CHAPTER FIVE

The Economics of Industrial Slavery

> The Virginia and Tennessee Railroad ". . . though just commenced, is already exciting upon the public mind of that State in reference to turning a portion of its labor now entirely engaged in agricultural into other pursuits. . . . We really believe that this road is to be the *Moses*, which is to lead Virginia out of Egypt into a better land."
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> *American Railroad Journal*, 23 (1850), 147.

The economics of slavery is a subject in which scholars have long been interested. From the pre-Civil War period until the present day, historians and economists have offered theories and evidence regarding, in particular, the profitability of plantation slavery. After all, if slavery was not economically viable, would not slaveowners have abandoned their "peculiar institution?" And was a bloody civil war necessary if slavery was dying of its own weight? Obviously, the economics of slavery is important not only in its own right, but also in relation to the political development of the United States. Despite its political significance, however, scholars have devoted little attention to whether the use of slave labor in Old South industries was economically feasible.[1]

To study the economics of industrial slavery requires the consideration of several questions. The first is whether slave-employing industries could expect to earn reasonably profitable rates of return on their capital investments. In this analysis, profit rate means either the annual dividend paid on common stock or the annual net income expressed as a percentage of the net worth of the industrial enterprise. A reasonably profitable investment means at least a 6 per cent annual return on capital—the average rate of return on other forms of investment.[2]

The second question is whether industrial slavery was *generally* as efficient and as economical as an alternative labor system. Were slaves as efficient as free whites? Was slave labor —directly owned or hired—less expensive to employ than free labor? Did slave labor entail higher capital and maintenance costs than free labor?

The third question, related to the second, concerns the *specific* competitive advantages of industrial slavery—that is, how did the use of slaves enable Southerners to compete with the North and with Britain, where industrialization had progressed further? Specifically, did the exploitation of slave women and children, the training of slave managers, and the coupling of common slaves with skilled foreign technicians enable southern industries to reduce their costs and to raise their quality in order to become competitive in national market places?

The last question concerns the problems of capitalizing slave labor in industries. What were the sources of capital for slave-based industries? Did Southerners have sufficient investment capital to support industries? And, finally, did the funding of industries with slave capital have a detrimental effect on financial structures by reducing the flexibility of capital and the mobility of labor? [3]

At the outset, certain theoretical and methodological problems should be noted. While the above questions are obviously interrelated, an affirmative answer to one of them does not necessarily imply an affirmative answer to the others. Much confusion has resulted from a failure to distinguish the differences between the questions. Precise analysis of the economics

of industrial slavery is also difficult, since information on the sources of finance, the capital cost and maintenance of labor, and the profits of enterprise is scarce. Available statistics are unsatisfactory because not all businesses kept records and only a few fragmentary accounts have survived. Those that have do not necessarily constitute representative samples of non-agricultural enterprises, since most records pertain to large establishments, and it is not certain whether small industrial operators were as successful as large ones. Moreover, the data on costs of labor and rates of profit is often unclear because of the peculiarities of antebellum accounting and the difficulty of finding long-term statistical series. Company reports tended to underestimate expenses and to exaggerate earnings to promote southern enterprise, while official censuses were haphazardly taken and must be used cautiously. Prices varied, while business cycles caused fluctuating profit rates and frequent bankruptcies. Variables such as location, luck, competition, and caliber of management also make computations of the profitability of industrial slavery difficult. Even so, it is worthwhile to explore the earnings, the efficiency, the competitive position, and the capitalization of those slave-employing industries whose records survive.

The Profitability of Industrial Slavery

Under normal operating conditions, slave-employing industries and transportation projects could expect to earn reasonable profits on their capital investments. Some enterprises failed, of course, but most industrial entrepreneurs employing slave labor enjoyed highly satisfactory rates of return on their investments. Most slave-employing enterprises whose records are available matched or exceeded an annual rate of return of about 6 per cent.

The records of southern textile mills employing slave labor

indicate that they usually earned annual profits on capital ranging from 10 to 65 per cent and averaging about 16 per cent. The DeKalb, Martin and Weekly, Roswell, and Tuscaloosa textile companies, to give but four examples, annually paid between 10 and 20 per cent. The Woodville mill, which went bankrupt with free labor, annually paid 10 to 15 per cent dividends after switching to slave labor. "The Saluda Manufacturing Company . . . is doing a flourishing business . . . [and] pays large dividends," ran a report of one slave-employing cotton mill.[4]

The available records of southern iron works employing slaves suggest further that substantial profits could be made in this industry. As early as 1813, one slaveowning iron manufacturer reportedly could "afford to work as cheap as others, and always do so but not at an under rate." From 1835 to 1845, a Mobile iron foundry made 25 per cent annually; during the 1850's, a South Carolina iron works earned 7 per cent yearly. The famous Tredegar Iron Company averaged annually better than 20 per cent returns from 1844 to 1861.[5]

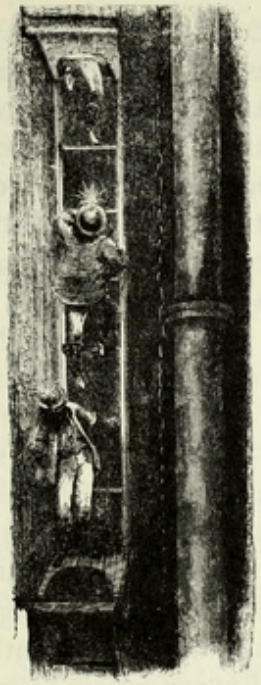
Other kinds of manufacturing and processing enterprises employing slave labor evidently earned similar profit rates. One hemp manufacturer testified that he realized more than 42 per cent profits per annum in the 1840's. A tannery reported 10 per cent yearly between 1831 and 1845. A gas works also earned a 10 per cent return in 1854.[6] According to official reports, most Louisiana sugar mills earned better than 7 per cent returns in 1830 and almost 11 per cent in 1845. During the 1850's, a cotton press made 10 per cent; the Haxall Flour Mills of Richmond reportedly "made large fortunes for their owners for over half a century."[7]

Similarly, slave-employing enterprises in the extractive industries generally made handsome profits. Though one turpentine manufacturer "believed sincerely that no money can be made at the business while labour is so extremely high,"

in the 1850's, turpentine enterprises in North Carolina and Georgia did achieve satisfactory returns. In 1850, *De Bow's Review* proclaimed that "compared to other labor, this [turpentining] has, for the last ten years, been deemed the most profitable of all." The profitability of lumbering is suggested by one Louisiana woodyard that annually earned 12.5 to 25 per cent returns between 1846 and 1850. In addition, the Dismal Swamp Land Company reportedly "realized almost fabulous proceeds from the timber," while a Carolinian maintained that "I have no doubt from all I have heard . . . that more money can be made in this business [West Florida lumbering] than any other when [slave] manual labor is used." Fisheries usually earned at "a level with the ordinary industrial pursuits of the country," though "enormous profits" were "sometimes realized." [8]

Most southern mining enterprises employing bondsmen also earned substantial profits. As early as 1807, the Missouri lead-smelter Frederick Bates declared that "few labors or pursuits in the U. States, yield such *ample*, such *vast* returns—A slave, with a *Pick* and *Shovel* is supposed to do nothing, if the nett proceeds of his labor, do not amount, annually, to the sum of 400 dollars—the price which his master has probably paid for him." Later, Bates added: "You will see [in my letter to Albert Gallatin] the vast profits arising from the prosecution of this lucrative business." Official records indicate that between 1834 and 1845, several Key West salt works earned 8 per cent annually. Many southern gold seekers failed, to be sure, but scores of mines were as profitable as, for example, John C. Calhoun's which yielded nearly $1 million, and Samuel J. Tilden's which earned $4 million. The success of these gold miners confirmed the conclusion of the Richmond *Enquirer* in 1853:

> It is demonstrated beyond question, that gold mining, *as a business,* can be most profitably conducted . . . with a proper outlay of capital in machinery & excavations. . . . Though worked thus rudely & superficially, altogether by native labor and with little mining skill or experience, they have all paid well.[9]



Miners Descending the Shaft

From the 1790's to 1861, the majority of transportation enterprises employing slaves realized profitable returns. Some southern railroads paid annual dividends as high as 20 per cent, and most other lines averaged about 8 per cent. Some canal companies, such as the Roanoke, did not do as well as most railroads, but others, such as the Louisville and Portland and the Dismal Swamp, paid nearly as well. Plank roads and turnpikes, however, generally did not earn returns greater than 4 per cent on the capital invested.[10]

A few unusually complete statistical series for such slave-employing enterprises as sawmilling, steamboating, and gold mining do survive to permit the further computation of the profitability of industrial slavery. As early as 1794, Alexander Telfair's sawmills made him one of Georgia's wealthiest citizens. The Hart Gold Mining Company yielded a similar fortune for another Georgian. The earnings of the *Thomas Jefferson* permitted a Virginia steamboat company to average acceptable dividends between 1833 and 1849.[11]

The surviving records of two rice mills are complete enough so that some idea of the profitability of this industry can be determined. Though it is impossible to separate the profits of rice planting from rice milling, James Hamilton Couper's Georgia rice estate annually averaged 4.1 per cent return on capital between 1833 and 1852, despite his financial losses from natural disasters and from long agricultural experimentation. However, Couper's 4.1 per cent return does not take into account personal expenditures to support his sumptuous living standard and the appreciation of his lands and slaves. Between 1827 and 1841, for example, the plantation appreciated in value as much as 26 per cent; between 1827 and 1845, the slaves multiplied from 380 to about 500—almost a 20 per cent increase on their original valuation.[12] Couper's average total annual return on capital was therefore greater than 6 per cent. Similarly, the records of the Manigault family's Savannah River rice mills reveal average annual returns of 12 per cent between 1833 and 1839, and 12.2 per cent from 1856 to 1861. The natural increase in the number and value of the Manigaults' bondsmen compensated for losses from three cholera epidemics, the absence of an experienced overseer between 1855 and 1859, a destructive freshet in 1852, and a devastating hurricane in 1854.[13]

The records of those industrial enterprises which hired bondsmen instead of purchasing them outright further reveal that reasonably profitable returns on invested capital could be

earned. In such cases, of course, slave hirers computed only the cost of labor against their net income to estimate their profit rate, while slaveowners computed the amount of rent against their investment to estimate their profits for the year. In 1817, Ebenezer Pettigrew noted the expenses and earnings from a hired slave lumberman as follows:

Hire	$80.00
Clothing	17.00
Victuals	27.40
	$124.40

Net proceeds of said fellow geting Juniper Shingles is found to be $250.00

Moreover, from 1830 to 1860, the annual rates of return from slave hiring ranged, according to one study, from 9.5 to 14.3 per cent in the upper South, and from 10.3 to 18.5 per cent in the lower South.[14] Such earnings suggest that slave hiring was at least as profitable as direct slave ownership for industries.

Finally, it should be recalled that industrial entrepreneurs, like most other slaveowners, profited from slavery's intermediate product—marketable and productive slave offspring. Many industrial establishments owned slave women whose progeny could easily be sold, and both women and children could be employed in light and heavy industries. Slave women and children therefore gave competitive advantages to employers of industrial slaves.[15] It may therefore be concluded that industrial enterprises, which either owned or hired slave labor, earned profitable returns on their investments.

The General Efficiency of Industrial Slavery

It is possible that industrial slavery was an inefficient or uneconomical labor system, even though it was simultaneously

profitable to most industrial enterprises. Slaves were so troublesome and so unwilling, according to some historians, that they were less efficient than free workers. After all, did not slaves have to be coerced, while free workers responded eagerly to wage incentives? Industrial slave labor may also have been so expensive compared to free labor that it was, objectively, an unviable labor system. Given these questions, it is necessary to examine further the general efficiency of industrial slave workers and the costs arising from their ownership.

