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11 Population and Labor in the British Caribbean in the Early Nineteenth Century

B. W. Higman

The early nineteenth century was a critical period of transition in the long-term development of the British Caribbean's labor force. The abolition of the British Atlantic slave trade in 1807 ended almost two centuries of dependence on the labor of imported African slaves. The effective abolition of slavery itself in 1838 was followed by a movement toward dependence on free wage labor, though a few colonies, notably Trinidad and British Guiana, continued to make extensive use of indentured, contract labor on plantations until World War I (Engerman 1983).

Before 1807, most British Caribbean colonies had shown long-term growth in the size of their slave populations, but this growth was sustained largely by the continued influx of slaves through the Atlantic trade since few of the populations had achieved a position of positive natural increase. Thus the ending of the trade was followed by decline in the slave populations of the major sugar-producing colonies, with the important exception of Barbados, and an internal slave trade developed briefly to redistribute slaves from the economically backward areas of the British Caribbean, such as the Bahamas and the Virgin Islands, to the frontier sugar regions. In the British Caribbean as a whole, the slave population declined from 775,000 in 1807 to 665,000 in 1834 (the date of formal emancipation). However, the abolition of the Atlantic slave trade was important not only for its impact on total population growth and decline but also for its effects on the structure of the slave labor force. Whereas the slave trade had permitted a degree

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of demographic selectivity, regulated by its price mechanism, the abrupt ending of importation in 1807 meant change in the structure of the potential labor force away from the planters' ideal model. During the long period of dependence on slave labor in the plantation sector, a set of principles had been worked out which determined the allocation of slaves to particular occupations, a blend of demographic and psychosocial perceptions balanced against the demand for labor in particular tasks. The abolition of the slave trade created stress within this system of allocation. Thus an examination of the period 1807–34 serves to illuminate the mature system of slave labor organization developed in the British Caribbean since the underlying assumptions were highlighted under stress.

11.1 The Data

The most systematic data available for the study of British Caribbean slave populations are to be found in the slave registration returns made to the colonial governments by the masters between 1813 and 1834. The dates of these returns varied from colony to colony, as did the amount of information contained in them. Initial returns provided the name, sex, age, color, and birthplace of each slave belonging to an owner and, for some colonies, the slave's occupation, stature, bodily marks, and family relations. Subsequent, normally triennial, returns listed births, deaths, manumissions, transfers, and desertions within the slave holdings. Difficulties arise in the interpretation of these data, particularly as a result of the underrecording of births and deaths, but it is not possible to discuss all of these problems here (Higman 1984, pp. 6–39).¹

Of the 20 British colonies in the Caribbean in the early nineteenth century, only the slave registration returns for Barbados, St. Kitts, Dominica, St. Lucia, St. Vincent, Tobago, Trinidad, Demerara-Essequibo, Berbice, British Honduras, the Cayman Islands, the Bahamas, and Anguilla included data on occupation. The most important omission from this list is Jamaica, which accounted for almost half of the total slave population. The original Trinidad Order in Council instructed the masters to record in their returns "the particular trade, occupation, or ordinary employment of the slave, specifying, in the cases of mechanics, artisans, or handicraftmen, the particular art or business in which he or she is usually employed; and in cases of ordinary plantation slaves, describing them as labourers only" (Higman 1984, p. 24). There is no doubting the capacity of the masters to know the occupations of the slaves, but problems of definition remain. Some slaves, especially those belonging to small units, performed a wide

range of tasks from day to day. In making their registration returns, the masters either spelled out this multiplicity or adopted portmanteau labels. Field workers were the most likely to be described in general terms. Thus the St. Vincent registration act, following the Trinidad pattern, called for specific descriptions of the occupations of tradesmen and domestics, but "in case of ordinary plantation slaves, describing them as labourers only" (Higman 1984, p. 24). This results in a relative lack of information on the distribution of slaves between particular field gangs and other agricultural tasks, compared to the richer detail on skilled and house slaves.

Of equal importance is the problem of seasonality in occupational patterns. Since the returns were made at a specific time of year, the occupations listed may have been weighted to that particular point in the seasonal cycle. For example, would a slave be described as a "sugar boiler" or a "fiddler" only if the return was made during crop or close to Christmas revelry? The Trinidad, Barbados, St. Kitts, and Anguilla regulations all called for "ordinary" or "usual" employment, but it seems probable that specific skills were more likely to be mentioned than manual work, even though the use of these skills might be confined to one part of the year, since it was these skills that served best to identify the slave. The result, probably, is some overstatement of the amount of time spent in specialized occupations.

11.2 Economic Activities

The British invasion of the Caribbean fell into three major phases: the second and third quarters of the seventeenth century, the 1760s, and the nineteenth century. The first phase saw the establishment of the "old sugar colonies," Jamaica, and the "marginal" or nonsugar colonies. The second and third phases created the "new sugar colonies" (table 11.1).

By 1807, the territorial expansion of the British Empire in the Caribbean was complete. But the phasing of this expansion over almost 200 years meant that the colonies were inevitably at different states of economic and demographic development. They were also subject to differing political and cultural forces. But the plantocracy was generally strongest in the longest settled, most monocultural, most British of the colonies, and weakest in the recently settled colonies of diversified agriculture and cosmopolitan population. Thus the political power of the plantocracy was strongest where the ratio of slaves to free people was greatest. In general, the first-phase colonies tended to have the slighter slopes, the thinner soil, and the lighter rainfall, whereas the later settled tended to be rugged and wet. The nature of the economic

Table 11.1 British Colonies in the Caribbean, circa 1834

Colony	Slave Population	Slaves per Km ²	Year of British Colonization
<i>Old sugar colonies</i>			
Barbados	83,150	193.4	1627
St. Kitts	17,525	104.3	1625
Nevis	8,840	95.1	1628
Antigua	28,130	100.5	1632
Montserrat	6,400	63.4	1632
Virgin Islands	5,135	33.6	1672
Jamaica	311,070	27.2	1655
<i>New sugar colonies</i>			
Dominica	14,165	17.9	1763
St. Lucia	13,275	22.0	1803
St. Vincent	22,250	57.2	1763
Grenada	23,645	68.5	1763
Tobago	11,545	39.1	1763
Trinidad	20,655	4.3	1797
British Guiana	83,545	0.4	1803
<i>Marginal colonies</i>			
British Honduras	1,895	0.1	1670
Cayman Islands	985	3.8	1734
Bahamas	9,995	0.7	1648
Anguilla	2,260	25.1	1650
Barbuda	505	3.2	1685

Source: Higman 1984, p. 41.

activities in which the slaves were employed was determined by the interaction of these contrasting physical environments with phases of settlement.

The principal factor underlying any classification of the British colonies' economic structure must be the relative dominance of sugar (table 11.2). In 1830 roughly 80% of the slaves in the old sugar colonies worked on sugar estates, compared to 71% in the new sugar colonies, 53% in Jamaica, and none in the marginal colonies. The proportion changed little between 1807 and 1834, except in the new sugar colonies where the crop significantly increased its share of the population. There was also a clear pattern of agricultural diversification outside of sugar, with cotton predominating in the old sugar colonies, coffee, pimento, and livestock in Jamaica, and coffee, cotton, and cocoa in the new sugar colonies. It is probable that this pattern, especially in the years immediately before emancipation, was the most monocultural in the history of the British Caribbean, since the peasantry which emerged after 1838 was quick to restore minor staples to a more important place. Thus the dominant role of the large sugar estate was at its most intense in this period. Even in 1830, however, more than one-third of the slaves

Table 11.2 Estimated Distribution of Slaves by Crop Type: Classes of Colonies, 1810, 1820, and 1830

	Percentage of Slaves										Number of Slaves
	Sugar	Coffee	Cotton	Other Agriculture	Live-stock	Salt, Timber	Fishing, Shipping	Urban			
<i>1810</i>											
Old sugar colonies	77.5	—	4.8	5.0	1.1	0.1	0.6	10.9			156,150
Jamaica	51.5	17.0	—	8.0	14.0	—	0.5	9.0			347,000
New sugar colonies	54.7	14.2	13.4	5.8	0.7	0.1	0.7	10.4			246,400
Marginal colonies	—	—	3.2	54.0	0.1	16.4	6.9	19.4			15,800
Total	56.8	12.3	5.4	7.6	6.8	0.4	0.7	10.0			765,350
<i>1820</i>											
Old sugar colonies	78.9	—	3.4	5.5	1.0	0.1	0.6	10.5			151,700
Jamaica	52.0	16.0	—	9.0	14.0	—	0.5	8.5			342,380
New sugar colonies	64.2	10.5	8.1	5.7	0.6	0.1	0.7	10.1			222,200
Marginal colonies	—	—	—	59.9	0.1	14.9	7.1	18.0			16,960
Total	60.1	10.6	3.2	8.5	6.9	0.4	0.7	9.6			733,240
<i>1830</i>											
Old sugar colonies	79.9	—	2.2	6.2	1.0	0.1	0.5	10.1			150,870
Jamaica	52.7	15.2	—	9.9	13.7	—	0.5	8.0			319,000
New sugar colonies	70.5	8.0	4.0	6.2	0.7	0.1	0.7	9.8			199,250
Marginal colonies	—	—	—	63.0	0.2	13.6	6.9	16.3			15,480
Total	62.7	9.4	1.7	9.2	6.8	0.3	0.7	9.2			684,600

Source: Higman, 1984, p. 71.

were not employed in sugar, but lived and worked in a variety of economic, social, and physical environments, each with a differing potential for their demographic experience.

