# Slave Prices and the South Carolina Economy, 1722–1809

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Based on data from probate inventories we construct and analyze an annual time series of slave prices for South Carolina from 1722 to 1809. Comparison of South Carolina slave prices with those in other parts of the Western Hemisphere and the relationship between slave prices and slave imports indicate that while the long-run supply of slaves was highly elastic, over periods of one to two decades the supply curve was upward sloping. Comparison of our slave price series with an index of agricultural export prices indicates that labor productivity growth in agriculture was modest over the eighteenth century.

Playery was central to the economic development of South Carolina in the eighteenth century. Slaves were a majority of the population and labor force for much of the century, and made up close to half of the personal wealth recorded in probate inventories in most decades. Despite the proliferation of studies examining various facets of the slave-based economy of South Carolina in recent years, there has been no serious consideration of the evolution of slave prices in the course of the eighteenth century. As a measure of the value of the most important productive asset of the economy and a key component of the region's wealth, the behavior of slave prices can shed new light on the pace and pattern of economic growth in the lower South. Though the data needed to construct a series of slave prices have been available in probate inventories from the early 1720s through the first decade of the nineteenth century, scholars have not previously subjected them to intensive scrutiny.

Using data drawn from probate inventories between 1722 and 1809 we present and analyze a new series of prices for adult male slaves in South Carolina. Our slave price series shows fluctuations but no trend before 1750, and a sharp rise thereafter. This increase was interrupted briefly in the 1790s, but by the first decade of the nineteenth century prices had more than tripled from their early-eighteenth-century levels.

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<sup>1</sup> Among the most important general economic histories of South Carolina are Morgan, *Slave Counterpoint*; Chaplin, *Anxious Pursuit*; and Coclanis, *Shadow*. Other important contributions include Menard, "Slavery" and "Economic and Social Development;" Bentley, "Wealth"; Terry, "Champagne Country"; Nash, "South Carolina"; and Egnal, *New World Economies*, ch. 6.

The history of slave price movements bears directly on three important issues in the economic history of South Carolina. The first concerns the operation of the trans-Atlantic slave market in the eighteenth century and its impact on South Carolina's economy. Although a number of scholars have examined the pace and pattern of slave imports into the region, their analysis has been handicapped by the absence of reliable data on slave prices.<sup>2</sup> We show that the behavior of slave prices and imports can be explained within the framework of a supply and demand model in which the long-run supply elasticity was quite high, but the short-run supply was less than perfectly elastic. The second issue concerns the effects of changes in cultivation practices on agricultural labor productivity and economic growth. Scholars have argued that the development of new methods of irrigation during the eighteenth century contributed to a substantial increase in the productivity of rice growing.<sup>3</sup> We find, however, that changes in the prices of male slaves relative to the prices of the agricultural commodities they were employed in producing imply no discernable increase in agricultural labor productivity over the course of the century. Rather than contributing to an increase in the volume of output per worker, changes in technique appear to have served mainly to encourage more rapid extensive growth of the South Carolina economy. The third relates to the political decisions to prohibit slave imports. Although the national prohibition on slave importation that took effect in 1808 is the best known, and was the final such restriction, there were others. The political economy of those restrictions is far too complex an issue to be taken up in full in this article, but we argue that the level of and changes in the price of slaves influenced the national debate on the decision to halt the commerce in humans.

# SLAVE PRICE DATA

To construct a time series of slave prices we draw on the large database of slave valuations contained in probate inventories from South Carolina. A number of scholars have made use of these probate inventories in the past, but none of them has examined the information they contain concerning slave prices.<sup>4</sup> The starting date of our estimates is dictated by the fact that

<sup>&</sup>lt;sup>2</sup> See, for example, Morgan, "Slave Sales"; Richardson, "British Slave Trade"; and Ryden, "Slave Trade."

<sup>&</sup>lt;sup>3</sup> See, for example, Coclanis, *Shadow*, p. 96. As we later note, his interpretation has been widely accepted by other scholars.

<sup>&</sup>lt;sup>4</sup> Most of these studies have focused on changes in the aggregate levels of wealth, changes in its distribution and the composition of wealth holding as revealed by the inventories. See, for example Bentley, "Wealth"; Terry, "Champagne Country"; Waterhouse, *New World Gentry*; Chaplin, *Anxious Pursuit*; and Morgan, *Slave Counterpoint*. Unlike the previously mentioned studies, which are focused primarily on temporal changes in wealth holding, Jones, *Wealth*, has compared characteristics of probate inventories at a single point in time across a range of colonial locations, including South Carolina. Coclanis, "Rice Prices," has used information from probate inventories to construct a time series of prices for rice in the 1720s.

there are very few inventories prior to 1722.<sup>5</sup> For the periods 1722–1762 and 1776–1809 we have been able to draw on data collected by other scholars, but we have gathered data ourselves from probate inventories to fill in the gap for the years 1763 through 1775. For 1722 to 1762 we make use of data on all extant inventories summarized by William George Bentley in an appendix to his dissertation.<sup>6</sup> For each inventory Bentley reported the total value of slaves in each of four age-sex categories—adult males, adult females, boys, and girls—as well as the number of slaves in each of these categories. We use these data to calculate the average value of slaves in each category. After 1775 we use the sample of slave valuations collected by Robert Fogel and Stanley Engerman.<sup>7</sup> These data provide individual valuations along with information on the sex and age of slaves in eight southern states including South Carolina.

Table 1 reports our estimates of the value of adult male slaves, both nominal and deflated by a general consumer price index for the colonies, along with information about the number of observations on which each estimate is based and some scattered price evidence obtained from slave sales. The slave sale prices for the post-1800 period are for sales of adult male slaves from probated estates, and are thus more comparable to the probate values reported in the table than are the values for 1750–1769, which are derived from auctions of newly imported slaves that included women and children as well as adult males. Because of the inclusion of women and children, and because newly imported slaves were less valuable than seasoned ones, these sale prices are almost certainly lower than the average price of adult male slaves. Figure 1 plots five-year moving averages of nominal and deflated slave value indices calculated from these data. To facilitate comparisons over time we have expressed all prices and values in terms of dollars.<sup>8</sup>

<sup>&</sup>lt;sup>5</sup> There are only 12 inventories for the period 1710–1721.

<sup>&</sup>lt;sup>6</sup> Bentley, "Wealth," analyzed over 2,000 inventories, but before we could utilize these data we had to enter them into a computer file from the printouts included in his dissertation. In these printouts Bentley reported information separately for African and Native American slaves, though the number of Native American slaves listed is relatively small. We use only the data on African slaves. In instances where he was unable to identify the age and sex of all slaves listed in the inventory, Bentley aggregated the unidentified slaves with the adult males. In the subsequent analysis we discard these observations, and utilize only those cases where he was able to categorize all of the slaves inventoried.