The available evidence indicates that slave labor was not less efficient than the free labor available in the Old South. To be sure, the slave's indifference to his work and his resistance to bondage tended to diminish his productivity somewhat. But this does not necessarily mean that competent managers could not make industrial slaves work or would have found free labor more efficient to employ. Physical coercion, or the threat of it, was an effective slave incentive, and masters often gave bondsmen material rewards for satisfactory production. In addition, industrial slaveowners could exploit women and children more fully than could employers of free labor. The average industrial bondsman was disciplined more rigorously than the typical free worker. Slaveholders were not troubled by labor organizations and were not obliged to bargain openly with their employees. "These advantages," concludes one authority, "more than compensated for whatever superiority free labor had in efficiency." [16]

In theory, slave labor may be less efficient than free labor over the long run, but for this study the practical comparison is between southern Negro slaves and the alternative free labor —poor whites, yeomen, and immigrants—available to the Old South. If this comparison is made, then it may be seen that the available free labor—particularly the poor whites and immigrants—was less efficient than slave labor, since these whites were less tractable than slaves.[17]

Testimony from southern manufacturers who employed free labor supports the conclusion that it was not very efficient. White "hands had to be trained," admitted an associate of Daniel Pratt, the well-known Alabama businessman. "These [whites] were brought up from the piney woods, many of them with no sort of training to any kind of labor; in fact, they had to learn everything, and in learning, many mistakes and blunders were made fatal to success." Southern poor whites were not disciplined to sustained industrial labor, conceded the treasurer of William Gregg's Graniteville, South Carolina, cotton mill—another southern showpiece employing southern white workers.[18] Moreover, such testimony has been confirmed even by those scholars who argue that the level of productivity (that is, output per man) of slave labor was "low." "When white labor was used in Southern factories, it was not always superior to slave labor," admits one historian. ". . . [Southern white] productivity was much lower than in the North. . . . The use of whites did not guarantee a better work force than did the use of Negroes, for the South lacked an adequate pool of disciplined free workers." [19]

The efficiency, or total output, of slave labor compared to free labor can also be estimated by comparing the prices paid for slave hirelings with the wages paid southern free labor. From 1800 to 1861, white wages did not increase substantially; they remained fairly constant at about $300 per annum.[20] On the other hand, between 1800 and 1833, slave rents increased by about 50 per cent. Then, in the 1840's and the 1850's, slave hires again increased by another 50 per cent. At the same time, the value of slaves was increasing proportionately.[21] This suggests that both the productivity of and the demand for slave labor were increasing substantially during the first half of the nineteenth century. Thus, no matter how inefficient slave labor may have been, it was not less efficient than the free labor available to Southerners at the time.

It is often argued that the use of slaves entailed expenditures that were avoided by the employers of wage labor. The initial investment in blacks, the interest and depreciation on slave capital, the constant risk of financial losses from death, injury, disease, and escape, and the expense of maintaining slaves were all special expenses supposedly peculiar to slave ownership. These extra costs, according to some scholars, made slave labor more expensive and less economical than free labor.

It is clear, however, that these special costs did not make slave ownership more expensive than free labor. Many industrialists did not bear the cost of initial slave capitalization, since they had inherited their bondsmen or had shifted them from agriculture to industry. Interest on capital was a current operating expense only if bondsmen were purchased on credit rather than with cash. Depreciation of slave capital was not a cost for most slaveowners, since slaves were appreciating in value and were producing saleable offspring. The prospect of financial disaster from losses of bondsmen was beginning to be alleviated in the 1840's and 1850's as many owners began to insure the lives of their Negroes. Finally, industries that hired slaves rather than purchasing them did not bear directly the cost of initial capitalization.[22]

Yet, when industries did purchase bondsmen considerable expenditure of capital was involved, which should be compared to the costs of wage labor. The purchase of slaves entailed a different sort of expense than wages of free labor, since it was capitalization of future expenditures on labor and the payment all at once of a portion of what an employer of free labor would pay over a period of years. The cost of Negroes and their maintenance were, as one historian has argued, part of the wages an employer of free labor would expect to pay, and what masters were willing to pay for the right to fully control the time and movements of their workmen.[23] Slavery thus involved long-term capitalization of labor, while free labor involved the current expense of wages.

The surviving evidence also demonstrates that maintaining industrial slave labor cost much less than paying wages to available free labor. For directly owned industrial slaves the largest annual expenditures were for maintenance and supervision—specifically for food, clothing, shelter, medical care, and management, as well as such incidental expenses as taxes, insurance, and incentive payments.[24] The records of typical slave-employing enterprises reveal that the cost of important maintenance items and of supervision varied considerably. Suits of clothing, for example, ranged in price from $4 to $7, while shoes cost between $1 and $1.50, and boots from $1.50 to $2.50 a pair. Hats and caps sold for 50 or 75 cents, while blankets cost $1 or $2 each. Doctors ordinarily charged from $1 to $3 per visit; treatment of diseases such as syphilis cost from $5 to $15; medicine cost between 50 cents and $1 per illness. Life insurance ranged between $1.66 and $5 per hundred dollar valuation, but averaged about $2 per hundred, or 2 per cent of valuation.[25] Depending on self-sufficiency and locale, the annual per capita cost of food varied between $10 and $125; clothing varied from about $3 to $30 annually per capita, housing cost between $5 and $10, and management ranged from about $200 to $3000 a year.[26]

Despite such wide variations, industrial records indicate that between 1820 and 1860 food annually averaged about $50 per slave and clothing about $15.[27] Medical attention annually averaged about $3 per slave, housing probably cost about $7, and supervision amounted to about $800 per thirty hands, or about $27 per annum per slave. Incidental expenses annually cost little more than $5 per slave.[28] The annual average maintenance cost per industrial slave therefore amounted to about $100. Obviously this was higher than the maintenance of slaves

on plantations, which were much more self-sufficient. But how did these expenses compare with the cost of free labor in the Old South?

In the antebellum South, the daily wages of white common laborers ranged from 75 cents to $2 and averaged about $1 a day, while skilled whites earned daily from $2 to $5 and averaged about $3. The wages of common white workers did not increase appreciably between 1800 and 1861.[29] Thus, for a 310-day working year, and depending on skill, white wages ranged from $225 to $1500 annually. But the bulk of unskilled white workers who figure in this study averaged only about $310 per year. Like slaves, wage laborers required supervision, but they ordinarily fed, clothed, and housed themselves, unless their board was furnished for them or they lived in company towns where their maintenance costs were automatically subtracted from their wages. The cost of free labor thus totaled about $335 per annum, including supervision. The annual average maintenance cost per industrial slave was therefore less than one-third the annual cost of wages and supervision of free common laborers.

The surviving reports from those "integrated" companies previously mentioned which used both slave labor and free labor simultaneously (or in succession) also reveal that slave labor was much less expensive than free labor. At the Cape Fear and Deep River Navigation Works white workers cost 40 cents per day to board, while slaves cost 30 cents. In 1849, the Jackson *Mississippian* reported that whites cost 30 cents per day to board, while slaves cost 20 cents. In the late 1830's and 1840's, the Graham Cotton Mill in Kentucky listed white board at from $65 to $71 per year, while slave board ranged from $35 to $50. The accounts of the Roanoke Valley Railroad for 1852–53 indicate that slaves were boarded more cheaply than whites, and the records of the Jordan and Davis

iron works in Virginia for 1857–58 demonstrate that whites were boarded for $8 per month, while slaves cost $7.[30]

Similarly, in the 1820's, the proprietors of the Maramec Iron Works in Missouri (another such integrated enterprise) reported that slaves were cheaper than free workers. Whites cost on the average about $15 per month, *excluding* supervision and free housing. Slaves hired for $100 per annum; their supervision and maintenance ran no more than $80 per year. Maramec's proprietors also testified that the cost of labor per cord of wood chopped by slaves compared favorably with the cost when whites performed the task.[31] A Kentucky hemp manufacturer, who converted from free labor to slave labor, claimed that slaves reduced his costs by 33 per cent. In 1854, it was reported that Kanawha River, Virginia, slave miners produced $2 per day more than free miners at Pittsburgh, Pennsylvania, pits. The next year, the Virginia and Tennessee Railroad reported that slave labor cost only about $11 monthly while free labor cost $40 to $50 monthly. The manager of one South Carolina cotton mill estimated that in 1851 slaves cost less than half as much as whites.[32] Therefore, at such integrated industrial enterprises, where the only variable was the nature of the labor force, slave labor was very much less expensive to employ than free labor.

Unusually complete records of several other integrated enterprises provide additional evidence that industrial slave labor was much cheaper than free labor. The labor rolls of the Gosport Navy Yard reveal that in the 1830's slaves produced as much as white workers for two-thirds the cost—that is, the use of industrial slaves was, in this case, almost twice as efficient as the use of whites. This was partly because the daily rent of slave hammerers ranged only from 72 to 83 cents, averaging close to 72 cents. The daily wages of white hammerers ranged from $1.68 to $1.73. Of course, the cost of maintaining

the slaves probably amounted to about 30 cents daily, which increased the cost of slave hammerers to about $1 per day. Even so, it was less expensive to employ slaves than whites.[33]

The account sheets for Robert Jemison, Jr.'s Alabama construction projects further indicate that in 1858 bondsmen were 26 per cent cheaper to employ than free laborers. In 1859, slaves were 46 per cent less expensive than whites. The accounts of the Graham textile mill in Kentucky reveal that from 1837 to 1843 unskilled slaves annually cost 26 per cent less than unskilled whites, while skilled slaves cost between 15 and 22 per cent less than skilled whites. As late as 1851, slave carders, weavers, and spinners still cost less than comparable whites. The records of the Woolley textile mill in Kentucky also indicate that, between 1856 and 1861, most skilled slaves annually cost 57 per cent less to employ than skilled whites.[34]

Another integrated industrial enterprise, Richmond's Tredegar Iron Works, offers an interesting example of the cheapness of slave labor. After commencing to hire slaves in 1848, Tredegar's proprietor, Joseph Reid Anderson, stated that slave labor "enables me, of course, to compete with other manufacturers." Competitiveness was achieved by combining slaves with white iron workers, which reduced the average cost of labor per ton of rolled iron. Between 1844 and 1846, *before* slaves were employed, for example, labor cost more than $12 per ton; from 1850 to 1852, *after* slaves were fully at work, labor averaged $10.59 per ton. The introduction of slaves thus enabled Anderson to reduce his labor costs by 12 per cent.[35]

A confidential report by the chief engineer of the South Carolina Railroad, which employed free labor at its Charleston terminal but used slave labor for its upcountry stations, offers additional evidence on the comparative cost of bondsmen and free workers. "It is a subject well worthy of enquiry whether the labor at the Charleston Depot could not be performed by

slaves more economically than by whites," confided the official to the president of the line in 1849. "What cannot fail to strike you in the abstract of Depot expenses for August last is the fact that 1570 days [of] *white* labor at Charleston Depot cost $1,206, or 77 cts per day, while 1033 days [of] *slave* labor cost at the three *upper terminii* only $524 or 51 cts per day," he continued. "This statement also shows that it took 50 per cent more labor to load merchandise and unload cotton [at Charleston by white labor] than to load cotton and unload merchandise [in the upcountry by slave labor], or the cost of the former was two & a third (2⅓) times the latter."[36]

Similarly, an 1855 report by the State Engineer of Louisiana also reveals that slave labor was much less expensive than free labor. Since this report was based on detailed accounts and considerable experience with both slave and free labor, it is perhaps worth quoting at length:

> This department has employed for the last two years an average of one hundred and three negroes, at an average cost for provisions and clothing for the two years of $7,478.00. Nine of them have died in the meantime . . . so that . . . the State has lost but four per cent of its capital each year of that time. The account should stand thus, estimating the negroes at $1,200 each:
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> | | |
> |---|---|
> | Value of 103 negroes at $1,200 each | $123,600 |
> | Interest at six per cent on stock for one year | $ 7,416.00 |
> | Loss on stock for one year four per cent | 4,944.00 |
> | Provisions and clothing | 7,478.00 |
> | Total | 19,838.00 |
> | Total cost for each slave per year | 192.60 |
> | Cost per month | 16.05 |
> | One year's labor of 103 white men, at $35 per month, including provisions | 43,260.00 |
> | Making a difference in favor of slave labor per year | 23,422.00 |

> . . . There is, however, one item not taken into the account, and that is the fact that negroes in this climate will, for the year round, perform much more labor than an equal number of white men—I think the difference is about two to three—or that twenty negroes will perform as much hard labor as thirty white men, which would increase the difference in favor of slave labor from $23,422 to $37,475 per year. . . . The cost of superintending white and slave labor must necessarily be about the same. Another disadvantage attending the employment of white laborers is the fact that they are more difficult to control than the negro, and when they know you are most dependent on them they will either demand higher wages or leave you. . . .[37]

Whatever the capital costs of slave ownership, these hardly concerned the employers of slave hirelings. Slave hirers bore only the expenses of rent, maintenance, and supervision, even though other costs might be hidden in the slave rent. Slave hiring was thus similar to paying wages to free labor. Moreover, industrial slave hirelings, like directly-owned Negroes, were also more economical to employ than the free labor available. This is confirmed by comparing the total cost of hiring slaves with the cost of free labor. Throughout the slave states during the period from 1833 to 1852, the average annual rent of slave hirelings was $100; from 1853 to 1861, it was $150. During the same spans, per capita slave maintenance annually averaged about $100. The total cost of employing slave hirelings thus ranged from $200 to $250 per annum from 1833 to 1861. However, between 1800 and 1861, the annual average cost of employing free common laborers remained at about $310, not including supervision. By comparing these figures, it can be seen that slave hirelings remained between 25 and 40 per cent cheaper to employ than wage laborers.[38] Therefore, industrial slaves—whether hired or owned—were apparently

more efficient and economical than the free labor available in the Old South.