11.3 Ownership Patterns

The strongest contrasts in the pattern of slaveowning were between rural and urban regimes. In the British Caribbean, most rural slaves belonged to absentee white males and lived in relatively stable communities of 100 and over. Town slaves, on the other hand, belonged to small fluid units, most of the owners being women and many of them colored and black freedpeople. The decline of the urban populations after 1807, together with negative natural increase on the larger plantations, resulted in a general concentration into holdings of about 50–200 slaves. But in some colonies, chiefly those described as marginal, the slaves lived typically in units of less than 10 and very few belonged to holdings of more than 50 slaves. In some of the relatively diversified new sugar colonies there was a concentration in units of less than 100 slaves, few of the sugar estates being really large but sometimes dominating isolated regions (table 11.3). In Jamaica, very large holdings, medium-sized plantations, and small units were intermixed in most regions of the island (Higman 1976, pp. 68–71).

The number of slaves possessed by a free person was determined chiefly by the individual's wealth. It depended on the rate of natural growth or decline in the slave population, but a slaveowner could always alter the extent of his or her holding through selective sale and purchase, within the constraints imposed by prevailing prices. Slaveowners also had definite preferences regarding the characteristics of their slaves, particularly in terms of sex, age, color, and birthplace. These preferences were determined partly by the type of work a slave-

Table 11.3 Slaves per Holding by Crop, in Five Colonies

Crop	Mean Slaves per Holding				
	Demerara- Essequibo, 1832	Jamaica, 1832	St. Lucia, 1815	Dominica, 1827	Trinidad, 1813
Sugar	233	223	121	112	56
Coffee	87	128	33	30	7
Cotton	149	—	23	—	12
Cocoa	—	—	24	—	12
Provisions	—	—	12	—	9
Livestock	28	99	—	—	—

Source: Higman 1984, p. 106.

owner wanted performed and partly by biological ideas and prejudices. In consequence, there were significant differences between the types of slave holdings in terms of their internal demographic structure as well as in their absolute numbers.

11.4 Demographic Structure

British Caribbean planters showed a preference for males as agricultural laborers, and this was reflected in the prices paid for slaves. About 1820 males of prime age fetched prices 110%–130% of those paid for females. In the last decades of the Atlantic trade slave cargoes had sex ratios varying between 150 and 180 males per 100 females (Klein 1978, p. 150; Sheridan 1981, p. 276). Thus the sex ratios of the slave populations differed according to the proportions of Africans they contained, and these differences in turn were determined chiefly by variations in stage of settlement. In general, abolition of the slave trade was followed by convergence toward a balanced sex ratio, most colonies having a female majority after 1815. By 1834, however, only the slave population of British Honduras (with 163 males per 100 females) approximated the sex ratio desired by the masters, and this was reflected in its peak slave prices.

The declining proportion of African-born slaves after 1807 was the most obvious result of the abolition of the Atlantic slave trade. In the first-phase sugar colonies the proportion varied from a minimum of 7.1% in Barbados in 1817 to a maximum 16.1% in St. Kitts. In the Windward Islands and Jamaica, however, the proportion exceeded 35%, and in Trinidad and British Guiana it exceeded 50%. Where Africans made up a substantial part of the total slave population, the sex ratio rose rapidly to reach a peak of almost 200 males per 100 females at age 45, around 1817, but the ratio fell even more rapidly after this age, because of the heavier mortality levels of males, to be evenly balanced among the oldest slaves.

In the period between the abolition of the slave trade and emancipation the slave populations of the new sugar colonies were aging. In Demerara-Essequibo, for example, the mean age of the slaves increased from 25 years in 1817 to 30 in 1832. At the same time the over 50 years group increased its share from 4.3% to 14.1%, while slaves under 10 years decreased from 22.3% to 18.7%. This trend was a product of the increasing maturity of the large African-born section of the slave population and its declining fertility. In some of the first-phase sugar colonies, however, the slave populations tended to become younger after 1807. This tendency was chiefly a result of increasing fertility levels. A similar trend occurred in most of the marginal colonies. In Barbuda the proportion of slaves under 15 years increased from 39% in 1817 to

46% in 1832. In Barbados, however, the amount of change was much slighter and the age structure was quite stable in this period. Beyond these contrasts between the types of colonies, there was a significant difference in the age structure of rural and urban slave populations. Because they contained relatively large proportions of Africans, the urban populations displayed a more prominent bulge, in the 20–34 year age group, about 1817. This reflected the specific labor demands of the towns. On the other hand, differences between the age structures of the various rural crop types were not marked.

The proportion of colored (mixed-race) slaves in the British Caribbean increased with length of settlement, varying from 4% to 12% around 1817. The differences between the colonies are reduced somewhat if the focus is shifted to the proportion of the creole population comprising colored slaves, but the ordering of the colonies remains much the same. In St. Lucia and Nevis 16.4% of the creole slaves were colored around 1817 and in Berbice 4.8%, at the extremes. The most striking contrast in the distribution of the colored slave population was that between town and country. In general, colored slaves were almost twice as numerous in the towns as in the rural populations, reaching a maximum of 25% in Bridgetown.

11.5 Occupational Allocation

For an overall view of the occupational structure of the British Caribbean slave population, the most comprehensive data available are those generated as a by-product of the compensation of the masters at emancipation. This compensation was calculated according to the money value of the slaves, on the basis of the average prices paid for slaves sold between 1823 and 1830 (a total of 74,000 transfers). The slaves were classified after actual inspection by the Assistant Commissioners for Compensation, except that in the Bahamas the occupations listed in the registration returns of 1834 were used.

In the British Caribbean as a whole, 81.7% of the slaves were classified as active in the labor force (table 11.4). Indeed the only slaves excluded were children under 6 years of age (13.6% of the population) and those classed as “aged, diseased, or otherwise noneffective” (4.7%). There were some significant differences between the colonies but only in Anguilla and Barbuda did the active labor force fall below 75% of the total slave population, and only in Trinidad, British Guiana, and the Virgin Islands did it exceed 84%. These variations were a product of differing age structures.

Predial slaves, who made up 85% of the total labor force, were those employed in agriculture or the extraction of other produce from the land (table 11.4). Many of the “nonpredial” slaves lived on agricultural

Table 11.4 British Caribbean Slave Population as Classified for Compensation, 1834

Compensation Classification	Number of Slaves	Percentage of Slaves	Percentage of Employed Slaves
<i>Predial attached</i>			
Head people	25,658	3.8	4.7
Tradesmen	18,735	2.8	3.4
Inferior tradesmen	5,999	0.9	1.1
Field laborers	241,177	36.2	44.3
Inferior field laborers	132,008	19.8	24.2
<i>Predial unattached</i>			
Head people	1,772	0.3	0.3
Tradesmen	1,639	0.3	0.3
Inferior tradesmen	643	0.1	0.1
Field laborers	22,218	3.3	4.1
Inferior field laborers	10,730	1.6	2.0
<i>Nonpredial</i>			
Head tradesmen	4,151	0.6	0.8
Inferior tradesmen	2,439	0.4	0.5
Head people on wharves, shipping, etc.	3,335	0.5	0.6
Inferior people on wharves, shipping	3,928	0.6	0.7
Head domestic servants	29,387	4.4	5.4
Inferior domestic servants	40,718	6.1	7.5
Children under 6 years of age	91,037	13.6	—
Aged, diseased, or otherwise noneffective	30,088	4.5	—
Runaways	1,075	0.2	—
Total	666,737	100.0	100.0

Source: Higman 1984, p. 47.

units, of course, but most of these served in the masters' households. The largest proportions of predials were found in the sugar colonies of Tobago and British Guiana (exceeding 90% of the active labor force) and the smallest in the marginal colonies of Anguilla and the Bahamas (less than 60%). Slaves working on lands owned by their masters were classified as "predial attached" and those employed elsewhere as "predial unattached." The latter were hired out by their masters under a variety of arrangements. Some led relatively settled lives, working for years on a single plantation, while others belonged to jobbers who moved them about frequently and some, especially tradesmen, were employed by the day.