<sup>&</sup>lt;sup>7</sup> Fogel and Engerman, "Slave Sales." For some slaves in some instances the data also include information on skill and physical condition. The documentation of these data is sparse, describing them only as having been "obtained from a non-random sample of probate records for southern counties, located on microfilm at the Genealogical Society Library of the Church of Jesus Christ of Latter-Day Saints in Salt Lake City, Utah." In correspondence Stanley Engerman indicated that data on slave prices were collected for all male slaves included in the source.

<sup>&</sup>lt;sup>8</sup> In the colonial period, inventory valuations appear to have been made in South Carolina currency. We first converted these values to sterling using the exchange rates reported in McCusker, *Money*, and then converted these values to dollars by multiplying by 4.44, the value suggested by McCusker, *How Much is That*, pp. 313–14. After 1775 each pound of South Carolina currency was worth \$4.29 (see McCusker *How Much is That*, appendix C). Although the slave values published by Chaplin, *Anxious Pursuit*, were expressed in pounds sterling, it is evident from data she provided us that the original values were recorded in local currency and that she had subsequently converted these values to sterling.

TABLE 1 SLAVE VALUES AND PRICES IN SOUTH CAROLINA, 1722–1809

	Probate Inventories			Sales	
	Slave Values		Number of		
Year	Nominal (\$)	Deflated (\$)	Observations	Nominal Prices (\$)	
1722	109.63	146.05	28		
1723	101.32	142.40	109		
1724	120.17	150.79	147		
1725	136.52	165.40	57		
1726	127.46	147.74	53		
1727	99.85	123.64	31		
1728	107.83	122.71	1		
1729	111.65	121.17	118		
1730	126.19	155.58	27		
1731	105.75	141.22	52		
1732	116.81	167.11	36		
1733	111.53	161.96	108		
1734	124.14	177.59	14		
1735	115.01	162.11	113		
1736	112.95	166.55	177		
1737	104.86	152.28	70		
1738	113.62	153.38	315		
1739	74.87				
	92.97	113.90	34 15		
1740 1741	91.24	135.01 96.10	478		
1742	92.56	109.53	7		
1743	107.97	145.76	44		
1744	130.15	189.00	79		
1745	111.59	167.12	155		
1746	84.67	124.84	55		
1747	53.70	72.49	5		
1748	123.74	144.63	4		
1749	108.35	123.63	157		
1750			0	119.88	
1751	149.06	168.08	2	124.32	
1752	171.26	188.67	7	124.32	
1753	134.15	153.07	20	137.64	
1754	144.42	170.89	26	146.52	
1755	119.02	144.39	55	146.52	
1756	125.01	155.61	22	128.76	
1757	95.12	112.55	2	146.52	
1758			0	155.40	
1759	158.57	158.57	1	159.84	
1760	168.09	168.09	42	142.08	
1761	167.48	167.48	47	137.64	
1762	147.64	147.64	29	164.28	
1763	203.75	205.57	113	150.96	
1764	190.67	207.68	1896	159.84	
1765	198.54	213.81	348	155.40	
				177.60	
				1 / / .00	
1765 1766 1767 1768 1769	198.54 193.58 208.03 200.92 201.36 210.62	213.81 189.33 209.88 213.97 207.52 201.87	348 333 655 913 928 729		

TABLE 1 — continued

		Probate Inventories			
	Slave Values		N 1 C	Sales	
Year	Nominal (\$)	Deflated (\$)	Number of Observations	Nominal Prices (\$)	
1771	206.63	206.30	780		
1772	256.04	225.14	850		
1773	262.86	249.44	997		
1774-1783	No data availa	ble			
1784	414.71	323.16	34		
1785	171.93	140.84	17		
1786	268.37	225.63	21		
1787	252.45	216.04	21		
1788	270.18	242.02	24		
1789	233.41	211.05	29		
1790	228.63	199.21	59		
1791	223.98	189.98	61		
1792	228.57	190.50	39		
1793	264.14	212.75	57		
1794	202.44	146.99	34		
1795	304.29	193.15	15		
1796	227.62	137.21	36		
1797	234.13	146.67	27		
1798	264.75	171.45	31	330.48	
1799	201.75	171.13	0	340.16	
1800	249.48	158.36	29	441.06	
1801	310.23	194.34	22	386.88	
1802	405.71	301.44	24	521.07	
1802	320.00	225.52	10	474.41	
1804	401.46	270.97	41	420.95	
1805	380.00	258.31	5	358.53	
1805	333.33	217.34	9	350.10	
1807	303.57	209.32	14	411.38	
		225.69			
1808	355.56		9	412.64	
1809	375.00	242.85 Longer Perio		414.33	
		_	_		
1722–1724	110.37	146.42	284		
1725–1729	116.66	136.13	260		
1730–1734	116.89	160.69	237		
1735–1739	104.26	149.64	709		
1740–1744	102.98	135.08	623		
1745–1749	96.41	126.54	376		
1750-1754	149.72	170.18	55	130.54	
1755–1759	124.43	142.78	80	147.41	
1760–1764	175.53	175.53	840	150.96	
1765-1769	200.48	206.90	3177		
1770-1774	240.94	233.20	4277		
1775-1779					
1780-1784					
1785-1789	239.27	207.12	112		
1790-1794	229.55	187.89	250		
1795–1799	257.70	162.12	109	335.32	
1800–1704	337.38	230.13	126	448.87	
1805–1709	349.49	230.70	40	389.40	

#### TABLE 1 — continued

Notes and Sources: Probate inventory values are average valuations calculated for all adult male slaves found in inventories for each year. For 1722–1762 data are from summaries of inventories reported in Bentley, "Wealth." In each year we divided the total value of adult male slaves in all inventories by the number of adult males slaves in the inventories. For 1763–1774 data are from South Carolina, Court of Ordinary Inventories. For 1784–1809 data are from Fogel and Engerman, "Slave Sales." The number of observations is the number of individual slaves represented in the underlying data for each year. Slave sale prices for 1750–1769 are from Duncan, "Servitude," p. 155, and reflect average prices of newly imported slaves sold in Charleston. Slave sale prices for 1798–1809 are calculated from Fogel and Engerman, "Slave Sales," and reflect the sales of adult male slaves from estate inventories. Longer period averages are unweighted averages of values for each year with nonmissing data. Real slave prices are computed by deflating nominal prices using the all commodity price deflator for the colonies in McCusker, How Much is That, table A-2, col. 6.

