

THE ECONOMICS OF SLAVERY IN THE ANTE BELLUM SOUTH¹
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I. OBJECTIVES AND METHODS

THE outstanding economic characteristics of southern agriculture before the Civil War were a high degree of specialization and virtually exclusive reliance on a slave labor force. The large-scale, commercial dependence upon slave labor was to distinguish the ante bellum South not only from other regions in its own time but from all regions at all other times in American agricultural history. Because of this unique historical status, ante bellum southern agriculture has, been a subject for special historical attention. Above all else, attention has been focused upon the proposition that, even without external intervention, slavery would have toppled of its own weight. This allegation has its source in the assertions of slave inefficiency to be found in

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the writings of men who lived with slavery: American or English liberals like G. M. Weston, I-I. R. Helper, or J. E. Cairnes and southern slaveowners who, in a religious, self-righteous age, could find every motive for the protection of the slave system except that it was personally profitable. The argument is to be found most strongly stated in the work of later southern historians, especially C. W. Ramsdell and U. B. Phillips, who take the position that the Civil War, far from being an irrepressible conflict, was an unnecessary blood bath. They argue that slavery had reached its natural limits and that it was cumbersome and inefficient and, probably within less than a generation, would have destroyed itself. To the question why emancipation was not resorted to, they reply that slavery was for the southerners an important (and evidently expensive) duty, part of their "unending task of race discipline." On the other side, Lewis Gray and Kenneth Stampp have strongly contested this view, contending that southern plantation agriculture wits at least as remunerative an economic activity as most

other business enterprises In the young republic.

The evidence employed in this debate has been provided by the few, usually fragmentary, accounting records that have come down to us from early plantation activities. The opposing parties have arranged and rearranged the data in accordance with various standard and sometimes imaginary accounting conventions. Indeed, the debate over the value of the different constituent pieces of information reconstructs in embryo much of the historical development of American accounting practices. For example, virtually all the accounting valuation problems have been discussed with relation to the slave question, including the role and meaning of depreciation, the nature and accountability of interest charges, and the validity of distinctions between profits and payments of managerial wages. But, despite the fact that the problem is ostensibly one in economic history, no attempt has ever been made to measure the profitability of slavery according to the economic (as opposed to accounting) concept of profitability. This paper is an attempt to fill this void.

Thus this paper is devoted to establishing methodological as well as historical points. Specifically, we shall attempt to measure the profitability of southern slave operations in terms of modern capital theory. In doing so, we shall illustrate the ways in which economic theory might be used in ordering and organizing historical facts. An additional methodological point is also made evident by this exercise, namely, how the very simple statistical concepts of range and central tendency as applied to frequency distributions of data can be employed in interpreting or moderating inferences from historical facts.²

In executing these tasks, we must ask first what it is we are talking about and, second, whether we can say anything that can be proved or disproved. For example, we must ask what the slave economy was. Was it cotton culture? Was it cotton and sugar and tobacco? Was it all of ante bellum southern agriculture? In answering, we shall define slavery in terms of two production functions. One function relates inputs of Negro slaves (and the materials required to maintain the slaves) to the production of the southern staple crops, particularly cotton. The second function describes the production of the intermediate good, slave labor--slave-breeding, to use an emotionally charged term which has colored, even determined, most of the conclusions about this problem.

What do we mean by "efficiency"? Essentially, we shall mean a comparison of the return from the use of this form of capital--Negro slaves--with the returns being earned on other capital assets at the time. Thus we mean to consider whether the slave system was being dragged down of its own weight; whether the allocation of resources was impaired by the rigidity of capitalized labor supply; whether southern capital was misused or indeed drawn away to the North; and, finally, whether slavery must inevitably have declined from an inability of the slave force to reproduce itself.

The hypothesis that slavery was an efficient, maintainable form of economic organization is not a new one, of course. Nor are we, by one hundred years, - at least, among the first to conclude that Negro slavery was profitable in the ante bellum South. What we do feel to be

² A more thorough presentation of these methodological views may be found in our paper, "Economic Theory, Statistical Inference, and Economic History," in *The Tasks of Economic History*, proceedings issue of the *Journal of Economic History*, December, 1957.

novel, however, is our approach. Postulating that American Negro slavery was characterized by two production functions, we argue that an efficient system developed in which those regions best suited to the production of cotton (and the other important staples) specialized in agricultural production, while the less productive land continued to produce slaves, exporting the increase to the staple-crop areas. It is this structure that we are examining.

We propose to test the hypothesis by putting appropriate values on the variables in the production functions and computing the rate of return over cost, the stream of income over the lifetime of the slave. This rate of return, the marginal efficiency of slave capital, must, in turn, be shown to be at least equal to the rate of interest currently available in the American capital markets. It is further necessary to show that appropriate markets existed to make this regional specialization possible and that slavery did not necessarily imply the disappearance or misallocation of capital. Evidence on the ability of the slave force to maintain itself numerically will be had as a corollary result. For these purposes it is necessary to obtain data on slave prices and cotton prices, the average output of male field hands and field wenches, the life-expectancy of Negroes born in slavery, the cost of maintaining slaves during infancy and other nonproductive periods, and, finally, the net reproduction rate and the demographic composition of the slave population in the breeding and using areas.

Looked upon simply as a staple-commodity agriculture, the southern system must appear to have been burdened--possibly even to have been on the verge of collapse--under the weight of areas of inefficient unprofitable farming. We sub-

mit that this view is in error and that the error arises from the failure to recognize that an agricultural system dependent upon slavery can be defined operationally only in terms of the production function for, both the final good—in our case, cotton--and the production function for the intermediate good--Negro slaves. Considered operationally, in terms of a neoclassical two-region, two-commodity trade system, it must be seen that a slave system produces labor as an intermediate good. The profitability of the system cannot be decided without considering the system's ability to produce chattel labor efficiently.

There are also non-historical reasons for taking up once again the economics of ante bellum southern slavery. A detailed re-evaluation of the profits of plantation slavery in the American South might help us evaluate the possibilities, first, that the near-slavery existing today in many highly agricultural, underindustrialized lands is an institution that can be expected to disappear automatically or, second, that dislodging it will require substantial governmental pressure or interference. These are, of course, often key policy questions in former colonial countries that are just beginning to develop modern industrial economies.

The possible relevance of the American experience in this connection increases, moreover, as the underlying economic motivations of a slave system are analyzed and established. This happens primarily because, once these motives -are recognized, it becomes possible better to understand and predict the political structures that will accompany slavery. In other words, the interrelationships between certain economic and political goals of slavery can be better understood once the underlying economic factors are understood.

II. THE ECONOMIC RETURNS ON SLAVE-HOLDING

From the standpoint of the entrepreneur making an investment in slaves, the basic problems involved in determining profitability are analytically the same as those met in determining the returns from any other kind of capital investment. The acquisition of a slave represented the tying-up of capital in what has appropriately been called a roundabout method of production. Like the purchase of any capital, a slave purchase was made in the anticipation of gaining higher returns than are available from less time-consuming or capital-

that the marginal efficiency exceeds the interest rate (in the Keynesian terminology). From this statement of the problem, it is obvious that the following information is needed to determine the profitability of slaveholding from the slaveholder's point of view: (a) the longevity of slaves; (b) the costs of Slaves and any necessary accompanying capital investments; (c) the interest rate; and (it) the annual returns from slave productive activities, defined to include both field labor and procreation. We shall consider each of these in turn and then put the pieces together to determine the approximate profitability of slave investments.

A. THE LONGEVITY OF SLAVES

Slave longevity corresponds, of course, to the period for which a slave investment was made. We shall limit attention here to the purchase of twenty-year-old Negroes in the immediate pre-Civil War era, and we shall deal only with the typical or median life-expectancy for this group. These limits greatly simplify the problem and still include the vast majority of relevant cases.

There is a scarcity of good longevity data for the period, but it is known that in 1850 Negroes lived just about as long as whites in the two states for which acceptable data are available. The available figures are given in Table 1. There is doubt about the quality of these estimates because they show Negroes in New England expecting a longer life than whites. This is not the case today, nor

TABLE 1
EXPECTATION OF LIFE AT BIRTH IN
YEARS FOR WHITE AND COLORED
MALES, UNITED STATES, 1850*

State	White	Colored
Massachusetts...	38.3	39.75
Maryland.....	41.8	38.47
Louisiana.....	.....	28.89

*Reported in L. I. Dublin, A. J. Latka, and M. Spiegelman, *Length of Life* (New York: Ronald Press Co. 1949) p. 54, where the source is given as the L. W. Meech table based on the records of the 1850 Census and first published in J. C. G. Kennedy, *The Seventh Census--Report of the Superintendent of the Census, Dec. 1, 1852* (Washington, D.C., 1853), p. 13. The Maryland colored data are for slaves only; the Louisiana, for slaves and free together.

using methods. This model is particularly applicable in the present case, because slave investments, like the forests or wine cellars of classic capital theory, produced a natural increase with the passage of time.

Investment returns are properly computed by using the capital-value formula, $y = x_t / (1 + r)^t$, where y is the cost of the investment, x_t is realized return t years hence, and r is the internal rate of return³ or what Keynes called the marginal efficiency of capital. When returns are realized over a number of years, the total earnings of the capital can be found by simple summation in this formula. The criterion for a profitable investment is

³ Computation of rate of return in this way is preferable to the usual recording of net profit rates on total plantation investment in slaves, land, and durable equipment, because of the reproductive character and the limited durability of slave investments. Clearly, the same characteristics do not apply to non-depreciable investments in land. A non-depreciable investment in agricultural land is, however, quite rare.

was it the case in 1900, when the first good data became available. Also, Negroes would appear in this table to have had a longer life-expectancy in 1850 than they had fifty years later. Although surprising, this may be perfectly correct. Negroes could have received better care under slavery, because plantation owners had an economic interest in keeping Negroes alive. Furthermore, the Negro in the period after emancipation generally lacked the means to participate equally in the new medical advances, in contrast to his position of roughly equal medical care in the period before 1860.

Life-expectation at birth does not tell us much, of course, about the expectation of a twenty-year-old man. Actually, there are no data on Negro life-expectancy at different age levels in the prewar period except for some imperfect estimates made by Sydnor for Mississippi slaves.⁴ Using the average reported age at death of those over the age of twenty who (lived in 1850, he estimated a life-expectancy of twenty-two years for a twenty-year-old Mississippi slave. This figure is probably low for two reasons. First, the estimating procedure tells more about life-expectancy in the years preceding 1850 than after, unless we make the dubious assumption that there was no advance in medical and dietary knowledge around the middle of the century. Second, estimates from deaths reported at the end of ten-year intervals and averaged back over the decade would tend to underestimate life-spans at the younger ages. Doubts about the quality of the Sydnor data are borne out by consideration of the Massachusetts life-expectancy of 40.1 years for twenty-year-old males, white and Negro, in 1850.⁵

Looking back at the data in Table 1, there is no reason to expect twenty-year-old Massachusetts Negroes to have a lower life-expectancy than Massachusetts whites, though both clearly lived longer than southern Negroes of the period. Taking all these factors into account, an estimate of thirty to thirty-five years of life-expectancy seems most plausible for twenty-year-old Negroes working as prime cotton bands on southern plantations in the period 1830-50 and a thirty-year life-expectancy will generally be used in the succeeding calculations.

B. THE COST OF THE CAPITAL INVESTMENT

The capital investment in plantation operations included investment both in slaves and in the land and equipment on which the slaves worked. The price of slaves fluctuated widely, being subject to the waves of speculation in cotton. Furthermore, the price depended, among other things, upon the age, sex, disposition, degree of training, and condition of the slave. In order to hold these variables roughly constant, we shall confine our present analysis to eighteen-twenty-year-old prime field hands and wenches. Some summary data on slave prices were compiled by U. B. Phillips on the basis of available market quotations, bills of transactions, and reports of sales in most of the important slave markets of Georgia. His estimates of the best averages for

⁴ Charles S. Sydnor, "Life Span of Mississippi Slaves," *American Historical Review*, XXXV (April, 1930), 566-74.

⁵ L. I. Dublin, A. J. Latka, and M. Spiegelman, *Length of Life* (New York: Ronald Press Co., 1949), p. 51. It is worth noting that there is general agreement that labor on the rice and sugar plantations was sufficiently more arduous to reduce Negro longevity in such locations. Therefore, the Louisiana estimates are probably inordinately pessimistic, and the Maryland figures are better estimates of conditions prevailing on the cotton plantations. This, in turn, means that the thirty-to thirty-five-year estimates used below are, if anything, a little conservative.

several years between 1828 and 1800 are presented in Table 2. On the basis of these data it would appear that both the median and the mean price for prime field hands were in the range of from \$900 to \$950 in the period 1830-50. Because of the substantial price increases in the last ante helium decade, these averages would run substantially higher for the entire slave period after 1830; specifically, about \$1,100-\$1,200. Since the prices of field wenchens usually aver-

TABLE 2
ESTIMATED AVERAGE SLAVE
PRICES IN GEORGIA, SE-
LECTED YEARS, 1828-60

Year	Average Price of Prime Field Hands
1828	\$ 700
1835	900
1837	1,300
1839	1,000
1840.....	700
1844	600
1848	900
1851	1,050
1853	1,200
1859	1,650
1860	1,800

Source: U. B. Phillips, "The Economic Cost of Slaveholding in the Cotton Belt," *Political Science Quarterly*, XX, No. 2 (1905), 267.

aged about \$100-\$150 less than those of hands, they were probably in the range of from \$800 to \$850 in the years 1830-50 and between \$900 and \$1,100 for the entire period 1830-60. (Phillips' averages are substantially confirmed by the detailed tabulation of slave transactions shown in Table A of the Appendix. This is a reasonably exhaustive list of such transactions as reported in the standard references on ante bellum southern agriculture.)

