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## Free Labor and Slave Labor

Stanley L. Engerman and Robert A. Margo

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### 9.1 Human Capital

Policies regarding the level and growth rate of the stock of human capital were among the important decisions to be made at the founding of the new nation. At the start, the ratio of land to labor was extremely high; to make effective use of available land, it was necessary to attract more labor. Indeed, land itself would serve as a means of attracting labor. The changing ratio of the labor input to the settlement of what became the United States was influenced by legislation as well as by natural forces. The major sources of labor supply were the following:

- Rates of natural increase of the population, (the difference between fertility and mortality) for European descendents as well as Native Americans and slave labor.
- Immigration from abroad:
  - Free whites, free or subsidized as individuals, in families, and in other groups
  - Indentured labor, of white individuals from England and elsewhere in Europe, trading labor time for a set number of years for transport costs
  - Convict labor
  - Slaves from Africa
- Native Americans as slaves or free workers

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The basic forms of human capital, in addition to physical labor, were determined by the following:

- Education
- Medical and health practices
- Migration—internal and external
- On-the-job training at employment

## 9.2 Settling the Colonies

Before 1492 and the start of the European settlement of the Americas, the European population density was relatively high, while that of the Americas was quite low.<sup>1</sup> Within the Americas, population density differed significantly. In the regions including Mexico and the Andean areas, the density was considerably higher than in mainland North America, where the number of Native Americans was very low and where European settlement was less concentrated (Denevan 1976, 291). The populated areas of Latin America had sophisticated societies with developed agriculture, military force, and slavery. Even after the demographic collapse, due primarily to the introduction of European diseases to a population not previously exposed to these diseases, these areas still had a disproportionate large share of the population of the Americas. After the decline in population, the population density in the Americas became even lower compared to Europe than it had been prior to Columbus's arrival (see table 9.1).

The European settlement of the Americas took place in several steps. Over time, different countries led the way in terms of numbers and political controls. Spain and Portugal were the initial settling nations, leading the nations of Northwest Europe by about one century, going to the most populated and richest areas of the Americas and introducing African slaves into Brazil and Spanish America. It was only after 100 years of the Iberian settlements that the British, French, and Dutch arrived in the Americas, generally into the still available areas of the Caribbean and mainland North America. The French and Dutch sent few Europeans—the Dutch being considerably more heavily involved in the East Indies—and about 90 percent of the migrants to the Dutch and French colonies were slaves purchased in Africa (Eltis 2001; Engerman and Sokoloff 1997, 2002; Craven 1965). After their late start, the British ultimately had the largest number of immigrants, the structure by race and status varying by geographic regions. The colonies in the West Indies attracted few white workers for sugar production and came to depend on attracting a large number of slaves from Africa, to become

1. The estimated population density in 1500 for Europe was about twenty times that of the Americas, and that of Latin America about thirteen times that of North America (McEvedy and Jones 1978). The estimates for the Americas is low compared to most other sources. For some related estimates, see Inikori (2002, 158–60).

**Table 9.1**      **The estimated distribution of the Aboriginal American population, c. 1492**

|  |            |
|--|------------|
| North America (the United States, Canada, Alaska, and Greenland) | 4,400,000  |
| Mexico   | 21,400,000 |
| Central America  | 5,650,000  |
| Caribbean  | 5,850,000  |
| Central Andes  | 11,500,000 |
| Lowland South America  | 8,500,000  |

*Source:* Denevan (1976, 291).

primarily sugar producers. This immigration stream was largest in the first half-century of British migration, when British migration to the West Indies exceeded that to the mainland, but then this migration to the mainland exceeded that to the West Indies. Unlike the British migration to the British West Indies, the migration to the mainland of the whites exceeded that of slaves, even in the southern colonies. This pattern of predominant white migration was unusual for the pre-nineteenth century Americas, making the thirteen British colonies a rather unique region.

As with their counterparts, the British colonies were interested in generating income for the home country, and accomplishing this meant acquiring a larger population of productive individuals. This could be achieved by several measures—purchases of slaves from Africa, enslavement of Native Americans, attracting free white workers to come by various forms of subsidies, by arrangement for indentured servants, or by acceptance of convicts. Given the great abundance of land relative to the size of the population, land was often used as the primary means of attracting population. The scarcity of land in Europe made this an attractive measure for Europeans. To take advantage of available land to provide benefits to possible migrants by ownership of small farms was, however, not the policy that the British introduced in a number of areas, which initially followed European landholding patterns. The Spanish and Portuguese provided large grants to settlers. The French in Quebec carried over the seigniorial system from France, while several of the British American colonies followed the precepts of the manorial system from England (Engerman and Sokoloff 2005). These systems, in the thirteen colonies and Canada, however, soon ended, with a movement to smaller, owner-operated farms.

Colonies with a high initial and ongoing ratio of land to labor characterized most of the Americas, but they were not the only type of colony settled by Europeans at the time. Outside of the American colonies, colonies such as India and the East Indies had quite high population densities, so high that there was no need to attract more labor and no need to adopt liberal land policies to attract new workers (Engerman and Sokoloff 2005). Many colonies in Asia and Africa had similarly high population densities, suggesting that rather different land policies would be applied in various parts

of the world and also that the political systems imposed by the Europeans would differ.

With the limited number of Native Americans to enslave or use as free labor in North America, and the inability to pay the high prices for slaves that Latin American and Caribbean sugar producers could, because of the limited number of slaves sent by Africans in the transatlantic slave trade, the British North Americans had to depend upon white British laborers to provide their labor force (Galenson 1981). In Great Britain, the main concern in much of this period was with overpopulation, so that transatlantic migration was encouraged. Spain, on the other hand, was concerned with the changes in its domestic population and introduced constraints on migration to the new world, while outmigration to the Americas from France and the Netherlands, for various reasons, was also relatively small (see Elliott 2006, particularly 255–91).

British outmigration in the seventeenth and eighteenth centuries took two major forms. There was some free migration, often of religious groups, to the colonies, but more important in numbers, accounting for about three-quarters of migrants, most often to the southern and middle Atlantic states, were the many indentured servants. There were also limited numbers of redemptioners from Germany after 1720 (see Galenson 1981; Smith 1947; Wokeck 1999; Baseler 1998; and Grubb 1985a, 1985b, 1992). These indenture contracts generally were for four to seven years, and during this period the laborers could be bought and sold. There were, at times, subsidies paid in land or cash to the initial purchasers of these servants, and at the end of the indenture period, the laborers were at times given “freedom dues” of land or cash to establish themselves as free workers or landowners. To encourage transportation of free or indentured labor, the colonies could provide land grants, tax exemptions, acceptance of religious tolerance, financial assistance, and easier terms of naturalization and voting privileges; all to make transatlantic settlement more desirable. Not all migrants were considered acceptable, some colonies having restrictions based on religion, generally Catholic and Quaker, and against public charges, such as poor and indigent immigrants, as well as paupers and criminals. These would be excluded or else required some security or bond. Another source of immigrants from England, often unpopular but amounting to about 50,000, mainly to southern states, were British convicts who served out their term of labor in the colonies (Ekirch 1987). Several colonies limited convict imports, and, after the Revolution, when the colonies were given the opportunity to continue to receive British convicts, this offer was refused by the new republic, leading to the larger, longer-term shipment of convicts to Australia.