Specific Competitive Advantages of Industrial Slavery

It is well known that southern industrialization lagged behind that of the North and of Great Britain. At least by the 1830's, northern and British industrialists had longer experience, more efficient management, larger markets, superior technology, and the ability to ship directly to the South. Northern products were of a better quality; Pennsylvania's iron and coal ores, for example, were superior to Virginia's and Kentucky's.[39] The earlier development of internal improvements in the North reduced transportation costs, which in turn reduced the prices of northern products generally. The availability of cheap labor—native and immigrant—in the North lowered prices further; the immigration of skilled Europeans increased the quality of northern products even more. The abundance of commercial capital for industrial investment enabled northern manufacturers to expand production, absorb business losses, withstand depressions, and, most important, to engage in cutthroat competition with southern producers. Thus, whatever the long-range causes and consequences of southern industrial backwardness,[40] the immediate question facing southern businessmen—especially manufacturers—was how best to compete with outside producers.

Southerners attempted to overcome their competitive disadvantages in various ways. They tried to foster direct trade with consumers of cotton, to promote internal improvements, and to recapture western markets.[41] But the most interesting means by which Southerners attempted to raise the quality and reduce the cost of their products was the use of industrial slave labor in several specific ways. First, southern businessmen extensively exploited slave women and children (and

Stemming Tobacco

sometimes superannuates). Second, they trained a Negro slave managerial group to complement white overseers. Finally, they "coupled" inexpensive slave workers with highly skilled white technicians–northern and foreign. In short, Southerners attempted to take advantage of the efficiency and inexpensiveness of slave labor to improve their competitive position in national market places.

Slave women and children comprised large proportions of the work forces in most slave-employing textile, hemp, and tobacco factories. Florida's Arcadia Manufacturing Company was but one example of a textile mill run entirely by 35 bondswomen, ranging in age from fifteen to twenty years, and by 6 or 7 young slave males.[42] Young slaves also operated many Kentucky and Missouri hemp factories. One visitor entered a

ropewalk's "long apartment, where there were 18 or 20 boys, of from 8 to 15 years old, spinning the 'filling.'" As early as 1820, Fayette County, Kentucky, hemp factories alone employed 135 slave children to work with 199 slave men. Four decades later, Missouri hemp factories employed 100 slave children to help 125 bondsmen. Slave women and children also worked at "light" tasks in most tobacco factories; one prominent tobacco manufacturer, who employed twenty slave women "stemmers," six boys, and a few girls, used for the arduous task of "pressing" the tobacco only ten mature slave males in the entire factory.[43]

Slave women and children sometimes worked at "heavy" industries such as sugar refining and rice milling. "All along the endless carrier [the conveyor belt connecting the outside yard with the inside sugar milling machinery]," wrote one observer, "are ranged slave children, whose business it is to place the cane upon it, when it is conveyed through the shed into the main building, where it falls between the rollers, [and] is crushed." At another sugar mill several slave girls placed the cane in the small trams discharging loads at the foot of the roller mill. Twelve other slave girls fed cars, three boys potted, four boys carted trash, four women boiled scum or washed, ten boys boiled juice, while adult slaves attended to heavier jobs.[44] Another sugar miller who included twenty-five females and ten "supernumings" on his "Sugar Making Roll" for 1851 followed a typical arrangement.[45] During the height of the rice milling season, one large steam rice mill added fifty bondswomen to the normal work force of forty-eight bondsmen, while another steam rice mill supplemented twelve slave men with ten boys and girls.[46]

Other heavy industries such as transportation and lumbering used slave women and children to a considerable extent. In 1800, slave women composed one-half of the work force at South Carolina's Santee Canal. Later, women often helped

build Louisiana levees. Many lower South railroads owned female slaves, who worked alongside the male slaves. Two slave women, Maria and Amelia, corded wood at Governor John A. Quitman's Mississippi woodyard. The Gulf Coast lumber industry employed thousands of bondswomen.[47]

Iron works and mines also directed slave women and children to lug trams and to push lumps of ore into crushers and furnaces. The Nesbitt Manufacturing Company in South Carolina and the Yeatman Iron Works in Tennessee, for example, owned scores of slave women and children. In Virginia the Oxford Iron Works owned twenty Negro boys, twenty-nine women, and six girls, who assisted its sixty-two males. These slave women and children worked mainly either at Oxford's coaling grounds and ore banks or at its furnaces and forges, where ten women, one boy, and one girl joined nineteen prime male slaves.[48]

Slaveowners used women and children in industries in several ways in order to increase the competitiveness of southern products. First, slave women and children cost less to capitalize and to maintain than prime males. John Ewing Colhoun, a South Carolina textile manufacturer, estimated that slave children cost two-thirds as much to maintain as adult slave cotton millers. Another Carolinian estimated that the difference in cost between female and male slave labor was even greater than that between slave and free labor.[49] Evidence from businesses using slave women and children supports the conclusion that they could reduce labor costs substantially.[50]

Second, in certain light industries, such as manufacturing, slave women and children could be as productive as prime males, and sometimes they could perform certain industrial tasks even more efficiently. This was especially true in tobacco, hemp, and cotton manufacturing, where efficiency depended more upon sprightliness and nimbleness than upon

strength and endurance. The smaller hands and agile fingers of women and children could splice cotton or hempen threads more easily than the clumsy fingers of males. Delicate palms and dexterous digits processed tobacco more carefully. "Indeed it is well known that children are better adapted to some branches of manufacturing labor than a grown person," editorialized the Jackson *Mississippian*.[51] Similarly, another promoter observed that slave children, women, and superannuates could spin and gin cotton more efficiently than males:

> The great feature of success is the number and sort of hands we shall use the machinery with. These we have already selected out, and have them training; they run thus: one old man sixty five years old at the "gin and lap;" one man (maimed, forefinger off) at "cards;" one old man sixty years old at "drawing;" one boy ten, and one girl twelve years old at "speeders;" three boys seven to nine, and three girls and boys, ten years old, "spinning;" six women and girls to the reels; but one good field hand, and she a girl but fourteen years old—17 all told.[52]

In addition, some industrialists believed that slave women could do as much work in some heavy occupations as males. "In ditching, particularly in canals . . . a woman can do nearly as much work as a man," concluded a Carolinian. *De Bow's Review* also advocated the use of women ditchers. Fugitive slave Solomon Northrup recalled that bondswomen could chop and pile lumber as capably as bondsmen. One year a rice mill overseer even proposed to use female labor exclusively to thresh the rice.[53]

Third, industrialists used slave women and children in order to utilize surplus slaves fully. "Negro children from ten to fourteen years of age are now a heavy tax upon the rest of the planter's force," editorialized the Jackson *Mississippian*. "Slaves not sufficiently strong to work in the cotton fields can

attend to the looms and spindles in the cotton mills," concluded a visitor to a cotton mill where 30 of 128 slaves were children, "and most of the girls in this establishment would not be suited for plantation work." Placing Negroes in cotton mills "render[s] many of our slaves who are generally idle in youth profitable at an early age," observed a textile promoter. "Feeble hands and children can perform this work," concluded a rice miller, "leaving the effective force for improvements or to prepare for another crop." [54]

The intention of industrialists to utilize slave capital fully by employing women and children extensively is confirmed by an analysis of the manuscript census schedules. This study reveals that almost one-half of the slave population was in the labor force—a figure which is close to, if not at, the maximum possible participation rate. Since 44 per cent of the slaves were under fourteen years of age and 4 per cent were adults over sixty, then most slave women, most teen-age slaves, many slave children, as well as most adult males seemed to be at work. Moreover, the slave participation rate in the labor force was 60 per cent greater than the white participation rate.[55] This suggests that slaves of all age groups were forced to labor more extensively than whites.

It has already been seen that one of the greatest costs and problems at southern industries was supervision. Since the cost of management contributed to the price of industrial products, Southerners sought to reduce its expensiveness and to increase its competence. Each of the types of free white management available—personal supervision, native white technicians, and imported directors—had serious limitations. When more than thirty slaves were employed, personal supervision was difficult, since sales, supplies, and bookkeeping occupied the owner's time. Native white managers were scarce, and they were often technically incompetent. Imported directors—northern

and foreign—commanded high salaries for their superior abilities and to compensate for the rigors of the southern climate. No matter what the source, therefore, free white industrial management was expensive, ranging from $200 to $3000 per annum and averaging about $800.[56] Given these circumstances, industrial enterprises often trained their own Negro slave managers.

Black slave managers were used by many southern industries. Simon Gray and Jim Matthews, slave hirelings of the Andrew Brown Lumber Company of Natchez, were responsible for rafting lumber and sand down the Mississippi River to customers along the way and to a New Orleans depot. Simon Gray directed as many as twenty raftsmen—both free whites and slaves—either owned or hired by the company. He disciplined the crewmen, distributed the wages—about $20 monthly—of the white workers and the overtime payments to the slaves, and he paid the expenses of both. After each trip to New Orleans, Gray returned to Natchez by steamboat with his crew.

Simon Gray was an exceptionally capable bondsman. Guiding hundred-foot rafts of lumber down the twisting river required great skill; bargaining with planters and sawmillers along the way demanded considerable business acumen. Simon Gray knew reading, writing, and arithmetic, kept accurate accounts, and collected and disbursed large sums of money. He once delivered $800 to a creditor; on another occasion he escorted a newly purchased bondsman from a slave market to the industrial site—a responsibility ordinarily entrusted only to white men. He had his own pass, and he could charge goods to his personal account at the company store.[57]

Simon Gray had many counterparts in southern industry. As early as the 1790's, Andrew, a slave, rafted lumber down Georgia rivers, directed other slave raftsmen, and responsibly delivered bills of lading as well as valuable lumber for saw-

miller Alexander Telfair. A Savannah factor paid each crewman $1 per trip, but they once received $3 to $5 each. Andrew served Telfair until the early 1800's; other slave managers shouldered similar responsibilities for Telfair until the Civil War. In the 1840's, before he fled, Solomon Northrup rafted lumber from Louisiana camps to river towns for his master.[58]

Other slave managers handled large sums of money with fidelity. One slave ferryboat operator faithfully collected company tolls, controlled disbursements, and seemed to manage the entire business without difficulty. One railroad company hired Phocian, a slave, who served as a business agent, delivered company correspondence, faithfully handled sums of money ranging up to $200, and received many privileges, including a pass to visit his wife. Harry, a slave, delivered iron and procured supplies for an iron works during the 1830's and 1840's.[59]

Other industrial slave managers were also trained as business agents. From as early as 1857 until 1862, Nathan, a fifty-seven-year-old bondsman, responsibly transacted much of the affairs of a North Carolina tannery. Without much supervision, Nathan made week-long business trips to sell leather at markets within a fifty-mile radius of the company. He bargained with buyers over prices, tracked fluctuations in the leather market, knew arithmetic, kept accounts, and, after selling the leather, returned to the tannery with valuable hides and large sums of money. From ten business trips in 1858, for example, Nathan brought back over $560 in cash as well as hundreds of dollars' worth of hides.[60]

Many slave engineers skillfully operated complicated industrial machinery. Two slave rice millers, Frank the "headman" and Ned the engineer (whose tragic personal lives were poignantly depicted by Fanny Kemble), capably ran the steam engine and the milling machinery at one establishment.