Below these broad divisions, comparisons of the occupational composition of the colonies are affected more strongly by inconsistencies

in classification. In particular, the principles used to separate "inferior" from other slaves in a class varied from colony to colony (Wastell 1932, p. 77). It is more useful to ignore this distinction and consider the five main occupational categories into which the slaves were grouped. Overall, "field labourers" accounted for almost 75% of the active labor force. Only in British Honduras and the Bahamas did this proportion fall below 60%. Low proportions were also found in Trinidad, Anguilla, and Nevis. After field laborers the most numerous category consisted of "domestics." In the marginal colonies of British Honduras, the Bahamas, and Anguilla, domestics made up more than 25% of the slave labor force. They were less numerous in the sugar colonies, where the proportion varied with the urban concentration of the slaves. More than half of the domestics lived in capital towns. Slave "tradesmen," employed in manufacturing processes or the production of intermediate goods on plantations, accounted for 6.2% of the labor force. The largest proportions occurred in the first-phase sugar colonies, whereas the marginal colonies with large numbers of domestics had the smallest. Although the compensation records rarely summarized the data by sex, it is clear that the trades were the occupations most strictly reserved for male slaves.

Slaves classified as "head people," the supervisors, overlapped the tradesman and field laborer categories. If they were distributed thus, there would be a significant inflation of the tradesman category (probably raising it to 10% of the labor force) and a slighter inflation of the field laborer class. Greater changes might result from this adjustment at the colony level, but there seem to have been inconsistencies in classification. It is obvious that head people would be more numerous in those colonies where the slave holdings were large. In the Bahamas, for example, no headman was assigned to a master unless he owned at least 10 slaves (Wastell 1932, p. 77). In the sugar colonies the proportion of head people was inevitably larger, a reflection of the structure of slaveownership and work organization, and of the internal hierarchy of the slave system.

11.6 Rural Patterns

At the end of the eighteenth century, a group of Barbadian planters instructed their fellow planters that a "judicious division of negroes into gangs" was essential to good plantation management, since "the application of their labor to works suited to their strength and ability requires the strictest attention." The first task of a new manager, they said, was "to examine individually the state and condition of every negro; and then to assort them in such manner, that they may never be employed upon any work to which their powers are not equal"

(Lascelles 1786, p. 22). The planters' evaluation of the slaves' "strength and ability" was based chiefly on the demographic characteristics discussed above: sex, age, birthplace, and color.

The general principles of occupational allocation on rural slave holdings can be stated fairly simply. Females were totally excluded from skilled trades other than sewing, and very rarely worked in transportation or fishing, or served as "watchmen." Males were excluded only from washing and sewing. Color was less exclusive than sex, but colored males generally were allocated to domestic work or skilled trades and colored females to domestic occupations. Ethnic origin or birthplace was of only minor significance and never accounted for actual exclusions. Within the framework of these fixed characteristics, occupational allocation depended above all on age. Children generally worked in the third gang between 5 and 12 years of age. The second gang comprised children of 12–18 years and weak adults, most of them over 40 years of age. The first gang comprised the strongest slaves on the holding, those aged between 18 and 45 years. On sugar estates, slaves in the first gang performed the heavy tasks of hoeing the soil, planting and cutting canes, and working in the mills during crop; those in the second gang molded, weeded, and trashed canes, and carried trash in crop; and those in the third gang weeded and gathered grass for the livestock. Domestics and stockkeepers also commenced work at an early age. Skilled tradespeople, transport workers, and fishers were generally drafted from the field gangs and domestics during their teens. Drivers emerged gradually from the first gang, most of them over 35 years of age. The duties of watchmen were confined to the old and weak. All of these general tendencies were affected by short- or long-term illness or physical disability, of course. The size and demographic structure of particular slave holdings also imposed constraints on the flexibility of the rules, as did changes in demographic structure consequent on the abolition of the slave trade.

Detailed occupational data are available in the slave registration returns for Trinidad, St. Lucia, Berbice, Anguilla, the Cayman Islands, and British Honduras, and these have been reduced to a simplified classification in table 11.5. Most of the analysis which follows is based on these examples, together with sample parish data from Barbados.

Field labor accounted for the majority of rural slaves between the ages of 10 and 60 years in the new sugar colonies of Trinidad and St. Lucia. But slaves entered the field much earlier in Barbados, and left earlier as well. More than 40% of Barbadian slaves were in the field by age 9 and more than 70% by age 14, compared with only 5% and 25% in Trinidad. Although the concentration of slaves in field labor in the marginal colony of Anguilla was not as great as in the sugar colonies, for any age group, the slaves tended to remain longer in field work

Table 11.5 Occupations of Slaves: Trinidad, St. Lucia, Barbice, Cayman Islands, Anguilla, and British Honduras, 1813-34

Occupation	Percentage of Slaves					
	Trinidad, 1813	St. Lucia, 1815	Barbice, 1819	Anguilla, 1827	Cayman Islands, 1834	British Honduras, 1834
Field laborers	57.3	57.0	62.4	61.0	50.1	2.9
Drivers	1.6	1.4	1.8	0.6	0.0	0.5
Skilled tradespeople	10.6	7.0	9.1	7.6	2.8	5.6
Domestics	22.7	21.4	10.2	21.9	43.7	39.0
Stockkeepers	1.6	2.7	1.9	3.4	0.0	0.8
Transport workers	1.6	1.8	0.8	0.9	1.5	0.9
Watchmen	0.4	2.3	1.1	0.9	0.0	0.0
Fishermen	0.4	0.5	0.2	1.5	1.6	0.0
Sellers	0.8	0.5	0.2	0.1	0.0	0.1
Laborers	0.7	1.3	5.6	0.0	0.0	49.9
Hired	0.0	0.4	0.0	0.0	0.0	0.0
Nurses	0.6	0.8	1.5	0.5	0.2	0.3
Sick or disabled	0.7	2.3	4.8	1.6	0.1	0.0
Absent	1.0	0.6	0.4	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
No occupation	17.1	22.8	21.2	32.9	8.7	13.9
Number of slaves	25,571	16,078	23,760	2,503	985	1,923

Sources: Calculated from Higman (1984, pp. 559-79, 584) and Bolland (1977, pp. 108-9).

because there were fewer alternative occupations for the aging. In Anguilla there was little difference in the concentration of males and females in field work, but in the sugar colonies it is striking that a larger proportion of females than males worked in the field after about 20 years of age and until they reached 50. Indeed, the proportion of males in the field declined from an early peak of about 65% at 20 years in all of the sugar colonies, while females reached a higher peak of more than 80% only by about 30 years. The peak was reached earlier in Barbados than in the new sugar colonies, probably because Barbados had a larger proportion of young creoles in the population by 1817. It is important to note that this discussion is based on cross-sectional registration data and does not reflect the life experiences of individual slaves or secular trends in the structure of the slave populations. The concentration of females in field labor, then, does not mean that they necessarily outnumbered males in the gangs. Where the sex ratio was relatively high, as in the third-phase sugar colonies, males continued to dominate the field labor force. In Trinidad females made up only 43.6% of the field slaves in 1813, compared with 43.5% of the total rural population; and in Berbice in 1819 females accounted for 44.9% of field slaves, compared with 43.8% overall. Where the sex ratio was low, as in the old sugar colonies, Jamaica, and the marginal colonies excepting the Cayman Islands, females did indeed attain a numerical superiority in the field gangs soon after 1807 (table 11.6). The important point here is that females were always overrepresented in the field labor force, and that as the slave populations became increasingly creole and the sex ratio fell to low levels females came to dominate. The reason for this tendency is that males were put to a fairly wide range of occupations, whereas females were confined almost entirely to field or domestic tasks.