Two other forms of labor were used. Native Americans were sometimes enslaved, but these were limited in numbers and were not regarded as a major labor source (Lauber 1913; Gallay 2002; Chapin 2005). Unlike in Latin America, where Native Americans were the major component of the labor

force, even though not generally legally enslaved, few Native Americans in North America were members of the general labor force, either as slaves or as free workers. Beside white Europeans, slaves purchased from Africa or, earlier, from the West Indies, were of considerable importance in the South. Slave labor was legal in all the colonies, but the major constraint on the numbers arriving was the limited profitability to their owners relative to that obtained from the slaves in the West Indies and Brazil. The crops in North America, commonly grains and livestock, did not have the profitability of those in the rest of the Americas. While slaves were legal in all the Americas and all regions did have some slaves, the overall share of slave arrivals in North America was only about 5 percent of all slaves in the Americas, and the use of slave labor in production there was smaller than elsewhere (Curtin 1969; Eltis 2001). Slave labor was of primary importance for crops grown on larger than family-sized farms, but those in the U.S. South were much smaller than the sugar plantations in Latin America.<sup>2</sup> The British North American colonies, at the end of the seventeenth century, produced mainly tobacco; then, in the middle of the eighteenth century, there was an expansion into rice production in South Carolina, and, then, of greatest importance, cotton throughout the South in the nineteenth century, the latter development presumably not anticipated by the founders.

There was a significant difference between the rates of growth of the population in the North American colonies and those elsewhere in the Americas (Klein 2004, 10–106; Engerman and Sokoloff 1997). Free whites and black slaves in North America had rates of natural increase that were exceptionally high by any standard, and this meant that their population numbers greatly exceeded the number of immigrants received. Thus, the major increase of the labor force over time came about from the natural increase of the arrivals rather than from the number of immigrants. Without this high rate of natural increase, the growth of the labor force would no doubt have been considerably lower. The United States thus had a much larger share of population—white and black—than its share of immigrants and came to demographically dominate the Americas. To Malthus, the North American white population grew at close to what was thought to be the maximum possible for a people under favorable conditions—available land and circumstances permitting relatively early and frequent marriages—without leading to a demographic crisis (Malthus 1960–1961). The U.S. slave population, unlike other slave populations, also grew at a very rapid rate, with many surviving children per female, whereas in the Caribbean and Brazil, it was necessary to maintain imports of slaves to keep its population from falling. Such a decline of a slave population was never an issue for North America.

As a new area of colonization, with considerable amounts of still unset-

2. There is a rather extensive literature on this topic, but see in particular Menard (2001) and McCusker and Menard (1991). See also, in regard to the role of diseases, Coelho and McGuire (1997).

tled land, a basic concern of early settlers was to increase the number of potential producers, either as workers or as landowners. Coming relatively late to the settlement process, over a century behind Spain and Portugal, and even for British North America, late compared to the British West Indies, the British could observe what the practices of the others, particularly Spain, had been. The English colonies lacked the large Native American populations of those in Mexico and South America, even after the depopulation caused there by disease. Also, on the mainland, they initially lacked the climate and soil to produce those marketable crops sufficiently in demand in Europe and were not able to pay the high prices required to purchase the limited number of slaves coming from Africa. The labor force and population in the United States would thus consist of fewer Native Americans and slaves than in most other places in the Americas, with a larger role to be played by European immigrants and their descendents. As suggested by Franklin and by Malthus, population growth was influenced by the high ratio of land to labor, leading to early marriage and high fertility by those people able to acquire landholdings at a low price and to a favorable living standard for both the free and enslaved population. The policies introduced to encourage immigration by taking advantage of land availability were highly beneficial to achieving a high rate of population growth, both by attracting new migrants and by permitting early marriage and high rates of childbearing.

An early appraisal of the high rate of population growth in the United States was made in 1751 by Benjamin Franklin, and similar arguments were developed later by Thomas Malthus (Labaree 1961b; Malthus 1960–1961; Zirkle 1957; Aldridge 1949).<sup>3</sup> The key point to Franklin was the availability and cheapness of land, permitting settlers to own and farm their own land and leading to high fertility relative to mortality. There were few direct subsidies granted for this natural increase, but a generous land policy did provide favorable conditions for marriage and fertility (see table 9.2).

The magnitude of free labor migration and the continued increase reflected the outcome of immigration policy. The colonies were long open to migrants, more so than were the colonies of the other settling nations, leading to large inflows and, because there were no broad restrictions on religious or national origins, the colonies were open to migrants from diverse countries and religions (Baseler 1998; Risch 1937; Proper 1900; Brite 1939). It is estimated that the English and Scots accounted for two-thirds of the 1790 population, and the Irish about 10 percent, the Germans 6 percent, and other Northwestern European about 6 percent (McDonald and McDonald 1980). The thirteen colonies each had their own rules regarding immigration and other matters, and it was only after the Revolution that a central

3. The basic demographic arguments were made in Labaree (1961a) in the mid-1700s, and this later was used in the arguments of Malthus (1960–1961). See Zirkle (1957). Subsequent debates on the impact of immigration on fertility were rather inconclusive (Easterlin 1971).

**Table 9.2** European-directed transatlantic migration, 1500–1760, by European nation and continent of origin

| Period and country | Africans arriving in the New World, by region (1) |       | Europeans leaving each nation for New World (net) (2) |       | Total flow of migrants to New World (1 + 2) (3) |       | Flow of Africans relative to Europeans (1/2) (4) |
|--------------------|---|-------|---|-------|---|-------|--|
|                    | In thousands                                      | %     | In thousands  | %     | In thousands                                    | %     | %  |
| 1500–1580          |   |       |   |       |   |       |  |
| Spain              | 45  | 77.6  | 139   | 59.9  | 184   | 63.4  | 0.32   |
| Portugal           | 13  | 22.4  | 93  | 40.1  | 106   | 36.6  | 0.14   |
| Britain            | 0   |       | 0   |       | 0   |       | 0  |
| Total              | 58  | 100.0 | 232   | 100.0 | 290   | 100.0 | 0.25   |
| 1580–1640          |   |       |   |       |   |       |  |
| Spain              | 289   | 59.7  | 188   | 43.7  | 477   | 52.2  | 1.54   |
| Portugal           | 181   | 37.4  | 110   | 25.6  | 291   | 31.8  | 1.65   |
| France             | 2   | 0.4   | 4   | 0.9   | 6   | 0.7   | 0.60   |
| The Netherlands    | 8   | 1.7   | 3   | 0.6   | 10  | 1.1   | 4.00   |
| Britain            | 4   | 0.8   | 126   | 29.3  | 130   | 14.2  | 0.03   |
| Total              | 484   | 100.0 | 430   | 100.0 | 914   | 100.0 | 1.13   |
| 1640–1700          |   |       |   |       |   |       |  |
| Spain              | 141   | 18.4  | 158   | 30.7  | 299   | 23.3  | 0.89   |
| Portugal           | 225   | 29.3  | 50  | 9.7   | 275   | 21.5  | 4.50   |
| France             | 75  | 9.8   | 45  | 8.8   | 130   | 10.1  | 1.67   |
| The Netherlands    | 49  | 6.4   | 13  | 2.5   | 62  | 4.8   | 3.77   |
| Britain            | 277   | 36.1  | 248   | 48.2  | 525   | 41.6  | 1.12   |
| Total              | 767   | 100.0 | 514   | 100.0 | 1,281   | 100.0 | 1.49   |
| 1700–1760          |   |       |   |       |   |       |  |
| Spain              | 271   | 10.5  | 193   | 21.7  | 464   | 13.3  | 1.40   |
| Portugal           | 768   | 29.7  | 270   | 30.3  | 1,038   | 29.8  | 2.84   |
| France             | 414   | 16.0  | 51  | 5.7   | 465   | 13.4  | 8.12   |
| The Netherlands    | 123   | 4.8   | 5   | 0.6   | 128   | 3.7   | 24.60  |
| Britain            | 1,013   | 39.1  | 372   | 41.8  | 1,385   | 39.8  | 2.72   |
| Total              | 2,589   | 100.0 | 891   | 100.0 | 3,480   | 100.0 | 2.91   |
| 1500–1760          |   |       |   |       |   |       |  |
| Spain              | 746   | 19.1  | 678   | 32.8  | 1,424   | 23.9  | 1.10   |
| Portugal           | 1,187   | 30.5  | 523   | 25.3  | 1,710   | 28.7  | 2.27   |
| France             | 491   | 12.6  | 100   | 4.8   | 591   | 9.9   | 4.91   |
| The Netherlands    | 180   | 4.6   | 20  | 1.0   | 200   | 3.4   | 9.00   |
| Britain            | 1,294   | 33.2  | 746   | 36.3  | 2,040   | 34.2  | 1.73   |
| Total              | 3,898   | 100.0 | 2,067   | 100.0 | 5,965   | 100.0 | 1.89   |