Sandy Maybank was the slave head carpenter at another Georgia rice mill. A "full-blooded" black man superintended a Carolina cotton mill; a slave machinist attended the machine shop of a Virginia railroad; and Emanuel, a locomotive engineer owned by a Louisiana line, had an admirable record during ten years' service. One master's coal pits were, according to Edmund Ruffin, "superintended and directed entirely by a confidential slave of his own (whom he afterwards emancipated, and then paid $200 a year wages), and the laborers were also slaves; and they only knew anything of the condition of the coal." [61] The best description, however, of the duties of a slave rice mill engineer comes from Frederick Law Olmsted, who wrote:

> We drove to the "mill" . . . with more extensive and better machinery for threshing and storing rice, driven by a steam-engine, than I have ever seen . . . before. . . . We are attended through the millhouse by a respectable-looking, orderly, and gentlemanly-mannered mulatto, who was called by his master, "the watchman." His duties, however, . . . were those of a steward, or intendant. He carried, by a strap at his waist, a very large number of keys, and had charge of all the stores of provisions, tools, and materials of the plantation, as well as of all their produce before it was shipped to market. He weighed and measured out all of the rations of the slaves and the cattle; superintended the mechanics, and himself made and repaired, as was necessary, all the machinery, including the steam-engine.
>
> In all of these departments, his authority was superior to that of the [white] overseer. . . . His responsibility was much greater than that of the overseer; and Mr. X. said, he would trust him with much more than he would any overseer he had ever known.[62]

Some slave managers were quite talented. Horace, a slave architect and civil engineer, and Napoleon, his slave assistant,

designed and executed Black Belt bridges for Robert Jemison, Jr., a wealthy Alabama planter-industrialist. Horace's most notable achievement for the year 1845 was the erection of a bridge in Columbus, Mississippi, for which he served as "chief architect." This project won Horace his employer's praise as "the most extensive and successful Bridge Builder in the South." Upon the completion of Horace's next project, a bridge in Lowndes County, Mississippi, Jemison wrote: "I am pleased to add another testimony to the style and despatch with which he [Horace] has done his work as well as the manner in which he has conducted himself." [63]

There can be little doubt that industrial slave managers were less expensive to employ than white managers, and that by reducing the costs of supervision they increased the competitiveness of southern industries. Simon Gray, the riverman, clearly reduced the management costs for the Andrew Brown lumber company. As a head raftsman Gray at first received twelve dollars monthly; this was about one-fourth the wages of a white head raftsman. Even when Gray's incentive was raised to twenty dollars monthly, the same wages as ordinary white raftsmen, it was still only *half* that of white head raftsmen. A white manager with Gray's skills and responsibilities would have cost the lumber company annually almost as much as Gray's total market value.

Similarly, Nathan, the tannery business agent, cost much less than a comparable white manager. Nathan received for his services only a dollar or two per trip, for about ten trips per year. He incurred in addition only his maintenance, which amounted to several cents per day. A white business agent with Nathan's responsibilities would have cost at least $2.50 daily in wages alone and might have been less trustworthy than the slave. Sandy Maybank, the slave head carpenter at the Georgia rice mill, was as skillful as, yet less expensive than, a comparable white manager. Moreover, his master reaped extra financial benefits from Maybank's ability to hire himself out in the slack season. Horace and Napoleon, the slave bridge builders, cost only five dollars daily plus board; two comparable white managers probably would have cost twice as much. Even at these rates, Jemison considered Horace's services so indispensable and profitable that he continued to engage Horace for many years. Olmsted concluded that the slave rice mill engineer he observed was "extremely valuable to his owner." [64]

While some industries employed slave managers, others used highly skilled white technicians—imported from the North or Europe—to improve the quality and the competitiveness of industrial products. Of course, imported managers were more expensive than native ones—free or slave; but businessmen discovered that the use of inexpensive slave common laborers made possible the employment of expensive skilled foreign technicians. By "coupling" common slaves with these skilled white managers industries could raise the quality of products without increasing overall labor and management costs. By engaging the best foreign technicians available Southerners thus attempted to compete with northern and British manufacturers.[65]

Among the many southern industries which coupled cheap slaves with expensive white engineers was textile manufacturing, where competitiveness depended greatly on quality. As early as 1815, cotton millers realized the advantages of skilled management, when one Carolinian who hired three northern superintendents "thought it best so to do—for to depend upon our hands to learn would take a considerable time before we could cleverly get underway." Similarly, a Tennessee textile mill employed a Providence, Rhode Island, foreman; John

Ewing Colhoun, whose products were so widely praised, also employed a northern superintendent; and an experienced "Loweller" managed a Mississippi mill.[66]

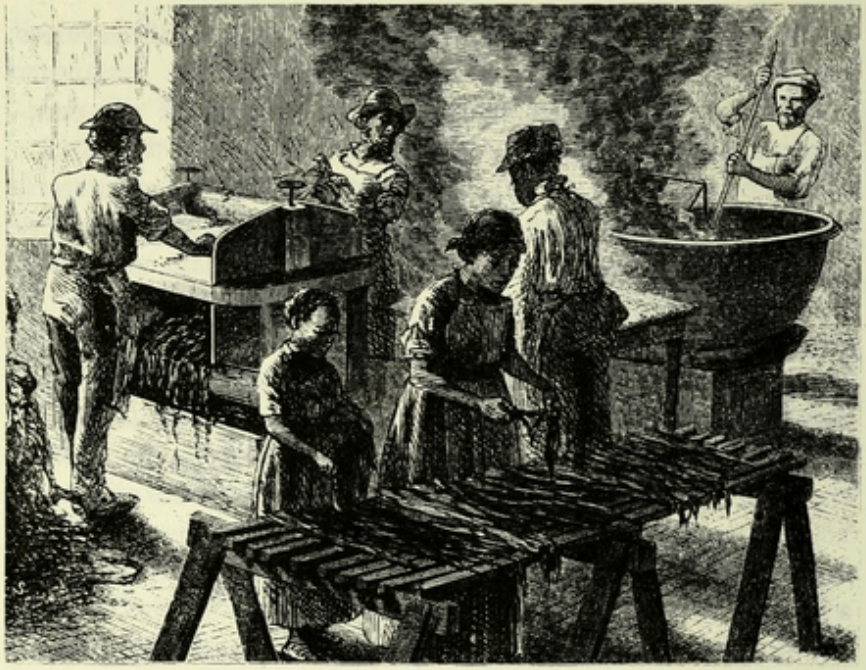
Combining inexpensive slaves with skilled technicians was also common in extractive industries. Mining companies often hired experienced Welsh, English, Cornish, and other foreign supervisors to direct the blasting, tunneling, seam tracking, and other work performed by common slave miners.[67] Lumbering enterprises often engaged skilled sawyers from Maine or northwest forests to supervise unskilled slave lumbermen. "Those who would engage in a scheme of this kind," advised an early shipbuilding promoter, "would however find it their interest to instruct negroes in the art of working on ships under two or three master-builders." [68]

Experienced foreign civil engineers likewise executed many heavy construction projects, since native southern technicians were scarce. Architect B. H. Latrobe designed the New Orleans Water Works, Loammi Baldwin administered the Gosport Navy Yard, while his brother, James, executed the Brunswick and Altamaha Canal. After 1819, Hamilton Fulton, an Englishman, supervised North Carolina and then Georgia's river improvement programs. European-trained J. Edgar Thompson planned the Georgia and the Southern Pacific railroads. Charles Crozet, a French engineer, served the Virginia Board of Internal Improvements.[69]

The coupling of inexpensive bondsmen with skilled white artisans was also important to the iron industry which attempted to compete with northern and foreign producers. South Carolina's Nesbitt Manufacturing Company imported several New York founders. Four experienced Connecticut Yankees managed the Hecla Iron Works in Virginia. Another iron company employed a "Jersey founder"; William Weaver's hiring agent tried to engage one of Virginia's most famous colliers, while another iron monger sought the services of James Obrian, Weaver's skilled hammerer.[70]

Many southern businessmen clearly understood the competitive advantages of combining skilled white technicians with inexpensive slaves. Textile manufacturers and promoters, such as E. Steadman, who advocated paying cotton mill superintendents well enough to attract the "best talent and skill" to the South, seemed especially aware of these advantages. If the Saluda cotton mill had only hired "a carder, spinner, dresser, weaver, and an active and skillful young man as overseer, taking the best talents that Massachusetts could afford . . . and offered inducements that would have commanded the very best," editorialized the Columbia *South Carolinian* in 1844, the company would have been more successful. "If it is desirable to establish cotton factories in the South," agreed a "practical" English manufacturer who visited South Carolina, "let the proprietors select the proper man to make out the plans, select the machinery, manage the manufacturing details, and let them pay such men sufficient remuneration for their services, and I venture to affirm that there will be no difficulty in building up a manufacturing business, equally as successful, and much more profitable, than the majority of Northern factories." [71]

Other manufacturers were also aware of the advantages of coupling slaves with skilled managers. Manufacturing was less expensive in the South, according to one promoter, mainly because "the manual labor, costing even now as little as northern labor, may be and will be, under a . . . skilful and eminently practical management, made, by the judicious intermingling of slave male and female labor with that of native whites, and their imported tutors, cheaper than it can possibly be had for in any northern locality. Here then, with all the elements of cost at the lowest rate," he concluded, "the wares



Dipping Tobacco

of this factory would contend successfully, even for a foreign market, with the keenest Yankee competition." [72]

Transportation companies also comprehended the advantages of skilled management. As early as 1822, the Upper Appomattox Company of Virginia reported,

> . . . we have reason to believe the capital employed would have fallen very far short of executing the work, nor would it have been so well executed, had we not adopted the custom of the country in obtaining and directing labor. We began our operations by purchasing what we judged a requisite number of laborers, including a blacksmith; employed a good stone mason, under whom, we placed a number of such as we judged best qualified to learn the trade. The labor of the rest of the

> hands was directed by as industrious and enterprising an overseer as we could obtain. . . . The same laborers being continued, they became expert, and were qualified to execute the most difficult parts of the work, in the best manner.[73]

This company's experiment was successful, and during the 1830's and 1840's, other transportation projects also engaged skilled engineers. By the 1850's, as railroad construction forged ahead, the advantages of "coupling" had become widely known.[74] When the directors of the Southern Pacific Railroad pondered the merits of various labor forces, for example, promoter Thomas Jefferson Green proposed to combine common bondsmen with skilled engineers. "It may not be out of place to remark," advised Green, "that the experience of the entire South is in favor of building roads with negro Labor, as the *cheapest*, the most reliable in all works of road building, the best, and not liable to strikes & riots & the consequent of tearing up rail & burning depots & bridges, the best Labor too to operate a road when built and as ordinary help in the machine shops." Citing the "wonderful" facts that southern railroad mileage cost one-third that of northern mileage and made better profits, Green concluded: "It may be safely estimated that the natural increase of negroes upon the healthy line of our road together with the increased value of turning field labour into railroad mechanicks will eaqual 15 pr. cent per annum, whilst the interest upon their cost would be 6 pr. cent—leaving a difference of 9 pr. ct. in favor of the company which would go far toward covering Engineering expenses & head mechanics—and other incidental charges." [75] Green thus understood that the use of slaves would save the company enough money to permit the employment of high-salaried civil engineers.