Females also dominated among the house slaves. In general, 70% of rural domestics were females, though the proportion was as high as 86.4% in Anguilla in 1827. In the new sugar colonies, a large proportion of the domestics were young. This pattern was most obvious in Trinidad, where 44% of rural females aged 10–14 years were employed as domestics in 1813 and 25% of males. The proportion dropped rapidly until it leveled out at about 30 years of age, when only 15% of females and 2% of males were domestics. A similar pattern occurred in St. Lucia and Berbice. In these new sugar colonies, then, many young slaves spent a few years in domestic work before being drafted to the field gangs or skilled trades. Anguilla showed a similar pattern, except that males never accounted for so many domestics and the concentration of females was clear at all ages. In the parish of St. John, Barbados, however, the proportion of the female slave population employed in domestic work increased fairly steadily with age, and the male pro-

Table 11.6 Percentage of Female and Colored Slaves by Occupation: Rural Barbados, St. Lucia, and Anguilla, 1815-27

Occupation	Percentage Female			Percentage Colored		
	St. John, Barbados, 1817	Rural St. Lucia, 1815	Anguilla, 1827	St. John, Barbados, 1817	Rural St. Lucia, 1815	Anguilla, 1827
Field laborers	56.8	58.8	55.3	11.0	5.6	10.6
Drivers	51.6	3.0	0.0	6.6	14.8	0.0
Skilled tradespeople	6.7	7.9	21.1	33.3	26.2	37.0
Domestics	72.8	69.3	86.4	36.4	32.0	24.0
Stockkeepers	26.7	28.7	21.1	9.1	12.2	10.2
Transport workers	0.0	0.0	0.0	0.0	10.2	24.3
Watchmen	0.0	31.8	26.7	8.3	7.6	25.0
Fishermen	—	2.2	0.0	—	20.0	24.3
Laborers	68.6	36.6	—	0.0	18.3	—
Nurses	100.0	97.1	100.0	17.5	14.7	0.0
Sick or disabled	64.3	65.2	51.9	5.7	7.1	7.4
None	50.6	54.9	50.3	18.2	18.9	19.2
Total	53.2	54.2	54.6	15.8	13.5	17.3

Source: Higman 1984, p. 192.

portion showed a similar, though flatter, curve. Since the overall proportion of slaves employed was much the same in St. John and rural Trinidad, it is clear that the Trinidad domestics contained significantly fewer adult slaves. This contrast between the old and new sugar colonies can be explained by the greater demand for "able" field laborers in the expanding plantation frontier and the desire to minimize the loss in productivity resulting from the use of scarce labor in domestic service. It matched the significantly earlier entry of slaves to field work in Barbados.

The skilled trades were confined almost entirely to males, and the few females included in this category were usually seamstresses. The latter were often quite young, but skilled males were generally older than male field laborers or domestics and increased as a proportion of the population with age. Skilled males were drawn from the domestics or field gangs as they entered their later teens, while females employed as domestics or seamstresses in their youth were drafted to field labor. Apprentice carpenters, coopers, masons, and wheelwrights distinguished in the Barbados registration returns were aged between 8 and 18 years.

In most colonies all drivers were males. Not one female driver was identified in the registration returns of Trinidad or Anguilla, and only a handful were listed for St. Lucia and Berbice. But they were common in Barbados. Females accounted for 37.9% of the drivers in rural St. Michael, 44.8% in St. Andrew and 51.6% in St. John. They easily outnumbered males as supervisors of the second, third, or fourth gangs. Almost all of these female drivers were over 40 years of age, whereas males often began working as drivers in their thirties. The unusual importance of female drivers in Barbados must be traced to the early age at which Barbadian children were introduced to field labor and the resulting large squads of children under 15 years of age to be supervised. These two characteristics made the field labor system of Barbados unique, and they help to explain how Barbadian planters were able to maintain productivity while extracting relatively low levels of work time from their first gangs.

Females constituted about one-quarter of the slaves employed as stockkeepers, but they generally had responsibility for the smaller animals rather than cattle and horses. The age distribution of stockkeepers, both male and female, was bimodal, with peaks in the teens and over-50 age group. The tasks of watchmen overlapped with those of stockkeepers, to some extent, but females were generally not required to keep watch at night and males employed in this occupation were older than any other active group. Fishermen tended to be mature adults. So did nurses, but the females, who predominated, were generally older than the males.

Color was a significant factor in occupational allocation, especially for domestics and skilled tradespeople, but slaves of color never outnumbered blacks in any occupation. In St. Lucia, for example, 57.5% of employed colored slaves worked as domestics or skilled tradespeople in 1815, yet they composed only 32.0% of domestics and 26.2% of skilled tradespeople. Slaves of color were also overrepresented among the drivers, fishermen, and nurses of St. Lucia. In Anguilla slaves of color were overrepresented among domestics, skilled tradespeople, transport workers (most of them sailors), fishermen, and watchmen. A relatively large proportion of slaves of color remained unemployed, both because they tended to be younger than blacks and because they were sheltered from the rigors of plantation life. Slaves of color were everywhere underrepresented in the field gangs, though they followed the pattern for blacks in being introduced to field labor earlier in Barbados than elsewhere. The contrast between the sexes applied to colored as well as black slaves, so that colored males least often found themselves in the field, followed by colored females, black males, and black females. The proportion of colored males in the field began to decline at an earlier age than for any other group. Although females predominated overwhelmingly among domestics, a larger proportion of the male colored population was employed in the house than of the female black population. Female drivers were always black, but a small proportion of the males were colored. Seamstresses were much more likely to be colored than were skilled tradesmen. Within the female domestic group, however, washerwomen were rarely selected on the basis of color and most of them were relatively mature, suggesting that the strenuous nature of their work was recognized.

The preference given to colored slaves as domestics, skilled tradespeople, and nurses reflected the slaveowners' perception of them as relatively weak and unfitted for the hard work of field labor. In some cases it also reflected a conscious recognition of the obligations of paternity or an essentially unconscious appreciation of the hierarchy of status within the broader slave society. But the conviction that slaves of color made poor field laborers, and should be employed as domestics or put to skills, was placed under stress in the period after 1807 as the source of black field laborers was cut off and the proportion of colored slaves grew.

Birthplace was the least important of the demographic factors controlling occupational allocation. Creole slaves were generally regarded by planters as more "intelligent" than Africans, but this was believed to give them an advantage only in the skilled trades. In Berbice, for example, creole males were much more likely to be skilled tradesmen than Africans, even if slaves of color are excluded from the creole

group. Africans and creoles of similar age were equally likely to be domestics, but Africans over 25 years of age were more often employed as field laborers and creoles as skilled tradesmen. In the other occupations birthplace mattered little. Similarly, among the Africans, regional or ethnic origins associated with particular skills seem not to have been considered in allocating slaves to occupations.

It can be concluded that rural slaveowners did allocate slaves to occupations on the basis of their "strength and ability," with some notable exceptions. The most important of these aberrations were the tendency to keep slaves of color from field work and other types of heavy manual labor and the failure to recognize the particular skills of Africans. In the field gangs females performed the same tasks as males, including the digging of cane holes and night-work in the factories, though some concessions were made to pregnant and nursing women. The early age at which children were put to work did not appear unusual to the slaveowners of this period, nor did the long hours children had to labor. There were few significant differences between the colonies in the principles used to allocate slaves to tasks, except that the Barbadian system of large gangs of children supervised by female drivers was unique.

11.7 Urban Patterns

Most urban slaves worked as domestics (table 11.7). In Bridgetown, for example, 50% of the slaves were domestics in 1817, compared with just 10% of the rural population of Barbados. Apart from domestics, the towns also contained many more sellers and transport workers than the rural slave populations, and roughly twice as many skilled tradespeople, fishermen, and general laborers.