Source: Eltis (1999).

control over migration occurred. Various types of legislation did have some influence on the size of the inflow, including safety restrictions and space limits on transatlantic vessels imposed by states (and later national policy) and then, after independence, the setting of the period of years it would take for immigrants to achieve citizenship and voting rights.<sup>4</sup> Migration patterns included individuals, families, and various groups, religious and otherwise,

4. For a discussion of shipping regulations, see Abbott (1924). On the discussion of citizenship requirements, see Baseler (1998), Kettner (1973), and Hutchinson (1981). For the debates at the Constitutional Convention, see Madison (1984, 406, 419).



some of whom paid their way in full, although in other cases subsidies in full or in part had been provided.

The Native Americans who were present in quite small numbers relative to those in Latin Americas (less than one-tenth) were sometimes used as slaves, generally purchased from Indian tribes, but the numbers used near home locations as nominally free workers were very limited, and unlike in Latin America, these Native Americans were not quantitatively important in the labor force.

As noted, there were two other forms of migrant labor that played a role in settling the mainland. Indentured labor, mainly from the United Kingdom, involved a period of four to seven years of labor time (depending on personal characteristics) in exchange for the cost of transportation to the colonies. At the end of the contract period, the individual was regarded as a free person. In some states, the importer of the individual labor was given a cash subsidy or a subsidy in land for contributing to the region's population increase. Redemptioners, mainly from Germany, arrived after the 1720s, came without signed contracts but contracted themselves after arrival to pay their transport costs. The colonies were also the recipients of convicts from England, who served their time as purchased laborers before being freed. This was not always a popular source of labor increase, at least to Benjamin Franklin, who compared convicts to rattlesnakes, to their detriment (Labaree 1961a, 130–33). When the independent United States refused to take in British convicts, the British then used them to settle Australia. There were also a small number of domestic convicts who could be used for various types of labor by governments or else hired to private individuals by governments.

The most debated of the sources of labor were the slaves imported from Africa and their rapidly growing descendents. The slave trade from Africa to the new world had begun with the period of initial Spanish and Portuguese settlement, and the British colonies had basically followed the previous set of legal arrangements developed elsewhere (Klein 1986). Slavery was legal throughout the colonies, and each colony had some slaves although the numbers varied considerably, based on conditions related to crop possibilities and the required scale of production. The first colonies to end slavery were in the New England, which had relatively few slaves, starting with Vermont in 1777, and then by 1804, most northern states had legislation ending slavery (Zilversmit 1967). The United States ended the transatlantic slave trade in 1808, the same year as did the British. Due to their differences in crop and climate conditions from Latin America and the Caribbean, North American slave labor generally worked on small units producing crops such as tobacco but also rice for export. Unlike tobacco, in the production of rice, there was no direct competition between free white labor and slaves. The regulations imposed by the state and colonial governments did distinguish between the slave trade and slavery itself, and, in North

America, as elsewhere, the slave trade was ended about one half-century before slavery.

Table 9.3 presents data on slave and free migration and population for the four major regions of the British colonies (including the West Indies), presenting the racial breakdown of the preindependence migrations and populations. The late settlement of the British mainland by whites, and the relatively limited number of slaves there, are the most striking characteristics of the North America population pattern, as was the relatively high rate of population growth of both whites and blacks and the small number (compared to Latin America) of Native Americans, who did not provide much of the North American population or labor force. And while most immigrants came from the British Isles, a higher proportion came from the other European nations than was the case for the Spanish and other areas of settlement. The British colonies did have fewer restrictions on migrants than did the colonies of other European nations, helping to account for differences in magnitude and in diversity of origins.

### 9.3 Education, Health, Migration

The concept of human capital relates to factors that increase the productivity of labor. The four most important categories of human capital formation are education, health, migration, and on-the-job training. Education in the British North American colonies was widely available, from both secular and religious forces, compared to the other colonial regions where education lagged, sometimes for several centuries. Relative to most European nations, the colonies provided more schooling for both males and females. There were variations in regard to who organized schools, religious and secular, and who paid for education, but colonial levels of literacy were, by world standards, quite high, particularly for women (Lockridge 1974). The sense of obligation for education developing out of the colonial period was indicated by the fact that seven of sixteen state constitutions in 1800 mentioned the provision of education, and the number rose to thirteen out of twenty-three by 1820. States such as Massachusetts had required domestic education laws by 1642 and required schooling by 1647. By 1671, all New England states but Rhode Island had compulsory education legislation (Cubberley 1947). Most other states had education systems in place before the Revolution, and these were most often formed by Protestant churches. It is estimated that Massachusetts had a literacy rate for males of about 60 percent in 1650 and 90 percent by 1789, compared to female rates of 30 percent and 50 percent, respectively, rates above those for other states (Lockridge 1974; Axtell 1974; Kaestle and Vinovskis 1980). These literacy rates in New England colonies exceeded those in Europe and Latin America. The Spanish colonies devoted most of their educational expenditures to the university level, while the North American colonies spent considerably more

**Table 9.3** Patterns of net migration to categories of British colonies

| Ethnic group and period | Destination of migrants |             |                 |             |              |             |              |             |
|-------------------------|-------------------------|-------------|-----------------|-------------|--------------|-------------|--------------|-------------|
|                         | New England             |             | Middle Atlantic |             | South        |             | West Indies  |             |
|                         | In thousands            | Row percent | In thousands    | Row percent | In thousands | Row percent | In thousands | Row percent |
| <b>Whites</b>           |                         |             |                 |             |              |             |              |             |
| 1630-1680               | 28                      | 11.0        | 4               | 1.6         | 81           | 31.9        | 141          | 55.5        |
| 1680-1730               | -4                      | -1.8        | 45              | 19.9        | 111          | 49.1        | 74           | 32.7        |
| 1730-1780               | -27                     | -10.7       | 101             | 40.1        | 136          | 54.0        | 42           | 16.7        |
| Total, 1630-1780        | -3                      | -0.4        | 150             | 20.5        | 328          | 44.8        | 257          | 35.1        |
| <b>Blacks</b>           |                         |             |                 |             |              |             |              |             |
| 1650-1680               | 0                       | —           | 0               | —           | 5            | 3.7         | 130          | 96.3        |
| 1680-1730               | 2                       | 0.5         | 5               | 0.9         | 64           | 12.0        | 461          | 86.7        |
| 1730-1780               | -6                      | -0.9        | -1              | -0.2        | 150          | 23.4        | 497          | 77.7        |
| Total, 1650-1780        | -4                      | -0.3        | 4               | 0.3         | 219          | 16.8        | 1088         | 83.2        |
| <b>Total</b>            |                         |             |                 |             |              |             |              |             |
| 1630-1680               | 28                      | 7.2         | 4               | 1.0         | 86           | 22.1        | 271          | 69.7        |
| 1680-1730               | -2                      | -0.3        | 50              | 6.6         | 175          | 23.1        | 535          | 70.6        |
| 1730-1780               | -33                     | -3.7        | 100             | 11.2        | 286          | 32.1        | 539          | 60.4        |
| Total, 1630-1780        | -7                      | -0.3        | 154             | 7.6         | 547          | 26.8        | 1345         | 66.0        |

