II

In the nineteenth century, the plantation Americas were reshaped by revolution, a shift to less restricted trade, and abolition of the slave trade and eventually slavery itself. Where in 1770 there had been six or seven colonial systems producing a range of plantation output, by 1850 there were just

²³ David Eltis, "The Total Product of Barbados, 1664–1701," *Journal of Economic History*, 55 (1995): 321–36.

²⁴ R. B. Sheridan, *Sugar and Slavery* (Baltimore, 1973), pp. 229–32; Trevor G. Burnard, "'Prodigious Riches': The Wealth of Jamaica before the American Revolution," *Economic History Review*, 54 (2001): 516. Peter Coclanis had earlier argued that Sheridan's estimate overstated the true figure by just under one-fifth ["The Wealth of British America on the Eve of Revolution," *Journal of Interdisciplinary History*, 21 (1989): 253–54]. For per capita exports, see S. L. Engerman, "Notes on the Patterns of Economic Growth in the British North American Colonies in the Seventeenth, Eighteenth and Nineteenth Centuries," in Paul Bairoch and Maurice Levy Leboyer (eds.), *Disparities in Economic Development Since the Industrial Revolution* (New York, 1981), p. 50.

three major plantation complexes, each specializing in a different product. The U.S. South produced most of the world's cotton, Brazil a slightly lower share of the world's coffee, and Cuba a smaller share, but still about half, of all marketed sugar. All three still continued to have access to slave labor, but after 1852 only Cuba could import slaves from Africa via the transatlantic traffic. Early in the century, the richest slave colony in history, St. Domingue, had become independent Haiti via the world's most successful slave revolt, and the remaining French slaves had followed their British counterparts into freedom in 1848. Of the Dutch slave system, only a fragment survived to emancipation in 1863.

By the early 1820s no slave economy in the Americas could operate in the accustomed seventeenth and eighteenth century manner, free of restrictions on access to African slaves. At first, British naval patrols in the Atlantic did not fully prevent the transportation of slaves from Africa. However, as both Eltis and Richardson (Chapter 6), and Bergad (Chapter 7) document, attempts to suppress the trade helped increase the price of slave labor in Brazil, Cuba, and the French Americas – regions that still participated in the trade – as well as lower the price of slaves in Africa. By 1823 the British, along with the Danes and Americans, had effectively ended all slave trading with Africa, and the British imposed restrictions on owners' use of slaves. Britain abolished slavery itself in 1833, and other European nations followed suit later.

British West Indian sugar exports did not decline until slavery itself was abolished. Indeed, with the opening of new lands in Trinidad and British Guiana, exports actually increased slightly – but the British lost market share to Brazil and Cuba, the planters in both countries facing fewer restrictions on access to and exploitation of slave labor. Land reform in Cuba at the end of the eighteenth century encouraged the development of plantations by introducing something akin to freehold tenure; and at the same time, restrictions on the purchase of slaves from outside Cuba were greatly reduced. Prices of bozales slaves (new Africans) had been 50 percent greater in Cuba than in nearby Jamaica in the middle of the eighteenth century, but the differential disappeared by 1800.²⁵ Bergad (Chapter 7) shows Cuban slave prices after 1800 moving in tandem with slave prices elsewhere in the Americas. Development of a major plantation complex – that might have occurred in Cuba almost anytime after 1675 but for Spanish imperial policy – finally got underway; and by 1850 the Spanish Caribbean had assumed the position effectively abandoned by the British in world sugar markets.

How did these developments affect income in the Americas? Within the British West Indies, Jamaican sugar exports declined from 82,600 tons in

²⁵ Compare Eltis and Richardson (Chapter 6) in this volume, and the series in Laird W. Bergad, Fe Iglesias Garcia and Maria del Carmen Barcia, *The Cuban Slave Market, 1790–1880* (Cambridge, 1995), pp. 47–49.