Before discussing these data in detail, however, it is necessary to address several concerns about the evidence on which our estimates are based. These concerns fall into two distinct categories. The first revolves around the accuracy with which the slave valuations contained in the probate inventories reflect actual market prices, while the second concerns the ability to extract meaningful information about the market for slaves from these data.

Historians using probate inventories have long recognized that the processes that generated probate inventories did not result in a randomly drawn sample of the population. In the first place, it is clear that those persons dying during any selected period are likely to differ in a number of important characteristics, such as age and accumulated wealth, from the living population. But even among the deceased, those individuals whose estates were inventoried may not be randomly selected. These sampling biases are of concern for scholars who wish to use probate data to study the size and composition of individual wealth holding in the population as a whole. But there is no reason to think that the characteristics of slaves owned by probated individuals differed systematically from those whose estates did not pass through probate.

Another concern with the probate data is that the individuals assigned to compile estate inventories may have performed this task in a perfunctory manner, or may simply have been ignorant of prevailing market conditions. Researchers who have worked carefully with the inventories in the Lower South, however, believe that they were produced by knowledgeable individuals who took considerable care in their preparation. <sup>10</sup> This judgment is borne out by the limited evidence available on slave sale prices that we

<sup>&</sup>lt;sup>9</sup> After 1745 South Carolina law required inventories of all estates, but even in that period the reality is that estates were more likely to be inventoried if they contained substantial amounts of property and were located closer to Charleston, where the records had to be lodged. From 1712 to 1744 inventories were required only for intestate estates, and enforcement appears to have been relatively lax prior to 1736 when inventories were first kept as a separate series of records. See Waterhouse, *New World Gentry*, pp. 61–62. For a more general discussion of differences between probated wealth holders and the living population see Jones, *Wealth*, pp. 347–52.

<sup>&</sup>lt;sup>10</sup> According to Peter Coclanis, "Rice Prices," p. 535, for example, "appraisals of agricultural estates in South Carolina were generally made by other planters, that is, by men familiar with market conditions and current price levels. Planters apparently exercised considerable care in their evaluations."

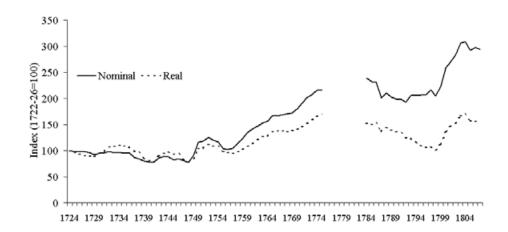


FIGURE 1
FIVE-YEAR MOVING AVERAGE OF NOMINAL AND REAL SLAVE PRICE INDEXES

Source: Table 1.

report in Table 1. To facilitate comparison we have plotted in Figure 2 the time series of inventory valuations and sales prices for the years in which both are available. Between 1751 and 1770 the long-run trends in both series were similar, with sale prices rising by about 44 percent and valuations increasing 35 percent. As we would expect, given the difference in sources, sale prices were generally below appraised values, though the sale prices did rise above the appraised values briefly in the late 1750s. After 1798 movements in inventory valuations appear to have lagged somewhat behind sale prices, as we might expect in a period of sharply changing prices such as occurred in the initial cotton boom of the 1790s, but the movements of the two series appear similar. Finally, comparison between the two periods indicates that the inventory values capture accurately the longer-run rise in slave prices between the 1750s and the early nineteenth century. Based on the similarity between sale prices and inventory valuations we will in the remainder of the article refer to the valuations simply as slave prices.

The second issue that must be addressed concerns the interpretation of the price series derived from the inventory valuations. Individual slave prices are likely to have varied widely, reflecting differences in age, sex, skills, physical condition, health, and other characteristics. Ideally, we would like to make comparisons over time in terms of the price of a homogeneous class of labor. Doing so would require that we control for variations in prices caused by differences in individual characteristics that might otherwise introduce spurious variations in prices. We are able to control for some of the most important sources of individual price variation by focusing on the prices of adult males, but this still leaves room for a considerable degree of variation attributable to individual characteristics. Although we cannot

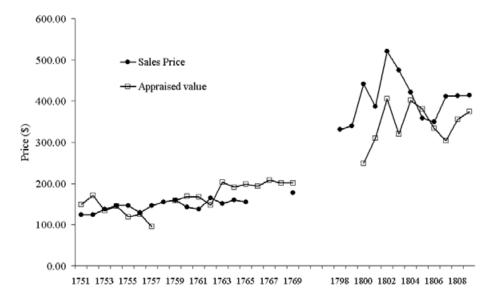


FIGURE 2 COMPARISON OF SLAVE PRICES FROM INVENTORIES AND SALES, 1750–1769 AND 1798–1809

Source: Table 1.

directly control for these differences, we are able to reduce their impact by taking an average price over a relatively large number of observations and using five-year averages. Although there remains some noise in the data as a result of random variations in the composition of our sample from year to year, the resulting estimates still contain a good deal of useful information.

#### SLAVE PRICES AND THE MARKET FOR SLAVES

Table 1 and Figure 1 show that nominal prices of slaves in South Carolina nearly tripled between 1722 and 1809. Prices fluctuated without any clear trend from the 1720s through the late 1740s, but then began to rise. By the 1770s prices had nearly doubled from their levels in the 1722–1750 period. Data are unavailable during the Revolutionary War, but the sharp run up in slave prices just prior to the war and the high value found in 1784, the first year for which we have observations after the Revolution, suggest that prices must have been quite high during the conflict. After the conclusion of the war, nominal prices appear to have returned quickly to about the same level as they had been at before the war. Then in the second half of the 1790s prices began to rise again, reaching about \$350 by the first decade of the nineteenth century. Much of the increase in slave prices reflects more gen-

<sup>&</sup>lt;sup>11</sup> Although Fogel and Engerman, "Slave Sales," does include a number of probate inventories from the years of the American Revolutionary War, there are data for only 11 slaves in South Carolina between 1776 and 1783.

eral inflationary forces in the economy. The deflated slave price series rose by perhaps 30 percent over the colonial period, with most of this increase coming in the period after 1760. Between the early 1770s and the late 1790s, the deflated prices fell back nearly to their level of the 1720s, before rising again after 1800.

The movements of slave prices can be readily interpreted within a supply and demand framework. As we elaborate below, combining our estimates with data on slave prices in other parts of the Western Hemisphere as well as information on the evolution of the South Carolina economy it is possible to discern a good deal about the nature of supply and demand conditions that determined slave prices. In the long run the supply of slaves was relatively elastic and prices were determined largely by developments in the larger trans-Atlantic slave market. But for periods of up to 10 or 20 years the supply curve appears to have been upward sloping and conditions within the South Carolina economy played an important role in determining slave prices.