Female slaves worked in a narrower range of occupations than males in both town and country, but whereas this meant large-scale allocation to field labor on plantations in the towns it meant concentration in domestic work. The occupations of urban females were somewhat more diverse than those of rural females, however, so that only slightly more than 60% of adult females were employed as domestics in most towns. Fewer than 20% of adult males were domestics in the towns. In Trinidad, for example, only 16.5% of urban males aged 30–39 years worked as domestics in 1813, compared with 2.0% of rural males, while 72.2% of urban females in this age group were domestics, compared with 13.4% of rural females. Thus a relatively larger proportion of males than females worked as domestics in the towns as against the plantations, even though they were always a minority. Females comprised all the seamstresses and washers, and most of the hucksters, while

Table 11.7 Occupations of Urban Slaves: Barbados, St. Lucia, St. Vincent, Trinidad, 1813-17

Occupation	Percentage of Slaves			
	Bridgetown, Barbados, 1817	St. Lucia, 1815	Kingstown, St. Vincent, 1817	Trinidad, 1813
Field laborers	0.1	10.4	0.0	21.7
Drivers	0.0	0.0	0.0	0.2
Skilled tradespeople	16.4	11.5	16.2	15.7
Domestics	69.9	60.9	53.8	52.6
Stockkeepers	0.4	0.5	0.0	0.4
Transport workers	6.4	6.6	10.8	2.8
Watchmen	0.0	0.4	0.0	0.0
Fishermen	1.0	1.5	0.8	1.2
Sellers	0.8	2.7	1.4	2.8
Laborers	2.9	3.7	14.8	1.3
Hired	0.6	0.6	0.0	0.0
Nurses	0.3	0.0	0.4	0.1
Sick or disabled	0.8	1.0	1.2	0.4
Absent	0.4	0.2	0.6	0.8
Total	100.0	100.0	100.0	100.0
No occupation	28.0	19.2	23.0	15.4
Number of urban slaves	9,254	1,957	2,255	6,170
Percentage of colony slave population	11.9	12.0	8.9	24.0

Source: Calculated from Higman 1984, pp. 413-15, 552-70, 580-83.

males had a monopoly of the skilled trades, fishing, and transport work. Thus males and females were equally likely to work out and live separate from their owners.

In urban Trinidad and St. Lucia large numbers of young children were employed as domestics, the proportion reaching a peak in the 10-14 age group for both females and males. There was also a minor peak in the sixties. In Bridgetown, however, the proportion of females employed as domestics increased steadily with age to a maximum at about 35 years and only males shared the early peak seen in the new colonies. Thus, while the planters of Barbados were particularly quick to put children to field work, the slaveowners of Bridgetown were relatively slow to put them to domestic tasks. It is difficult to explain this contrast, though the perceived abundance of labor was greater in town than country. Among the domestics, washerwomen followed a distinct pattern, being concentrated in the 25-50-years age groups. Seamstresses, on the other hand, reached an early peak, in the teens,

and then fell to a small proportion of the female population. This suggests that sewing was seen strictly as a part of domestic work. Male skilled tradespeople emerged at later ages, as on the plantations, and always accounted for a larger proportion of the population than domestics after age 20. Transport workers emerged at even higher ages, and in Bridgetown outnumbered domestics and skilled males only after age 35. In part this reflected the concentration of African-born slaves in transportation, but it was determined also by the heavy nature of the work. Sellers also tended to be relatively old, approaching 10% of the female population only among those aged over 40 years.

Sex and age affected urban occupational allocation in much the same way as in the rural slave population. Color and birthplace, however, were less significant in the towns than on the plantations. More important, the general rule that colored females should be employed as domestics was not followed in the towns. In Bridgetown, for example, 69.6% of black females were employed as domestics but only 56.5% of the colored, and among the males 28.6% of black but only 26.2% of colored slaves. This pattern was little affected by differences in age structure, larger proportions of black than colored slaves working as domestics in almost every age group. In urban St. Lucia colored males and females did have a slight edge over black slaves, but it was nothing like that seen on plantations. This contrast between the rural and urban situations existed in spite of the much larger proportions of colored slaves found in the towns. It was a product of the fact that most urban slave holdings were small. Slaveowners had relatively few choices available to them and could not always afford to put colored slaves to domestic tasks or exclude blacks.

Skilled tradespeople and transport workers belonged to the larger urban slave holdings, and were purchased more selectively than domestics. Colored male slaves were employed more often in the skilled trades than blacks, and less often as porters, sailors, fishermen, or laborers. But the contrasts were less than seen on plantations. Colored females were more likely to work as seamstresses, but less likely to be sellers, most of whom belonged to small units. The sex and color of the owners had only a minor influence. Skilled tradesmen and transport workers belonged most often to males but domestics were evenly distributed. Although it was sometimes said that hucksters were generally the property of free colored women, the registration data for Bridgetown show that white and free colored women owned roughly equal proportions of sellers. Few belonged to males, certainly. In general, then, it may be concluded that the structure of urban slaveownership, particularly its dispersion, meant that occupational allocation in the towns was determined very largely by the slaves' age and sex but had relatively little to do with their color or birthplace.

11.8 Transition

The principles of occupational allocation developed in the British Caribbean under the system of slavery, and matured in the early nineteenth century, were essentially the creation of the slaveowners. Slaves were able to modify to some extent the manner in which they performed their tasks, but rarely were they able to influence the initial choice of occupational category. They were forced to recognize the hierarchy of statuses associated with occupations, particularly on large plantations, and elements of this hierarchy were internalized. Thus "demotion" to field labor was a common form of punishment for house slaves, and the parents of colored slaves sought for their children apprenticeship to skilled trades, for example. But the principles of allocation applied by the masters were never fully accepted by the slaves, as became clear after the abolition of slavery.

Emancipation did not in itself create freedom of occupational choice for the ex-slaves. Wherever the plantation system effectively occupied all the cultivable land, as it did in Barbados and the Leeward Islands, the ex-slaves had little choice but to continue laboring on the estates. Even where the plantation was not completely dominant and there were opportunities for the emergence of an economically viable peasant agriculture, as in Jamaica and the Windward Islands, those ex-slaves who worked either full time or part time on the estates remained subject to the planters' system of work organization and occupational allocation (Green 1976; Engerman 1982). The fundamental importance of emancipation, then, lay in the fact that ex-slaves were free to choose their employers and to refuse to work under specific regimes and in particular occupations. But they could do so only within the constraints imposed by the planters' variable control of resources and the necessity of survival. The first response of the ex-slaves to emancipation was not to flee the plantations but rather to seek a flexible system of work organization and residence rules within the context of the plantation (Hall 1978). Only when the planters attempted to connect rent, residence, and estate labor did the ex-slaves leave the plantations in large numbers, wherever alternative means of making a living existed. In turn, the planters sought to maintain their command over labor by introducing indentured, contract laborers who had little more control over the system of work organization than slaves (Engerman 1984).

Plantation labor continued to be organized on a gang system after 1838, though task-work and job-work became increasingly important during the nineteenth century. The composition of the gangs changed significantly, however. Wherever possible, females and young children were withdrawn from estate field labor and the gangs became increasingly male (Adamson 1972, p. 40; Craton 1978, pp. 282–83). This with-

drawal was never complete, and its extent varied with the strength of the independent peasant economy. It made clear the high value placed on the household labor of women by the ex-slaves. Color continued to play a role in occupational allocation after emancipation, persons of color still being favored for the skilled trades and domestic service. But the great demand for construction workers in the immediate post-emancipation period meant that skilled carpenters and masons were able to find employment outside the plantations, and this permitted the entry of an increasing proportion of black males (Riviere 1972, p. 3). The demand for domestic servants, on the other hand, contracted after 1838, since their services were seen as relatively unproductive and estates were increasingly controlled by absentees. In this situation, persons of color continued to dominate, until a servant-employing black and colored middle class emerged at the end of the nineteenth century, and the occupation lost status (Higman 1983, p. 125). The importance of gender, differentiating skilled and domestic occupations, persisted throughout the century, however. In these ways, then, emancipation meant a sharp break in patterns of occupational allocation and work organization, altering the roles of male and female, while at the same time the significance attached to color under slavery had long-term implications for the distribution of status and wealth within British Caribbean society.

Comment Stanley L. Engerman

Barry Higman has presented some important economic and demographic information for the slave colonies of the British Caribbean for the years of the early nineteenth century, focusing on the period from 1808 (the ending of the legal slave trade from Africa) to 1834 (the ending of slavery—the transitional stage of apprenticeship was terminated in 1838). The topic of Caribbean slavery is of obvious importance, as are comparisons of slavery there with slavery in the United States, but in my comments I will be concerned chiefly with measures and interpretations of labor force participation and occupational structure.

From the perspective of American economic history, slavery, particularly Caribbean slavery, is an important topic. Down to the early nineteenth century, about four times as many black slaves as free white settlers came to the Americas, and reliance on crop production by

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slaves was instrumental in the expansion of European powers (Eltis 1983). The pronounced difference between the migration rates of the races is obscured in the aggregate population data by regional differences in demographic performance, the Caribbean societies experiencing negative rates of increase in contrast with the very high rates of natural increase of the British mainland colonies. Unlike the mainland, where even in the South slaves were only about one-third of the population, the Caribbean areas were generally about 90% black slave, with relatively few whites and free blacks and coloreds—a point with obvious implications for the analysis of occupational distribution by race and status.