It remained, however, for Joseph Reid Anderson of the Tredegar Iron Works of Richmond, Virginia, consciously to

systematize the coupling of common slaves with expensive technicians in order to increase competitiveness. In 1842, Anderson contracted skilled white "puddlers" to train common slave apprentices. Then, in 1847, some of these bondsmen, now more skillful, were promoted to the position of puddler. The next year Anderson explained the theory behind this practice:

> . . . I am employing in this establishment [Tredegar] as well as at the Armory works, adjoining, of which I am President, almost exclusively slave labor except as to Boss men. This enables me, of course, to compete with other manufacturers and at the same time to put it in the power of my men to do better for themselves. With this view, I am now giving my men, who are steady and respectable as are to be found, each to furnaces at puddling, and furnish them three of my own hands who are blacks—one of them capable of acting as Foreman of the Furnaces. . . . I am getting on very satisfactorily and will eventually have enough of Puddlers here. . . .[76]

Throughout the 1850's, Anderson continued these arrangements, and he was soon able to reduce his labor cost per ton of rolled iron by 12 per cent.[77]

The Character of Industrial-Slave Capitalization

It is possible that the capitalization of the slave labor force crippled the finances of industries, even though industrial slavery was both profitable to investors and an efficient labor system. In this respect, industrial slavery may have been unviable in the long run because it reduced the flexibility of capital and the mobility of labor. Slave capital was so frozen, according to some scholars, that it could not easily be converted into cash. To transfer slaves from one place to another or to use them in different kinds of employment was allegedly

difficult. "Negro slave labor was expensive," argued one historian, "because it was overcapitalized and inelastic. . . . Circulating capital was at once converted into fixed capital. . . . The capitalization of labor lessened its elasticity and its versatility; it tended to fix labor rigidly in one line of employment" —namely, in agriculture.[78]

Contrary to this view, the available evidence suggests that slave ownership did not seriously lessen the mobility of labor nor did slavery inhibit investment in industrial enterprises. Indeed, the funding of slave-based industries was primarily an internal process, intimately linked to slave-based agriculture.[79] Many industries were actually capitalized by transferring bondsmen from farming or planting to manufacturing, milling, mining, and transportation. And slaveowners themselves, not merchants or bankers, were the chief source of capital for industrial investment.

Slaveowning planters capitalized many manufacturing enterprises, such as cotton mills and hemp factories, by shifting some less-than-prime field hands or house servants to weaving and spinning. In such cases slave labor itself contributed to capitalization, while profits from planting or slavetrading provided additional funds. "The staples of the lower country require moderate labour, and that at particular seasons of the year," reported a Virginian to Alexander Hamilton, as early as 1791. "The consequence is, that they have much leisure and can apply their hands to Manufacturing so far as to supply, not only the cloathing of the Whites, but of the Blacks also." A visitor to Kentucky calculated: "The surplus [farm] labor is chiefly absorbed by the rope and bagging factories, which employ a vast number of slaves."[80]

To finance larger textile factories slaveowning planters often pooled their slaves and cash and sold stock to neighboring agriculturists. David Rogerson Williams's South Carolina Union Factory was but one example of a textile mill where

close financial relationships developed between investors and the company. James Chesnut, the prominent planter, bought company stock and arranged to rent to Williams's factory several of his surplus slaves. The company credited Chesnut for the amount of the hirelings' rent, against which he drew cotton and woolen goods manufactured at the mill. The factory purchased Chesnut's raw cotton, paying him in cash or credits which he used to buy finished textile goods for his plantation hands. Of course, Chesnut also received a share of the company's earnings.[81] To the company, Chesnut was a welcome source not only of capital, but of labor and raw material at comparatively low prices, while Chesnut's plantation served as a market for its manufactured goods. To Chesnut, the mill absorbed surplus slaves, cash, and cotton, while the company provided comparatively cheap manufactured goods and yielded profitable returns on his investment. Such financial relationships were mutually beneficial to planters and manufacturers alike.

Slaveowning planters also financed many iron works—the Nesbitt Manufacturing Company, a large South Carolina concern, being an interesting case. Like other Nesbitt investors, its president, Franklin Harper Elmore, a leading slaveholding and landowning banker, had strong personal, political, and financial ties in South Carolina and neighboring states. To raise capital, the company's founders agreed to permit investors to purchase stock with an equivalent value of blacks. Financial records reveal that several planters, including Wade Hampton, Pierce Mason Butler, and the Elmore Brothers, each invested thousands of dollars' worth of bondsmen in return for company certificates. The iron works thereby accumulated about 140 Negroes, worth about $75,000. Though two nearby banks loaned cash, a large portion of the company's capital consisted of slave labor.[82]

Similarly, slaveowning planters capitalized many extractive

enterprises. As early as 1804, Moses Austin observed Missouri farmers sending or accompanying their slaves to the lead diggings after harvest, to supplement their incomes. In the 1840's, John C. Calhoun periodically worked some of his cotton plantation slaves at his Dahlonega, Georgia, gold mines. In 1849, the *American Farmer* reported that Alabama cotton planters were shifting their bondsmen into turpentine extraction and distillation.[83]

Slaveowning planters and farmers also financed the majority of southern railroads, canals, and turnpikes. Some planters bought company stock with cash; others purchased or received shares for the labor of their slaves. "The cleaning, grubbing, grading, and bridging of the road," reported the Mississippi Central Railroad, "have been undertaken by planters residing near the line, who, almost without exception, are shareholders in the company. They execute the work with their own laborers, whose services they can at all times command." [84] Some slave-employing railroad contractors were paid company stock instead of cash, while some planters exchanged their slaves' labor for the privilege of having a railroad pass nearby their plantation.[85] The advantages of such financial relationships were clearly understood by many southern railroad officials, including the president of the Charlotte and South Carolina line, who reported in 1849:

> The practice of allowing stockholders to pay up their subscriptions in labor, is one of recent origin; is admirably calculated to increase the amount of stock subscribed, to facilitate its payment; and gives to the slave States great advantages over the free in the construction of railroads. . . . Although this road was not, in the first instance, let in this manner, yet it has virtually resulted in it. The contractors, in many instances, hiring the hands of other stockholders, and purchasing their supplies of them, have contributed largely to the payment of stock in labor.[86]

While private investment by slaveowners predominated, public investment in industries and internal improvements by state and local authorities comprised only a small portion of the total capitalization of southern industries. Such public funds went almost entirely into slave-employing transportation projects rather than into other types of industry.[87] Moreover, federal [88] and foreign [89] funding of southern industries was also negligible. This situation contrasted with the process of capitalization in the North and West, where more industrial capital came from commercial surpluses, rather than agricultural, and where state, federal, and foreign funding of industries played an important role.[90] Indeed, the ratio of public to private investment, especially in transportation, seemed lower in the South than in the North. Thus, Southerners derived industrial capital from their own internal, private sources, specifically from the earnings of plantation agriculture. Southerners seemed to be developing industries in their region almost exclusively by their own efforts.

Regarding the flexibility of industrial slave capital, the records of several southern enterprises reveal that slave ownership did not cripple industrial finance. It is, of course, possible that larger industrial enterprises and wealthier businessmen were able to manipulate their slave investments more easily than smaller operators and less secure investors. But it is also true that industrial slavery reduced neither the flexibility of capital nor the mobility of labor to the extent that financial problems could not be solved. At the Nesbitt Manufacturing Company, a large South Carolina iron works, for example, finance remained quite flexible. In 1840, a planter-investor proposed to rent twelve blacks to the company rather than to invest them. The annual rate of hire would be $120 for each slave, the duration of hire four years, and the rent paid in company stock at the end of each year. The company

accepted this proposal. The same year Pierce Mason Butler decided to withdraw some of his slave capital. Having transferred $12,315 worth of slaves to the company in 1837, Butler now withdrew eight bondsmen worth $4,850, including four whose skill and value had increased. Even when the company terminated operations and settled its obligations, the original stockholders were reimbursed merely by returning their slaves, whose offspring counted as a bonus.[91]

The Nesbitt Company's slave capital was sufficiently flexible so that in the first case the investor obtained shares by renting his slaves, utilized some of his surplus bondsmen, received company earnings, and withdrew his slaves when they had become more skillful and valuable. In the second and third instances, investors suffered little financial embarrassment and they retained appreciated slave capital when the enterprise was terminated. In each case, slave capital seemed sufficiently mobile to meet the company's needs.

Slave labor supposedly was less flexible than wage labor during commodity market fluctuations and business depressions when income dropped and labor costs had to be reduced. However, many slaveowning industries found that during such periods slave labor was as flexible as wage labor, even though whites could be dismissed and slaves could not. "The certainty of a regular and adequate supply of mining labor at reasonable prices is the surest avenue of success in coal mining," privately confided the slaveowning coal miner William Phineas Browne in 1847. "In this respect slave labor owned by the mining proprietors is greatly superior to free labor even if the latter were as abundant as it is in Europe or in the mining districts of the North." To Browne, the purchase of slave coal miners was less expensive than paying wages to free laborers. To retain large stocks of coal during dull periods the capital required to sustain free-labor mining operations economically would amount to nearly enough to purchase

Negroes, he argued. If enterprises owned slaves, on the other hand, sufficient funds could be realized from current sales to maintain full mining operations without financial embarrassments during periods of depressed market conditions. Browne also argued that slave ownership enabled enterprises to capitalize on market fluctuations. Mining companies should therefore depend mainly upon slave labor; free labor should be worked only as a "subordinate adjunct" to the regular slave force. "The employment of slave labor besides being more in harmoney with our institutions," concluded Browne after much experience, "ensures a successful business against all contingencies and will enable proprietors to pass through all disturbing crises without being sensibly affected by them." [92]

Browne's confidence in the flexibility of slave capital was confirmed by the experiences of many southern transportation enterprises. The Upper Appomattox Company of Virginia, which owned its black diggers, was able, in 1816 and again in 1835, to rent out twenty bondsmen to obtain funds to complete the work. The Roanoke Navigation Company of Virginia, which also owned Negroes, was able, in 1823, to obtain capital by either selling or renting out several slaves. During the panic of 1837, this company rented out some bondsmen for five months for $3,167; within a few months the company thereby recouped 23 per cent of its original $14,025 investment in thirty-three slaves. Of course, the company still operated the canal and owned its slaves. In 1839, the company sold half its blacks for $7,044, rented some of the remaining bondsmen to a nearby railroad, and thereafter earned additional income by hiring out slaves each winter and spring, while using them for repairs during summers.[93] Similarly, after 1827, the Slate River Company of Virginia, which owned five Negroes worth $1,900, rented out four of them at $235 per annum each. One Alabama railroad, which owned $9,575 worth of slaves, realized $2,503 annually (a 26 per cent return) by hiring them out in the 1830's. Upon the completion of the slaveowning Bayou Boeuf Navigation Works in Louisiana, the company totally reimbursed its original investors and continued to pay them dividends.[94]

Confidence in the flexibility of slave capital was also evident in the financial schemes of A. C. Caruthers, a Tennessee turnpike promoter. "We have a Charter for a Road to Trousdale's Ferry," confided Caruthers to a friend in 1838. "We will build our Road—the State takes half. The plan is devised—a few men—8 or 10—will take the stock—pay it all in at once—get the State Bonds—& with the fund build the Road. . . . If you have any means of ascertaining the prices of negroes . . . I should be glad to receive the information—I mean all sorts—and especially such little & big [Negroes] as would suit to work on a Turnpike—pound rock & c. Perhaps you could also learn whether three or four hundred might not be got of some three or four large slave holders in North Carolina—Virginia & Maryland. . . . ." Proposing a clever plan of finance, the promoter concluded:

> With this fund, they can buy say 300 negroes, who will do the work in one year. The interest of the $70,000 borrowed—the tools—support of hands, mechanicks & all cant cost more than $40,000. When the Road is done the $140,000 is theirs—the bond to the Directors is cancelled. The 300 Negroes are theirs—They can sell them for an advance of at least of $100 each = $30,000. The whole sale would be $140,000 original cost & $30,000 proffit = in all $170,000. Out of this they must repay the $70,000 borrowed, & the $40,000 expenses in all $110,000—leaving a clear profit of $60,000 & their road stock, which is $6,000 each partner & $10,000 in road stock. . . .[95]

The experiences of slaveowning industries regarding the flexibility of slave capital have been confirmed by some recent studies. In South Carolina there seemed to be adequate sources

of capital for industrial investment, while Texas masters converted slave capital into liquid capital, according to one historian, by selling, mortgaging, or renting out their Negroes. "At the same time that slave labor was being used as an instrument of production, that labor was also creating capital," he concludes. "It is difficult to understand how the notion became current that the slave became a frozen asset and a drain upon the capital resources of a region." [96] Of course, slave hiring was an even more flexible use of capital than slave ownership, and since demand for slaves remained high, slave capital tended to remain liquid.