Throughout much of the eighteenth century, South Carolina planters were active participants in the trans-Atlantic slave trade, importing large numbers of slaves. In the pre-Revolutionary period, there were few barriers to the importation of slaves into South Carolina, except for a brief period of prohibitive duties imposed in the wake of the Stono slave rebellion in 1739. After 1775 the American Revolutionary War and subsequent legislative actions impeded the flow of slaves to varying degrees. Military conflict during the Revolution effectively blocked the international slave trade from 1776 to 1783. Although colonists briefly resumed their importation of slaves in the immediate postwar period, the South Carolina legislature in 1787 suspended foreign and domestic imports for three years. In the following year legislators partially reversed themselves, passing an act allowing slaves to be imported from other states, but extending the ban on foreign imports until 1793. 12 Although slaves could not be brought from other states to be sold in South Carolina, settlers coming from other states could bring unlimited numbers of slaves with them. These restrictions remained in effect until 1803, when limitations on foreign importation were lifted by the state legislature. Between 1803 and 1808, when the federally imposed ban on slave imports took effect, slave traders imported nearly 40,000 slaves into Charleston, though they subsequently sold a significant number of these to purchasers outside South Carolina. 13

<sup>&</sup>lt;sup>12</sup> Interestingly, at this same time, South Carolina's delegates to the Constitutional convention were instrumental in obtaining passage of a constitutional provision blocking federal action on the slave trade until 1808. Analysis of voting in the state legislature suggests that support for the restriction of imports in the 1790s derived mainly from large slaveholders and low country residents, groups most likely to benefit from any increase in slave prices that would have resulted from this supply restriction, while the owners of small numbers of slaves and back country residents generally supported continued importation. Brady, "Slave Trade," pp. 607–10.

<sup>&</sup>lt;sup>13</sup> Brady, "Slave Trade," pp. 608–15. Berlin, "Many Thousands," pp. 308–09 estimates that 35,000 slaves were imported by South Carolina planters. The difference between these figures may reflect Berlin's estimate of the number of slaves subsequently re-sold outside the state.

TABLE 2 SOURCES OF GROWTH OF THE SOUTH CAROLINA SLAVE POPULATION, 1720–1809

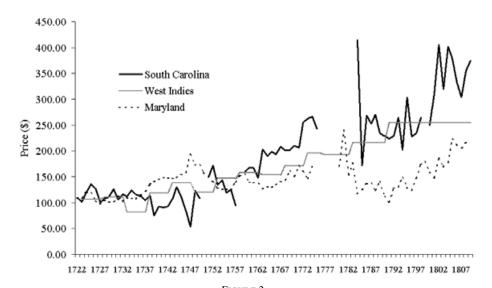
	Slave Population			Slaves Imported	
Period	Beginning of Period	End of Period	Change over Preceding Decade	Number	Ratio of Imports to Total Increase
1700–1710	2,444	5,768	3,324	3,000	0.90
1710-1720	5,768	11,868	6,100	6,000	0.98
1720-1730	11,868	20,000	8,132	11,600	1.43
1730-1740	20,000	39,155	19,155	21,150	1.10
1740-1750	39,155	40,000	845	1,950	2.31
1750-1760	40,000	53,000	13,000	16,497	1.27
1760-1770	53,000	75,178	22,178	21,840	0.99
1770-1780	75,178	97,000	21,822	18,866	0.87
1780-1790	97,000	107,094	10,094	19,200	1.90
1790-1800	107,094	146,151	39,057	19,991	0.51
1800-1810	146,151	196,365	50,214	30,195	0.60

Notes and Sources: Slave population is from Coclanis, Shadow, p. 64, and U.S. Census Bureau, Historical Statistics, series A195, A199–200; Slave imports are from Philip Morgan, "Black Society," p. 87, and Slave Counterpoint, p. 59. Through 1775, there are reasonably complete data on the number of slaves imported into South Carolina. After 1775, Morgan had to impute the volume of imports using an estimate of the rate of increase of the resident population, and then calculating the difference between actual and estimated population at each date.

During the colonial era, British Naval Office records provide a reasonably accurate measure of the volume of slave imports into the colony. With American independence, however, this source of evidence ends. Consequently, historians have had to estimate slave imports after 1775 from evidence about the overall growth of the slave population in combination with assumptions about the likely rate of natural increase. Table 2 summarizes estimates of slave imports into South Carolina compiled by Philip Morgan and places them in the context of the overall growth of the slave population. The data reveal that imports played a significant role in the expansion of the slave population throughout the entire period. During much of the first half of the eighteenth century, deaths outnumbered births among the colony's slaves, and the expansion of the slave population was possible only because of the large volume of imports. With the exception of the 1740s, when imports dropped to very low levels, imported slaves were the major source of population increase throughout the colonial period. Although the rate of natural increase may have become positive as early as the 1750s it was not until after 1790 that natural increase began to contribute significantly to the growth of the slave population.<sup>14</sup>

Although South Carolina received more slaves than any other mainland colony, it still accounted for only a small fraction of the larger Atlantic slave

<sup>&</sup>lt;sup>14</sup> Morgan, *Slave Counterpoint*, p. 90. For a more extensive discussion of slave demography in the first half of the eighteenth century see Menard, "Slave Demography."



SLAVE PRICES IN SOUTH CAROLINA, THE WEST INDIES, AND MARYLAND, 1722–1809

Note: All prices are in current dollars.

Sources: South Carolina: Table 1; Maryland, Kulikoff, "Tobacco," pp. 485–88, and Fogel and Engerman, "Slave Sales"; and West Indies, Bean, *British Trans-Atlantic Slave Trade*, p. 77, and LeVeen, *British Slave Trade*, pp. 146–47.

market during the eighteenth century.<sup>15</sup> This fact has led some previous analysts to suggest that the colony faced what was in effect a perfectly elastic supply of slaves at prices that were determined by the larger trans-Atlantic slave market.<sup>16</sup> But the elasticity of supply is an empirical question that can be examined on the basis of our estimates of South Carolina slave prices. Figure 3 compares our estimates of South Carolina slave prices with prices in the British West Indies—a major part of the world market—and the Chesapeake region—the other major slave economy on the mainland.<sup>17</sup> Figure 4 plots South Carolina slave prices relative to West Indian prices in each year. In the long run, price movements in these different locations display a considerable degree of conformity with one another, but over

<sup>&</sup>lt;sup>15</sup> According to Richardson, "British Slave Trade," pp. 127–29, about 1.7 million slaves were shipped to the Western Hemisphere between 1700 and 1775. Over this same period the data in Table 2 indicate that South Carolina imported about 101,000 slaves, or about 6 percent of total slave shipments.