As for the non-slave capital, by far the most important was the investment in land. Since the land values varied widely,

depending on the quality of the soil and the type of agriculture pursued, experimental control on our calculations requires that attention be confined to cotton culture. The range in cotton-land prices in the period 1830-50 is fairly well bracketed by the \$6 per acre paid for poor upland pine land in Alabama and the \$35-\$40 per acre paid for cleared Mississippi alluvium. Such a range even encompasses the costs of new lands in the Southwest. Although such land was obtained for nominal original cost, the usual costs of clearing, draining, and otherwise preparing it, plus the transportation of slaves and supplies, would amount to something in the range of \$20-\$30 per acre. There was also variation in -the number of acres needed per hand. Counting garden land and woodlots, as well as productive fields, the usual number of acres per field hand was between 15 and 35, the exact figure depending primarily on the quality of the land. This meant an original land investment per hand of somewhere between \$90 and \$1,400, with \$180-\$600 encompassing the vast majority of instances.

The price per acre was, of course, related to the durability of the land, which immediately introduces a further dimension into the capital cost problem. Cotton lands lasted between ten and forty years, depending upon original quality and fertilization. In the land-rich, labor-scarce economy of the nineteenth-century United States, fertilization was a rare practice. Furthermore, planters clearly had the choice between operating less capital intensively on low-durability land or more capital intensively on high-durability land. For example, poor Alabama pine land might be expected to last ten years and require 30-35 acres per hand; this meant that \$180-\$210 had to be reinvested every ten years to utilize the

slave force properly. Assuming thirty-year slave longevity and an 8 per cent interest rate, the present value of the land investment for one slave's lifetime was \$302-\$350 for an upland-pine operation. On the alluvium, by contrast, the land would typically outlast the slave in usefulness; assuming, though, that both lasted the same number of years and that 16 acres of cleared and 10 of uncleared land (at \$10 per acre) were used per hand, a total land investment of \$660 per hand is indicated. This difference in value of the land investment was presumably a function of different yields. At any rate, the typical case was probably halfway between these two, involving a land investment of about \$450 per hand.

Similar problems arise in estimating the investment in plows, gins, wagons, cabins, and miscellaneous implements. Such investments ran about \$25 per hand in original outlay and had to be renewed every fifteen years. This gives a total present value in such items (again on the assumption of thirty-year slave longevity and 8 per cent interest) of about \$33. A small investment was required in work horses and oxen, but in this case the stock was likely to be self-replenishing, reducing the costs to interest on the investment at most. Putting all these capital costs together indicates that \$1,400-\$1,450 was a fair approximation of the typical or average total investment per male slave in terms of present values. The range ran from \$1,250 to \$1,650.

C. THE INTEREST RATE

Determining the relevant rate of interest--the rate with which the cotton-slave returns must be compared--is perhaps empirically the easiest and conceptually the most difficult of the tasks in computing the economic returns on slave investments. While there is a relative abund-

ance of data on interest rates in this period, none corresponds exactly to the desired rate. In a strict conceptual sense, the relevant rate of interest is that which plantation owners or other investors in southern agriculture could have earned on their money in other pursuits if slavery had gone out of existence. This is difficult to arrive at on the basis of historical evidence, since it assumes circumstances contrary to the facts. The closest substitute would be earnings on other investments that were *least* dependent upon cotton and southern agriculture. Given the importance of cotton in the American economy prior to the Civil War and the general interdependence of economic systems, even in so primitive an economy as that of the United States in the first half of the nineteenth century, it is difficult to find any conceptually correct figures. The figures that follow are offered in complete recognition of their fallibility on this count, yet they are probably as good as are available.

In the contemporary chronicles it is obvious that southerners and northerners alike considered 6-8 per cent a reasonable rate of return and a reasonable asking price for loans. Figures in this range are repeated over and over again and must be given some significance. This is all the more true because these figures are consistent with reported rates charged on prime commercial paper and other debt instruments in the principal money markets before 1860. The prime commercial rates charged in New York and Boston in the period 1830-65, shown in Table 3, illustrate this point.⁶ Similarly, the

⁶ In confirmation of these figures, Lance E. Davis, who is now completing a study of New - England financial intermediaries (the essentials of which can be found in his Ph.D. dissertation on deposit in the Johns Hopkins University Library), reports that these New England firms consistently realized less than 6 per cent on three-signature prime commercial

rates on New York Stock Exchange call loans, New England municipal issues, and rail debentures, shown in Table 4, fall for the most part within, or below, this same 6-8 per cent range. While the average annual rates fluctuated widely in the years between 1830 and 1850 and the distribution of rates is skewed, the central tendency was clearly close to the 6-8 per cent range. Specifically, the New York average was 9.2 per cent, the median was 8.0, and the mode was be

side the time period of this investigation, may be conceptually the most pertinent figures in Tables 3 and 4. The Civil War represents its good an approximation as is achievable of a controlled experiment to determine investment returns in the North under complete divorce from the plantation economy. The difficulty is, of course, that too many other structural changes took place con, comitantly with the withdrawal of the southern cotton economy: above all else,

TABLE 3
AVERAGE ANNUAL INTEREST RATES ON PRIME COMMERCIAL
PAPER FROM 1831 TO 1860

	New York*	Boston†		New York*	Boston †
1831	5.1	6.5	1849	10.0	12.0
1832	5.3	6.5	1850	8.0	7.5
1833	6.9	6.0	1851	9.7	7.0
1934	14.6	14.5	1852	6.6	6.0
1935	7.0	5.0	1853	10.2	10.7
1836	18.4	20.3	1854	10.4	12.0
1837	14.1	6.0	1855	8.9	7.0
1838	9.0	7.0	1856	8.9	10.0
1839	13.2	9.0	1857	12.9	9.0
1840	7.8	6.0	1858	5.0	4.5
1841	6.9	6.0	1859	6.8	7.0
1942	8.1	7.8	1860	7.0	6.0
1843	4.5	3.0	1861	6.5	....
1844	4.9	5.0	1862	5.8	....
1845	6.0	6.0	1863	5.0	....
1846	8.3	8.0	1864	6.0	....
1847	9.6	6.0	1865	7.6	....
1848	15.1	15.0			

Sources: New York data: Federal Reserve Bank of New York. *Monthly Review*, March 1, 1921, p. 3. The figures are also reproduced in A. O. Greef, *The Commercial Paper House in the United States* (Cambridge, Mass.: Harvard University Press, 1938), p. 79. Boston data: Joseph G. Martin, *One Hundred Years' History of the Boston Stock and Money Markets* (Boston: The Author, 1898), pp. 52-53.

*Two-name sixty-ninety-day paper.

† "First class three to six months, bankable paper." The rate reported is either one sustained for a major portion of the year or an arithmetic average.

tween 6.0 and 7.0 per cent. Because of the skew, the median rate of 8 per cent is probably the best measure of central tendency for the present analysis.

The interest rates for the Civil War years, although they lie somewhat out-

paper in the period before 1840; from 1840 to 1860, however, almost all loans were made at 6 per cent, which was the legal maximum under Massachusetts usury laws. He estimates that these intermediaries realized an over-all return of between 6 and 7 per cent in the period 1840-60 on their total investment 6 per cent on the debt and 7-8 per cent on equity.

the Lincoln administration adopted the very essence of Keynesian expansionary fiscal policies. It simultaneously ran a large deficit budget and closed the economy with high tariffs and buy-American clauses in government contracts. On the supply side of the money market, the war meant that the southern withdrawal was consummated without any flow of capital out of slavery and into other ventures. Consequently, returns on northern investments unquestionably remained

higher than they would have if southern cotton had been withdrawn without offsetting government action and with a flow of southern capital into northern money markets. On the other hand, there might have been compensatory government action even without the war, and the loss of southern funds was at least partially offset by the loss of southern opportunities. The 6-7 per cent average returns in the period 1860-65 can be viewed as indicative of at least what could be achieved in the United States in the absence of cotton investment opportunities.

The realization on short-term, high-quality commercial paper might normally be expected to be below the realization on longer-term investments of the type represented by ownership of a cotton plantation. However, in the period 1840-60 banking practices were rather lax and potentially or actually inflationary, as indicated by the recurrent financial panics of the time. Such unstable financial conditions may have given equity a premium that it might otherwise not have enjoyed. Furthermore, the existence of well-established slave and real estate markets made most plantation investments highly negotiable, thereby reducing the time commitment in such investments. There are some reports available on the realizable returns on longer-term investments; for example, Table 4 presents the rates at which some municipal and railroad development bonds were floated in the prewar period. In addition, Davis reports returns of 16.76 per cent on total capital stock in the 1844-48 period and 5.75 per cent in the 1848-53 period for nine of the larger and more prosperous Massachusetts textile firms.⁷

From these many disparate sources it seems safe to estimate that a wholesale

withdrawal of capital from slave operations in southern agriculture would not have depressed marginal investment returns in the prewar United States economy much below 4.5-5 per cent. Similarly, it seems safe to conclude that the withdrawn capital could not have expected to earn returns much in excess of 8 per cent. Between these high and low estimates, a return of 6 per cent seems the most probable and, therefore, appropriate for comparison in our model.

TABLE 4
YIELDS ON VARIOUS ECONOMIC
ACTIVITIES, 1857-65

Year	New England Municipal Bond Yields (January Index Numbers)	Call Money Rates at the New York Stock Exchange (Arithmetic Average of Months)	Railroad Bond Yields (January Average for All Railroads)
1857	5.2	9.3	8.1
1858	5.3	4.2	8.7
1859	4.8	5.4	7.4
1860	4.8	6.0	7.5
1861	4.9	5.8	7.4
1862	5.2	5.2	7.5
1863	4.4	6.2	5.6
1864	4.7	6.6	6.0
1865	5.2	6.2	6.2

Source: Frederick R. Macaulay. *The Movements of Interest Rates, Bond Yields and Stock Prices in the United States since 1956* (New York: National Bureau of Economic Research, 1939), pp. A 172 -A 173 and A34-A38.

D. ANNUAL RETURNS

The appropriate return figure to enter in the capital equation is the net return on current account, or the difference between gross sales and all out-of-pocket expenses. The expense deduction is limited to out-of-pocket expenses, because all the book charges that complicate the usual accounting procedures are taken into account in the process of constructing the capital cost estimate.

⁷ Lance E. Davis, "Sources of Industrial Finance: The American Textile Industry," *Explorations in Entrepreneurial History*, IX (April, 1957), 201. The figures are based on the companies' financial records to be found at the Baker Library of the Harvard Graduate School of Business Administration

Estimates of plantation expenses have been taken primarily from three excellent, exhaustive records of the available material: J. L. Watkins' *The Cost of Cotton Production*, Lewis C. Gray's *History of Agriculture in the Southern United States to 1860*, and Kenneth Stamp's *The Peculiar Institution*⁸. A reasonably thorough check of these secondary sources against some primary sources and against one

The total figure of \$20-\$21 annual out-of-pocket slave maintenance costs will be used in subsequent calculations. These costs are to be subtracted from the annual gross return figures on slave activities.

For a male field hand the returns considered will be limited to the sales of products realized from his field labor; in the case of a female hand, an addition

TABLE 5
TYPICAL ANNUAL OUT-OF-POCKET COSTS OF MAINTAINING AND WORKING
PRIME FIELD HANDS ON SOUTHERN PLANTATIONS IN THE PERIOD 1840-60

A. Food and clothing	
(1) Out-of-pocket costs where most food was produced on plantation and most clothing was hand-sewn	\$ 2.50--\$ 3.46
(2) Cash costs if purchased	\$25.00-\$40.00
(3) Out-of-pocket costs where some ready-made clothing and meat, fish, and other food "delicacies" were purchased	\$ 7.00-\$10.00
B. Medical care	\$ 1.50-\$ 2.00
C. Taxes	\$ 0.39-\$ 1.20
D. Supervision	\$ 5.00-\$15.00
Total, based on means of the estimates above and option (3) under A .	\$20.00-\$21,00

Principal sources: J. L. Watkins, *The Cost of Cotton Production* (United States Department of Agriculture, Division of Statistics Miscellaneous Series, Bull. 16 [Washington, D.C.: Government Printing Office, 18991]; Lewis C. Gray, *History of Agriculture in the Southern United States to 1860* (Washington, D.C.: Carnegie Institution, 1933), pp. 529-67; Kenneth Stamp, *The Peculiar Institution* (New York: A. A. Knopf, Inc., 1956), chaps. vi, vii, and ix

another for consistency indicates that these surveys have been reliably and accurately made. A digest of the estimates is presented in Table 5.