During the period with which Higman is dealing, the economies of the British Caribbean were generally expanding, particularly the newer sugar colonies (areas of low population density acquired in the late eighteenth and early nineteenth century, most importantly Trinidad and British Guiana). Thus whatever may be argued about broader issues of long-term prospects and the relationship between capitalism and abolition, the Caribbean slave economies were not economically stagnant and decaying. Nonetheless, the British Caribbean was undergoing demographic decline. While the rates of decline were lower than before the close of the slave trade, only Barbados (among the major sugar producers) and the marginal colonies (with only a few slaves and without sugar production) had positive rates of natural increase. For various reasons, political constraints on interisland migration of slaves had been introduced, so the large-scale movements of slave labor into new areas, which had been taking place in the United States, was precluded in the Caribbean. The closing of the slave trade meant fewer Africans in the West Indian populations and, since the slave trade had brought in almost two males for each female, a change in the sex composition to a greater number of females, a shift often accelerated by a marked difference in death rates by sex.

Sugar was the main crop grown in the British Caribbean, but there were other export crops (cocoa, coffee, cotton) as well as considerable production of foodstuffs, some on plots cultivated by individual slaves. While most slaves were on sugar plantations, Higman shows that in 1830 over one-third (the share varying by area) lived on agricultural units specializing in other crops, and about 10% resided in urban areas. Sugar plantations were large and heavily capitalized, generally averaging over 100 slaves, allowing for a considerable division of labor internally. They were among the largest business units in the Americas, eclipsed only by the New England cotton textile firms after 1820. And, it may be added, down to the 1890s there were no small-scale units producing sugar, a point relevant to the matter of potential technological flexibility and the possible variability of labor force distribution.

The major findings of Higman's analysis relate to labor force participation rates and occupational distribution. His findings pose important questions for the analysis of free labor populations. Most striking, no doubt, is the extremely high labor force participation rates observed; these are generally about 80% of the total population, with no marked differentials between males and females. With the exception of children under 6 (treated differently, for legal reasons, on the Compensation Returns Higman used, but shown by other evidence to be the age at which children usually began to labor), the aged, and the diseased, some labor force function was found for almost everybody. Within agriculture, most laborers were described as fieldhands, and this was true for both males and females. About 12% of slaves had artisan-like and skilled occupations, these jobs being restricted almost exclusively to males. Domestic service was primarily a woman's job. Within the limits set by the importance of field labor, jobs were allocated according to a life-course pattern; for example, among males the percentage of workers with skilled occupations rose with age.

Both physical and cultural factors play roles in the determination of labor force participation rates. The significance of the cultural factors can be seen in the disparities between labor force participation rates of women and children in slave and nonslave societies, disparities that have important implications for our understanding of measured national income and economic welfare. Not only were there differences in measured rates of female and child labor force participation between slave and free societies, the high percentages of females and children in the field labor force in sugar plantations suggests a significant difference in type of work performed by slave and by free females. Clearly freedom meant the ability to avoid certain types of labor, even if not the ability to avoid participation in the labor process. Higman's data highlight one of the benefits of slave emancipation—the relative withdrawal of women and children from the labor force, particularly from plantation work. By seeing what participation rates were for women and by observing at what ages children could do full-time work under different forms of labor institutions, we are better able to interpret the extent to which labor force participation in free societies is influenced by social and cultural, as well as economic, forces.

The life course of functions found in slave societies is based upon a different set of factors than in a free labor society. The pattern is set by planters; it does not reflect the free choices of individuals (as in a free labor society), and there is no prospect for wealth accumulation and intergenerational transfer by the slaves. The pattern of change of slave occupations over the life course apparently reflects a deliberate pattern of promotion of slaves, a pattern constrained by the influence of age and physical and intellectual maturity on the masters' capacity

to exploit opportunities. There were not only age-related shifts in occupations, but also, as reflected in price data, age-related changes in the productivity of slaves within given occupations. The existence of these age-related productive capacities in a slave society, even without individual accumulation, indicates that there are physiological and/or skill development factors in the age-income relationship. Measures from slave societies could be used to indicate the importance of the prospects for wealth accumulation in determining the life-cycle wealth and income patterns within free labor societies.

Higman points out that it is often difficult to define the occupational structure of the slave labor force. Individuals often performed more than one type of job, but were generally assigned to only one job classification in the records, either the one corresponding to the highest skilled job they performed or the one at which they spent most of their time. In an era of highly seasonal work, with different functions performed at different times of the year, these recording procedures can produce serious problems for the student of labor force structure.¹ These slave records may overstate the time spent in skilled work, and thus the skill needs of the economy (see Higman 1984, p. 24). Such problems are particularly serious in economies—such as those of the Caribbean plantation sector—in which labor time is divided between agricultural and industrial pursuits. It is not just that some agricultural output (and labor time) might best be classified as industrial. In examining the early stages of industrialization, where such seasonal shifts can be quite important, the measure of occupational change and of industry productivity development can be quite sensitive to the principles by which occupational and industrial distributions of output and labor are measured. Further, since the measured division of labor is affected by the size of producing units, intertemporal comparison of skill distributions, in a time of increasing unit size, may overstate the extent of the changing skills embodied in the population.

More generally, there are questions concerning the reasons for preparing measures of skill distributions and also of the broader relationship between the level of technology and the distribution of skills. The distribution of the labor force by occupation is used to measure changing fortunes of individuals, as well as to describe the overall sophistication of an economic system. In a free labor economy the attention paid to occupations in studies of social mobility reflects the use of skill, measured by occupation, as a proxy for individual returns from economic activity (see Thernstrom 1973). The higher the level of skills

1. For detailed information on the functional distribution of work done, prepared on the basis of planter allocations of actual days spent performing different tasks on United States slave plantations, see Anderson (1974) and Olson (1983).

observed, the more favorable, it is argued, are living standards, a basic consideration from the general relation of skills and incomes.² Skill levels are, of course, imperfect proxies for increased income, given learning by doing within specific occupations (particularly important in the agricultural sector, where little occupational reclassification over time might be noted). There is an obvious interplay between the occupational structure and the level of technology. The relative sophistication of a sugar-producing economy required certain skills and, as Higman shows, the plantation owners were aware of the need to have methods of job selection and planning to fill the necessary slots. The patterns—by sex, age, color, etc.—found by Higman reflect the constraints of demographic forces on the choices required to fill these slots. The skilled positions were filled by individuals with low levels of literacy and few of the correlates of skill among free laborers. In interpreting changing measured skill levels over time, we need to learn more about the precise meaning and nature of skills at different levels of economic development (e.g., What are the necessary skills acquired by those in what are commonly classified as unskilled jobs?) as well as the extent to which the technology at each time determines the measured level of skills and abilities within an economy (and vice versa).

Comment Gerald Friedman

Professor Higman's paper presents a superb summary of the demographic and occupational structure of slavery in the British West Indies (BWIs) in the period between the abolition of the African slave trade (1807) and emancipation (1834). Higman's paper covers a wide range of topics and draws on his detailed study of slavery in many of the islands of the BWIs to place each in a comparative context. Since the larger part of Higman's paper concerns slave occupations—that is, "labor" rather than "population"—my remarks will also focus on the occupational allocation of slave labor in the BWIs. I begin with a brief discussion of the demographic performance of the BWIs, focusing on the differences between the group of colonies that Higman designates the "new sugar colonies" (NSCs) and those he calls the "old sugar colonies" (OSCs). I follow with a few comments concerning the reli-

2. Skilled slaves, similarly, may receive pecuniary as well as nonpecuniary benefits relative to the unskilled. They nevertheless do not receive the full pecuniary benefits, since part was reflected in the higher prices of the skilled slaves.

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ability of the data Higman uses on slave occupations, and some remarks on the high labor force participation rate of the slave labor force, the technological determinants of the share of slaves in nonfield occupations, and the effect of an individual slave's personal characteristics on that slave's occupation. I then conclude with a brief discussion of the BWIs after emancipation, returning here to a comparison of the NSCs and the OSCs.