<sup>&</sup>lt;sup>16</sup> Morgan, "Slave Sales," p. 914, for example, asserted that "changes in prices paid for slaves in South Carolina appear to have been caused more by aggregate supply and demand conditions within the Atlantic trading world than by factors within the colony." Ryden, "Slave Trade," explicitly assumes a perfectly elastic supply function in his analysis of the South Carolina slave market.

<sup>&</sup>lt;sup>17</sup> These are the only comparable series of New World slave prices that we have been able to find. Manning, *Slavery*, pp. 177–78, summarizes a variety of different time series of slave prices in the eighteenth century, but all of them refer to slaves purchased on the Atlantic Coast of Africa, not to slaves delivered in the New World.

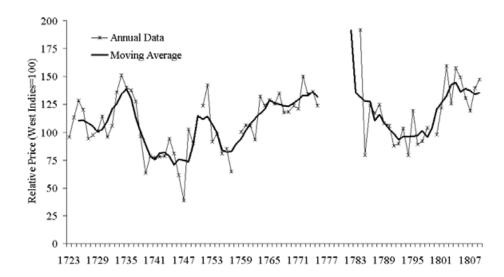


FIGURE 4 SLAVE PRICES IN SOUTH CAROLINA RELATIVE TO THE WEST INDIES

Sources: See Figure 3.

shorter periods—lasting up to one or two decades—a considerable degree of divergence in their behavior is evident.

Between the 1720s and the late 1730s slave prices in South Carolina rose relative to prices in the West Indies and the Chesapeake. This divergence continued until 1739, when prices in South Carolina collapsed, falling below the level of prices in other British colonies for most of the 1740s. By the late 1740s prices in South Carolina had begun to recover, and starting in the mid-1750s, they once again began to rise in relative terms, an increase that continued through the early 1770s. At the end of the colonial period slave prices were roughly 30 percent higher in South Carolina than in the West Indies and close to 50 percent higher than in the Chesapeake. In the immediate aftermath of the Revolution, prices in South Carolina remained high, but by the early 1790s they had fallen back into line with the West Indies, though they remained well above prices in the Chesapeake. Beginning in the mid-1790s slave prices in South Carolina once again began to rise in relative terms, reaching a new peak in the first decade of the nineteenth century.

These variations in relative prices account for much of the variation in the volume of slave imports documented in Table 2, and coincide closely with qualitative accounts of fluctuations in the growth of the South Carolina economy in the eighteenth century. Illustrating the relationship between relative prices and slave imports, Figure 5 plots slave imports against the average relative price of slaves in each decade. Because a high volume of imports during a decade ought to exert downward pressure on prices during

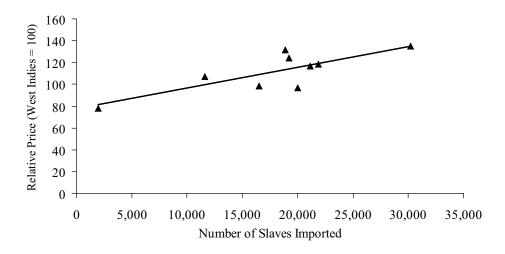


FIGURE 5 RELATIONSHIP BETWEEN SLAVE IMPORTS AND RELATIVE PRICES OF SLAVES, 1720-1809

Sources: Tables 1 and 2.

the decade, we would expect that such a comparison would understate the extent to which price variations and imports were correlated. Yet it is apparent that there was a strong positive relationship, suggesting that these points roughly trace out an upward-sloping short-run supply curve of slave labor. Although higher relative prices encouraged increased levels of importation, the strength of this response was not sufficient to restore equilibrium quickly.<sup>18</sup>

The causes of short-run deviations of slave prices from prevailing levels in the Atlantic economy can be located in shocks to the demand for slaves arising within the South Carolina economy. For the most part these shocks can be traced to the evolution of world demand for South Carolina's major export staples, especially rice. Staple agricultural production dominated South Carolina's commercial agricultural activities and was the major employer of slave labor throughout the eighteenth and early nineteenth centuries. Rice was the most important crop, though after 1740 indigo exports grew dramatically, and at the end of the century cotton began to replace rice as the state's most important export.<sup>19</sup>

Although there is evidence that colonists had begun to grow rice as early as the mid-1690s, it first emerged as an important crop after about 1700. Figure 6 traces the growth of rice exports from South Carolina and from the

<sup>&</sup>lt;sup>18</sup> An alternative view is that demand shocks were highly serially correlated, and that this correlation was not anticipated by participants in the market for slaves.

<sup>&</sup>lt;sup>19</sup> Coclanis, *Shadow*, provides the most extensive account of South Carolina's economic history. Nash, "South Carolina," offers a compact account of changing conditions in the market for rice and their impact on the South Carolina economy.

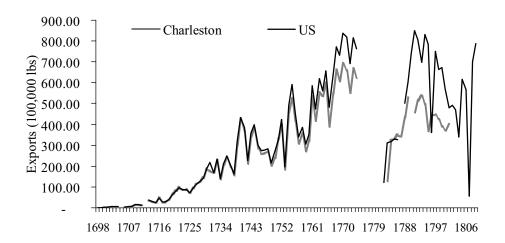


FIGURE 6
EXPORTS OF RICE FROM CHARLESTON AND FROM THE UNITED STATES, 1698–1809

Sources: Charleston: for 1698–1724 from Coon, Market Agriculture, pp. 349–50; for 1725–1774 from U.S. Bureau of the Census, Historical Statistics, Series Z483; for 1782–1809 from Gray, History, p. 1022. United States: for 1725–1775 is the total of exports from Georgia and South Carolina from U.S. Bureau of the Census, Historical Statistics, Series Z481; for 1782–1809 from Gray, History, p. 1030.

area that eventually became the United States over the course of the eighteenth century, and Figure 7 depicts movements in the nominal price of rice in Charleston starting in 1722. Encouraged by expanding European demand after 1700, South Carolina's rice exports increased rapidly, rising from 450 thousand pounds at the turn of the century to 6.5 million pounds in 1720. European demand conditions were less favorable after 1720, but poor harvests in Italy coupled with the lifting of British restrictions on direct shipments of the crop to southern Europe in 1730 helped to lift the prices received by South Carolina exporters. As Figure 7 shows, rice prices received by South Carolina planters nearly doubled between 1720 and their peak in 1738. Responded to rising prices, planters increased their production of rice and the volume of exports continued its upward trend, increasing by a factor of more than 6.5 to 43 million pounds in 1740 (Figure 6).