⁸These three secondary sources carefully and consistently record the estimates available from three basic types of primary material. Gray's *History of Agriculture in the Southern United States to 1860* (Washington, D.C., 1933), esp. pp. 529-67, covers the cost estimates intermittently reported in the principal agricultural and business journals read by the planters and traders: *DeBow's Review*, *Farmers' Register* *Farmer and Planter*, *Southern Planter*, *Southern Agriculturist*, and *Hunt's Merchants' Magazine*. Watkins' *The Cost of Cotton Production* (U.S. Department of Agriculture, Miscellaneous Series, Bull. 16 [Washington, D.C., 18991] includes the estimates recorded in the Patent Office and the Commissioner of Patents' Annual Reports, especially for the years 1844, 1849, 1850, 1852, 1854, and 1855. Stamp's *The Peculiar Institution* (New York, 1956), esp. chaps. vi, vii, and ix, reports the estimates available from diaries and individual plantation records still in existence.

must be made for the returns realized on the labor and sale of her children. Because of these basic differences in the production functions for the two sexes, they will be treated separately.

For the male field hand, limited to the returns on his field labor, the gross proceeds will depend on the price of cotton and the quantity of his annual output. The output, in turn, will be crucially dependent on the quality of the land on which the slave was employed and, to a much lesser degree, upon the quality and amount of capital goods with which he was equipped. The figures in Table 6 illustrate the possible variation in productivity per hand. These estimates agree with frequent statements in con-

temporary journals that in the typical case a prime field hand could be expected to raise from 3.5 to 4 bales per year. The maximum seems to have been 7-8 bales on the best lands, and 2-3 bales was the minimum on the poorest land.

The relevant price of cotton for valuing these yields is the net price realized at the farm (in order that price and cost data be comparable). This means that export prices at the major ports must be

ally equal to the Liverpool price us ocean shipping rates, the New York and Mobile prices were generally somewhat higher. Taking all this into consideration, 7-8 cents seems a realistic and conservative estimate of the average realized farm price for the whole period.

Finally, the price, productivity, anti capital cost estimates must be combined in order to compute the actual profitability of investments in male slave labor

TABLE 6
REPORTED YIELDS PER PRIME FIELD HAND

Location	Year	Bales per Hand	Source
South Carolina coastal	1849	4-1/3	Watkins
Mississippi (De Soto County)	1849	4	Watkins
Unidentified	1844	7	Watkins
Alabama (Cherokee County)	1855	4	Watkins
Mississippi (Vicksburg area)	1855	8	Watkins
New Southwest land	1850's	5	Gray, p. 912
South Carolina upland. .	1852	3	Gray, p. 912
Texas	1859	10	Stampp, p. 408
Arkansas River	1859	7	Stampp, p. 408

adjusted downward by the amount of freight, insurance, storage, drayage, and factor's commission charges that were properly chargeable to the planter. Gray estimates that these costs generally ran between \$2.50 and \$4 per bale. Somewhat more detailed information is presented by Watkins, whose findings are summarized in Table 7. The Gray and Watkins findings are fully compatible, and a marketing cost of from 0.7 to 0.8 cent per pound appears to be properly deductible from the export price in determining the price f.o.b. farm.

The export price itself fluctuated widely over the period. As can be seen from Table 8, New Orleans cotton prices averaged almost 50 per cent higher in the thirties and fifties than they did in the depressed forties. Even in the forties, however, the export price level was sufficient to insure an average net farm price of not much less than 6.5 cents. Since prices at any given port were usu-

TABLE 7
COTTON MARKETING COSTS PER BALE
CHARGEABLE TO PLANTERS IN 1840

	At Mobile	At Charleston
Freight in .	\$1.50*	\$1.25†
Drayage	0.125	0.13
Weighing	0.125	0.06
Storage (1 month)	0.20	0.24
Insurance (1 month).	‡	0.25
Factor's commission (2-2.5 per cent)	0.80	0.60-1.61
Total per bale	\$2.75	S.3.03§
Total cents per pound ||	0.69	0.76§

Source:
Watkins, *op. cit.*, pp. 38, 39.

* By river.

† From Columbia.

‡ Not reported. Note that the higher (Charleston) figure have been used in the profit computations to follow.

§ Assuming \$1.10 factor's commission.

|| Four hundred pounds to a bale.

for cotton production. Capital costs must be included in the computations, since the present value of the capital outlay will depend, as was previously shown, upon the rate of return. In lieu of a single computation, several cases involving different capital outlays, yields per hand

and realized farm prices have been constructed; the results are given in Table 9.⁹ Cases 1, 2, and 3 are the most typical; cases 4, 5, and 6 represent the situation on somewhat better land. These first six cases, with returns ranging between 4½ and 8 per cent, encompass the majority of ante bellum cotton plantation operations. Cases 7, 8, and 9 represent the minimum of profitability or what might be expected on poor upland pine country or the worked-out lands of the eastern seaboard. By contrast, cases 10, 11, and 12 show the upper range of profitability

The calculations in Table 9 represent an estimate of potential returns for the relatively simple production function of prime field hands. With the female hand or prime field wench the situation becomes much more complex: in addition to her productivity, the productivity of her children and the returns realized on their sale must be considered. Similarly, the extra cost of maintaining the children and the maternity and nursery costs associated with their birth must also be counted.

To make the calculations in this rather

TABLE 8
WEIGHTED YEARLY AVERAGE PRICES OF SHORT-STAPLE COTTON (USUALLY LOUISIANA OR MISSISSIPPI MIDDLING OR SECOND GRADE) AT NEW ORLEANS FOR THE CROP YEARS 1830-60

Year	Price	Year	Price	Year	Price
1830	8.4	1840	9.1	1850	11.7
1831	9.0	1841	7.8	1851	7.4
1832	10.0	1842	5.7	1852	9.1
1833	11.2	1843	7.5	1853	8.8
1834	15.5	1844	5.5	1854	8.4
1835	15.2	1845	6.8	1855	9.1
1836	13.3	1846	9.9	1856	12.4
1837	9.0	1847	7.0	1857	11.2
1838	12.4	1848	5.8	1858	11.5
1839	7.9	1849	10.8	1859	10.8
				1860	11.1
Decade average price	11.2		7.6		11.2

Source: Gray, op. cit., Table 41, pp. 1027-29.

which was realized on the best lands of the new Southwest, the Mississippi alluvium, and the better South Carolina and Alabama plantations.¹⁰

⁹ No allowance has been made in these computations for the expenses of maintaining slaves in their dotage. This would not appear to be a serious omission. Generally speaking, slaves were considered to be virtually fully productive in field labor until their fifty-fifth birthdays--which corresponds to the average life-expectancy on the purchase of a twenty-year-old slave. Furthermore, the direct out-of-pocket costs of simply maintaining a slave were only \$10-\$15, figures considerably below productive value in field work. Given the possibility of specialized use of older labor in such occupations as garden-tending, nursery operations, and supervision, it seem doubtful if many slaves lived long enough to be economic drains on current account.

complex situation manageable, the following assumptions will be made:

1. Each prime field wench produced five to ten marketable children during her lifetime. (The computations for the ten-child or upper-limit case are shown in Table 10, while those for the lower limit of five children are shown in Table 11.)

¹⁰ A purist might ask how different returns can be realized in what is ostensibly the same type of economic activity in a relatively competitive industry. The question overlooks the fact that it took a much larger initial outlay to attain productive situations like those in cases 10-12. This is all the more true, since the capital outlay in these cases would be concentrated at the start of the undertaking, while in cases 7-9 some of the outlay would be delayed ten or fifteen years until the land wore out.

Furthermore, we assume that successful pregnancies were spaced two years apart. It must be recognized that these figures represent assumptions more about what was achievable than about actual happenings. Slave infant mortality data are too poor to permit inferences about the latter.

2. The prime field wench was one-half to two-thirds as productive as a prime field hand when she was actually at work in the field. This estimate is based on the fact that, when prime field hands and

nancy. This allowance for "lost time" is probably too generous, since the only births that really cost any important productive field time were those occurring during the peak agriculture seasons, planting and picking times.

3. The wench's children began to be productive in field labor at age six, with the males becoming self-sustaining by age nine (that is, they then earned the adult maintenance charge of \$20 per year), while females became self-sustaining by age thirteen. This can be repre-

TABLE 9
REALIZED RETURNS ON PRIME FIELD HANDS UNDER
VARIOUS HYPOTHESIZED CONDITIONS

Case	Present Value of Capital Outlay per Hand	Yield per Hand (Bales)	Average Net Farm Price (Cents)	Approximate Return (Per Cent)
1	\$1,350-\$1,400	3-3/4	7	4.5
2	\$1,350-\$1,400	3-3/4	8	5.2
3	\$1,350-\$1,400	3-3/4	9	6.5
4	\$1,600	4½	7	5.0
5	\$1,600	4½	8	7.0
6	\$1,600	4½	9	8.0
7	\$1,250-\$1,300	3	7	2.2
8	\$1,250-\$1,300	3	8	3.9
9	\$1,250-\$1,300	3	9	5.4
10	\$1,700	7	7	10.0
11	\$1,700	7	8	12.0
12	\$1,700	7	9	13.0

wenches were hired out, the hiring rate on the latter was usually one-half to two-thirds the hiring rate on the former. Thus, it is assumed that the market hiring rate reflects the relative productivity of the two sexes. In addition, adjustments must be made for the time lost by the female during pregnancy and postnatal period. It is assumed here that three months' productive field time was lost for each successful pregnancy; the entire deduction has been made in the year in which the successful birth took place, despite the fact that it would probably be more realistic to assume that one month and a half was lost on each unsuccessful as well as each successful preg-

mented by letting the male productivity go up \$5 every year between ages six and nine and letting female productivity increase by \$2.50 for every year between the ages of six and thirteen. These rates are in keeping with the previously stated principle that females were roughly half as productive in field labor as males. After reaching a self-sustaining status at these ages, it is further assumed that their productivity continued to rise linearly until the children reached their full adult productivity at age eighteen; thus, male productivity is assumed to rise \$10 per year between ages nine and eighteen and the female productivity \$5 per year between ages thirteen and eighteen.

4. The typical wench had as many male as female children. For purposes of computation, the productivity, sales price, and other data for the two sexes have been averaged. For example, the final sales price of a typical child is assumed to be \$875, halfway between the average price of \$825 for prime field wenches and the average price of \$925 for prime field hands.

5. Nursery costs were about \$50 per successful pregnancy.

Using these assumptions, hypothetical

annual returns for it typical prime field wench can be determined; such calculations are shown in Tables 10 and 11. In constructing these tables, it was assumed that the prime field wench and her children worked on land that returned 3.75 bales of cotton per year for every prime male hand employed; that is, the land is of approximately average fertility. Also, a 7.5 cent net farm price for cotton has been used. The first successful pregnancy has been assumed to occur in the second year after the prime field wench

TABLE 10
ANNUAL RETURNS ON A PRIME FIELD WENCH INVESTMENT (WORKING ON LAND WHICH YIELDED 3.75 BALES PER PRIME MALE FIELD HAND, ASSUMING A 7.5-CENT NET FARM PRICE FOR COTTON AND TEN "SALABLE" CHILDREN BORN TO EVERY WENCH)

Year from Purchase Date	Personal Field Returns	Child Field Returns	Child Sale Returns	Personal Upkeep	Child Upkeep	Net Returns
1	\$56	.....	.....	\$20	.....	\$ 36
2	40	.....	.....	20	\$ 50	-30
3	56	.....	.....	20	10	26
4	40	.....	.....	20	60	-40
5	56	.....	.....	20	20	16
6	40	.....	.....	20	70	-50
7	56	.....	.....	20	30	6
8	40	\$ 3.75	.....	20	80	-56.25
9	56	7.50	.....	20	45	-1.50
10	40	15.00	.....	20	95	-50.00
11	56	22.50	.....	20	60	-1.50
12	40	37.50	.....	20	110	-52.50
13	56	52.50	.....	20	75	13.50
14	40	75.00	.....	20	130	-35.00
15	56	97.50	.....	20	95	47.50
16	40	127.50	.....	20	150	-2.50
17	56	157.50	.....	20	115	78.50
18	40	195.00	.....	20	165	55.00
19	56	232.50	.....	20	130	134.30
20	40	195.00	\$875	20	170	920.00
21	56	232.50	.....	20	130	138.50
22	56	195.00	875	20	120	986.00
23	56	232.50	.....	20	120	148.50
24	56	195.00	875	20	110	996.00
25	56	232.50	.....	20	110	158.00
26	56	195.00	875	20	100	1,006.00
27	56	232.50	.....	20	100	168.00
28	56	187.50	875	20	90	1,008.50
29	56	225.00	.....	20	90	171.00
30	56	180.00	875	20	80	1,011.00
31	.....	210.00	.....	.....	80	130.00
32	.....	157.50	875	.....	60	972.50
33	.....	180.00	.....	.....	60	120.00
34	.....	120.00	875	.....	40	955.00
35	.....	135.00	.....	.....	40	95.00
36	.....	67.50	875	.....	20	922.50
37	.....	75.00	.....	.....	20	55.00
38	.....	.....	875	.....	.....	875.00

is purchased; further successful pregnancies occur at regular two-year intervals. The children were sold at age eighteen, and the annual maintenance cost per child was assessed at the rate of \$10 per year for one-six-year-olds, \$15 per year for seven-twelve-year-olds and \$20 per

right-hand columns of the tables on the assumption that the total investment in the prime field wench, land, and equipment amounts to \$1,200-\$1,300, figures which would appear to be very good averages. A rate of return of 8.1 per cent was thus obtained for the mother bearing