Even if these findings—that slave labor in southern industries was profitable, efficient, and economically viable—are valid, it still should be explained why southern industry did not develop more rapidly. While the reasons for this are, of course, complex, an explanation seems to rest in the limitations of southern markets, the South's difficulty competing with northern and foreign producers, unfavorable balances of southern trade, and, perhaps most important, in the ability of southern agriculture to outbid industry for investment capital.

The slow development of southern industries stemmed partly from various restrictions on consumer demand. Slaveowners usually maintained their slaves at subsistence living standards, and some of the largest plantations were almost entirely self-sufficient. The poor whites lacked purchasing power because they did not produce for regional markets. Isolated from transportation facilities, yeoman farmers produced only for limited markets and had difficulty competing with more efficient planters. Moreover, the South lacked urban markets, since by 1860 only about 10 per cent of its population lived in cities, compared to the Northwest's 14 per cent and the Northeast's 36 per cent. Except for New Orleans and Baltimore, the South had only a handful of cities

with populations over fifteen thousand,[97] and many urban dwellers were slaves or free blacks whose purchasing power was minimal. Relatively few foreigners emigrated to the South, where economic opportunity was poorer and the climate sicklier than in the North. In addition, as late as 1861, the southern transportation network still primarily tied plantation districts to ports, rather than providing a well-knit system which might have increased internal consumption. Finally, the distribution of wealth, which helps determine consumption propensities, was less even in the South than in the North,[98] although the rate of growth and the level of southern income compared favorably with other sections.[99]

Southern industries also lagged because southern manufacturers had difficulty competing in national market places. Compared to northern and foreign producers, Southerners had less experience, less efficient management, smaller markets, inferior technology, poorer transportation, indirect trade routes, and, perhaps most important, smaller capital resources. Credit arrangements and unfavorable balances of trade drained plantation profits northward and permitted northern merchants increasingly to dominate the commerce in cotton, the leading export both of the South and of the nation. Imports came first through New York, rather than directly to the South, because ships were assured of more cargo on the westward passage from Europe to northern ports than to southern ones.[100] The South would have had to pay for loans and services obtained from the North in any event, but capital accumulated by northern merchants, bankers, and insurance brokers tended to be reinvested in northern industries and transportation enterprises rather than in southern ones.

Southern backwardness was not inevitable; rather, it was the result of human decisions which could have led in a different direction. After all, from the 1780's to about 1815, southern planters had been investing much of their surplus

capital in industries and transportation projects. During these years, when the South sustained one-third of the nation's textile mills, southern industrial growth seemed to be paralleling that of the North.[101] After 1815, however, southern industries waned as the rapidly developing textile industry of Britain and New England demanded cotton, the invention of the cotton gin stimulated short-staple cotton cultivation, and fertile southwestern plantations yielded quick profits to investors. Southerners now began to invest more in new lands and in slave labor than in industry and internal improvements. This decision stemmed not only from the agrarian tradition and the prestige of owning real property, but also because the production of staples seemed to promise the easiest financial success. In the competition for capital, agriculture thus outbid industry.[102]

As a result of this process, by the 1830's key slave-state industries were already a generation behind those of the free states, and they were having great difficulty competing against outsiders. By 1860, the South had only one-fifth of the nation's manufacturing establishments, and the capitalization of southern factories was well below the national average. Thus, as Eugene Genovese has pointed out, Southerners could provide a market for goods manufactured by Northerners and foreigners, but that same market was too small to sustain southern industries on a scale large enough to be competitive.[103]

Though these factors helped inhibit southern industries, it is hard to demonstrate that slavery was the *sole* cause of industrial backwardness. Slavery was only partly to blame for the South's difficulty competing with outside manufacturers, for unfavorable patterns of trade, and for restricted consumer demand. Other factors, such as geography, topography, and climate, were at least as important as slavery in retarding southern industry. Can slavery be blamed, for example, for the natural attractiveness of farming in a fertile region? Was

slavery responsible for the South's natural waterway system, which delayed railroad development? It therefore seems doubtful that slavery alone decisively retarded the industrialization of the South.[104]

However, it must also be understood that, in the long run, extensive industrialization would have been difficult, if not impossible, under a rigid slave system. To develop according to the British or northern pattern, the rural population of the South would have had to be released from the land to create a supply of factory workers and urban consumers. Greater investment in education for skills and greater steps toward a more flexible wage labor system would have been necessary than were possible in a slaveholding society. Changes in the southern political structure permitting industrialists, mechanics, and free workers greater participation in decision-making processes affecting economic development were prerequisite to any far-reaching program of modernization.

On the other hand, even if slavery is theoretically and practically incompatible in the long run with full industrialization, the point at which this inconsistency would manifest itself had, apparently, not yet been reached between 1790 and 1861. Tensions were present in southern society, to be sure, but Southerners were not yet foundering upon their domestic contradictions. The time when slavery would be absolutely detrimental to southern industries remained quite far off. Moreover, the development of slave-based industries was still necessary and desirable, given the imperatives of the proslavery ideology and the political realities of the period.

Louisiana, 83; Morris, "Measure of Bondage," 229; Kemble *Journal*, 104, 122–126, 129.

70. Negro Time Book, Nov. 17 and 29, 1833, Graham Papers (UV), for fight between "Capt. R." and "Bryce McC."; the objection by some Moravians to employing slaves, instead of whites, in textile mills is recounted in A. L. Fries, "One Hundred Years of Textiles in Salem," *NCHR*, 27 (1950), 13.
71. Woodward, *Strange Career of Jim Crow*, 12–13.

Chapter Five: The Economics of Industrial Slavery

1. The literature on the profitability of plantation slavery is reviewed in H. D. Woodman, "The Profitability of Slavery," *JSH*, 29 (1963), 303–325, and S. L. Engerman, "The Effects of Slavery Upon the Southern Economy," *EEH*, second series, 4 (1967), 71–97.
2. H. O. Stekler, *Profitability and Size of Firm* (Berkeley, 1963), ch. 1 and 2; Conrad and Meyer, *The Economics of Slavery*, ch. 3.
3. U. B. Phillips, "The Economic Cost of Slave-holding in the Cotton Belt," *PSQ*, 20 (1905), 257–275, U. B. Phillips, *American Negro Slavery* (New York, 1918), especially chs. 18 and 19; C. W. Ramsdell, "The Natural Limits of Slavery Expansion," *MVHR*, 16 (1929), 151–171; E. D. Genovese, "The Significance of the Plantation for Southern Economic Development," *JSH*, 28 (1962), 422–437; E. D. Genovese, *The Political Economy of Slavery* (New York, 1965); D. North, *The Economic Growth of the United States, 1790–1860* (Englewood Cliffs, 1961), esp. p. 132. Cf. R. R. Russel, "The General Effects of Slavery Upon Southern Economic Progress," *JSH*, 4 (1938), 34–54, and "The Effects of Slavery Upon Non-Slaveholders in the Ante-Bellum South," *AH*, 15 (1941), 112–126, and *Economic Aspects of Southern Sectionalism;* D. Dowd, "A Comparative Analysis of Economic Development in the American West and South," *JEH*, 16 (1956), 558–574; Wade, *Slavery in the Cities*, esp. chs. 1 and 9, argues that slavery was dying in the largest southern cities and thus tends to lend weight to the old Ramsdell hypothesis.
4. See table on textile mills in appendix.
5. D. Ross to J. Staples, Sept. 16, 1813, Ross Letterbook (VHS); *De Bow's Review*, 6 (1848), 295; Charleston *Mercury*, Feb. 18,

1859; Tredegar Stockholders' Minutebook, reports for 1838–48, and Tredegar Corporate Holdings, 1866, pp. 7–9 (VSL).

6. *Report of Court of Claims*, #81, 34 C., 3 s., 1857, 62–64; L. McLane, Documents of Manufactures, *House Doc.* #308, 22 C., 1 s., 1832, 676–677; New Orleans *Picayune*, Jan. 2, 1853.
7. *Niles' Register*, 39 (1830), 271–272; Olmsted, *Seaboard Slave States*, 686–688; Report of the Secretary of the Treasury, *House Exec. Doc.* #6, 29 C., 1 s., 1845, 708–709, 748; Taylor, *Slavery in Louisiana*, 96–101; Sitterson, *Sugar Country*, 157–166, 178–184, 197, and *passim*.
8. J. E. Metts to J. R. Grist, Dec. 5, 1858, Grist Papers (Duke); letters dated 1854–60, Williams Papers (UNC); *De Bow's Review*, 7 (1849), 560–562, and 11 (1851), 303–305; Stephenson, ed., *Franklin*, 114, 177–180, 213–217; *Harper's Monthly*, 13 (1856), 451, and 14 (1857), 441; J. M. Cheney to E. Bellinger, Feb. 16, 1855, Misc. Mss. (SCHS); C. H. Ambler, ed., *Correspondence of R.M.T. Hunter*, AHA *Annual Report* (1916), 176–177.
9. Marshall, ed., *Bates Papers*, I, 111–112, 244. For lead mining, see inventory of Jan. 1, 1851, and Will of May 1, 1856, Desloge Papers (MoHS); Report on Salt Springs, and Lead and Copper Mines, *House Doc.* #128, 18 C., 1 s., 1824, 20–22, 130–133; Report of Secretary of Treasury, *House Exec. Doc.* #6, 29 C., 1 s., 1845, 660, 664–665; and *Mining Magazine*, 1 (1853), 164–166. For gold mining, see 1828 memo and undated account sheets, Fisher Papers (UNC); High Shoal Gold Mine Records (UNC); letters of 1830–33 and account book, vol. 10, 1843, Brown Papers (UNC); Expense Book of S. Burwell and J. Y. Taylor, 1832–39 (UNC); T. G. Clemson to J. C. Calhoun, Jan. 23 and 24, 1843, and T. G. Clemson to P. Calhoun, Oct. 12, 1856, Clemson Papers (Clemson); *Mining Magazine*, 11 (1858), 211 and 12 (1859–60), 365–366; *De Bow's Review*, 12 (1852), 542–543; *American Farmer*, series 1, vol. 12 (1830), 230; *Hunt's Magazine*, 31 (1854), 517.
10. See tables on railroads, canals, and turnpikes in appendix.
11. Telfair Account Books, 1794–1861, #s 90, 87, 88, 89, 152, 153, 155, and 156 (GHS); Hart Gold Mine Company Accounts, 1855–57, Latimer Plantation Book (UG); Journal of James River Steamboat Company, 1833–49 (VSL); the Palfrey Account Books, 1842–61 (LSU) reveal that Louisiana sugar plantations and mills earned substantial profits.

12. J. H. Couper Accounts, 1827–52 (UNC); the financial statements and reports for Hopeton and Hamilton plantations, 1830's to 1843, 1849, and 1853–65, and J. H. Couper to F. P. Corbin, March 28, 1859, Corbin Papers (NYPL) permit the computation of Couper's profits from rice milling beyond the year 1852; T. P. Govan, "Was Plantation Slavery Profitable?" *JSH*, 8 (1942), 513–535, demonstrates the profitability of Couper's rice milling enterprise from 1827 to 1852.
13. Account Book, vol. 4, 1833–39, 1856–61, Manigault Papers (UNC); Govan, "Was Plantation Slavery Profitable?" 513–535, demonstrates the profitable returns on Manigault's rice milling investment. For the earnings of other rice mills, see J. B. Irving's Windsor and Kensington Plantations Record Books, 1840–52, and T. Pinckney's estate appraisals and account books, 1842–63 and 1827–64 (CLS).
14. R. Evans, Jr., "The Economics of American Negro Slavery," *Aspects of Labor Economics* (Princeton, 1962), p. 217; Wall, Ebenezer Pettigrew, 308.
15. See below on the use of women, children, and superannuates in southern industries; cf. Conrad and Meyer, *The Economics of Slavery*, ch. 3.
16. Stampp, *Peculiar Institution*, ch. 9, and above chs. 2, 3, and 4. According to R. W. Fogel and S. Engerman, *The Reinterpretation of American Economic History* (New York, 1968), part 7, the manuscript census schedules reveal that about one-half of the slave population was in the labor force—a figure which is close to, if not at, the maximum possible participation rate. Since 44 per cent of the slaves were children under fourteen years old and 4 per cent were adults over sixty, virtually every able-bodied adult slave and most teen-agers were compelled to work. The slave participation-rate in the labor force was, moreover, 60 per cent greater than that of white workers.
17. See above, chapter 4, on the unreliability of white workers in the South.
18. Genovese, *Political Economy of Slavery*, 226–227; cf. below, chapter 6, on the politics of industrial slavery.
19. Genovese, *Political Economy of Slavery*, 37 note 13.
20. For evidence on this point, see Starobin, Industrial Slavery, ch. 5, note 20. The wages of white southern textile workers were somewhat lower.