Source: Galenson (1996).

at the primary level, in addition to funding some colleges. Between 1636 and 1769, in the thirteen colonies, there were nine colleges formed, each with some religious affiliation, all of which still remain in existence. The number of colleges increased to twenty-nine by 1829 (Cubberley 1947).

While direct government expenditures by the colonies on health care were few, Massachusetts in 1641 and 1647 and Connecticut after 1663 did introduce provisions for quarantine and vaccination, most frequently as part of the fight against smallpox (Duffy 1953, 1979; Shryock 1960; Tobey 1926, 1939). The first hospital that handled private and poor patients opened in Philadelphia in 1751, and the first medical school opened in Philadelphia in 1765. Municipal boards of health were formed by the 1790s in several states to aid the flow of information on public health related issues. The concern of some colonies with the health on immigrant vessels meant benefits not only for immigrants but also for those already resident, including former immigrants. The positive advantages of health in the colonies were indicated by the high life expectation and the greater heights of the population in the period of settlement (Steckel 2009).

In the pre-Revolutionary period, migration controls, both internal and external, were colonial decisions (Baseler 1998). Important in the eighteenth and nineteenth centuries were restrictions on outmigration from several European nations, limits based either on the migration of entire populations, or, as in the case of Britain, only of skilled mechanics. There were relatively few specific restrictions on intercolonial or interstate migration. There were, in some locations, restrictions regarding pauper residence and parish inflows, as in the English Poor Laws, and rules about times of residence needed for voting (see, for example, Jones 1975). In the nineteenth century, there were state laws concerning the movement of free blacks and of slaves, based on state laws, but, in general, there were no restrictions for whites (Farnam 1938, 211–24).

The period prior to the Constitutional Convention saw some changes in the nature of the colonial labor force. The outcome of the Revolution meant that the United States no longer received convicts from Britain. There were steep declines in the number of the free white and indentured population, as well as of the slaves. These declines, except for convicts, were expected to be reversed when peace was restored, as indeed they were. During the interval of migration decline, however, there was a prolonged recession in domestic economic activity, which, with the wartime activities, served to reduce the inflow of population and labor.

The ending of the war brought about limited legal changes in labor force adjustments. There were no forced declines in contract labor supplies, but there was a significant decline in numbers due to other factors related to war and to disturbances between England and the United States. Immigration of free populations was frequently discussed, but no major interventions were introduced. Following the British discussion after the 1770s, the ending of

slave trade was discussed in the colonies, but with no dramatic change until the Constitution's limits of 1787 were introduced. Thus, in the long run, there was only a limited decrease in immigration at this time.

#### 9.4 Constitutional Debates

The debates surrounding the Constitution contained several discussions of policies that had an influence on the magnitude of labor supplies and on the nature of human capital. Some of the measures described were part of the Constitution, other measures were due to legislation by Congress at the national level, and some reflected legislation at the state level; some but not all of the new states followed the same policies.

The discussions at the Constitutional Convention included the setting of rules on various matters to be imposed by the national government (Madison 1984). Except for slaves, there were basically no provisions regarding population inflows and their sources. A major discussion that influenced immigration concerned the period of time to achievement of citizenship, an issue that did lead to several changes in subsequent decades. Later, in 1798, some limit was imposed permitting the deportation of enemy aliens at time of war, as well as preventing aliens from entering (Hutchinson 1981). There were discussions to limit immigrants from monarchies as well as to limit land ownership and voting by recent migrants, but these attempts were not successful. It was believed that subsidies to immigrants were not necessary, because, as Hamilton argued, the favorable economic conditions, including the prospect of higher incomes, lower taxes, "greater personal independence," and the "equality of religious privileges," as well as the availability of land in the United States, would serve to attract labor from abroad (Hamilton 1964).

In his 1791 *Report on the Subject of Manufactures*, Alexander Hamilton pointed to the probability of immigration from Europe as a means to keep agricultural employment high, while at the same time permitting a movement of labor into manufactures. This development was also to be aided by attracting women and children into the labor force, as in Great Britain (Hamilton 1964; Coxe 1965, 40–68; Cooke 1978, 182–200). This policy of open immigration was maintained for those not diseased whose entry was limited after 1838, while after 1891, constraints relating to literacy, insanity, and paupers were introduced. The first limitations on immigration by nationality came with restrictions of Chinese immigrants in 1882. There were also limits on a form of contract labor that was introduced in 1864 and reversed in 1885. The major changes in immigration policy, by numbers and by sources, came in the twentieth century (Hutchinson 1981). Throughout the nineteenth century, the United States received the largest share of immigration from Europe, and this immigration accounted for up to one-third of overall U.S. population growth. In the early antebellum period, the largest

population of immigrants came from Ireland, with large numbers also from Great Britain and Germany. The years 1847 to 1854 had the highest ratio of immigrants to population of any period in U.S. history (Cohn 2009; Carter et al. 2006).

There was no mention of indentured servitude in either the Constitution or in Hamilton's report. Perhaps this was because it seemed to have lost its importance with the Revolution. Nevertheless, some indentured labor did persist into the 1810s and 1820s (Grubb 1994; Steinfeld 1991). Then due to some combination of legal changes in the United States and higher European incomes, indentured labor became limited as a source of labor. With the U.S. decline, indentured servitude faded from the world scene, only to be revived with movements to the West Indies and elsewhere from India and China after the 1850s, following the ending of slavery in many parts of the world (Northrup 1996). In the United States, there were, after the Civil War, attempts to bring in contract labor from Europe, mainly as strikebreakers, but these were limited in number, and the recruitment of this form of contract labor ended with the passage of the Foran Act prohibiting contract labor in 1885 (Erickson 1957).

Convict labor was also not mentioned in the Constitution. The British did want to resume sending convicts to the new nation, but this was not acceptable to the United States, and after a brief period of storage on barges in the Thames, they became the settlers of Australia. There was a particular role for convicts described in the Northwest Ordinance because those convicted of crimes could be considered involuntary servants, a provision carried forward in the Thirteenth Amendment, and the same clause required the return of fugitive slaves (*Land Ordinance of 1785; Northwest Ordinance of 1787*). Convict labor by residents did surface as an issue in later years, generally involving the performance of harsh work (particularly in the South) as a form of punishment, whether working for governments or through rental arrangements with private firms or individuals.