TABLE 11
ANNUAL RETURNS ON A PRIME FIELD WENCH INVESTMENT (WORKING ON LAND WHICH YIELDED 3.75 BALES PER PRIME MALE FIELD HAND, ASSUMING A 7.5-CENT NET FARM PRICE FOR COTTON AND FIVE "SALABLE" CHILDREN BORN TO EVERY WENCH)

Year from Purchase Date	Personal Field Returns	Child Field Returns	Child Sale Returns	Personal Upkeep	Child Upkeep	Net Returns
1	\$56	.....	.....	\$20	.....	\$ 36
2	40	.....	.....	20	\$50	-30
3	56	.....	.....	20	10	26
4	40	.....	.....	20	60	-40
5	56	.....	.....	20	20	16
6	40	.....	.....	20	70	-50
7	56	.....	.....	20	30	6
8	40	\$3.75	.....	20	80	-56.25
9	56	7.50	.....	20	45	-1.50
10	40	15.00	.....	20	95	-50.00
11	56	22.50	.....	20	60	-1.50
12	56	37.50	.....	20	60	13.50
13	56	52.50	.....	20	65	23.50
14	56	75.00	.....	20	65	46.00
15	56	97.50	.....	20	75	58.50
16	56	127.50	.....	20	75	88.50
17	56	157.50	.....	20	85	108.50
18	56	191.25	.....	20	85	142.25
19	56	225.00	.....	20	90	171.00
20	56	180.00	\$875	20	75	1,016.00
21	56	210.00	.....	20	75	171.00
22	56	157.50	875	20	60	1,008.50
23	56	180.00	.....	20	60	156.00
24	56	120.00	875	20	40	991.00
25	56	135.00	.....	20	40	131.00
26	56	67.50	875	20	20	958.50
27	56	75.00	.....	20	20	91.00
28	56	.....	875	20	.....	911.00
29	56	.....	.....	20	.....	36.00
30	56	.....	.....	20	.....	36.00

year, the full adult maintenance cost, for those age thirteen and over. The maternity costs have been included in the annual charge for the children's upkeep; similarly, the \$16 decline every other year for the first few years in the wench's own field returns represents the allowance for time lost because of pregnancy. Rates of return were computed on the streams of net returns shown in the far

ten children and a return of 7.1 per cent for the mother with five children.

These figures are, of course, somewhat higher than those calculated for the prime field hands. A proper working of the market mechanism would suggest that the attainable returns on the two sexes should be approximately equal. That is, the price differential between males and females should be such that the rate of

return on the two types of investment turns out to be roughly equal in the typical or average case. The question therefore arises why a somewhat higher estimated return is obtained for the female.

Several answers can be made to this question. First, the difference between the estimated returns for the two sexes may arise because it probably took a somewhat higher return on the females to attract capital investment into that type of productive activity. Slave-breeding and slave-trading were not generally considered to be high or noble types of activity for a southern gentleman. Indeed, many plantation owners would stoop to all sorts of subterfuge to disguise the fact that they were engaging in any part of the slave trade or breeding operations. Second, the investment in the female was a longer-term affair; from Tables 10 and 11 it is apparent that the bulk of the returns on a female were realized twenty or more years after the investment was made, when the children had grown to marketable ages. To the extent that more distant developments are more uncertain, investments in female slaves could be expected to demand a higher return. Finally, the over-all average price of prime field wenchens quoted from Phillips may be too low for proved "childbearers"; as is evident from Table A of the Appendix and contemporary comments, a female who had proved herself fertile was worth more than a female who had yet to bear her first child.

But these qualifications do not change the principal conclusion that slavery was apparently about as remunerative as alternative employments to which slave capital might have been put. Large or excessive returns were clearly limited to a few fortunate planters, but apparently none suffered excessively either. This

general sharing in the prosperity was more or less guaranteed, moreover, if proper market mechanisms existed so that slaves could be bred and reared on the poorest of land and then be sold to those owning the best. Slavery in the immediate ante bellum years was, therefore, an economically viable institution in virtually all areas of the South as long as slaves could be expeditiously and economically transferred from one sector to another.

III. REPRODUCTION, ALLOCATION, AND SLAVE MARKETS

It thus remains to be determined whether an efficient supply mechanism--efficient in both its generative and its allocative functions--existed in the ante bellum South. That the slave force might reproduce itself was not sufficient; there must also have been a capital market capable of getting the labor to the areas where production was expanding if slavery was to be profitable. It will be useful to introduce the secondary propositions by stating several arguments which together form the orthodox opposition to the present hypothesis. The arguments follow, in every case accompanied by a citation as a talisman against any possible charge that we are setting up straw men:¹¹ (i) slaves are notoriously inefficient and unwilling workers; (ii) slave

¹¹ (i) J. E. Cairnes, *The Slave Power* (New York: Follett Foster & Co., 1863), pp. 44-50; F. L. Olmsted, *The Cotton Kingdom* (New York: Mason Bros., 1861), pp. 100-110 (1953 ed.; New York: A. A. Knopf); W. A. Lewis, *Theory of Economic Growth* (Homewood, Ill.: Richard D. Irwin, Inc., 1955), pp. 107-8; (ii) U. B. Phillips, *Life and Labor in the Old South* (Boston: Little, Brown & Co., 1935), pp. 174-75; (iii) U. B. Phillips, "The Economic Cost of Slaveholding in the Cotton-Belt," *Political Science Quarterly*, XX (1905), 257-73; (iv) Lewis, *op. cit.*, pp. 111-13; (v) J. S. Duesenberry, "Some Aspects of the Theory of Economic Development," *Explorations in Entrepreneurial History*, (1950), 9. This is, of course, intended only as a list of examples, chosen in the hope that they are particularly well stated.

property, unlike wage labor, must be supported in the years before and after the slave is economically productive; (iii) slaveholding absorbed plantation earnings; (iv) slave economies are constantly threatened by decline because they cannot in general maintain the number of slaves; and (v) capitalization of the labor force inhibits the efficient allocation of labor.

The first and second of these arguments are implicitly tested in the computation of the rate of return on slave capital. We are not concerned with efficiency per se, however that might be measured, or with the efficiency of slaves as opposed to free white laborers. The more sophisticated version of this efficiency argument--that slave ineptness forced the planters to use a particularly wasteful form of agriculture--is probably untestable because of the difficulties of identification where impetus or motives are being considered. It might be suggested as a partial answer, however, that extensive farming was not peculiarly a characteristic of slave agriculture or even of plantation cotton culture. It was common to all North American colonial agriculture and, as late as the end of the nineteenth century, was reputed to be characteristic of farming in the Northwest wheat lands. It is, generally, a salient feature of agriculture where labor is scarce relative to land.¹² But, insofar as slaves were inefficient, the inefficiency must be reflected in the returns computed in our model. Similarly, the costs of maintaining slaves in infancy and dotage are accounted for in our cost of production.

The third argument--that the South lost from the payment of interest and

the constant enhancement of prices (and, therefore, overcapitalization of the labor force)--rests in part upon two misapprehensions, attributable to U. B. Phillips: (1) that capitalization involves a net loss through the payment of interest and (2) that slaves were, somehow, a fictitious form of wealth. We have already shown that slave capital earned returns at least equal to those earned by other contemporary forms of capital. For the overcapitalization part of the argument, it remains to be shown that slave prices did not run away from cotton values.

The last two of the assertions state the negative of our principal secondary hypothesis, which is that an efficient market system existed for the supply of slaves to the rapidly growing cotton industry of the Southwest from the exhausted land of the Old South. It will be shown below that the slave population, in all but the Louisiana sugar area, more than reproduced itself. It will be further shown that the border states were not being depleted to provide for western needs but that only the natural increase was being exported. Finally, avoiding the emotion-wracked testimony of the time, we will attempt to demonstrate the existence of regional specialization and an efficient market by comparing the demographic composition of the cotton and border states and by examining the price behavior in the market for Negro slaves.

A. THE REPRODUCTION OF THE SLAVE LABOR FORCE

The history of slavery is full of examples of slave economies which could not reproduce their population and collapsed because of a failure of supply. Frequently, as in the Roman case, the supply was dependent upon a steady flow of military prisoners. The Augustan peace and the stabilization of the borders of the empire are credited with the de-

¹² M. B. Hammond, *The Cotton Industry* (New York, 1897), p. 82. See also *United States Patent Office Report (Agriculture)*, 1852 (Washington, D.C., 1953), p. 374.

cline of Roman slavery for this reason. Similarly, the labor supply in the Caribbean sugar islands could be maintained only by importation. It is generally argued that slavery disappeared from Jamaica because of the inability of the slave population to reproduce itself once the slave trade had been closed and not because of abolition in 1834.

By contrast, the ante bellum cotton-slave economy of the southern states managed to maintain and allocate its labor supply by a system of regional specialization which produced slaves on the worn-out land of the Old South and

TABLE 12
PERCENTAGE DECENNIAL INCREASE IN WHITE
AND NEGRO POPULATION, 1790-1860
INCREASE DURING PRECEDING TEN YEARS

CENSUS YEAR	Total		Negro		
	White	Total	Slave	Free	
1800	35.1	35.8	32.3	28.1	82.2
1810	36.4	36.1	37.5	33.1	71.9
1820	33.1	34.2	28.6	29.1	25.3
1830	33.5	33.9	31.4	30.6	36.8
1840	32.7	34.7	23.4	23.8	20.9
1850	35.9	37.7	26.6	28.8	12.5
1860	35.6	37.7	22.1	23.4	12.3

Source: Bureau of the Census, *Negro Population in the United States, 1790-1915* (Washington, D.C., 1918), Tables 2 (chap. ii) and 1 (chap. v) and pp. 25 and 53. The sharp declines in the rate of increase for slaves in the decades ending in 1840 and 1860 probably reflect the generation cycle following the increase in importations, mostly of mature Negroes, in the years just prior to 1808.

the border states for export to the high-yield cotton land of the Mississippi and Red River valleys. For the whole nation the Negro rate of increase in the six decades before the Civil War was only slightly below the rate for the white population; for most of the period, the slave rate was very much above that for free Negroes. In the South the disparity between Negro and white rates of increase is in favor of the Negro rate; considering the relative rates of immigration of whites and Negroes after the first decade of the nineteenth century,

the discrepancy in natural increase is even more striking. The evidence in Table 12 does not admit of any doubt that the slave population was capable of producing a steady supply of labor for the plantation economy.¹³

B. SLAVE MARKETS AND ALLOCATION

The more important issue, however, is whether or not the slave force could be allocated efficiently. The natural rate of increase was more than sufficient in the Old South to meet the needs of agriculture in the region, but in the West it was less than sufficient to meet the demands for increased cotton production. By direct export and by the migration of planters with their work forces, the eastern areas supplied the needs of the Southwest. In every decade before the Civil War, the increase of slaves in the cotton states was much above and in the Atlantic and border states much below the rate of increase for the whole slave population. Indeed, in the decades ending in 1840 and 1860, the net rate of population increase in the Old South was only slightly above the level sufficient to maintain the population at a constant level, 4.5 per cent and 7.1 per cent (see Table 13). From 1790 to 1850 the increase of slaves in the Atlantic states was just 2 per cent per annum, while in the Gulf states (including Florida), Arkansas, and Tennessee the rate was 18 per cent per annum. A rough but probably conservative estimate of the export from the selling states between 1820 and 1860 is given by W. H. Collins. Taking the difference between the average natural increase and the actual

¹³ See Bureau of the Census, *Negro Population in the United States, 1790-1915* (Washington, D.C., 1918); Gray, *op. cit.*, chap. xxviii; Cairnes, *op. cit.*, chap. iv; E. Halle, *Baumwollproduktion und Pflanzungswirtschaft* (Leipzig, 1897), Vol. I, Book III, 5.3.

rate in the selling states, Collins arrived at the following estimates:¹⁴

1820 30	124,000
1830 40	265,000
1840-50	146,000
1850-60	207,000

Collins estimated that at least three-fifths of the removals from the border states were due to emigration to the Southwest rather than to export. While this has little bearing upon the issue of allocative efficiency, it does have significance for the corollary assertion that the slaveowners of the border states, consciously or unconsciously, were engaged in a specialized breeding operation, producing chattel labor for the growing Southwest. In 1836 the *Virginia Times* estimated that, "of the number of slaves exported [from Virginia], not more than one-third have been sold, the others being carried by their masters, who have removed."¹⁵ Ruffin supposed that the annual sale in 1859 "already exceed in number all the increase in slaves in Virginia by procreation."¹⁶ Bancroft goes

¹⁴ W. H. Collins, *The Domestic Slave Trade of the Southern States* (New York, 1904), chap. iii. In the first decade the selling states include Virginia, Maryland, Delaware, North Carolina, Kentucky, and the District of Columbia; the buying states are assumed to be South Carolina, Georgia, Alabama, Mississippi, Tennessee, and Missouri. In 1830, Florida, and in 1850, Texas were added to the buying group. Tennessee, Missouri, and North Carolina are very uncertain assignments, since these states were far from homogeneous slave-marketing areas; some parts imported, while other parts exported, during the period (cf. Halle, *op. cit.*, pp. 282 ff., and Frederic Bancroft, *Slave Trading in the Old South* [Baltimore: J. H. Furst, 1931], chap. xviii, for similar estimates, consistent with those given by Collins).