To achieve these increases planters vastly expanded the area under cultivation and adopted new methods of cultivation, shifting production from upland areas to inland swamps so that they could take advantage of nearby ponds and reservoirs to provide a more regular supply of water for their crops. Irrigation raised yields, but was also more labor intensive. Construction and maintenance of the dikes, canals, and floodgates necessary to imple-

<sup>&</sup>lt;sup>20</sup> Nash, "South Carolina," pp. 685–86; Dethloff, "Colonial Rice Trade," p. 236; and Egnal *New World Economies*, p. 100.

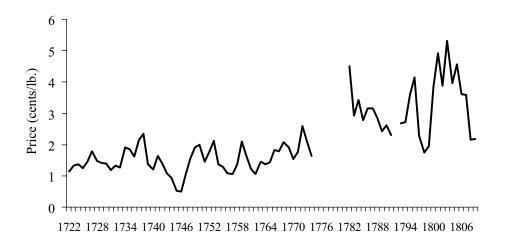


FIGURE 7
PRICE OF RICE, 1722–1809
(cents/pound)

Sources: Coclanis, Shadow, p. 107; and Cole, Wholesale Commodity Prices, p. 154.

ment this shift required large amounts of labor. Rice cultivation also required a great deal of weeding, which was difficult and unpleasant work performed ankle- or even knee-deep in mud. According to contemporary estimates successful plantations in South Carolina required a labor force of 30 or more slaves.<sup>21</sup> To meet these labor demands, slave imports boomed. Between 1700 and 1720, planters imported 9,000 slaves (see Table 2), contributing to a more than four-fold increase in the slave population. By 1720 the slave share of the population had increased to 70 percent, reaching its highest level. In the next 20 years as planters further expanded production they purchased more than 32,000 additional slaves, nearly three times the number of slaves resident in the colony in 1720. Despite this importation, the slave population increased by just 18,000 over these years reflecting the harsh demographic regime.<sup>22</sup> The combination of strong demand for their primary product and the need to continue importation simply to maintain the existing slave population helped to push up slave prices in the colony despite the influx of slaves.

The initial period of rice expansion came to a sudden end in 1740. In 1739 the Stono rebellion, in which slaves killed 39 colonists, contributed to the planters' fears about the growing black majority in the colony and resulted in the passage of a prohibitive duty on slave imports, which lasted

<sup>&</sup>lt;sup>21</sup> Glen *Description*, p. 8; Chaplin, "Tidal Rice Cultivation," pp. 31–33; and Morgan, *Slave Counterpoint*, pp. 35–37.

<sup>&</sup>lt;sup>22</sup> This demographic pattern is similar to the situation in the British West Indies. See, for example, Sheridan, *Doctors*, especially, ch. 8.

until 1744.<sup>23</sup> At nearly the same time King George's War (1739–1748) substantially raised shipping and insurance costs, restricting the market for rice.<sup>24</sup> As Figures 6 and 7 show, rice prices plummeted between 1739 and 1746 and exports fell along with them. Slave prices also fell sharply at this time. In light of this drop in slave prices it seems likely that efforts to restrict slave imports at this time were not in fact a binding constraint on the importation of slaves.

During this period planters experimented with other crops, most notably indigo, which emerged as an important complement to rice. British bounties made indigo commercially attractive, and because it was less bulky than rice, it was less affected by the wartime rise in shipping costs. Moreover, because it could be grown on lands not suited to rice cultivation, and because its peak labor demands did not coincide with those of rice cultivation, planters could add indigo without substantially reducing their commitment to rice. <sup>25</sup> By 1748 indigo already accounted for 10.4 percent of South Carolina's exports, putting it third in importance behind deerskins, 22 percent, and rice, 55 percent. <sup>26</sup>

With the return of peace in the late 1740s, rice prices recovered and the volume of exports began to rise again. The continued expansion of indigo cultivation in the 1750s provided a further stimulus to the economy. Between 1750 and 1760 exports of indigo increased nearly eight-fold, rising from 57,000 pounds to 481,000 pounds. Per slave exports of indigo also increased substantially, rising from about 1.5 pounds per year to nearly 8.4 pounds per year. Consistent with contemporary views that indigo and rice were largely complementary in their labor demands, this increase had only a minor effect on rice production per slave, which fell only about 10 percent, from 780 pounds per year in 1750 to 696 pounds per year in 1760.<sup>27</sup> Reflecting these developments, slave prices began to rise and slave imports resumed.

In the early 1760s rice prices began to increase again, reflecting an increase in European demand as continental food production fell behind the rate of population expansion.<sup>28</sup> Particularly important in this period was the lifting of prohibitive British tariffs on rice in 1767, which opened the large British market for the first time. Responding to rising prices, exports shot upward after 1760. As rice production expanded, cultivation spread out into Georgia—facilitated by colonists there having lifted their prohibition on the

<sup>&</sup>lt;sup>23</sup> Richardson, "Slave Trade," p. 131; Crouse, *Public Treasury*, p. 56; and Wood, *Black Majority*, pp. 308–26.

<sup>&</sup>lt;sup>24</sup> Menard, "Slavery," pp. 251–52.

<sup>&</sup>lt;sup>25</sup> Gray, History, p. 289.

<sup>&</sup>lt;sup>26</sup> Coclanis, *Shadow*, p. 80.

<sup>&</sup>lt;sup>27</sup> Nash, "South Carolina," p. 689.

<sup>&</sup>lt;sup>28</sup> Nash, "South Carolina," p. 692; and Dethloff, "Colonial Rice Trade," p. 235.

use of slave labor—and the Cape Fear region of North Carolina. South Carolina remained by far the largest producer, and exports through Charleston continued to dominate total exports, but the growth of other sources of supply is apparent in Figure 6. By the early 1770s rice exports from Charleston were in the range of 60 to 70 million pounds per year, well above the peak reached in the 1740s, and total American exports were in excess of 80 million pounds annually.

The upward trajectory of rice exports came to an end with the American Revolutionary War. Importation of slaves into the region was interrupted by the war, and the sustained conflict in the region from 1778 to 1781 led to a sharp decline in the size of the slave population. The precise causes of the demographic shock remain unclear, though it seems likely that during the chaotic conditions of the war some slaves seized the opportunity to flee or rebel against planter authority, while others were commandeered by British or American troops. Although data are imprecise, historians have estimated that the regional slave population was reduced by approximately 25,000 as a result of the war.<sup>29</sup> The impact of these losses is apparent in Table 2, which suggests that over the course of the 1780s imports of nearly 20,000 slaves increased the slave population by only 10,000.