Similarly, little was said at this time about Native American labor, and this remained a limited source of the overall labor supply in North America. The issues related to Native Americans debated at the time of the Constitution concerned Indian reservations, and then later, the impact of the westward movement on Indian location and land policy.

It was regarding slavery that major constitutional debates took place, particularly that concerning the international slave trade. The key provision in the Constitution was that the slave trade could not be ended for at least twenty years, and a limit was placed on the tariff that could be imposed on slave imports (Robinson 1971). As was expected, the slave trade was ended in 1808, the same year as for Great Britain, a few years after the ending of the Danish slave trade. To some, closing the slave trade would mean, eventually, the ending of slavery, though the specific time span was not spelled out. In regard to slavery, there was not a constitutional debate, and this

was a matter left to state governments. There were, even before the end of the Revolution, several states that ended slavery and also the slave trade, albeit with some differences in specific provisions. Vermont, in 1777, was the first state to end slavery, although with some period of apprenticeship. This freed, at most, nineteen slaves. Within the next decade, New Hampshire and Massachusetts had, in theory, immediate emancipation, but legal issues meant some delay in the time of its accomplishment. Pennsylvania (1780), Rhode Island (1784), Connecticut (1784), New York (1799), and New Jersey (1804) passed legislation that freed those born after a specified date, subject to a period of apprenticeship, but did not free those already enslaved. This meant, in effect, that most of the costs of emancipation were born by slaves and not by taxpayers or slave owners. By 1804, state legislation in all of the Northern states to end slavery had passed although, because of the graduation provisions, slavery still existed in some northern states into the 1840s (Zilversmit 1967). The Northwest Ordinance had limited (but technically not ended) the legality of slavery in the North, but not in the South, and it was not until the Thirteenth Amendment that the national government provided for the national ending of slavery.<sup>5</sup>

Education was not discussed in the Constitution although the Northwest Ordinance did provide some set asides from land sales to go toward educational expenditures, with 1/16 from land sales to be used for common schools and two townships in each new state for colleges (*Land Ordinance of 1785; Northwest Ordinance of 1787*). Discussions of education were mainly at the state and local levels, which had the responsibility for determining who would organize the schools (secular or religious), the mix of fees and taxes, and what taxes could be collected for this purpose. As seen by literacy and enrollment rates, educational expenditures and literacy in the United States were quite high by world standards. Compulsory education was not widespread until the end of the nineteenth century, but it did not seem necessary for the achievement of high rates of enrollment in most states (see Goldin and Katz 2008; Cubberley 1947).

Medical and health care was primarily a state and local, not federal, function before the twentieth century. One exception was the creation in 1798 of hospitals for merchant seamen, basically a continuation of earlier British practices regarding the navy (Farnam 1938, 231–52).

Until the 1880s, there were no general restrictions on foreign migration although there was some use of the timing of citizenship and voting rights to influence the process of migration. The Constitution provided no limit on internal migration, but several states had laws to prevent the admission of slaves and of free blacks and also prohibited the entry of some undesired

5. Although the Northwest Ordinance banned slavery in the North under most conditions, it did not end slavery if it already existed in those territories and permitted slaves to be brought into two of the territories. Thus, Indiana and Illinois had several slaves recorded in the census through 1840.

groups. There were no federal limits on the interstate slave trade between states where slavery was legal, and none on white internal migration.

Lincoln's policy to limit and then end slavery in the United States was based on the prohibition of slavery in territories. Presumably by increasing the ratio of labor to land in the existing areas, slave prices would ultimately fall and slavery become unprofitable although Lincoln thought that this might take up to about 100 years (Lincoln 1989, 508–27).

Internal migration was encouraged by a land policy that made land more easily accessible to settlers of smaller farms (Gates 1968; Hibbard 1965). Over time, the price per acre fell as also did the minimum size of land to be purchased, and legislation regarding squatters' rights and graduated prices for lands unsold for long periods made for easier acquisition. This meant that the pace of growth of eastern manufacturers was slowed, but the steady inflow of immigrants and the use of women and children meant that any declines in labor in the east were not marked. Debates on land policy also had political implications because population affected the amount of representation by states.

The introduction of labor standards regarding ages, hours, and conditions of work at the state level did not occur until the mid-nineteenth century, and then mainly for women and children. Federally based controls, such as worker's compensation, came even later, at the start of the twentieth century (Farnam 1938).

## 9.5 Slavery and Migration: A Model

Institutions that shape labor supply can have a profound effect on economic growth, yet, as we argued, the United States Constitution had relatively little to say about labor per se. The important exceptions, as we have noted, concern the date at which the slave trade would be ended (1808) and, indirectly, the influence that Congress possessed by its ability to set naturalization policy and its power to regulate the disposal of public lands, thereby affecting the pace and pattern of western settlement.

How can one assess the impact of a specific constitutional provision or its absence? In general, economists (and economic historians) assess the impact of institutions either using econometric analysis or by applying economic reasoning. For example, one might measure the impact of a constitutional provision by looking for structural breaks in aggregate time series or by comparing outcomes across countries. Practically speaking econometric analysis is impossible in the American case because there are no reliable annual time series on relevant economic aggregates until much later in American history, nor are there reliable cross country data for the period.

Economic reasoning offers the possibility of some insight into the effects of the Constitution. By economic reasoning, we mean an economic model in which some feature can be varied so that a counterfactual prediction can



be generated. The specifics of the argument will vary with the question at hand. In this section, we consider several examples of such reasoning.

Our first example is slavery. The Constitution, as we noted, imposed a ban on imported slaves beginning in 1808. By evaluating the effect of the ban on the market for slaves, we could then make predictions as to what the effects of delaying or accelerating the ban might have been.

To evaluate the effects of the import ban, it is useful to begin by specifying the short-run supply curve of slaves prior to the ban. This supply curve has two components—slaves who are already in the United States and slaves who are imported in a given time period. For simplicity, we assume that the marginal cost of importing slaves is constant.

The key feature of this supply curve is that it is perfectly inelastic with respect to the own price of slaves at the quantity of slaves already in the United States but a horizontal (perfectly elastic) function at the marginal cost of importing slaves. If demand for slaves is sufficiently large, slave imports will be positive, and the equilibrium price will equal the marginal cost of importing. A ban on slave imports, therefore, will render the supply curve perfectly inelastic at all prices. Holding the demand curve fixed, the quantity of slaves will equal the number already in the country, and price will increase to some value greater than the marginal cost of importing slaves.<sup>6</sup>

In the long run, the supply of slaves in the United States can be augmented by slave births. As just noted, an effective ban raises the price of slaves above the marginal cost of importing and thus the value of slaves born in the United States. As such, the ban should increase the portion of the value of female slaves that represented their childbearing capacity (see Fogel and Engerman 1974).

In thinking about this prediction, it is important to keep in mind that the date of the actual ban was known in advance, implying that slave traders (and owners) could alter their behavior in advance in ways that would moderate the price increases. The first way would be to import more slaves prior to the ban on imports, especially at young ages. The second way, rationally anticipating that fertility would be the source of slave labor supply in the future, is to import more female slaves. To the extent that both types of reactions occurred, any price effects might be moderated.