¹⁵ Quoted in *Slavery and the Internal Slave Trade in the United States of North America* (London, 1841) (by the Executive Committee of the American Anti-Slavery Society), p. 13. On the same page the authors assert that four-fifths or more of the slaves brought into the buying states are supplied by the internal slave trade.

beyond these estimates and states that "in the 'fifties, when the extreme prejudice against the interstate traders had abated and their inadequate supplies were eagerly purchased, fully 70 per cent of the slaves removed from the Atlantic and the border slave states to the Southwest were taken after purchase or with a view to sale, that is, were the objects of slave-trading."¹⁷ Whatever the accuracy of these several estimates, which range from two-fifths to four-fifths of total exports of slaves from the border

TABLE 13
PERCENTAGE RATE OF POPULATION INCREASE,
BY RACE, IN THE COTTON AND BORDER
STATES, 1790-1860

DECADE ENDING	COTTON STATES*		BORDER STATES†	
	White	Negro	White	Negro
1800	42.9	47.4	27.9	24.4
1810	37.5	61.3	23.5	23.4
1820	38.8	48.0	19.5	15.5
1830	40.0	46.8	19.0	14.0
1840	31.3	37.6	21.1	4.5
1850	34.1	35.6	34.5	11.0
1860	27.6	29.0	39.2	7.1

Source: Ernst von Halle, *Baumwollproduktion und Pflanzungswirtschaft in den Nordamerikanischen Sudstaaten* (Leipzig, 1897), p. 132. His sources were Tucker, *Progress of the United States* (to 1840), *Census of Population* (1850 and after), and H. Gannett, *Statistics of the Negroes in the United States*.

* North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Arkansas, and Tennessee.

† Delaware, Maryland, District of Columbia, Virginia, West Virginia, Kentucky, and Missouri.

and the Atlantic states, it is clear that sales of slaves provided an important capital gain for the exporting states. There is ample documentary evidence that planters in the Old South were aware of this, that some welcomed it and depended upon it, and that others were fearful of its effect upon the agriculture of the area and upon the tenability of slavery. Some spoke frankly about Virginia as a "breeding state," though the reply to such allegations was generally

¹⁶ Edmund Ruffin, *DeBow's Review*, -XXVI (1859), 650.

¹⁷ Bancroft, *op. cit.*, p. 398.

an indignant denial. Whether systematically bred or not, the natural increase of the slave force was an important, probably the most important, product of the more exhausted soil of the Old South.

The existence of such specialization is evident in the demographic composition of the cotton and breeding areas and in the price behavior in the markets for slaves. Table 14 demonstrates that the selling states contained, in 1850 and 1860, a greater proportion of children under fifteen years and a substantially greater proportion of slaves above the age of fifty than did the buying states.

To compare to these rates, we have purchase prices of male and female slaves, in the same markets, in 1859 and 1860. The purchase prices should reflect the relative usefulness of the sexes for field work. More than this, however, if there is any additional value to slave women--for breeding purposes, presumably--there should be a premium in the form of a narrower price differential than is found in the hiring rates. The prices shown in Table 16 are taken from Table A in the Appendix. Whenever possible, 1860 is used; wherever necessary, 1859. Table 16 includes age designations and,

TABLE 14
SLAVE POPULATION By AGE
(Per Cent)

AGE (YEARS)	1860			1850		
	TOTAL	Selling States*	Buying States†	TOTAL	Selling States*	Buying States†
Under 15	44.8	45.6	43.8	44.9	45.6	44.3
15-19	11.4	11.5	11.4	11.1	11.3	11.0
20-29	17.6	16.5	18.9	18.0	17.0	18.9
30-39	11.7	10.7	11.8	11.3	10.5	12.1
20-49	36.4	34.4	38.1	36.4	34.6	38.1
50 and over	7.5	8.5	6.7	7.5	8.5	6.6

Source: J. C. G. Kennedy, *Population of the United States in 1960* (Washington, D.C., 1864), "Classified Population," Tables No. 1, by state; J. D. B. DeBow, *Statistical View of the United States, . . . Being a Compendium of the Seventh Census* (Washington, D.C., 1854), Part II, Table LXXXII, pp. 89-90.

*Virginia, Maryland, Delaware, South Carolina, Missouri, Kentucky, District of Columbia.

† Georgia, Alabama, Mississippi, Florida, Texas, Louisiana.

NOTE.--The exclusion of Tennessee and North Carolina is explained in n. 14. Missouri was included with the selling group because of its apparent net selling position in this period.

While the disproportions are not great enough to characterize the selling states as a great nursery, the age composition is in the direction which our hypothesis would lead one to expect. The relationship between the prices of men and women in the slave market, when compared with the ratio of hiring rates for male and female field hands, gives an even stronger indication that the superior usefulness of females of breeding age was economically recognized. The relative hiring rates for men and women in 1860, shown in Table 15, can be taken as a measure of their relative values in the field.¹⁸

when available, a description of the grade or class represented in the average price.¹⁹ This evidence is a striking con-

¹⁸ The rates are quoted in Hammond, *op. cit.*, p. 90, from *Report of the Commissioner of Agriculture, 1866* (Washington, D.C., 1867), p. 416. Three Virginia newspaper quotations in G. M. Weston, *Who Are and Who May Be Slaves in the United States* (undated pamphlet), give ratios ranging between 2 and 2.5, supporting Hammond's estimate. There is a possible overestimate in these ratios, if they are to be used to infer relative usefulness in the field, since some allowance was probably made for time lost for delivery by pregnant females. No evidence has been found on this point, however.

¹⁹ With one exception--the South Carolina, 1860, comparison--the pairings are taken from single sales. In addition, the pairings are made, as far as possible, with slaves of apparently comparable

firmation of the validity of the model. In every case but one, the purchase-price differential is narrower than the hiring-rate differential. The price structure clearly reflects the added value of females due to their ability to generate capital gains.

the slave-breeding area for the cotton-raising West.

C. THE "OVERCAPITALIZATION" OF THE LABOR FORCE

The aspect of slave economics that causes the most confusion and outright error is that which relates to the capitalization, and, in the ante bellum southern case, the presumed overcapitalization, of slave labor. Phillips speaks of an "irresistible tendency to overvalue and overcapitalize" and argues that slaveholding had an unlimited capacity for absorbing the planters' earnings through the continual payment of interest and the enhancement of prices. For the Cotton Belt this was presumably aggregated into a continuous public drain of wealth, first,

TABLE 15
ANNUAL HIRING RATES FOR MALE AND FEMALE SLAVES (INCLUDING RATIONS AND CLOTHING), BY STATES, 1860

State	Men	Women	Ratio (Men: Women)
Virginia	\$105	\$ 46	2.28
North Carolina	110	49	2.25
South Carolina	103	55	1.87
Georgia	124	75	1.65
Florida	139	80	1.74
Alabama	138	89	1.55
Mississippi	166	100	1.66
Louisiana	171	120	1.43
Texas	166	109	1.52
Arkansas	170	108	1.57
Tennessee	121	63	1.92

TABLE 16
SELECTED PRICES OF MALE AND FEMALE SLAVES, 1859 AND 1860

State (Year)	Age	Condition	Male Price	Female Price	Ratio
Virginia (1859)	17-20	Best	\$1,350-\$1,425	\$1,275-\$1,325	1.07
South Carolina	.....	Prime	\$1,325	.....
	.....	Wench	.....	\$1,283	1.03
South Carolina (1859)	.....	Field hand	\$1,555	.....
	.....	Girl	.....	\$1,705	.91
Georgia	21	Best field hand	\$1,900	.....
	17	(9 mo. inf.)	.....	[\$2,150]	.88
Georgia (1859)	.....	Prime, young	\$1,300	.....
	.....	Cotton hand, houseservant	.....	\$1,250	1.04
Alabama (1859)	19	.....	\$1,635	.....	1.37
	18, 18, 8	.....	.....	\$1,193	
Mississippi	.....	No. 1 field hand	\$1,625	\$1,450	1.12
Texas	-	.....	\$2,015	\$1,635	1.23
Texas (1859)	17,14	.....	\$1,527	\$1,403	1.09

It is especially interesting in this regard to note that the price ratios in Virginia and South Carolina, the two breeding states represented in the list, show practically no differential. This evidence clearly shows that the Old South recognized in the market the value of its function as

to England and New England and, later, to the upper South.²⁰ Moreover, a series of writers from Max Weber down to the most recent theorists of economic growth have, argued that capitalization tends to rigidify the pattern of employment. "Free labor is necessary to make free transfers of labor possible. A production

quality. The Virginia and Mississippi quotations are from average-price listings and are probably most useful for present purposes.

²⁰ Phillips, "The Economic Cost of Slaveholding in the Cotton-Belt," *op. cit.*, pp. 271 ff.

organization cannot be very flexible if it has to engage in the purchase or sale of slaves every time it changes its output."²¹ But this is really a question of how good the market is; no one, after all, claims that manufacturing is made suicidally inflexible by the fact that expanding sectors must buy the capitalized future earnings of machinery. There are three issues to be distinguished in this argument: first, the alleged tendency toward overcapitalization; second, the inflexibility of chattel labor and the difficulty of allocating it, geographically and industrially; and, third, the loss of wealth.

First, was the southerner his own victim in an endless speculative inflation of slave prices? The assertion of an irresistible tendency to overvalue and overcapitalize must mean that he was so trapped, if it means anything. Phillips answered the question by comparing the price of cotton with the price of prime field hands, year by year. He found, or believed he found, a permanent movement toward overcapitalization inherent in American slaveholding. But speculative overexpansion is capable of reversal: from the inflation of 1837 to the bottom of the depression in 1845, slave prices fell as sharply as cotton prices. If the rise from that lower turning point is a demonstration of speculative mania, it was a mania solidly based on the increase in the value of the crop per hand, owing to the concentration of production in more fertile areas, the greater efficiency of the American-born slaves, lowered transportation costs, and the development of new high-yield varieties of cotton from the fourth decade of the century on.²² Finally, the choice of the initial period in

Phillips' analysis exaggerates the decline in cotton prices relative to the price of slaves: at the turn of the century the demand for cotton was increasing rapidly, supporting remarkably high prices, while the unrestricted African slave trade kept domestic slave prices well below the level that might be expected in view of the level of profits. Table 17 and Chart 1 demonstrate the relationship among slave prices, cotton prices, and the value of cotton output per slave (of field work age, ten to fifty-four). Several things become clear in this comparison. To begin, the relationship between slave and cotton prices is significant for Phillips' purposes only if there is no increase in productivity. While he is struck by the fact that slave prices rise more rapidly than cotton prices in the long upswing starting in the early 1840's, it is equally striking to observe that (New Orleans) slave prices rose about one and one-half times between the low point in 1843-45 to 1860, while values of cotton production per hand rose more than three times from the low in 1842. This was recognized in the *New Orleans Daily Crescent* in 1860, as follows:

Nor do we agree with our contemporaries who argue that a speculative demand is the unsubstantial basis of the advance in the price of slaves.... It is our impression that the great demand for slaves in the Southwest will keep up the prices as it caused their advance in the first place, and that the rates are not a cent above the real value of the laborer who is to be engaged in tilling the fertile lands of a section of the country which yields the planter nearly double the crop that the fields of the Atlantic States do.²³

Furthermore, it would appear that slave prices fluctuate less than do cotton prices. This and the less clear-cut lag of the slave

²³ Quoted in Phillips, *Life and Labor in the Old South*, p. 180. Having quoted this, Phillips, without offering any evidence, asserts: "But surely a peak was being shaped, whose farther side must have been a steep descent, whether in time of peace or war."