The devastation caused by the war is apparent in the very low levels of rice exports in the immediate postwar period. Exports rose rapidly in the second half of the 1780s; but even at their peak in 1793, Charleston's exports were well below the level they had attained in the early 1770s. Although the large reduction in the slave population helped to raise slave prices in the aftermath of the war, weak export performance and falling rice prices contributed to the decline in real slave prices through the mid-1790s.<sup>31</sup> As a result, slave prices fell below those in the West Indies for the first time since the early 1750s. That slave prices in South Carolina were below West Indian prices in the late 1780s and early 1790s provides one important explanation for the state legislature's willingness to prohibit international importation: given the high price of imported slaves there was little demand for them at this time. When demand increased again after 1800 and slave prices in the Lower South rose above levels in the international market the legislature quickly acted to lift import restrictions. Despite the depressing effects on the South Carolina economy, slave prices there remained well above the level of prices in the Chesapeake, which helps to account for the relatively large influx of slaves into the state during the 1790s.

<sup>&</sup>lt;sup>29</sup> Morgan, "Black Society," p. 111; and Gray *History*, p. 596.

<sup>&</sup>lt;sup>30</sup> In addition to the loss of slaves, wartime disruptions had led planters to neglect normal maintenance on their irrigation systems, further impeding postwar recovery.

<sup>&</sup>lt;sup>31</sup> Mancall, Rosenbloom, and Weiss, "Agricultural Labor Productivity," table 2, found that, valued in constant prices, an index of the value of exports per slave in 1790 was only 5 percent higher than it had been in 1750, or about three-quarters of its level in 1770.

After the mid-1790s cotton cultivation began to spread rapidly through the interior regions of the state, providing a new source of demand for slave labor. As cotton production shot upward, reaching perhaps 20 million pounds by 1800, the demand for slaves increased, causing slave prices to rise as well. Adding to the upward pressure on slave prices at this time may have been additional demand created by the expectation that Congress would prohibit the international importation of slaves after 1807.

The configuration of slave prices in the early nineteenth century shown in Figure 3 helps to illuminate the economic context of the Congressional debate in 1807 over ending the international importation of slaves. Although slave prices in the Lower South were high enough at this time to justify continued imports, the low prices in the Chesapeake suggest that a restriction on the import of slaves may not have been a critical concern in that region. Indeed, by cutting off the international supply, the ban on importation would have increased demand for slaves from the Chesapeake, thus raising their prices. By the same token, the ability of planters in the Lower South to import lower-priced slaves from the Chesapeake at this time may have muted their concerns about the impact of a Federal prohibition on the international slave trade. In the end, other factors came into play, especially the efforts to regulate the coastal trade in slaves, but the relative prices may have influenced the degree to which representatives from different states opposed the measure in the first place.<sup>32</sup>

# SLAVE PRICES AND AGRICULTURAL LABOR PRODUCTIVITY

As the preceding account makes clear, fluctuations in European demand for rice, indigo, and cotton were an important influence on the growth of the South Carolina economy. Changes in agricultural technique also played some part in the economy's growth and influenced planters' demand for slaves. Over the course of the eighteenth century methods of rice cultivation underwent a series of changes: moving from dry land to irrigated swamps in the decades after 1720, and then shifting later in the century to tidal irrigation. Tidal irrigation itself was refined as planters shifted from "flow culture," in which fields were flooded and drained several times, to "water culture," in which fields were kept flooded and the water level raised to keep up with the rice as it grew taller.<sup>33</sup>

The innovations associated with these shifts in production had a direct impact on output per slave by enabling each slave to work more acres. John McCusker and Russell Menard, in surveying the colonial economy, felt certain that "these innovations . . . resulted in impressive productivity

<sup>&</sup>lt;sup>32</sup> See Robinson, *Slavery*, chap. 8, for a discussion of the critical amendments introduced in the House, and the Conference bill that was finally passed into law and signed by Jefferson.

<sup>&</sup>lt;sup>33</sup> Chaplin, "Tidal Rice Cultivation," pp. 32–49.

gains," and urged further research.<sup>34</sup> Work since then by Peter Coclanis, Joyce Chaplin, and Philip Morgan has set out some likely values for the increases in output per worker that resulted from the shifts in techniques.<sup>35</sup> In the words of Coclanis:

Whereas James Glen, writing in 1748, stated that it was "a common computation throughout the province" that a good working hand on a rice plantation produced about 2250 pounds of clean rice per year the figure for an *average* hand had apparently grown to about 3000 to 3600 pounds yearly during the second half of the eighteenth century, with good hands capable of even more.<sup>36</sup>

Taken at face value, the improvements described by contemporary observers imply that output per worker in rice production increased between 33 and 60 percent over the last half of the eighteenth century; an annual rate of improvement of between 0.6 and 0.9 percent per year. The evidence on which such conclusions rest, however, is rather limited, especially for the earlier years.

Because improvements in productivity lead to increases in the standard of living, it is important to establish more clearly and convincingly the size and timing of productivity advances in agriculture. Our slave price series allows us to do this, at least for the export portion of the agricultural sector.<sup>37</sup> In equilibrium, employers will equate the marginal product of labor with the real (product price deflated) price of labor, thus suitably deflated slave prices enable us to gauge the impact of the technological changes that took place in rice cultivation over the course of the eighteenth century. Assuming that slave purchasers evaluated their decisions in an economically rational way, slave prices at each date would reflect the expected discounted value of a slave's future production net of all costs of maintenance.<sup>38</sup> Consequently, trends in what we shall call "deflated slave prices" (that is, nominal slave prices relative to the prices of the agricultural commodities that slaves produced) can be interpreted as an index of labor productivity analogous to the way data on real wages have been interpreted. Of course, unlike wages, slave prices reflected not just the current marginal product of labor, but rather the capitalized value of future marginal products. Consequently, they would also be affected by changes in the length of the stream of expected future income—through changes in life expectancy—changes in the rate of discount used to evaluate future income streams, and changes in uncertainty about future returns. We cannot quantify the magnitude of these effects, but it seems clear that their

<sup>&</sup>lt;sup>34</sup> McCusker and Menard, *Economy*, p. 178.

<sup>35</sup> Coclanis, Shadow; Chaplin Anxious; and Morgan, Slave Counterpoint.

<sup>&</sup>lt;sup>36</sup> Coclanis, *Shadow*, p. 97.