Evaluating the predictions is very difficult because the necessary data on slave imports are not available. However, there are good data on slave prices covering the pre- and postban period for Louisiana, allowing at least a partial test of the effects of the ban. Coleman and Hutchinson (2006) estimate

6. To see this algebraically, let  $p = a - bq$  be the demand curve for slaves, where  $p$  = price,  $q$  = quantity and the parameters  $a$ ,  $b$  are constants. Let  $c$  be the marginal cost of importing slaves and  $q$  be the stock of slaves already in the United States. As long as  $(a - c)/b > q$ , slave imports will be positive and  $p = c$ . Under an effective ban on imports, the price of slaves will be  $p = a - bq$ . The condition under which  $p > c$  is  $(a - c)/b > q$ .

regression models of slave prices, controlling for a lengthy list of personal, and other, characteristics. Although the results are not always statistically significant for every type of slave, consistent with our predictions, they do find a broad-based increase in prices after the import ban is imposed, with the price effect being relatively larger for females of childbearing age.

Although the Constitution imposed an eventual ban on slave imports, it obviously did not go further and ban slave labor entirely. We can, however, imagine an extension of the import ban, one that, say, required federal emancipation after a certain point in the nineteenth century, perhaps similar in design to laws passed by state legislatures in the North in the late eighteenth and early nineteenth centuries.

The possible economic effects of a general ban on slavery can be illuminated with the aid of a simple economic model. Imagine that there are three goods (or sectors): “Wheat,” “Cotton,” and “Manufacturing” (or all other goods). Unlike wheat and manufacturing, cotton is not a final good—rather, it is an intermediate input into manufacturing. Capital is the factor specific to manufacturing, while land is specific to agriculture although it can be shifted between wheat and cotton. Slave labor can be used in any of the sectors, but only in cotton is there the possibility of a positive effect on total factor productivity through the use of the gang system (Fogel and Engerman 1974). Further, the gang system and slavery go hand in hand; if slavery is not possible, the gang system is not profitable (because free labor is unwilling to work in a gang unless paid a wage too high to make use of the system profitable). We assume that output prices are fixed or, equivalently, perfectly elastic demands for outputs. We also assume fixed total amounts of slave and free labor, capital, and land.

Initially, all slave labor is used in cotton because of the productivity effect of the gang system. If, when all slave labor is exhausted, the value of the marginal product of labor in cotton production still exceeds its value elsewhere, free labor will also be used. Now imagine that all labor is declared “free.” Relative to output levels under slavery in the no-slave equilibrium, cotton and manufacturing outputs are lower and wheat production is higher, but total agricultural output falls. Therefore, relative to output prices, the rental prices of land and capital are lower, as are wages. Because there is no longer a total factor productivity effect in cotton, former slave labor is dispersed across the different sectors; although cotton production declines, the proportion of (formerly) free labor in cotton production increases. These predictions are born out in the aftermath of the American Civil War—wages and land prices fell in the South relative to the non-South, and small-scale “yeoman” production of cotton increased (Margo 2004).

Migration policy can also be illuminated using such a framework. As we noted, the Constitution reserved naturalization policy to the federal government. Although state governments could (and did) pass laws attempting to restrict certain immigrants groups from entering, the efficacy of these laws

is questionable. As far as the nineteenth century is concerned, it is probably best to assume that, slave labor aside, the Constitution essentially permitted labor to flow inside the United States where it was most valued and that immigrants could move to the United States essentially without restriction, as long as the economic benefits were greater than the costs.

The fact that Congress did not restrict immigration to the United States (and no state could do this instead) arguably made U.S. population growth greater than it would have been otherwise. This, in turn, may have increased the rate of growth of per capita income in two ways. First, immigrants tended to settle, initially at least, in cities. Although hard evidence is lacking, it is plausible that there were “agglomeration” economies present in early U.S. cities. If this were the case, an increase in urban population due to immigration will raise aggregate total factor productivity and, thus, per capita income.

Within the United States, the absence of restrictions on internal migration—again, with the obvious exception of slave labor in the South—arguably raised the rate of per capita income growth. At first glance, this may seem unlikely because, early in the nineteenth century, per capita income was highest in the Northeast and the flow from east to west; this is the so-called Easterlin paradox (Margo 1999). However, the paradox is more apparent than real: wage data show that real wages were higher on the frontier than in settled areas; hence, a shift of labor from east to west was justifiable on grounds of economic efficiency. In turn, as labor flowed into newly settled areas, wages fell, leading to convergence (Margo 2000). Had each state set its own immigration policy, it is not obvious that, say, the state of Ohio would have permitted a free inflow because the gains would have accrued to landowners, not to labor. Labor, in other words, may have had an incentive to restrict immigration into the state.

What about education, social welfare, and health? As we have noted, the Constitution made no provision for a federal role in these areas of human capital investment; consequently, they were relegated to state (and local) governments. Recent work by Goldin and Katz (2008) argues that the “local” nature of American education was a huge plus. The highly decentralized American education system produced a great deal of competition in organizational forms across locations and efficient solutions to local variation in education demand (Fischel 2009). In other words, in a world like the early nineteenth century United States in which the rate of return to a small amount of education—basic literacy—was probably high but the marginal return was decreasing sharply beyond this point, local institutions—the one-room schoolhouse—were perfectly adequate. The general idea is that if a local government failed to provide a service, people could move to the next town (or county), much more difficult to do if the only option was to move across the county’s borders. Although we know of no comparable studies to Goldin and Katz’s, it seems likely that similar arguments apply to

health policy, particularly in light of the limited state of medical knowledge of the era.

Social welfare policy—by which we mean the care of the disabled, orphans, the indigent, and so on—was also left to the states. While a case can be made for decentralizing health and education expenditures, it is more questionable for social welfare policy because each state had an incentive to keep expenditures low, encouraging the poor to move elsewhere. Residency and other restrictions were common, as were work requirements. Evidence suggests that there was a steep trade-off in the willingness of taxpayers to provide poor support per recipient versus the number of recipients; as the number of recipients increased, support per recipient declined sharply (Kiesling and Margo 1997).

## 9.6 Conclusion

This chapter has reviewed the early settlement of the United States with an aim of evaluating the impact of the Constitution. Settlement followed a similar pattern for the first three centuries, dictated by the great expanse of fertile land and a set of policies that led to land being made relatively available at low prices in small units and a policy of unrestricted migration of Europeans. The attraction of migrants to provide a labor force took several different forms. Free immigrants were influenced by the availability of inexpensive land as well as by their economic conditions in Europe; immigrants who were unable to pay for their transportation came as indentured servants, and, where economically profitable, slaves were purchased from Africa. The mainland was unique in the very rapid rate of growth of the population, free and slave, with the encouragement of early marriage due to the availability of land as well as the generally high standard of living. The U.S. population growth was unusual in having both a high rate of immigration from Europe and an unusually high rate of natural increase.

In the period of the Revolutionary War, there were declines in the inflow of both slave and free labor. These were, however, soon reversed and continued to increase. The debates at this time did not seem to anticipate any continued declines, and no new policies to enhance migration attracted attention. Indentured labor declined early in the nineteenth century, without prompting by specific legislation. As specified in the Constitution, the slave trade was ended in 1808. Northern states ended slavery by legislation prior to 1804, but slavery did not end in the American South until forcibly achieved by the end of the Civil War in 1865.

We noted that, with the exception of the slave trade, the Constitution and early legislative history of the United States are distinguished by the near absence of clauses directly addressing matters of labor policy. For example, there were no quantitative and other restrictions upon free immigration until the twentieth century regulations controlling numbers and national-

ties. We argued that the best way to evaluate the impact of the Constitution and associated legislation is through general equilibrium analysis, possibly with a dynamic component. For example, had slavery itself not been a part of the American landscape in the nineteenth century, the distribution of output between various crops and the allocation of the labor force between agriculture and other sectors would have been quite different.