²¹Duesenberry, *loc. cit.*

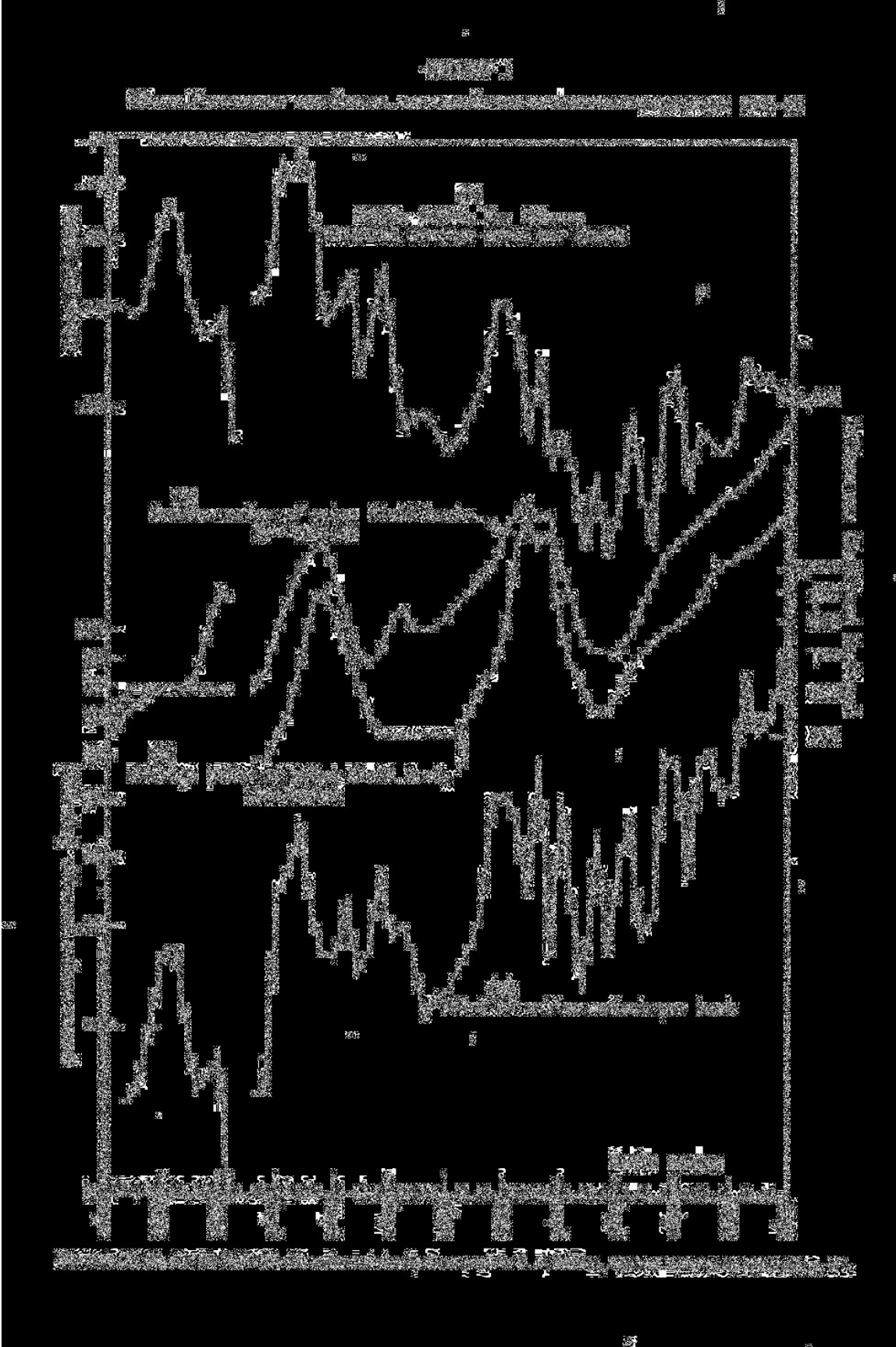
²²Gray, *op. cit.*, chap. xxx; *DeBow's Review*, XVIII (1855), 332-34; Hammond, *op. cit.*, pp. 76-77, 113-19; T. P. Kettell, *Southern Wealth and Northern Profits* (New York, 1860), p. 48.

TABLE 17
 VALUE OF COTTON PRODUCTION AND SLAVE POPULATION, 1802-60, NEW ORLEANS PRICES

Year	Crop (Thousands Of Pounds)	Average Price (Cents per Pound)	Value (Thousands)	No. of Slaves, Aged 10-54 Years*	Crop Value per Slave	Price of Prime Field Hand	Crop Value per Hand per Dollar Slave Prim
1802	55,000	0.147	\$8,085	550,708	\$ 14.68	\$ 600	.02
1803	60,000	.150	9,000	568,932	15.82	600	.03
1804	65,000	.196	12,740	587,157	21.70	600	.04
1805	70,000	.233	16,310	605,381	26.94	600	.05
1806	80,000	.218	17,440	623,606	27.97	600	.05
1807	80,000	.164	13,120	641,831	20.44	600	.03
1808	75,000	.136	10,200	660,055	15.45	640	.02
1809	82,000	.136	11,152	678,280	16.44	780	.02
1810	85,000	.147	12,495	696,505	17.94	900	.02
1811	80,000	.089	7,120	717,376	9.93	860	.01
1813	75,000	.155	11,625	759,118	15.31	600	.03
1814	70,000	.169	11,830	779,989	15.17	650	.02
1815	100,000	.273	27,300	800,860	34.09	765	.05
1816	124,000	.254	31,496	821,731	38.33	880	.04
1817	130,000	.298	38,740	842,602	45.98	1,000	.05
1818	125,000	.215	26,875	863,473	31.12	1,050	.03
1819	167,000	.143	23,881	884,344	27.00	1,100	.03
1820	160,000	.152	24,320	905,215	26.88	970	.03
1821	180,000	.174	31,320	933,517	33.55	810	.04
1822	210,000	.115	24,150	961,818	25.11	700	.04
1823	185,000	.145	26,825	990,120	27.04	670	.04
1824	215,000	.179	38,485	1,018,421	37.99	700	.05
1825	255,000	.119	30,345	1,046,723	28.99	800	.04
1826	350,000	.093	32,550	1,075,024	30.28	840	.04
1827	316,900	.097	30,739	1,103,326	27.86	770	.04
1828	241,399	.098	23,657	1,131,627	20.91	770	.03
1829	296,812	.089	26,416	1,159,929	22.77	770	.03
1830	331,150	.084	27,817	1,208,034	23.03	810	.03
1831	354,247	.090	31,882	1,247,489	25.56	860	.03
1832	355,492	.100	35,549	1,275,061	27.88	900	.03
1833	374,653	.112	41,961	1,302,633	32.21	960	.03
1834	437,558	.155	67,821	1,330,206	50.99	1,000	.05
1835	460,338	.152	69,971	1,357,778	51.53	1,150	.05
1836	507,550	.133	67,504	1,385,350	46.79	1,250	.04
1837	539,669	.090	48,510	1,412,923	34.38	1,300	.03
1838	682,767	.124	84,663	1,440,495	58.77	1,220	.05
1839	501,708	.079	39,635	1,468,067	27.00	1,240	.02
1840	834,111	.091	75,904	1,507,779	50.34	1,020	.05
1841	644,172	.078	50,245	1,568,022	32.04	870	.04
1842	668,379	.057	38,098	1,611,269	23.65	750	.03
1843	972,960	.075	72,972	1,654,516	44.11	700	.06
1844	836,529	.055	46,009	1,697,762	27.10	700	.04
1845	993,719	.068	67,573	1,741,009	38.81	700	.06
1846	863,321	.099	85,469	1,784,256	47.90	750	.06
1847	766,599	.070	53,662	1,827,503	29.36	850	.04
1848	1,017,391	.058	59,009	1,870,750	31.54	950	.03
1849	1,249,985	.108	134,998	1,913,996	70.53	1,030	.07
1850	1,001,165	.117	117,136	1,979,059	59.19	1,100	.05
1851	1,021,048	.074	75,558	2,034,482	37.14	1,150	.03
1852	1,338,061	.091	121,764	2,080,554	58.53	1,200	.05
1853	1,496,302	.088	131,675	2,126,626	61.92	1,250	.05
1854	1,322,241	.084	111,068	2,172,698	51.12	1,310	.04
1855	1,294,463	.091	117,796	2,218,770	53.09	1,350	.04
1856	1,535,334	.124	190,381	2,264,843	84.06	1,420	.06
1857	1,373,619	.112	153,845	2,310,915	66.57	1,490	.05
1858	1,439,744	.115	165,571	2,356,988	70.25	1,580	.04
1859	1,796,455	.108	194,017	2,403,060	80.74	1,690	.05
1860	2,241,056	0.111	\$248,757	2,460,648	\$101.09	\$1,800	.06

Source: *Crops*: Computed from the data on number of bales and average weight of bales in James L. Watkins, *Production and Price of Cotton for One Hundred Years* (U.S. Department of Agriculture, Miscellaneous Series Bull 9 [Washington, D.C., 1895]). *Price*: Gray, *op. cit.*, Table 41: "Weighted Yearly Averages and Monthly Prices in Cents per Pound of Short-Staple Cotton at New Orleans for the Crop Years 1802-1860." *Slaves*: Bureau of the Census, *Negro Population in the United States 1790-1915*. "Slave and Free Colored Population at Each Census by Sections and Southern Divisions, 1790-1860," p. 55, and "Negro Population in Years Specified, Classified by Sex and Age Periods; 1830-1910," p. 166. *Slave prices*: Estimated visually from the chart "Approximate Prices of Prime Field Hands in Hundreds of Dollars per Head: at New Orleans" in U. B. Phillips, *Life and Labor in the Old South* (Boston, 1935), p. 177.

*To estimate the slave population in the intercensal years, the increase over each decade was divided into equal parts and assigned to each year in the decade. The proportion of Negroes in the field-work age brackets (between the ages of ten and fifty-four) was .641 in 1860, .635 in 1850, .621 in 1840, and .610 in 1830. The census-year proportions at the beginning and end of each decade were averaged for use in the intervening years. For the years before 1830, an estimate of .60 was used. There is no implication that we have measured the number of field hands, but it should be noted that the range .60-.65 brackets several contemporary estimates of the proportion of the slave population employed in cotton agriculture (see, e.g., P. A. Morse, "Southern Slavery and the Cotton Trade," *De Bow's Review*, XXIII (1857), 475-82).



prices make it difficult to accept the image of unwary planters helplessly exposing themselves in a market dominated by speculators. It would make more sense to argue simply that the rising trend of slave prices coupled with a growing slave population is in and of itself strong evidence of the profitability of slavery.

D. THE EFFICIENCY OF ALLOCATION

The second point relates to geographic allocation and, to a lesser extent, to the mobility of the slave labor force among crops. The slave prices in all regions move very closely with cotton prices and products per hand. It is clear, too, that the eastern prices move directly with the cotton-area slave prices, although in the last two decades the rate of increase of prices fell behind in the breeding area. If the market were extremely imperfect and the transfer between the breeding and consuming states inefficient, in contradiction to our hypothesis, then there should be much less evidence of regional arbitrage than is found here. In response to the western demand, Virginia and the other eastern states shipped their natural increase to the cotton areas. Indeed, it is frequently argued that the transfer was too efficient and that the Old South was being continuously depressed by the high price of labor occasioned by western demand. Edmund Ruffin, particularly, took this position and argued that slave trade could not bring profits to Virginia but could result only in the paralysis of her industry. If true, this argument would be supported empirically by increasing real estate values on the western lands and decreasing values in the Atlantic and border states. That is, the chain of high cotton profits--high slave prices--increased cost of farming in the Old South should have depressed land prices in that area. Emigration, by reducing

demand, should have meant more downward pressure. The only influence which operated in the direction of maintaining the value of land in the older states was the profit to be had from the increase and sale of slaves. Indeed, in 1850 and 1860, the value per acre of farm land and buildings in the border states was \$7.18 and \$12.33, and, in the Lower South for the same two census years, \$4.99 and \$8.54. Undoubtedly, the western cotton land earned a considerable rent in farming over the older land. It was this rent which maintained the flow of migration to the Cotton Belt. But that migration depended upon and supported the prosperity of the breeding states. It is not clear that slavery was able to continue only by skinning the topsoil and moving on, leaving exhausted land and low slave and land value in its wake. Quite the contrary, the evidence can plausibly be interpreted as indicating a unified, specialized economy in which the settlers on the naturally superior western lands (superior even before the deterioration of the older regions by single-crop cultivation of tobacco and cotton) were able to bid slave labor away from general farming and to make wholesale removal unnecessary, if indeed there had ever been such a necessity.

E. SLAVERY AND SOUTHERN ECONOMIC GROWTH

Finally, there are two economic arguments about slavery and potential southern growth to be considered. The assertion that slavery per se was inimical to economic growth rests in part upon the alleged inefficiency of slave labor in industrial pursuits and in part upon the loss of capital that might otherwise have gone into industrialization and diversification.

The inefficiency argument is not supported very securely. There were slaves

employed in cotton factories throughout the South. Slaves were used in the coal mines and in the North Carolina lumbering operations. In the ironworks at Richmond and on the Cumberland River, slaves comprised a majority of the labor force. Southern railroads were largely built by southern slaves. Crop diversification, or the failure to achieve diversification, appears to have been a problem of entrepreneurship rather than of the difficulties of training slaves. In the face of the demand for cotton and the profits to be had from specializing in this single crop, it is hardly difficult to explain the single-minded concentration of the planter.²⁴

In what ways was slavery allegedly responsible for the drain of capital from the South? The lack of diversification, to the extent of a failure even to provide basic supplies, made necessary the import of much food and virtually all manufactured articles from the North. But half of this assertion, the argument that laid the responsibility for the single-crop culture upon slavery, has been found questionable already.