Higman begins with data on the size and distribution of the BWIs slave population at the time of the abolition of the African slave trade in 1807. The point is not new (Curtin 1969, 1975; Fogel and Engerman 1974), but even a casual comparison of the population figures Higman presents in table 11.2 with data on the volume of the African slave trade shows the catastrophic demographic effects of West Indian slavery, especially compared with slavery in the United States. Higman reports that in 1810 there were fewer than 800,000 slaves in the BWIs, or fewer than half Curtin's estimate of 1.7 million Africans imported to these colonies. The comparison with the United States is striking: in 1807, the number of free blacks and slaves in the United States was over three times the number of Africans imported.

Because of this poor demographic performance, the slave population of the BWIs began to decline once the African slave trade was ended. Despite a lively interisland slave trade, the sharpest population declines were suffered by the NSCs which had been most involved in the African slave trade and had experienced the most rapid population growth before 1807. (This association between the African slave trade, a high proportion of Africans in the slave population, and rapid population growth with high rates of natural decrease was also found among the OSCs in their early years [Craton 1974].) Using the data in table 11.2 of Higman's paper, the population of the NSCs declined by 19% between 1810 and 1830, while the population of the OSCs and the marginal colonies fell by only 3%, notwithstanding the movement of slaves from the marginal colonies and the OSCs to the NSCs.

The abolition of the African slave trade, and later restrictions on the interisland slave trade, crippled slavery in Jamaica and the NSCs, including many of the most productive slave colonies with the lowest population densities and the highest priced slaves (Great Britain 1837–38, no. 700; Ragatz 1928; Ward 1978). Estate owners in the NSCs were denied access to foreign slaves when their own slave labor force was aging and dying. British abolitionists expected the slaveowners to institute a pronatalist policy, and, possibly reflecting a change in the slaveowners' policy, there is some evidence that the rate of natural increase rose among the slaves after 1807. Another response to relative labor scarcity appears in table 11.2 of Higman's paper. The proportion of slaves employed in sugar cultivation rises throughout the BWIs

between 1810 and 1830, and the sharpest increase is in the NSCs. The proportion of the slave labor force involved in sugar cultivation rises by over 25% in the NSCs (from 55% to 71%), compared with much smaller increases in the OSCs (from 78% to 80%) and Jamaica (from 52% to 53%). This association of relative labor scarcity and an increasing concentration of slave labor in staple crop production has also been observed in the nineteenth-century American South, where it has been attributed to a relatively inelastic demand for slaves in gang labor cultivation as compared with more diversified urban labor or general farming (Goldin 1976).

Most of Higman's paper is devoted to the distribution of slaves across occupations in the BWIs, and is based on the masters' reports of the slave's occupation either at the time of a slave registration or at emancipation. Higman is properly concerned with possible biases in using these reports of the slave's "occupation" to infer the actual work activities of the slaves. He expresses two concerns in particular: first, that the proportion of the slave's time devoted to nonfield labor might be understated on smaller units if slaves classified as "laborer" actually performed a wide range of tasks, including some nonfield work. In addition, Higman is concerned that the proportion of nonfield labor might be exaggerated if masters classified their slaves by the highest occupation performed over the course of a year even if the slaves spent much of their time working as common laborers.

I suspect that Higman is correct that both of these biases exist, but his estimates of the occupational allocation of slave labor are probably quite accurate nonetheless. Both of the biases he discusses are probably relatively small, and the total error produced by the two biases together will be smaller than either individually since they work in opposing directions, one raising and the other lowering the estimate of the proportion of slave labor in nonfield activities. I have two specific points:

1. Among predial slaves in Trinidad in 1813, or slaves attached to rural estates, increases in the size of slave holdings are associated with very sharp increases in the proportion of workers listed as nonfield workers, especially tradesmen (or crafts workers). Some of this increase may be due, as Higman suggests, to the underreporting of nonfield labor performed by slaves listed as common laborers on smaller units. Slaves on larger units, however, may have performed a larger share of the nonfield work than did those on smaller farms since the proportion of units with resident owners is much lower on larger than on smaller units. Contemporary observers commented on the active involvement of small farmers in Trinidad (mostly French and Spanish) in the work routine of their holdings; absentee slaveowners may have employed slaves for nonfield craft and managerial work performed by resident owners on smaller estates.

2. There is considerable evidence, furthermore, that the occupation labels Higman uses do represent meaningful economic categories. The slaveowners' classification of slaves into occupations is clearly non-random and, as Higman notes, nonfield slaves are clearly distinguished from field laborers by their sex, age, physical condition, place of birth, and color. In addition, slaves listed in nonfield occupations are worth considerably more than field slaves and common laborers, possibly reflecting greater training, human capital investment, and productive potential. Michael Craton, in his study of one Jamaican plantation, Worthy Park, presents the range of values for slaves in different occupations in the period before emancipation. Comparing the midpoints of these ranges, drivers at £135 are worth 54% more than members of the great gang, while the head cooper is worth 60% more and tradesmen as a whole are worth 36% more. Domestic servants and members of the second gang were mostly females and either older or younger male slaves; the domestic servants are valued at 2% less on average than members of the great gang, while members of the second gang are worth 14% less. (It is revealing to note that the slaveowners anticipated a profit even from the labor of slaves without an occupation—including those listed as "superannuated" and "hopeless invalids"—since even these slaves have positive prices, albeit only a little over £5, or 6% of the value of a member of the great gang [Craton 1978; see also Higman 1976, pp. 190–205].)

Higman devotes much of his paper to discussing the factors determining a slave's occupation. Perhaps the most striking characteristic of the slave occupational structure is the very small proportion of slaves without an occupation, and the efficiency (or ruthlessness?) with which the slaveowners utilized their slaves' labor. Higman notes that in 1834 fewer than 20% of the slaves are listed without occupation, including 0.2% listed as runaways. Trinidad may be typical of the high labor force participation of the slaves. Even among predial slaves as young as 5 years of age in 1813, 14% are listed with occupations. The labor force participation rate for Trinidad children rises steeply with age; at age 10, 72% of the males and 76% of the females are listed with an occupation, and 98% of males and all females aged 15 years had occupations. The labor force participation rate remains over 98% for both sexes until age 40, and even among slaves over 60 years of age, 77% of the males and 59% of the females are listed with occupations. (It is interesting to note that while young females were more likely to have occupations than young males, the labor force participation rate declines faster for older females.) These labor force participation rates are significantly higher than those for most free societies, including the population of emancipated slaves in the BWIs after 1838 (Aufhauser 1974).

The high labor force participation rate among children reduced the cost to slaveowners of rearing children, and the relative advantage of

buying Africans. There may have been hidden costs attached to this intense utilization of the slaves' labor, however, and I will suggest two in particular that may have contributed to the poor demographic performance of the BWIs:

1. The early exposure of young children to field labor may have contributed to the relatively high mortality rate among children over age 5 by increasing their exposure to stress and to diseases transmitted through human and animal wastes often used as fertilizer and gathered by the children's gang. (The deleterious effect of field labor on children's health may be concealed where only children who are otherwise relatively healthy are selected for employment in the fields. Barbados had the highest rate of natural increase of the sugar colonies and also, as Higman notes, a particularly high proportion of children employed in field labor.)

2. The high labor force participation rate among adult women was achieved, in part, by granting short "concessions" to the needs of pregnant and nursing mothers. Dr. Collins (1811), a St. Vincent physician, for example, proposes reducing the field labor demanded of pregnant women beginning 6–8 weeks before delivery and resuming some field labor about 4 weeks after delivery; he implies that at least some West Indian slaveowners expected even more field labor from mothers than these restrictions would allow. Heavy field labor performed by pregnant women may have reduced their capacity to support their fetus and led to relatively weak, underweight babies.

Higman demonstrates that the probability that a rural slave would be in a nonfield occupation depends on the technology of production, the crop and unit size, as well as personal characteristics of the slave, including sex, age, color, and place of birth.

The most striking feature of slave occupations in the BWIs to an American is the relatively low proportion of adult slaves employed as simple field laborers. In Trinidad, for example, only 71% of adult male predial slaves and 84% of the adult females are listed as simple laborers. Most studies of slave occupations in the United States have found a much higher proportion of adults employed as common laborers. Herbert Gutman and Richard Sutch, for example, have estimated that between 88% and 97% of adult male slaves were simple field laborers (Gutman and Sutch 1976, pp. 87–89). Gutman and Sutch's estimates of the share of field laborers among American slaves are almost certainly too high (Margo 1979), but even my estimate of the proportion of adult male slaves in the Fogel and Engerman probate sample employed as common laborers (79%) is significantly higher than the comparable figure for Trinidad, and this estimate is made for a sample of slaves including a disproportionate share from large sugar-growing units likely to have a high proportion of slaves in nonfield occupations. (John Olson, using a smaller subsample from the Fogel and Engerman pro-

bates including only 39 relatively large units with very good occupation data estimates that only 72% of the adult male slaves were in field occupations. Olson also finds the proportion of field workers is still lower on a sample he drew of 29 very large plantations with surviving records [Olson 1983].)