Policies that restricted free immigration earlier in American history, such as the earlier introduction of legislation restricting the flow of free immigra-

**Table 9.4** The distribution and composition of population in New World economies (%)

| Colonial region and year | Composition of population |       |        | Share in New World population |
|--------------------------|---------------------------|-------|--------|-------------------------------|
|                          | White                     | Black | Indian |                               |
| Spanish America          |                           |       |        |                               |
| 1570                     | 1.3                       | 2.5   | 96.3   | 83.5                          |
| 1650                     | 6.3                       | 9.3   | 84.4   | 84.3                          |
| 1825                     | 18.0                      | 22.5  | 59.5   | 55.2                          |
| 1935                     | 35.5                      | 13.3  | 50.4   | 30.3                          |
| Brazil                   |                           |       |        |                               |
| 1570                     | 2.4                       | 3.5   | 94.1   | 7.6                           |
| 1650                     | 7.4                       | 13.7  | 78.9   | 7.7                           |
| 1825                     | 23.4                      | 55.6  | 21.0   | 11.6                          |
| 1935                     | 41.0                      | 35.5  | 23.0   | 17.1                          |
| United States and Canada |                           |       |        |                               |
| 1570                     | 0.2                       | 0.2   | 99.6   | 8.9                           |
| 1650                     | 12.0                      | 2.2   | 85.8   | 8.1                           |
| 1825                     | 79.6                      | 16.7  | 3.7    | 33.2                          |
| 1935                     | 89.4                      | 8.9   | 1.4    | 52.6                          |

Source: Engerman and Sokoloff (1997).

**Table 9.5** Immigration volume and rates

| Period    | Average yearly total (all countries) | Immigration rates (per 1,000 population) | Percent of average yearly total |         |  |         |
|-----------|--------------------------------------|--|---------------------------------|---------|--|---------|
|           |                                      |  | Great Britain                   | Ireland | Scandinavia and other Northwest Europe | Germany |
| 1630–1700 | 2,200                                |  |                                 |         |  |         |
| 1700–1780 | 4,325                                |  |                                 |         |  |         |
| 1780–1819 | 9,900                                |  |                                 |         |  |         |
| 1820–1831 | 14,538                               | 1.3                                      | 22                              | 45      | 12                                     | 8       |
| 1832–1846 | 71,916                               | 4.3                                      | 16                              | 41      | 9                                      | 27      |
| 1847–1854 | 334,506                              | 14.0                                     | 13                              | 45      | 6                                      | 32      |
| 1855–1864 | 160,427                              | 5.2                                      | 25                              | 28      | 5                                      | 33      |

Source: Cohn (2009).

tion, would have lowered the pace of land settlement and population growth, thereby likely altering relative factor prices and output levels. Given the abundance of land, it is likely that the absence of restrictions put the United States in a rather favorable position for economic growth in the eighteenth and nineteenth centuries although measuring the quantitative effects await further research (see table 9.4 and 9.5).

## References

- Abbott, Edith. 1924. *Immigration: Select documents and case records*. Chicago: University of Chicago Press.
- Aldridge, Alfred Owen. 1949. Franklin as demographer. *Journal of Economic History* 9:25–44.
- Axtell, James. 1974. *The school upon the hill: Education and society in colonial New England*. New York: Norton.
- Baseler, Marilyn C. 1998. *Asylum for mankind: America 1607–1800*. Ithaca, NC: Cornell University Press.
- Brite, John Duncan. 1939. *The attitudes of European states toward emigration to the American colonies and the United States, 1607–1820*. Chicago: University of Chicago Press.
- Carter, Susan, Scott S. Gartner, Michael R. Haines, Alan L. Olmstead, Richard Sutch, and Gavin Wight. 2006. *The historical statistics of the United States: Millennial edition*. Cambridge: Cambridge University Press.
- Chapin, Joyce E. 2005. Enslavement of indians in early America: Captivity without the narrative. In *The creation of the British Atlantic world*, ed. E. Mancke and C. Shammas, 45–70. Baltimore, MD: Johns Hopkins University Press.
- Coelho, Philip R. P., and Robert A. McGuire. 1997. African and European bound labor in the British new world: The biological consequences of economic choices. *Journal of Economic History* 57:83–115.
- Cohn, Raymond L. 2009. *Mass migration under sail: European immigration to the Antebellum United States*. Cambridge: Cambridge University Press.
- Coleman, Ashley N., and William K. Hutchinson. 2006. Determinants of slave prices: Louisiana, 1720–1825. Department of Economics Working Paper no. 06-W24. Nashville, TN: Vanderbilt University, December.
- Cooke, Jacob E. 1978. *Tench Coxe and the early republic*. Chapel Hill, NC: University of North Carolina Press.
- Coxe, Tench. 1965. *A view of the United States of America*. New York: Augustus Kelley. (Orig. pub. 1794).
- Craven, Wesley Frank. 1965. The early settlements: A European investment of capital and labor. In *The growth of the American economy*. 2nd ed. Ed. H. F. Williamson, 19–43. Englewood Cliffs, NJ: Prentice-Hall.
- Cubberley, Ellwood P. 1947. *Public education in the United States: A study and interpretation of American educational history*. Revised and enlarged ed. Boston: Houghton Mifflin.
- Curtin, Philip D. 1969. *The Atlantic slave trade: A census*. Madison, WI: University of Wisconsin Press.
- Denevan, William M., ed. 1976. *Native population of the Americas in 1492*. Madison, WI: University of Wisconsin Press.

- Duffy, John. 1953. *Epidemics in colonial America*. Baton Rouge, LA: Louisiana State University Press.
- . 1979. *The healers: A history of American medicine*. Urbana, IL: University of Illinois Press.
- Easterlin, Richard A. 1971. Does human fertility adjust to the environment? *American Economic Review* 61:399–407.
- Ekirch, A. Roger. 1987. *Bound for America: The transportation of British convicts to the colonies, 1718–1775*. New York: Oxford University Press.
- Elliott, J. H. 2006. *Empires of the Atlantic world: Britain and Spain in America, 1492–1830*. New Haven, CT: Yale University Press.
- Eltis, David, ed. 1987. *Coerced and free migration: Global perspectives*. Stanford, CA: Stanford University Press.
- Eltis, David. 1999. Slavery and freedom in the early modern world. In *Terms of labor: Slavery, serfdom, and free labor*, ed. S. L. Engerman, 25–49. Stanford: Stanford University Press.
- . 2001. The volume and structure of the transatlantic slave trade: A reassessment. *William and Mary Quarterly* 57:17–46.
- Engerman, Stanley L., and Kenneth L. Sokoloff. 1997. Factor endowments, institutions, and differential paths of growth among new world economies: A view from economic historians of the United States. In *How Latin America fell behind: Essays on the economic histories of Brazil and Mexico, 1800–1914*, ed. S. H. Haber, 260–304. Stanford, CA: Stanford University Press.
- . 2002. Factor endowments, inequality, and paths of development among new world economies. *Economia* 3:41–109.
- . 2005. Five hundred years of European colonization: Inequality and paths of development. University of California at Los Angeles, Department of Economics, Working Paper.
- Erickson, Charlotte. 1957. *American industry and the European immigrant, 1860–1885*. Cambridge, MA: Harvard University Press.
- Farnam, Henry W. 1938. *Chapters in the history of social legislation in the United States to 1860*. Washington, DC: Carnegie Institution.
- Fischel, William A. 2009. *Making the grade: The economic evolution of American school districts*. Chicago: University of Chicago Press.
- Fogel, Robert W., and Stanley L. Engerman. 1974. *Time on the cross: The economics of American negro slavery*. Boston: Little, Brown.
- Galenson, David W. 1981. *White servitude in colonial America: An economic analysis*. Cambridge: Cambridge University Press.
- . 1996. The settlement and growth of the colonies: Population, labor, and economic development. In *The Cambridge economic history of the United States*. Vol. 1, *The colonial era*, ed. S. L. Engerman and R. E. Gallman, 135–207. Cambridge: Cambridge University Press.
- Gallay, Alan. 2002. *The indian slave trade: The rise of the English empire in the American South, 1670–1717*. New Haven, CT: Yale University Press.
- Gates, Paul Wallace. 1968. *History of public land law development*. Washington, DC: U.S. Government Printing Office.
- Goldin, Claudia, and Lawrence F. Katz. 2008. *The race between education and technology*. Cambridge, MA: Harvard University Press.
- Grubb, Farley. 1985a. The incidence of servitude in trans-Atlantic migration, 1771–1804. *Explorations in Economic History* 22:316–39.
- . 1985b. The market for indentured immigrants: Evidence on the efficiency of forward-labor contracting in Philadelphia, 1745–1773. *Journal of Economic History* 45:855–68.