The major avenues by which wealth is said to have been drained from the cotton states were the excessive use of credit (through dependence upon factors' services) and the "absorption" of capital in slaves. The dependence upon advances was, in effect, a dependence upon the New York or London money market and was, therefore, an impediment to the accumulation of capital in the South. Good crop years bring the temptation to expand production; bad years do

²⁴ See Robert R. Russel, *Economic Aspects of Southern Sectionalism, 1840-1861* (Urbana, Ill., 1923), esp. pp. 54-64, and "Slavery and Southern Economic Progress," *Journal of Southern History*, V (February, 1938), 34-54. See also Gray, *op. cit.*, pp. 458-61, 940-42, and Hammond, *op. cit.*, pp. 40-44, 94-96.

not bring any release from the factors. But resort to factoring is characteristic of speculative, commercial agriculture, whether or not the labor force is organized in slavery. It is also frequently argued that slavery gave southern planters a taste for extravagant, wasteful display, causing the notorious lack of thrift and the relative lack of economic development, compared to that experienced in the North and West. This is a doubtful inference, at best. Slavery did not make the Cavalier any more than slavery invented speculation in cotton. However, insofar as successful slave management required military posture and discipline, the southerner's expensive image of himself as a *grand seigneur* was encouraged. It is beyond the scope of this paper to offer hypotheses about the reasons for the relative degrees of entrepreneurship in Charleston and Boston; in this context it is sufficient to state that slavery per se does not seem to have been responsible for the excessive reliance upon factoring and external sources of credit.²⁵

There remains only the absorption of capital in slaves to set the responsibility for lack of growth in the South upon the peculiar institution. Earnings that might have gone out of the South to bring in investment goods were fixed in the form of chattel labor. For the early years, during the external slave trade, there is some plausibility to this argument, though it is difficult to see how the capitalization of an income stream, excellent by contemporary standards, can

²⁵ Hammond, *op. cit.*, pp. 107-12; Russel, *op. cit.*, pp. 49 ff.; M. B. Hammond, "Agricultural Credit and Crop Mortgages," in *The South in the Building of the Nation* (Richmond, Va., 1909), V, 457-61; Alfred H. Stone, "The Cotton Factorage System of the Southern States," *American Historical Review*, XX (1915), 557-65. For an excellent discussion of the seigniorial impediments to entrepreneurship see W. J. Cash, *The Mind, of the South* (New York, 1941), pp. 42-70.

be said to count as a loss of wealth. In the later years there was, except to the extent that northern or English bankers drew off the interest, a redistribution of wealth only within the slave states: from the cotton lands back to the less profit-able field agriculture of the older section. And, to the extent that the old planting aristocracy used the profits to maintain the real or fancied magnificence of the preceding century, capital was absorbed. Slavery made this possible, so long as the natural increase could be shipped off. But, as Russel pointed out, slavery also made the profits in the cotton fields and the resultant demand for eastern hands. We are left with the conclusion that, except insofar as it made speculation in cotton possible on a grander scale than would otherwise have been the case and thereby weakened whatever pressure there might have been for diversification, capitalization of the labor force did not of itself operate against southern development.

IV. CONCLUSION

In sum, it seems doubtful that the South was forced by bad statesmanship into an unnecessary war to protect a system which must soon have disappeared because it was economically unsound. This is a romantic hypothesis which will not stand against the facts.

On the basis of the computation of the returns to capital in our model of the ante bellum southern economy and the demonstration of the efficiency of the regional specialization, the following conclusions are offered:

1. Slavery was profitable to the whole South, the continuing demand for labor in the Cotton Belt insuring returns to the breeding operation on the less productive land in the seaboard and border

states. The breeding returns were necessary, however, to make the plantation operations on the poorer lands as profitable as alternative contemporary economic activities in the United States. The failure of southern agriculture on these poorer lands in the post bellum period is probably attributable, in the main, to the loss of these capital gains on breeding and not, as is so often suggested, to either the relative inefficiency of the tenant system that replaced the plantations or the soil damage resulting from war operations. These factors were unquestionably contributing elements to the difficulties of post bellum southern agriculture, but they were of relatively small quantitative importance compared with the elimination of slave-breeding returns.

2. There was nothing necessarily self-destructive about the profits of the slave economy. Neither the overcapitalization argument nor the assertion that slavery must have collapsed because the slaves would not reproduce themselves is tenable. Slave prices did not outpace productivity, and the regional slave price structure would imply a workable transfer mechanism rather than the contrary.

3. Continued expansion of slave territory was both possible and, to some extent, necessary. The maintenance of profits in the Old South depended upon the expansion, extensive or intensive, of slave agriculture into the Southwest. This is sufficient to explain the interest of the Old South in secession and does away with the necessity to fall back upon arguments of statesmanship or quixotism to explain the willingness to fight for the peculiar institution.

4. The available productive surplus from slavery might have been used for economic development or, as in totalitarian regimes in this century, for militarism. In spite of this good omen for

development, southern investment and industrialization lagged. It is hard to explain this except on the social ground that entrepreneurship could not take root in the South or on the economic ground that the South did not really own the system but merely operated it. Furthermore, the American experience clearly suggests that slavery is not, from the strict economic standpoint, a deterrent to industrial development and that its elimination may take more than the workings of "inexorable economic forces." Although profitability cannot be offered as a sufficient guaranty of the continuity of southern slavery, the converse argument

that slavery must have destroyed itself can no longer rest upon allegations of unprofitability or upon assumptions about the impossibility of maintaining and allocating a slave labor force. To the extent, moreover, that profitability is a necessary condition for the continuation of a private business, institution in a free-enterprise society, slavery was not untenable in the ante bellum American South. Indeed, economic forces often may work toward the continuation of a slave system, so that the elimination of slavery may depend upon the adoption of harsh political measures. Certainly that was the American experience.

APPENDIX
TABLE A
TABULATION OF REPORTED SLAVE TRANSACTIONS AND VALUATIONS

Year	State	Sex	Age	Grade or Condition	No. in Sale	Average* Price	Source, Page*
1800	S.C.	.....	.....	Prime field hands	\$	500	P(PSQ)
	Ga.	.....	.....	Prime field hands	450	P(PSQ)	
1805	S.C.	.....	.....	Prime field hands	550	P(PSQ)	
	Ga.	.....	.....	Prime field hands	550	P(PSQ)	
1808	S.C.	.....	.....	Prime field hands	550	P(PSQ)	
	Ga.	.....	.....	Prime field hands	650	P(PSQ)	
1810	S.C.	.....	.....	Prime field hands	500	P(PSQ)	
	Va.	.....	.....	Prime field hands	500	G.665	
	La.	.....	.....	Prime field hands (max.) .....	.....	900	G.665
1813	S.C.	.....	.....	Prime field hands	450	P(PSQ)	
	Ga.	.....	.....	Prime field hands	450	P(PSQ)	
1818	Ga.	.....	.....	Prime field hands	1,000	P(PSQ)	
1819	S.C.	.....	.....	Prime field hands	850	P(PSQ)	
	Va.	.....	.....	Prime field hands	700	P(ANS) .370	
	La.	.....	.....	Prime field hands	1,100	P (ANS) .370	
	La.	.....	.....	African, "brute Negro" .....	.....	400-500	G.664
	La.	.....	.....	Intelligent dom. Negro .....	.....	1,000	G.664
1820	S.C.	.....	.....	Prime field hand	725	P(PSQ)	
1821	Ga.	.....	.....	Prime field hand	700	P(PSQ)	
1822	S.C.	.....	.....	Prime field hand	650	P(PSQ)	
	Va.	F	.....	Mother of 3 1	300	B.78	
		M	4	..... 1	200	B.78	
		M	2	..... 1	150	B.78	
		F	1	..... 1	75	B.78	
1825	S.C.	.....	.....	Prime field hand 1	500	P(PSQ)	
	Va.	F	.....	Mother of 3 (see above) 1	1	200	B.78
		M	7	..... 1	200	B.78	
		M.	5	..... 1	125	B.78	
		F	4	..... 1	90	B.78	
1826	S.C.	.....	.....	Prime field hand	475	P(PSQ)	
	Ga.	.....	.....	Prime field hand	800	P(PSQ)	
1828	S.C.	.....	.....	Prime field hand	450	P(PSQ)	
	Ga.	.....	.....	Prime field hand	700	P(PSQ)	

*SOURCES

P(PSQ) U. B. Phillips, "The Slave Labor Problem in the Charleston District," Political Science Quarterly XXII, No. 3 (1907) 436.
P(Doc. II): U.B. Phillips, "Plantation and Frontier, 1649-1863," in A Documentary History of American Industrial Society, Vol. II (Cleveland, 1910).
P(ANS): U. B. Phillips, American Negro Slavery (New York, 1918)

G.: Lewis Gray, History of Agriculture in the United States 80 1860 (Washington, D.C., 1933).
B. Frederic Bancroft, Slave Trading in the Old South (Baltimore, 1931),
O: Frederick Law Olmstead, The Cotton Kingdom (New York, 1953).
GMW: George Melville Weston, Who Are and Who May Be Slaves in the United States (pamphlet, undated, unsigned)

TABLE A--Continued

Year	State	Sex	Age	Grade or Condition	No. In Sale	Average Price	Source, Page*
1829	S.C.	.....	.....	Prime field hand	.....	\$ 475	P(PSQ)
	Va., Md.	M	18-24	First	Bid	400-450	B.30
		F	18-24	First	Bid.	280	B.30
	Ala., La., Miss.	.....	18-24	First	Est.	"Nearly twice as much"	B.30
1830	S.C.	.....	.....	Prime field hands	.....	450	P(PSQ)
	La.	.....	.....	Sugar hands, 5:3 ratio, working: children and aged	.....	.....	550 G.542
1832	S.C.	.....	.....	Prime field hand	.....	500	P(PSQ)
	Miss.	.....	.....	Price range: a: \$300-\$1,000	30	500	B.308
1835	S.C.	.....	.....	Prime field hand	.....	750	P(PSQ)
	Ga.	.....	.....	Prime field hand	.....	900	P(PSQ)
	Md.	M	18-25	Likely	Est.	500-650	B.39
		F	18-25	Likely	Est.	300-500	B.39
		F	18-25	Best field hand	Est.	300-400	B.39
		F	7	Servant	Est.	250	B.39
	S.C.	.....	.....	En route	75	533	B.55
	D.C.	.....	1	.....	1	100	B.55
		M	7- 8	.....	1	400	B.55
		M	18	.....	1	750	B.55
		F	.....	.....	2	650	B.55
		M	.....	First field hand	Est.	900	B.55
		M	.....	Mechanic	Est.	1,200	B.55
	Ky.	M	.....	"Boy"	1	350	B.209
		M	7	.....	1	630	B.209
		F	.....	"Young"	1	710	B.209
	Miss.	M	23	Coachman	1	950	B.303
		F	.....	Seamstress	1	750	B.303
		M	.....	Field hand	Est.	800	B.308
		F	.....	Field hand	Est.	600	B.308
		.....	.....	Bodyservant	Est.	1,000	B.308
		M	.....	Good mechanic	Est.	900-2,000	B.308
		F	.....	Seamstress	Est.	700-1,000	B.308
1836	S.C.	.....	.....	Prime field hand	.....	1,100	P(PSQ)
	Tenn.	.....	.....	(Aver. Tax Value)	.....	414	G.666
1837	S.C.	.....	.....	Prime field hand	.....	1,200	P(PSQ)
	Ga.	.....	.....	Prime field hand	.....	1,300	P(PSQ)
	Va.	.....	.....	Prime field hand	.....	1,000-1,200	G.666
	Tenn.	F()	(3 mos.)	.....	2	[1,350]	B.207
	La.	F()	(2)	Young mother	2	[700]	B.336
1844	S.C.	.....	.....	Prime field hand	.....	500	P(PSQ)
	Ga.	.....	.....	Prime field hand	.....	600	P(PSQ)

TABLE A—Continued

Year	State	Sex	Age	Grade or Condition	No. in Sale	Average Price	Source, Page*		
1846	S.C.	.....	.....	Prime field hand	.....	\$650	P(PSQ)	
	Ala.	.....	.....	Mostly boys and women, equal to 10 good hands	.....	13	446 G.542	
1851	S.C.	.....	.....	Prime field hand	.....	750	P(PSQ)	
1852	Ga.	.....	.....	Prime field hand	.....	1,050	P(PSQ)	
	S.C.	.....	.....	Prime field hand	.....	800	P(PSQ)	
1853	Va.	.....	.....	Incl. aged and infirm	42	400	B.167	
		.....	.....	Not above ordinary	21	553	B.350	
	Ala.	M	.....	.....	No trade	1	1,028	B.350
		F()	(10 mos.)	.....	.....	2	[950]	B.350
		F	11	.....	.....	1	600	B.350
		.....	.....	.....	Plantation sale	.....	700	B.350
		S.C.	.....	.....	Prime field hand	.....	900	P(PSQ)
		Ga.	.....	.....	Prime field hand	.....	1,200	P(PSQ)
		Va.	M	18-25	Best	1,200-1,300	O.595
			M	18-25	Fair	950-1,050	O.595
M			.....	.....	Boys, 5' tall	.....	850-950	O.595
M			.....	.....	Boys, 4'8" tall	.....	700-800	O.595
M	.....		.....	Boys, 4'5" tall	.....	500-600	O.595	
M	.....		.....	Boys, 4' tall	.....	375-450	O.595	
F	.....		.....	Young women	.....	800-1,000	O.595	
F	.....		.....	Girls, 5' tall	.....	780-850	O.595	
1854	Ky.	F	.....	.....	.....	700-750	O.595	
		F	.....	.....	.....	350-450	O.595	
	Ala.	M	45-50	.....	Scarred back	1	460	B.107
		.....	.....	.....	(Unscarred, est.)	.....	(750-800)	B.107
		F()	30(2)	.....	.....	2	[650]	O.41
		F	.....	.....	Very handsome mulatto	1	1,600	B.131
		.....	Ten un- der 7	.....	"Highest prices"	18	788	B.350
		M	7	.....	.....	1	760	B.350
		M	12	.....	.....	1	710	B.350
		M	17	.....	.....	1	1,374	B.350
1855	S.C.	F()	37(2-7)	.....	7	[5,000]	B.350	
		.....	.....	Prime field hands	.....	900	P(PSQ)	
1856	Va.	M	.....	.....	.....	1,467	GMW	
		M	70	.....	Ordinary field hand	2	100	GMW
		M	55	.....	.....	1	1,610	GMW
		F	20	.....	Likely, "highest pr."	1	1,700	GMW
		M	12	.....	.....	1	1,518	GMW
		F	.....	.....	Prime field hand	Est.	1,050	GMW
		M	.....	.....	Prime field hand	Est.	1,250-1,500	GMW