1798–1807 to 78,500 in 1814–23 to 68,500 in 1824–33, then to 33,400 in 1839–46. In British Guiana, sugar exports more than doubled in the twenty years of slavery ending with abolition in 1833, and fell 30 percent, thereafter, before recovering with the arrival of Asian contract labor in the early 1850s.²⁶ After 1800, sugar prices were generally declining; yet in 1832, per capita income in British Guiana, still a frontier area, was £24.8, or about 40 percent above the U.S. level.²⁷ In long-settled Jamaica, which had faced growing restrictions on the use of slave labor, per capita product in 1832 is estimated to have been £13.8, or 23 percent below the U.S. figure.²⁸ Indeed, in the aftermath of the abolition of the slave trade the Jamaican slave labor force began to decline for the first time and most of those working in the fields in the largest British slave colony were female soon after 1807.²⁹

British Guiana sugar production continued to expand to 1833 despite the British restrictions and in the face of slave prices that, by the early 1830s, were double those in the United States and Cuba (and more than double those in Barbados and Jamaica).³⁰ In fact, without the restrictive slave policies, per capita income in British Guiana might have been as far above that of the United States (and Britain) as Barbados per capita income had been 130 years earlier. By 1852, with slavery completely abolished in the British West Indies, per capita incomes in Jamaica and British Guiana had slipped to 50 percent and 85 percent, respectively, of U.S. levels.

Some narrowing of the gap between slave and the leading non-slave economies occurred by the mid nineteenth century, likely due to the gradual throttling of slavery and the slave trade. In 1850, Cuba still had substantial access to Africa for labor (albeit at higher prices than would have held with

²⁶ The best short survey of the impact of abolition is Herbert S. Klein and Stanley L. Engerman, “The Transition from Slave to Free Labor: Notes on a Comparative Economic Model,” in Manoel Moreno Fraginals, Frank Moya Pons and Stanley L. Engerman (eds.), *Between Slavery and Free Labor: The Spanish Speaking Caribbean in the Nineteenth Century* (Baltimore, 1985), pp. 255–69, and for the British colonies, p. 261.

²⁷ Calculated from Thomas Weiss, “Economic Growth Before 1860: Revised Conjectures,” in Thomas Weiss and Donald Schaeffer (eds.), *American Economic Development in Historical Perspective* (Stanford, 1994), p. 13; Michael Moohr, “The Economic Impact of Slave Emancipation in British Guiana, 1832–1852,” *Economic History Review*, 25 (1972): 589; Barry Higman, *Slave Populations of the British Caribbean, 1807–1834* (Baltimore, 1984), p. 70.

²⁸ Calculated from Gisela Eisner, *Jamaica, 1830–1930: A Study in Economic Growth* (Manchester, 1961), p. 25; Higman, *Slave Populations*, 70.

²⁹ Higman, *Slave Populations*, 190.

³⁰ For price patterns in the British sugar colonies see Stanley L. Engerman, “Economic Change in the British Caribbean: The End of Slavery and the Adjustment to Emancipation,” *Explorations in Economic History*, 21 (1984): 133–42. The high prices in British Guiana, as well as Trinidad, reflect the effectiveness of the ban on new slave arrivals in British Guiana and the confidence of British planters that they would be compensated should abolition of slavery itself (an issue in Britain since 1823) occur, as well as the open-land frontier in these colonies.

no restrictions whatsoever). Income estimates for Cuba are not as good as for the British Caribbean, but we do have estimates of the total value of exports, and if we assume that the ratio of such output to the production of all goods in the economy was the same as in Jamaica just prior to abolition, the result is a per capita income of £24.7 or 25 percent higher than the U.S. figure of £19.8. Juan Pérez de la Riva has estimated the 1862 per capita income of the western region of Cuba – the heartland of the sugar production – at \$350, or more than twice the 1860 estimates for the United States and Britain, though per capita income for the whole of Cuba would be considerably below this figure.³¹

Within the United States, disaggregation of five major geographic regions allows comparison of slave and non-slave areas. In 1860, per capita income in the northeastern and southwestern states was higher than in any other region in the country, but after adjusting for the relatively large proportion of the northeastern population that was of prime working age, the differential between the northeastern and southwestern states is very small.³² As noted, the highest per capita incomes in the U.S. South were in the southwest where all the U.S. sugar plantations were located. If the income gap between slave and leading non-slave economies closed in the nineteenth century, it probably closed first for those slave regions growing crops for which the economies of scale were less pronounced than in sugar cultivation.