- . 1992. The long-run trend in the value of European immigrant servants, 1654–1831: New measurements and interpretations. *Research in Economic History* 14:167–240.
- . 1994. The end of European immigrant servitude in the United States: An economic analysis of market collapse, 1772–1835. *Journal of Economic History* 54:794–824.
- Hamilton, Alexander. 1964. Report on the subject of manufactures. In *The reports of Alexander Hamilton*, ed. Jacob Cooke, 115–205. New York: Harper & Row. (Orig. pub. 1791).
- Hibbard, Benjamin Horace. 1965. *A history of the public land policies*. Madison, WI: University of Wisconsin Press. (Orig. pub. 1924).
- Hutchinson, E. P. 1981. *Legislative history of American immigration policy, 1798–1965*. Philadelphia: University of Pennsylvania Press.
- Inikori, Joseph E. 2002. *Africans and the industrial revolution in England: A study in international trade and economic development*. Cambridge: Cambridge University Press.
- Jones, Douglas Lamar. 1975. The strolling poor: Transiency in eighteenth-century Massachusetts. *Journal of Social History* 8:28–54.
- Kaestle, Carl F., and Maris A. Vinovskis. 1980. *Education and social change in nineteenth-century Massachusetts*. Cambridge: Cambridge University Press.
- Kettner, James H. 1973. *The development of American citizenship, 1608–1870*. Chapel Hill, NC: University of North Carolina Press.
- Kiesling, Lynne, and Robert A. Margo 1997. Explaining the rise in antebellum pauperism, 1850–1860: New evidence. *Quarterly Review of Economics and Finance* 37:405–17.
- Klein, Herbert S. 1986. *African slavery in Latin America and the Caribbean*. New York: Oxford University Press.
- . 2004. *A population history of the United States*. Cambridge: Cambridge University Press.
- Labaree, Leonard W., ed. 1961a. Felons and rattlesnakes. In *The papers of Benjamin Franklin*. Vol. 4, 130–33. New Haven, CT: Yale University Press.
- . 1961b. Observations concerning the increase of mankind. In *The papers of Benjamin Franklin*. Vol. 4, 225–34. New Haven, CT: Yale University Press.
- Land Ordinance of 1785. In *Documents of American history, vol. 1* (to 1898), ed. H. S. Commager, 123–4. New York: Appleton-Century-Crofts.
- Lauber, Almon Wheeler. 1913. *Indian slavery in colonial times within the present limits of the United States*. New York: Columbia University Press.
- Lincoln, Abraham. 1989. *Lincoln: Speeches and writings, 1832–1858*. New York: Library of America.
- Lockridge, Kenneth A. 1974. *Literacy in colonial New England: An enquiry into the social context of literacy in the pre-modern West*. New York: Norton.
- Madison, James. 1984. *Notes of debates in the Federal Convention of 1787*. Athens, OH: Ohio University Press. (Orig. pub. 1840).
- Malthus, T. R. 1960–1961. *An essay on population*. London: J. M. Dent (Orig. pub. 1803).
- Margo, Robert A. 1999. Regional wage gaps and the settlement of the Midwest. *Explorations in Economic History* 36:128–43.
- . 2000. *Wages and labor markets in the United States, 1820–1860*. Chicago: University of Chicago Press.
- . 2004. The North-South wage gap, before and after the Civil War. In *Slavery in the development of the Americas*, ed. D. Eltis, F. Lewis, and K. Sokoloff, 324–51. New York: Cambridge University Press.



- McCusker, John J., and Russell R. Menard. 1991. *The economy of British America, 1607–1789, with supplemental bibliography*. 2nd ed. Chapel Hill, NC: University of North Carolina Press.
- McDonald, Forrest, and Ellen Shapiro McDonald. 1980. The ethnic origins of the American people, 1790. *William and Mary Quarterly* 37:179–99.
- McEvedy, Colin, and Richard Jones. 1978. *Atlas of world population history*. Harmondsworth, UK: Penguin.
- Menard, Russell R. 2001. *Migrants, servants, and slaves: Unfree labor in colonial British America*. Aldershot, UK: Ashgate.
- Northrup, David. 1996. *Indentured labor in the age of imperialism, 1834–1922*. Cambridge: Cambridge University Press.
- Northwest Ordinance of 1787. In *Documents of American history, vol. 1* (to 1898), ed. H. S. Commager, 128–32. New York: Appleton-Century-Crofts.
- Proper, Emberson Edward. 1900. *Colonial immigration laws: A study of the regulation of immigration by the English colonies in America*. New York: Columbia University Press.
- Risch, Erna. 1937. Encouragement of immigration as revealed in colonial legislation. *Virginia Magazine of History and Biography* 45:1–10.
- Robinson, Donald L. 1971. *Slavery in the structure of American politics, 1765–1820*. New York: Harcourt Brace Jovanovich.
- Shryock, Richard Harrison. 1960. *Medicine and society in America, 1660–1860*. Ithaca, NY: Cornell University Press.
- Smith, Abbot Emerson. 1947. *Colonists in bondage: White servitude and convict labor in America, 1607–1776*. Chapel Hill, NC: University of North Carolina Press.
- Steckel, Richard H. 2009. Heights and human welfare: Recent developments and new directions. *Explorations in Economic History* 46:1–23.
- Steinfeld, Robert J. 1991. *The invention of free labor: The employment relation in English and American law and culture, 1350–1870*. Chapel Hill, NC: University of North Carolina Press.
- Tobey, James A. 1926. *The national government and public health*. Baltimore, MD: Johns Hopkins University Press.
- . 1939. *Public health law*. 2nd ed. New York: Commonwealth Fund.
- Wokeck, Marianne S. 1999. *Trade in strangers: The beginnings of mass migration to North America*. University Park, PA: Pennsylvania State University Press.
- Zilversmit, Arthur. 1967. *The first emancipation: The abolition of slavery in the North*. Chicago: University of Chicago Press.
- Zirkle, Conway. 1957. Benjamin Franklin, Thomas Malthus, and the United States Census. *Isis* 48:58–62.