<sup>&</sup>lt;sup>37</sup> Elsewhere (Mancall, Rosenbloom, and Weiss, "Agricultural Labor Productivity") we investigate agricultural productivity growth in greater detail, comparing this real slave price series with that for exports per slave and a broader measure of conjectured agricultural output per worker.

<sup>&</sup>lt;sup>38</sup> It should be noted that it is not necessary that all slave purchasers act in an economically rational way, only that the marginal purchaser was economically rational.

TABLE 3 REAL SLAVE PRICES, 1722–1809

			Real Slave Prices	
Date	Nominal Prices (dollars)	Export Price Index (1770 = 100)	Level (prices of 1770)	Index (1720 = 100)
1722–1724	110.37	66.5	165.88	100.0
1725-1729	116.66	76.5	152.52	91.9
1730-1734	116.89	73.5	159.10	95.9
1735-1739	104.26	96.7	107.82	65.0
1740-1744	102.98	64.9	158.61	95.6
1745-1749	96.41	54.2	177.86	107.2
1750-1754	149.72	87.2	171.77	103.6
1755-1759	124.43	75.0	165.98	100.1
1760-1764	175.53	72.4	242.54	146.2
1765-1769	200.48	88.4	226.76	136.7
1770-1774	240.61	100.3	239.82	157.2
1775	242.56	85.9	282.51	170.3
1785–1789	239.27	156.2	153.14	92.3
1790-1794	229.55	145.3	157.95	95.2
1795-1799	314.63	178.0	176.79	106.6
1800-1804	337.38	191.1	176.58	106.5
1805-1809	349.49	150.2	232.73	140.3

Notes and Sources: Slave prices are from Table 1. Export price data are from Cole, Wholesale Commodity Prices, pp. 107, 154. The export price index is based on rice prices for the years 1722–1746 and 1775–96. For 1747–1775 it is a weighted index of rice and indigo prices, with rice having a weight of 0.75 and indigo a weight of 0.25. For 1797–1805 it is a weighted index of rice and cotton prices, with each component having a weight of 0.5. Figures for each year are five-year centered averages unless otherwise noted.

effects, if any, would have been to increase slave prices over the period from 1720 to 1800, which means that any observed increase in slave prices would tend to overstate the rate of advance in labor productivity.<sup>39</sup>

In the first two columns of Table 3 we report five-year averages of nominal slave prices along with an index of prices of South Carolina's primary agricultural exports. The third column of the table shows the deflated prices, and the last column presents an index of these deflated figures. Through 1755–1759 the deflated slave values showed no clear trend, but thereafter, and coinciding roughly with the expansion of indigo production in the 1750s, they began to rise and continued to increase until the Revolutionary

<sup>&</sup>lt;sup>39</sup> Over the course of the eighteenth century life-expectancy for slaves must have increased. Early in the century the demographic regime was very harsh, and the slave population was maintained only through heavy importation. As the century progressed the improvement in conditions brought a decline in mortality and a rise in fertility. Menard, "Slave Demography"; and Morgan, "Black Society." This transition would be expected to have raised the value of slave labor even in the absence of improvements in productivity. Evidence on interest rates in the Lower South is sparse, but Coclanis, *Shadow*, p. 105, suggests they declined in the region. Elsewhere in the Atlantic world, interest rates were stable or falling according Homer and Sylla, *History*, ch. 11.

War. At their peak in 1775 they were 65 percent above their level in the 1750–1754 period. But these increases were transitory, and they disappeared in the aftermath of American independence. From 1785 to 1795 the deflated slave values were below their pre-1755 level. Only with the expansion of cotton cultivation in the second half of the 1790s did values again begin to rise, so that by 1805 they were modestly higher than they had been in the 1720s.

The 65 percent increase in the deflated slave values between 1750 and 1775 is on the same order of magnitude as the increase in output per worker indicated by the narrative descriptions, but the timing of the improvement is different. The narrative histories suggested that the improvements occurred more slowly and continued through the end of the century. The deflated slave value series indicates the improvements occurred in a much shorter time, but then dissipated by the end of the century.

In the face of a relatively elastic long-run labor supply curve, the finding that there was little long-run increase in labor productivity should not in fact be that surprising. It indicates that, whereas technological and market forces contributed to an outward shift in the regional labor demand curve, the international labor supply response prevented these forces from being translated into substantial increases in labor productivity. On the other hand, the pronounced but temporary rise in deflated slave values in the decade and a half before the Revolution shows how external, market-driven shocks—British bounties on indigo, and rising European demand for rice—influenced the value of labor in the region.

# **CONCLUSION**

We have used data from probate inventories from South Carolina to construct a long-term series of slave prices covering the period from 1722 to 1809. These estimates reveal that slave prices fell moderately between the 1720s and 1740s, before beginning to rise. The rate of price increases accelerated after 1770, and despite a sharp drop in the 1790s, nominal prices had approximately tripled by the early nineteenth century. Although the long-run supply of slaves was probably close to perfectly elastic, the short-run supply curve was relatively inelastic. In these circumstances, the growth of world markets for rice in combination with British bounties for colonial indigo contributed to rising output prices, which, in turn, helped to push up slave prices after the middle of the eighteenth century.

Consistent with our finding that the long-run supply of slaves was nearly perfectly elastic we find that over the course of the eighteenth century there was no apparent trend in the value of slave labor deflated by the price of its chief products. In the short-run, shifts in world demand and advances in

agricultural techniques may have raised the value of the marginal product of labor, but the long-run supply response shifted labor supply outward until the value of labor's marginal product was brought back into line with international slave prices. As a result extensive growth appears to have been the dominant factor in the expansion of the South Carolina economy over the course of the eighteenth century.

The behavior of slave prices in the 1790s may have been an important factor influencing attitudes about the termination of American participation in the international slave trade. At the time of the Constitutional Convention, slave prices throughout the South were below international levels, suggesting that the demand for imported slaves would have been small. Although delegates from South Carolina were instrumental in delaying federal action on the international slave trade until the early nineteenth century, the South Carolina legislature was prepared to legislate a temporary halt in importation during the 1790s. The spread of cotton cultivation drove up prices in the Lower South and contributed to the reopening of importation after 1803, but slave prices in the Chesapeake remained well below those in the Lower South and West Indies. This pattern of regional slave price variation may have affected views on the termination of slave imports in 1807. It seems plausible that planters in the Chesapeake would have viewed prohibition as likely to enhance the value of their slave property, and it is possible that the presence of a supply of lower-priced slaves in the Chesapeake may have muted concerns within the Lower South about the effects of prohibiting further importation.

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