There is other evidence that slave economies maintained their advantage over non-slave economies at least until the mid nineteenth century, and perhaps beyond. Prices of slaves rose through the eighteenth and nineteenth centuries, and prices of plantation output also increased from the 1730s on, but at a lower rate than slave prices. After the Napoleonic wars, however, the prices of sugar, cotton and coffee all began a steady descent.³³ Thus, before 1800, it would seem that increases in the demand for sugar, cotton, and

³¹ Juan Perez de la Riva, "Aspectos Demograficos y su Importancia en el Proceso Revolucionario del Siglo XIX," in *Union de Periodistas de Cuba* (Havana, 1968), pp. 30–49, cited in Francisco Lopez Segrera, "Cuba: Dependence, Plantation Economy and Social Classes, 1762–1902," in Moreno Friginals, Moya Pons and Engerman, *Between Slavery and Free Labor*, pp. 85–6. Another rough estimate for Cuba in 1860 puts per capita income 22 percent below the U.S. figure (Pedro Fraile Balbín, Richard J. Salvucci, and Linda K. Salvucci, "El Caso Cubano: Exportacion e Independencia," in Leandro Prados de la Escosura and Samuel Amaral, *La Independencia Americana: Consecuencias Económicas* [Madrid, 1993], pp. 80–101).

³² Fogel, *Without Consent or Contract*, 84–89.

³³ David Eltis, *Economic Growth and the Ending of the Transatlantic Slave Trade* (New York, 1987), pp. 283–7; Julia de Lacy Mann and Alfred P. Wadsworth, *The Cotton Trade and Industrial Lancashire* (New York, 1968), pp. 95–6; Noel Deerr, *The History of Sugar*, 2 vols., (London, 1950), 2: 530–32; John J. McCusker, *Rum and the American Revolution: The Rum Trade and the Balance of Payments of the Thirteen Continental Colonies, 1650–1775* (New York, 1989), pp. 1143–48; Great Britain, Parliamentary Papers, 1856, 55: 588–89. The argument in the balance of this paragraph is from Eltis, *Economic Growth*, 186–92,

coffee exceeded increases in supply, whereas after 1800, the situation was reversed. Throughout, but especially after 1800, the price of slaves was rising; and in all societies where slavery survived past mid-century, slave prices in real terms at least doubled in comparison with their 1800 levels.

Plantation records outside the United States have not been subject to the same analysis as those in the U.S. South, but it seems likely that the exploitation of new land, technological and organizational advances, and economies of scale in the marketing of crops account for the widening gap between prices of slaves and prices of the goods that slaves produced. Productivity improvements are addressed by Eltis and Richardson (Chapter 6), and Bergad (Chapter 7). Such improvements were of a magnitude comparable to those in British industry. The British cotton industry, for example, saw output per manhour increase at an average annual rate of 3 percent between 1830 and 1892, which compares to a 2.5 percent annual growth of sugar exports per slave from Cuba between 1827 and 1861, a period when the transatlantic slave trade to Cuba remained open.³⁴

A basis for the high incomes generated by plantation economies was the economies of scale made possible by the use of human beings, whose wishes could largely be disregarded. The basic model explaining the relative efficiency of slave labor was first presented in *Time on the Cross*, debated subsequently in the *American Economic Review*, and restated in *Without Consent or Contract*. Field-Hendrey and Craig (Chapter 8) return to this central issue below with a stochastic production frontier approach. Their conclusions largely support Fogel and Engerman's original conclusions.³⁵ The economies of scale made possible by the use of gang labor were greater for some crops than for others, with, among plantation crops, tobacco deriving the least advantage, sugar the most, and cotton falling in the middle of this range. In fact, the severe decline, throughout the Americas, in the plantation economies following the abolition of slavery, lends support to the general proposition that the high productivity and high per capita incomes associated with certain crops were closely tied to taking the fullest advantage of slave labor.

To summarize, all early European settlements in the Americas were likely better off than their Old World parent communities; but, from the mid seventeenth to the early nineteenth centuries and possibly beyond 1850, the plantation regions, particularly those in the sugar-producing Caribbean, were the most prosperous of all. The evidence suggests that in sequence Barbados, Jamaica, St. Domingue, and Cuba had the highest per capita incomes in the

³⁴ Calculated from Eltis, *Economic Growth*, 189, and Mark Blaug, "The Productivity of Capital in the Lancashire Cotton Industry During the Nineteenth Century," *Economic History Review*, 13 (1961): 366.

³⁵ For continued skepticism, see Richard Sutch's comments in *The Newsletter of the Cliometric Society*, 16 (2001), pp. 8–9.