TABLE A—Continued

Year	State	Sex	Age	Grade or Condition	No. in Sale	Average Price	Source, Page*	
1856	Tenn.	.....	.....	Aver. reported tax value	.....	\$689	G.666	
	Mo.	M	30-45	Common crop hands	5	1,380	GMW	
		F	.....	.....	.....	.....	800-900	GMW
		F	.....	.....	Houseservant	1	1,040	GMW
		F	.....	.....	Houseservant	1	1,753	GMW
	Ga.	F	Over middle age	.....	.....	2	700	GMW
			15	.....	.....	1	1,280	B.83
		F	14	.....	.....	1	1,280	B.83
		F	14	.....	.....	1	1,305	B.83
		F	16	.....	.....	1	1,525	B.83
F		18	Pregnant	.....	1	1,500	B.83	
F()		20	.....	.....	2	[1,840]	B.83	
M		18	.....	.....	1	1,290	B.83	
M		22	.....	.....	1	1,500	B.83	
La.		M	.....	"Prices never been equalled"	.....	.....	1,500-1,635	GMW
	F	.....	.....	.....	.....	1,200-1,550	GMW	
1857	Md.	F	14	.....	1	900	B.79	
		F	.....	Small girl	1	880	B.79	
		F	.....	Small girl	1	350	B.79	
	Va.	F	10	.....	.....	1	800	B.116
		.....	.....	.....	.....	35	700	B.116
		F	7	.....	.....	1	725	B.357
		F	12	.....	.....	1	770	B.357
	Mo.	F	9	.....	.....	1	805	B.79
		M	5	.....	.....	1	487	B.79
		M	2	.....	.....	1	325	B.79
La.	F()	20(3,4)	.....	.....	2	[2,505]	B.83	
	F()	30(3)	.....	.....	2	[1,610]	B.83	
	F()	35(2)	.....	.....	2	[1,325]	B.83	
Tex.	M	22	.....	.....	3	1,855	B.356	
	5M, 5F	11	.....	.....	10	716	B.358	
1858	S.C.	.....	.....	Prime field hand	.....	950	P(PSQ)	
	Ga.	M	.....	.....	2	1,350	B.362	
		"Several"	1,100	B.362
	La.	4M, 5F	.....	.....	.....	9	1,170	B.362
		.....	.....	.....	.....	7	1,538	B.356
		.....	.....	.....	.....	.....	of which:	.....
		M	36	.....	.....	1	1,835	B.356
		M	26	.....	.....	1	2,050	B.356
		M	50	.....	.....	1	1,225	B.356
	F	20	.....	.....	1	1,300	B.356	

TABLE A—Continued

Year	State	Sex	Age	Grade or Condition	No. in Sale	Average Price	Source, Page*		
1859	S.C. Ga. Va.	.....	.....	Prime field hand	.....	1,100	P(PSQ)	
		.....	.....	Prime field hand	.....	\$1,650	P(PSQ)	
		F	10	.....	.....	.....	1,151	B.79
				Mostly children	39	.....	566	B.79
		M	20-26	Number 1	Est.	.....	1,450-1,500	B.117
		M	17-20	Best plough boys	Est.	.....	1,350-1,425	B.117
		M	15-17	Best class	Est.	.....	1,250-1,375	B.117
		M	12-15	Best class	Est.	.....	1,100-1,200	B.117
		F	17-20	Best grown girls	Est.	.....	1,275-1,325	B.117
		F	15-17	Best class	Est.	.....	1,150-1,250	B.117
		F	12-15	Best class	Est.	.....	1,000-1,100	B.117
		F	14	Tolerably tall	1	.....	1,150	B.349
		M	.....	"Enormously high" (price)	1	.....	1,275	B.349
		F	.....	"Enormously high" (price)	1	.....	1,300	B.349
		M	15	"Very high" (price)	1	.....	1,188	B.350
		M	18	"Very high" (price)	1	.....	1,395	B.350
		F	10-16	"Very high" (price)	.....	.....	792-1,275	B.350
		M	Field hand—"should bring more Than \$2,000 in La. or Texas"	1	1,640	B.351
		M	.....	.....	1	.....	1,600	B.351
		F	16	.....	1	.....	1,400	B.351
		F	16	.....	1	.....	1,395	B.83
		F()	.....	.....	4	.....	[2,700]	B.83
		F()	.....	Excellent houseservant	2	.....	[1,300]	B.84
		F	10	.....	1	.....	765	B.79
		M	12	.....	1	.....	915	B.79
				Entire Pimlico stock	235	.....	750	B.183
		F	18	Unsound, excellent cook	1	.....	910	B.184
		F	16	Maid, seamstress	1	.....	1,000	B.184
		F	14	Likely	1	.....	970	B.184
		.....	.....	.....	90	.....	1,000	B.341
		F()	.....	.....	2	.....	[1,900]	B.352
		F()	.....	.....	4	.....	[3,000]	B.352
		F	.....	Girl	1	.....	1,705	B.352
		M	.....	Field hand	1	.....	1,555	B.352
			12<8	.....	36	.....	1,000	B.352
			3>40	.....	.....	.....	.....	B.352
		M	.....	Common field hand	1	.....	1,630	B.352
		M	40	.....	1	.....	1,795	B.352
		M	21	.....	1	.....	1,605	B.352
		M	10	.....	3	.....	1,150	B.352
		F	10	.....	1	.....	1,045	B.352
			13-16	.....	2	.....	1,053	B.352
		M	14-38	.....	7	.....	1,540	B.352

TABLE A—Continued

Year	State	Sex	Age	Grade or Condition	No. in Sale	Average Price	Source, Page*
1859	Ga.	.....	.....	Three of working age	8	\$1,250	B.83
					436, of which:	716	B.232
			126<10	.....	.....	.....	B.232
			182<31	.....	.....	.....	B.232
			88<50	(Several crippled or superannu-	.....	.....	..... B.232
			40>50	uated)	.....	.....	B.232
		M	.....	Carpenter, fair	1	1,750	B.232
		F	.....	Cotton hand, houseservant	1	1,250	B.232
		M	.....	Prime, young	.....	1,250-1,350	B.232
		3F, 2M	24, 21	.....	5	1,205	B.232
			17, 15, 12				
		M, F	.....	Plain smith and wife	2	[2,900]	B.341
	Ala.	M	.....	Very high, 12 mo. credit w/o in-		1	1,859 B.351
				terest			
		M	.....	.....	3	1,800	B.351
		M	32	.....	1	1,300	B.299
		M	22	.....	1	1,290	B.299
		M	19	.....	1	1,605	B.299
		F	18, 18, 8	.....	3	1,635	B.299
		M	12	.....	2	1,193	B.299
		F	8	.....	1	800	B.299
		M	14	.....	1	1,050	B.299
		F	33	.....	1	920	B.299
		F, 4M	35, 32, 11				
			9, 7	.....	5	[5,220]	B.299
		M	13	.....	2	1,000	B.299
		F	28, 8, 6, 4	.....	4	[2,328]	B.299
		F	15	.....	1	1,200	B.299
		F	30-38	.....	Several	900-1,500	B.299
		M	.....	.....	4	1,400	B.299
				Field hands and children	Thigpen estate	1,309	B.356
	Tenn.	.....	15	.....	6	1,140	B.357
	La.	M	.....	No infants. Sugar estate	55	1,000	B.341
		M	.....	Prime field (in above)	.....	1,500	B.341
	Tex.	M	.....	Blacksmith	1	2,000	B.356
		M	38	.....	1	1,308	B.358
		F	14	.....	1	1,403	B.358
		M	17	.....	1	1,527	B.358
		F	12	.....	1	1,255	B.358
		M	12	.....	1	1,155	B.358
		M	8	.....	1	1,002	B.358

TABLE A—Continued

Year	State	Sex	Age	Grade or Condition	No. in Sale	Average Price	Source, Page*			
1859	Tex.	.....	28	.....	1	\$1,500	B.358	
		.....	26	.....	1	1,650	B.358	
		.....	18	.....	1	1,800	B.358	
		.....	9	.....	1	1,056	B.358	
		.....	7	.....	1	1,005	B.358	
		.....	13	.....	1	1,005	B.358	
1860	S.C.	.....	.....	Prime field hand	.....	1,200	P(PSQ)	
	Ga.	.....	.....	Prime field hand	.....	1,800	P(PSQ)	
	S.C.	F	14	.....	Wench	1	970	B.84	
		F()	30()	.....	Houseservant, children	4	[2,200]	B.84	
		F()	18()	.....	With infant	2	[1,160]	B.84	
		F()	25 (2, 4)	.....	.....	3	[1,470]	B.84
		F	17	.....	Wench	1	1,400	B.84	
		F	18	.....	Wench	1	1,165	B.84	
		F()	20()	.....	.....	2	[1,180]	B.84
		.....	.....	.....	.....	30	750	B.185
		.....	.....	.....	Very prime	72	665	B.185
		.....	.....	.....	Sea Island cotton hands	34	703	B.188
		.....	.....	.....	Sea Island cotton hands	20	795	B.188
		M	21	.....	.....	1	1,205	B.188
		F	.....	.....	Disabled	1	485	B.188
		M	.....	.....	Prime	2	1,325	B.188
		N.C.	Tenn.	F()	18	Likely	2	[1,160]	B.195	
	.....			(7 mos.)	.....	1	700	B.195
	F			9	.....	68	586	B.205	
	4F, 5M			1-40	Prime (5 under 10)	9	450	B.220		
	M			.....	Carpenter	1	3,500-4,000	B.353	
	.....			8	.....	5	600	B.357
	M			12	.....	1	800	B.211	
	M			7	.....	1	400	B.211	
	M			4	.....	1	300	B.211	
	Ga.				M	21	Best field hand	1	1,900	P(Doc. II).73
					F()	17 (9 mos.)	2	[2,150]	P(Doc. II).73
F()					18 (3)	2	[2,500]	P(Doc. II).73	
F()		30(6)( )	.....		4	[4,525]	P(Doc II).73		
.....		.....	Far from prime		140	625	B.224		
.....		.....	.....		536	1,025	B.354	
.....		.....	.....		of which:			
F		17	.....		1	1,800	B.354		
M		20	.....		1,	1,800	B.354		
M		30	Field hand		1	2,005	B.354			
M	.....	.....	Several	2,000	B.354			

TABLE A—Continued

Year	State	Sex	Age	Grade or Condition	No. in Sale	Average Price	Source, Page*
1860	Ga.	M, F ( )	.....	.....	3	[\$4,500]	B.354
		25F and 10 children		Railway builders	108	1,364	B.355
		60F and children		Ordinary	81	1,100	B.355
		F	11	.....	1	1,465	B.355
		F	11	.....	1	1,385	B.355
		.....	.....	.....	20	919	B.355
					of which:		
				(Excluding 5, old and children)		15	1,128 B.355
			3-50	.....	Estate sale	1,148	B.355
	Fla.	.....	.....	Trader's purchase	53	834	B.223
	Miss.	M	.....	No. 1 field hands	Est.	1,600-1,650	B.309
		F	.....	No. 1 field hands	Est.	1,400-1,500	B.309
		.....	.....	.....	17	1,200	B.357
	Ala.	.....	.....	High, but for 12 mo. credit	33	1,145	B.84
					of which:		
		M, F	4<6	.....	6	[5,200]	B.84
		F( )	.....	.....	3	[2,600]	B.84
		.....	18	.....	1	2,045	B.84
	Tex.	M	21	.....	1	2,015	B.358
		F	15	.....	1	1,635	B.358
		M	10-12	.....	1	1,236	B.358
		M, F	6, 3	.....	2	500	B.358
		M	35	.....	1	2,206	B.358

NOTES

Square brackets indicate total sale price rather than average price and have been used where the age range is extremely wide.

Parentheses have been used to indicate children sold with their mothers.

"Est." Is used to indicate estimates of going prices in a market.

Where no entry is given under "No. In Sale," the average has been reported without indication of the size of the market or the number of observations. The Charleston and Middle Georgia

averages, taken from U.B. Phillips, "The Slave Labor Problem in the Charleston District," *Political Science Quarterly*, XXII, No. 3 (1907), 436, and given as the first entry in almost all the reported years, are given without indication of number.

The grade or condition or other comment on the sale or valuation has been quoted in the language of the original report whenever possible.