The technology of sugar production in the nineteenth century, and the large size of sugar estates, may account for some of the differences in the occupational allocation of slaves in the United States and the BWIs. In particular, the male share of slaves in nonfield occupations may have been higher in the BWIs than in the United States because unit size and crop have different effects on the proportion of slaves employed in predominantly male occupations (managers and tradesmen) than on the proportion in female occupations (such as domestic service).

Higman demonstrates in table 11.3 that sugar estates were significantly larger than units producing other crops and were, indeed, among the largest units of production in the world prior to the development of the modern textile industry (Chandler 1977). Because of their concentration on sugar production, farms employing slave labor in the BWIs were significantly larger than slave farms in the United States. Using data from Higman's earlier work on Jamaican slavery (Higman 1976) and from the United States *Census of Agriculture* for 1850, we can estimate that the average Jamaican slave lived on a unit with over 180 slaves, or more than four times as many as on the unit where the average American slave lived. These differences in scale served to reduce the proportion of both domestics and of male field hands on West Indian farms. Among slaves on predial units in Trinidad, 1813, for example, the proportion of adult females employed as domestics falls steadily with increases in the size of units, from 19% among women on units with under 16 slaves to 11% on units with over 99 slaves. By contrast, the proportion of adult males employed as tradesmen and managers rises steadily in Trinidad with increasing unit size and is nearly four times as high on units with over 99 slaves as on those with fewer than 16 slaves. Since females were virtually excluded from nonfield, nondomestic slave occupations, the proportion of females in nonfield occupations declines sharply with increases in the average size of slave holdings, even while the proportion of males in nonfield occupations rises because of the increased employment of tradesmen and managers.

The predominant crop grown in the BWIs may have also increased the employment of males in nonfield positions. Sugar cultivation using nineteenth-century technology requires the services of an especially large number of skilled tradesmen, including coopers to make barrels for transporting the sugar and boilers to refine the sugar syrup. In predial Trinidad, for example, even after controlling for unit size, the

proportion of adult male tradesmen is nearly 40% higher on sugar estates than on nonsugar farms. In the United States, as well, there is evidence in the Fogel and Engerman probate sample that the proportion of tradesmen is significantly higher on units in sugar-growing counties.

Higman notes that women were virtually excluded from nonfield, nondomestic occupations in the BWIs, as they were from trades and managerial positions supervising the labor of adults (especially adult males) in all slave societies I am aware of (see, e.g., Goldin 1976; Van den Boogaart and Emmer 1977; Craton 1978). This male monopoly on nonfield, nondomestic labor may have been due to the masters' prejudice, or perhaps reflected the hostility of male slaves (including male craftsmen) to working with and training women. The restriction of women from trades and managerial positions may also be consistent with the relative exclusion from these positions of shorter, less healthy, and presumably weaker males and may reflect the slaveowners' desire to have only the strongest slaves in craft and managerial positions. Among predial slaves in 1813 Trinidad, adult male drivers and craftsmen are nearly an inch taller than are male field hands, and are over 4 inches taller than the average adult female. Only some 10% of the adult women in Trinidad are as tall as the average male craftsmen. Most domestic servants are children or female, but the few adult male domestics are among the shortest males (Friedman 1982). Adult male tradesmen and managers also had significantly lower rates of mortality and morbidity than did domestics or field hands—perhaps also reflecting the selection of stronger slaves for these positions.

Higman notes that many slaves did not remain in the same occupation throughout their lives. Because of occupational segregation by sex, the age pattern of occupations was different for males than for females. The proportion of predial Trinidad males and females employed as domestics, for example, falls sharply as slaves enter late adolescence and continues to decline until slaves are nearly 40 years old. Among males, the proportion of slaves employed as field hands also declines after late adolescence, and some of the slaves released from field and domestic labor became tradesmen or managers. The proportion of tradesmen and managers among males doubles between the 16–19 and the 20–29 age groups and then continues to increase more slowly until age 60. Since adult females were not employed in trade and managerial occupations to any significant extent, the proportion of adult females employed as field hands and common laborers varies inversely with the share of domestics. The share of adult female field hands rises steadily with age until around age 40 when the share of field hands falls as the proportion of domestics begins to rise.

Higman notes that creoles, or slaves born in the New World, were preferred to African-born slaves in the skilled trades, but otherwise argues that "ethnic origin or birthplace was of only minor significance"

in selection of occupation. The data on slave occupations in Trinidad in 1813 may not be ideal to test this suggestion because of the island's recent development, but Trinidad creoles were much more likely to be in nonfield occupations than were slaves born in Africa. Among dark-skinned slaves, adult male creoles are over twice as likely to be drivers and nearly twice as likely to be craftsmen as are adult male slaves born in Africa, while the proportion of adult females employed in nonfield positions is nearly 2.4 times as high among creoles as among the African born. There is evidence as well that creoles were preferred to African-born slaves for nonfield work in both colonial Virginia and in at least one Jamaican estate (Mullin 1972; Craton 1978).

The slaveowners' preference for creoles may reflect the creole slaves' superior grasp of the master's language (a reason given in Virginia), as well as the masters' belief in their superior intelligence (as Higman notes). Creole slaves may have also been selected for nonfield positions because of their superior health; even 6 years after the abolition of the African slave trade, in 1813–15, male creole death rates in Trinidad were nearly 40% lower than were mortality rates for slaves born in Africa. In addition, it is also possible that some of the creoles inherited their trades from their fathers (Craton 1978).

Higman has only a few comments on the transition from slavery to freedom in the BWIs, although he notes that the principles of occupational allocation established by the masters under slavery, especially the high labor force participation rate, were not necessarily accepted by the freedmen. The freedmens' ability to act on their own principles of occupational allocation was constrained, however, where the former slaveowners maintained an effective monopoly over access to the means of production, especially land. The effect of emancipation on the economy of the former slave societies depended on the relative supplies of land and labor and the production technology available. Land abundance influenced the ability of the freed slaves to support themselves outside of the plantation economy, while the technology determined whether it was possible to renew staple crop production outside of large estates.

The plantation regime, with labor concentrated on large sugar estates employing gang labor, survived emancipation best in the OSCs where there was a high slave population density. The simple correlations between the slave/km² ratio and the ratio of sugar production in 1839–46 to production 1824–33 is 0.54 for the 13 colonies in table 11.1 of Higman's paper that did not experience the widespread use of imported indentured labor in the decade after emancipation. Sugar production declined sharply after emancipation in most colonies, with production increasing in only four. These four include three colonies where the ratio of slaves/km² was over 100 in 1834 (Barbados, St. Kitts, and

Antigua), and also Trinidad, where planters imported large numbers of indentured laborers from Asia soon after emancipation to replace the freedmen who ceased supplying regular field labor to the sugar estates. In the sugar colonies with relatively low population densities where semifree labor was not introduced, the preemancipation labor system broke down as the ex-slaves withdrew their labor from large-scale regimented sugar cultivation in gangs and established subsistence peasant properties. Sugar growers in the postemancipation British Caribbean were never able to pay sufficiently high compensating wage differentials to attract labor to gang cultivation of sugar where free peasant farming was an available alternative; consequently, the amount of labor employed on sugar estates declined after emancipation, and sugar production fell, wherever free land was available to freedmen. In Jamaica, for example, sugar production fell by over 50% between 1824–33 and 1839–46 (Deerr 1949, p. 377).

The effect of emancipation on the economies of the BWIs makes an interesting comparison with the postbellum American South. In the American South, as in Jamaica and other land-abundant sugar colonies, the newly freed slaves were able to avoid a return to gang labor; unlike Jamaica, however, the American South was able to restore staple crop production (of cotton) after emancipation, and it did so without the wholesale introduction of outside bound labor. The American success in reestablishing cotton production may be associated with the relatively small size of slave holdings before emancipation and the relatively small economies of scale in cotton production compared with sugar. Staple crop production in the United States was reestablished after emancipation because unlike sugar, which could be produced economically only on very large units with regimented labor, economically viable small cotton farms with semi-independent holdings could be operated without gang labor (Fogel and Engerman 1974; Engerman 1983).

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