21. See appendix on the cost of slave hiring in my dissertation:

Summary of Cost of Slave Hiring at Southern Industries
(in dollars)

PERIOD	DAILY	MONTHLY	ANNUALLY
1799–1833	.76	13.14	66.39
1833–52	.77	16.51	100.55
1853–61	1.44	19.68	150.00

22. Govan, "Was Plantation Slavery Profitable?" 513–535; Engerman, "The Effects of Slavery," 71–97; Stampp, *Peculiar Institution*, ch. 9; and above, ch. 3.
23. Conrad and Meyer, *The Economics of Slavery*, ch. 3; Stampp, *Peculiar Institution*, ch. 9.
24. See table on maintenance costs in appendix.
25. These prices are taken from the records of slave-employing industrial enterprises.
26. See table on maintenance costs.
27. *Ibid.*
28. *Ibid.*
29. For white wages, see Starobin, Industrial Slavery, ch. 5, note 20.
30. Boarding bills for October and Dec. 31, 1859, Treasurers' Papers: Internal Improvements: Cape Fear and Deep River Navigation Works (NCA); Jackson *Mississippian*, May 4, 1849; Graham Cotton Mill Daybook and Inventory, 1837–41 (UK); vol. 26, Hawkins Papers (UNC); account sheet, 1857–58, Jordan and Davis Papers (WSHS).
31. Norris, *Frontier Iron*, 40–41.
32. D. Myerle's testimony in *Report of Court of Claims*, #81, 34 C., 3 s., 1857; memorial of F. G. Hansford, *et al.*, Virginia *Board of Public Works Report, 1854*, p. 403; Report of the Virginia and Tennessee Railroad, Virginia *Board of Public Works Report, 1855;* Buckingham, *Slave States*, I, 264–265 and II, 112–113; *De Bow's Review*, 11 (1851), 319–320; Lander, "Slave Labor in South Carolina Cotton Mills," 170–171.
33. Rolls of Labor, 1831–32, and Memorandum of Work, 1831, Baldwin Papers and Selekman Notes (Baker). However, the daily rent of slave *common* laborers averaged about 72 cents, while the daily wages of white common laborers averaged $1.01. Therefore, savings came in the cost of the more skilled hammerers, where slaves were cheaper than whites.

34. Cost of Hands for 1858, 1859, and undated, loose inserts in Jemison and Sloan Company contract account book, 1856–59, Jemison Papers (UA); Daybook and Inventory, 1837–41, Ledger and Inventory Book, 1832–45, Factory Time Book, 1847–52, Ledger, 1846–47, and Account Book, 1847–50, Graham Cotton Mill Papers (UK); Wages Ledger, 1856–61, Daybook, 1856–59, and G. Woolley to W. Peck & Sons, June 2, 1861, Lettercopybook, Woolley Papers (UK). However, the Woolley Papers reveal that common slave weavers cost almost as much to hire and to maintain as common white weavers. Again, savings came with skilled labor, where slaves were cheaper than whites.
35. Dew, *Ironmaker to the Confederacy*, 18–20, 29–32, tables, and notes for prices of Tredegar iron products; J. R. Anderson to H. Row, Jan. 3, 1848, Tredegar Letterbook (VSL).
36. J. McRae to J. Gadsden, Nov. 4, 1849, McRae Lettercopybooks (WSHS).
37. *De Bow's Review*, 19 (1855), 193–195.
38. For the cost of slave hiring and white wage rates, see my dissertation, Industrial Slavery in the Old South, appendices, and ch. 5, footnote 20. In addition, R. Mills, *Statistics of South Carolina* (Charleston, 1826), 427–428, calculated that in Charleston in 1826 black common laborers cost half as much as whites; skilled blacks averaged 82¾ cents per day, while skilled whites averaged $1.37½.
39. Dew, *Ironmaker to the Confederacy*, 32; North, *Economic Growth, passim.*
40. See works cited above in footnotes 1 and 3.
41. See *De Bow's Review*, 1846 to 1862, for such programs.
42. Roswell Manufacturing Company Stockholders' Minutes and King papers, journals, accounts, and letterbooks (GA); D. R. Williams Papers (USC); *Hunt's Magazine*, 15 (1846), 417; and 17 (1847), 323. Cf. Report of the Secretary of the Treasury, *House Exec. Doc.* #6, 29 C., 1 s. (1845), 676; Bremer, *Homes*, II, 490; *De Bow's Review*, 7 (1849), 457–458; agreement, Aug. 29, 1828, Black Papers (USC); Richmond *Dispatch*, Jan. 5, 1860; P. Woolfolk to L. Hill, Dec. 30, 1845, Hill Papers, Brock Collection (Huntington); vols. 2 and 20, J. H. Cocke Papers (UNC); Bassett, ed., *Plantation Overseer Letters*, 150–151; J. Gunnelly to M. Telfair, Jan. 11, 1835,

Telfair Papers (GHS); F. L. Fries Woollen Mill Diary, 1840–42 (NCA); Lexington *Western Review*, 2 (1820), 296–298; J. E. Colhoun Commonplace Book, p. 26 (Clemson); W. W. Davis to W. Weaver, Aug. 13, 1829, Weaver Papers (Duke); D. Ross to T. Rice, Sept. 7, 1813, Ross Letterbook (VHS).

43. Louisville *Journal*, Nov. 29, 1830, misc. papers H (Filson); Moore, *Hemp Industry*, appendix; paylists, 1827–28, Leslie Papers (Duke); Poor, *Haldeman's Picture of Louisville*, 88.
44. Northrup, *Narrative*, 211–212; *Southern Agriculturist*, 6 (1833), 518, 527, 573.
45. Liddell Papers (LSU); entry for Dec. 3, 1857, R. R. Barrow Residence Journal (UNC); "Distribution of hands in Sugar rolling, 1857," Randolph Papers (LSU).
46. Bancroft, *Census of Savannah, 1848*, 34–35; "Memoranda," vol. 4, Manigault Papers (UNC); vol. 4, p. 54, Couper Papers (UNC); *Southern Agriculturist*, 8 (1835), 169–174.
47. Webber, "Senf's Account of Santee Canal," 120; *American Railroad Journal*, 9 (1839), 80–81; Reports of Southern Railroad Company, Mississippi *Journal of House of Representatives*, regular session 1850, pp. 113, 119, 128, and called session, 1852, p. 26; Montgomery and West Point Railroad *Report*, 1850, p. 19; statement of slaves owned by Mississippi Railroad Company, Mississippi *Journal of House of Representatives*, regular sessions, 1844, p. 486, and 1841, p. 98; "Abstract of Real Estate," Aug. 9, 1839, New Orleans and Carrollton Railroad Papers (Tulane); Charleston *Mercury*, Dec. 15, 1859; *Proceedings of the Annual Meeting of Stockholders of the North Carolina Railroad*, July 14, 1853; vol. 1, Quitman Papers (MA); Hickman, *Mississippi Harvest*, 23 and tables.
48. Steiner, ed., "South Atlantic States in 1833," 348; Elmore Papers (USC and LC); —— Woods to H. Edmundson, Nov. 26, 1831, March 12 and Feb. 5, 1832, Edmundson Papers (VHS); "List of Slaves at the Oxford Iron Works . . . Taken 15 January, 1811," Bolling Papers (Duke); D. Ross to J. Duffield, Jan. 9, 1813, and Ross to ———, ca. Nov., 1812, Ross Letterbook (VHS).
49. J. E. Colhoun Commonplace Book (Clemson); De Bow, *Industrial Resources*, II, 178.
50. See, for example, Graham Cotton Mill Papers (UK); Woolley Papers (UK); and King Papers (GA).
51. Jackson *Mississippian*, March 19, 1845.

52. *De Bow's Review*, 25 (1858), 114.
53. *Southern Agriculturist*, 6 (1833), 587; *De Bow's Review*, 18 (1855), 350–351; Northrup, *Narrative*, 155–156; K. W. Skinner to C. Manigault, Feb. 8, 1852, Manigault Papers (Duke).
54. Jackson *Mississippian*, March 19, 1845; *De Bow's Review*, 11 (1851), 319–320, and 22 (1857), 394, 397; Richmond *Enquirer*, Oct. 7, 1827; *Southern Agriculturist*, 7 (1834), 582, and 4 (1831), 368; New Orleans *Picayune*, Oct. 16, 1858.
55. Fogel and Engerman, *Reinterpretation*, part 7.
56. See appendix on the cost of management in my dissertation, Industrial Slavery.
57. Moore, "Simon Gray," 472–484.
58. Account Books, 1794–1863, Telfair Papers (GHS); Northrup, *Narrative*, 89–99.
59. G. Rogers, *Memoranda of Travels* (Cincinnati, 1845), 196, 310; D. B. McLaurin to W. H. Richardson, April 19 and Jan. 27, 1855, and pass dated April 20, 1855, Richardson Papers (Duke); M. Bryan to W. W. Davis, June 30, 1846, Jordan and Davis Papers (WSHS).
60. Vols. 39, 44, 17, 30, 45, and 46, Hawkins Papers (UNC).
61. Kemble, *Journal*, 113, 116–117, 168, 176, and 187–188; C. C. Jones to Sandy, Aug. 15, 1853, and C. C. Jones to T. J. Shepard, March 30, 1850, Jones Papers (Tulane); H. T. Cook, *David R. Williams* (New York, 1916), 140; John B. Mordecai, *A Brief History of the Richmond, Fredericksburg and Potomac Railroad* (Richmond, 1941), 17; Richmond *Times-Dispatch*, Jan. 31, 1943 (VHS); Sydnor, *Slavery in Mississippi*, 7; *Farmers' Register*, 5 (1837), 315; Duke de la Rochefoucault-Liancourt, *Travels Through the United States* (London, 1799), III, 122–123.
62. Olmsted, *Seaboard Slave States*, 425–429.
63. R. Jemison, Jr., Letterbooks, 1844–54 (UA); cf. Olmsted, *Seaboard Slave States*, 553.
64. For further information and sources on slave managers in industry, see my dissertation, Industrial Slavery, ch. 3 and 5, note 64.
65. See earlier discussion on the costs of slave ownership.
66. E. M. Lander, ed., "Two Letters by William Mayrant on His Cotton Factory, 1815," *SCHM*, 54 (1953), 3–4; *American Farmer*, series 1, vol. 9 (Oct. 12, 1827), 235–314; Lander, "Development of Textiles in South Carolina Piedmont," 92; Jackson *Mississippian*,

Dec. 4, 1844; Charleston *Courier*, Feb. 19, 1845. Another industry which often used white managers was sugar milling.

67. Report upon . . . the N.C. Gold Mining Co., Sept. 5, 1832, Fisher Papers (UNC); Richmond *Enquirer*, March 23, 1839, and Jan. 9, 1840; B. Broomhead to B. Smith, Sept. 7, 1857, Smith Papers (Duke); Olmsted, *Seaboard Slave States*, 47–48; *Harper's Monthly*, 15 (1857), 297; *De Bow's Review*, 7 (1849), 546–547, and 29 (1860), 378; S. Ashmore to C. Thomas, March 26, 1860, Silver Hill Mining Company Papers (NCA).
68. Pendleton, "Short Account, 1796"; J. Baker to S. Plaisted, Nov. 23, 1839, Plaisted Papers (LSU); *Niles' Register*, 47 (1834), 55; account book, 1812–17, Telfair Papers (GHS); entry for June 6, 1857, D. C. Barrow Diaries (UG); C. L. Benson to M. Grist, Oct. 1, 1855, Grist Papers (Duke).
69. Latrobe Papers (Tulane); Baldwin Papers (Baker); C. K. Brown, *A State Movement in Railroad Development* (Chapel Hill, 1928), 12; M. S. Heath, *Constructive Liberalism* (Cambridge, 1954), 241, 261; C. Goodrich, *Government Promotion of American Canals and Railroads* (New York, 1960), 98; *De Bow's Review*, 27 (1859), 725.
70. J. M. Taylor to F. H. Elmore, June 25, 1840, and agreements of Sept. 30 and Oct. 5, 1837, Elmore Papers (LC); Richmond *Enquirer*, June 3, 1851; Jordan, Davis & Co. to W. Weaver, Nov. 24, 1830, W. Ross to W. Weaver, Nov. 27, 1831, and G. P. Taylor to W. Weaver, Oct. 7, 1831 and May 2, 1832, Weaver Papers (Duke); W. Rex to W. Weaver, Jan. 8, 1859, Weaver Papers (UV).
71. E. Steadman, *A Brief Treatise on Manufacturing in the South* (Clarksville, Tenn., 1851), 108; Columbia *South Carolinian*, Dec. 18, 1844; *De Bow's Review*, 26 (1859), 95–96.
72. *De Bow's Review*, 14 (1853), 622–623.
73. Report of the Upper Appomattox Company, Virginia *Board of Public Works Report, 1822*, p. 33.
74. Richmond *Dispatch*, Dec. 9, 1853, for example.
75. T. J. Green to the Executive Committee of the Southern Pacific R.R. Co., Oct. 14, 1856, Green Papers (UNC).
76. J. R. Anderson to H. Row, Jan. 3, 1848, Tredegar Letterbook (VSL). However, employing slave labor could not solve Tredegar's problem of competing entirely, since American labor and transportation were costly and Virginia coal and iron were of a low quality. Tredegar's "most glaring weakness" lay not in its use of slave labor, according to Dew, *Ironmaker to the Confederacy*, p. 32, but in its "pitifully inadequate raw materials base" and in the southern transportation system.
77. See earlier discussion on the efficiency of slave labor and ch. 4 for further information on Tredegar. For sources on the use of white managers at other industrial enterprises, see my dissertation, Industrial Slavery, ch. 5, notes 66 and 77.
78. Phillips, "The Economic Cost of Slaveholding," 257–275; Phillips, *Transportation*, 388–389; F. Linden, "Repercussions of Manufacturing in the Ante-Bellum South," *NCHR*, 18 (1940), 328.
79. As a source of industrial capital, the money derived from mercantile activity—mentioned in L. Atherton, *The Southern Country Store* (Baton Rouge, 1949), ch. 6, p. 194, 204—seems less important than agricultural-based accumulation.
80. Standard and Griffin, "Textiles in North Carolina," 15–16; Coulter, "Scull Shoals," 41–43; G. A. Henry to wife, Dec. 3 and Nov. 28, 1846, Henry Papers (UNC); Spinning Book, 1806–7, Tayloe Papers (VHS); E. Carrington to A. Hamilton, Oct. 4, 1791, Cole, ed., *Correspondence of Alexander Hamilton*, 94, 145; Abdy, *Journal of a Residence*, II, 349.
81. Bill, May 9, 1829, account sheet, May 14, 1831, and J. N. Williams to J. Chesnut, May 17, 1831, Chesnut-Miller-Manning Papers (SCHS); same to same, ca. Oct., 1831, Chesnut Papers (WSHS); account sheets, 1829, 1830, June 19, 1830, and Feb. 14, 1835, Williams Papers (USC).
82. Various financial documents, Elmore Papers (LC and USC); account sheet, ca. 1840, P. M. Butler Papers (USC).
83. M. Austin, Description of the Lead Mines, 1804, *American State Papers: Public Lands*, I, 207; various letters between T. G. Clemson and J. C. Calhoun, 1842–43, Calhoun and Clemson Papers (USC and Clemson); *American Farmer*, series 4, vol. 4 (1849), 252.
84. *American Railroad Journal*, 28 (1855), 577.
85. For further information on the financing of southern transportation enterprises, see *De Bow's Review*, *American Railroad Journal*, *Western Journal and Civilian*, and the reports of boards of internal improvements and public works of the various slave states.
86. *American Railroad Journal*, 23 (1850), 9.
87. For information on the public capitalization of southern internal improvements and the ratio of public to private investment, see C. Goodrich, "The Virginia System of Mixed Enterprise," *PSQ*,

64 (1949), 366–369 and tables; C. Goodrich, *Government Promotion of American Canals and Railroads, passim;* Taylor, *Transportation Revolution, passim;* Heath, *Constructive Liberalism,* 287–289; Smith, *Economic Readjustment of an Old Cotton State,* 179–183; J. W. Million, *State Aid to Railways in Missouri* (Chicago, 1896), 232–236; D. Jennings, "The Pacific Railroad Company," *Missouri Historical Society Collections,* 6 (1931), 309; T. W. Allen, "The Turnpike System in Kentucky," *FCHQ,* 28 (1954), 248–258 note; C. B. Boyd, Jr., "Local Aid to Railroads in Central Kentucky," *KHSR,* 62 (1964), 9–16; S. J. Folmsbee, *Sectionalism and Internal Improvements in Tennessee* (Knoxville, 1939), 28, 122, 135, 265; S. G. Reed, *A History of Texas Railroads* (Houston, 1941), *passim;* M. E. Reed, "Government Investment and Economic Growth: Louisiana's Ante-Bellum Railroads," *JSH,* 28 (1962), 184, 189; and railroad reports in *De Bow's Review,* 26 (1859), 458–460, and 28 (1860), 473–477; *American Railroad Journal,* 28 (1855), 771; and the *Western Journal and Civilian,* 14 (1855), 292. Taylor, *Transportation Revolution,* 92, estimates that in 1860 about 55 per cent of the investment in railroads in the eleven Confederate states came from state and local authorities. This accounts for neither private investment in internal improvements other than railroads, nor investment generally in such states as Maryland, Kentucky, and Missouri.

88. For federal funding of southern enterprises, see Goodrich, *Government Promotion,* 156–162; Taylor, *Transportation Revolution,* 49–50, 95–96, 67–68; Reed, "Government Investment . . . Louisiana's Railroads," 184, 189.

89. For foreign funding of southern enterprises, see Kemble, *Journal,* 104–122; Hidy, *House of Baring,* 281, 330, 336; Ratchford, *American State Debts,* ch. 5; McGrane, *Foreign Bondholders and State Debts,* p. 89, and ch. 9–13; *Niles' Register,* 29 (1825), 178; 40 (1831), 270; and 42 (1832), 91; Governor's Message, Milledgeville *Federal Union,* Nov. 6, 1849, and Dec. 2, 1845; Barclay, *Ducktown, passim;* correspondence for 1845–48, and 1855–61, Gorrell Papers (UNC); Green, "Gold Mining, Virginia," 357–365; Green, "Gold Mining, Georgia," 224–225; *American Journal of Science,* 57 (1849), 295–299.

90. Taylor, *Transportation Revolution,* 97–102, and *passim.*

91. Financial documents and letters, Elmore Papers (LC and USC), and P. M. Butler Papers (USC).

92. W. P. Browne to G. Baker, Jan. 30 and 31, 1857, Browne Papers (AA).

93. Reports of Upper Appomattox Company, Virginia *Board of Public Works Reports, 1816,* p. ii, and *1835,* p. 42; Reports of Roanoke Navigation Company, Virginia *Board of Public Works Reports, 1823,* p. 69, *1838,* pp. 98, 100, *1839,* p. 125, and *1854,* pp. 487–488.

94. Report of Slate River Company, Virginia *Board of Public Works Report, Jan. 24, 1828,* p. 23; *American Railroad Journal,* 5 (1836), 817; J. Andreassen, "Internal Improvements in Louisiana," *LHQ,* 30 (1947), 46–47.

95. A. C. Caruthers to W. B. Campbell, Jan. 28, 1838, Campbell Papers (Duke), for the entire scheme.

96. Smith, *Economic Readjustment of an Old Cotton State,* 115–134; G. R. Woolfolk, "Planter Capitalism and Slavery: the Labor Thesis," *JNH,* 41 (1956), 103–116.

97. Genovese, *Political Economy of Slavery,* 20, 24–25, 34, 37 note 13, 159–172, 185, 276–277; North, *Economic Growth,* 126, 130, 132, 166, 170, 172–176, 205–206.

98. Genovese, *Political Economy of Slavery, passim;* North, *Economic Growth, passim.* For further discussion of southern income distribution, see Engerman, "Effects of Slavery," 71–97; F. L. Owsley, *Plain Folk of the Old South, passim;* F. Linden, "Economic Democracy in the Slave South," *JNH,* 31 (1946), 140–189.

99. However uneven income distribution was *within* the South, recent comparisons of regional and national wealth for 1840 and 1860 suggest that southern income levels and rates of growth compared favorably with those of the free states. See Engerman, "Effects of Slavery," 71–97, especially note 35, and R. Easterlin, "Regional Income Trends, 1840–1950," in S. Harris, ed., *American Economic History* (New York, 1961), 525–547. If one revises upward the maintenance cost of slaves (as Genovese, *Political Economy of Slavery,* 275–280, has done, and as I have also done above), then the size of the southern market and the demand for manufactured goods also increases.

100. Dew, *Ironmaker to the Confederacy,* 32; North, *Economic Growth,* 122–126; Genovese, *Political Economy of Slavery,* 159–165; W. Miller, "A Note on the Importance of the Interstate Slave Trade of the Ante-Bellum South," *JPE,* 73 (1965), 181–187.

101. Taylor, *Transportation Revolution,* chs. 1 and 10; Griffin, "Origins of Southern Cotton Manufacture, 1807–1816," 5–12;

Griffin, "South Carolina Homespun Company," 402–414; and Starobin, Industrial Slavery, ch. 1 and tables.

102. Taylor, *Transportation Revolution*, chs. 1 and 10; Eaton, *Southern Civilization*, chs. 9 and 10; Stampp, *Peculiar Institution*, 398–399.

103. Genovese, *Political Economy of Slavery*, 165–166.

104. Stampp, *Peculiar Institution*, 397. Though limited markets restricted southern industrialization, the extent of this phenomenon should not be exaggerated. Plantation self-sufficiency, slow urbanization, and other market factors did not restrict consumption entirely. Recent studies have also shown that plantation and slave consumption were higher than once thought, and that some southern businessmen found substantial markets outside of the slave states. See Genovese, *Political Economy of Slavery*, 25, 159–162, 170, 185, and 276–277; and North, *Economic Growth*, 130.

Chapter Six: The Politics of Industrial Slavery

1. Previous discussions of the debate over and the campaign for industrial slavery have suffered from several shortcomings. Opinion on the use of slave labor in industries has generally been confused with actual employment. The "boosterism" which permeated many magazines, such as *De Bow's Review*, has not been adequately accounted for. The debate was not confined simply to the question of textile manufacturing, but embraced the industrialization process as a whole. The controversy began in the 1790's and continued in the 1820's, long before the most intensive period of debate in the 1840's and 1850's. See, for example, P. G. Davidson, "Industrialism in the Ante-Bellum South," *SAQ*, 27 (1938), 405–425; J. G. Van Deusen, *The Economic Bases of Disunion in South Carolina* (New York, 1928); C. S. Boucher, "The Ante-Bellum Attitude of South Carolina towards Manufacturing and Agriculture," *Washington University Studies*, III (St. Louis, 1916); F. Linden, "Repercussions of Manufacturing in the Ante-Bellum South," *NCHR*, 18 (1940), 313–331; N. W. Preyer, "The Historian, The Slave, and The Ante-Bellum Textile Industry," *JNH*, 46 (April, 1961), 67–83; H. Collins, "The Southern Industrial Gospel before 1860," *JSH*, 12 (1946), 386–402. Cf. E. D. Genovese, *The Political Economy of Slavery* (New York, 1965), chs. 8, 9.