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Chapter Author: Robert E. Gallman

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*Trends in the Size Distribution of Wealth
in the Nineteenth Century: Some Speculations*

ROBERT E. GALLMAN
UNIVERSITY OF NORTH CAROLINA

AT PRESENT there are afoot two major studies (by Alice Jones of Washington University, and Lee Soltow of Ohio University) that, when completed, will tell us a good deal about the structure of wealth holdings toward the end of the eighteenth century and just before the Civil War. Until these studies are available, judgements concerning trends in the size distribution of wealth in the nineteenth century must rest on evidence by no means as full as one would wish. Nevertheless, some data are available and they suggest findings sufficiently clear and interesting to warrant a discussion at this time.

I propose to do the following: (1) compute from fragmentary census data a size distribution of wealth for the United States in 1860; (2) estimate the responsibility of the slave system for the shape of the 1860 distribution; (3) show the effect of trends in the distribution of population among three locations—large cities, the plantation south, other rural¹ areas—on the size distribution of wealth, on the assumption that all other relevant factors remain constant; (4) incorporate into the preceding analysis an estimate of the direction and weight of the effect of changes in average urban and rural wealth holdings on the size distribution of wealth; (5) estimate directly, using somewhat different data, the trend of the share of wealth held by those at the very tip of the wealth pyramid.

NOTE: I would like to thank Karen Hensely, Anne Cobb, Dale Swan, and Donald Schaefer, who helped me with the wealth samples drawn from the manuscript census; Taylor Cousins, who assembled the evidence from the pamphlets of Moses Beach; and my wife, Jane, who helped me to test the manuscript census samples. Both my wife and William N. Parker kindly listened to my plans and offered criticism.

¹The term "rural" is used in this chapter to designate areas outside *large* cities (i.e., those with at least 40,000 in population).

2 *Distribution Trends in Nineteenth Century*

The results of these exercises will suggest that the share of wealth held by the rich probably drifted upward during the nineteenth century, the support for this statement being stronger for the latter half of the century than for the first half.

I. Wealth Distribution in the U. S., 1860

The appendix contains wealth distributions for three cities and three rural areas, computed from the manuscript census records of 1860. If these distributions can be regarded as representative of larger populations, the total exhausting the universe, they can be used to compute the size distribution of wealth in the U. S. in 1860, following the procedure proposed in another context by Professor Kuznets.² Mean wealth per family is computed for each subuniverse, and relative weights are established on this basis. Each sample distribution (expressed in terms of the per cent of wealth held by each percentile of the family population) is then multiplied by the relevant weight. The distributions can then be combined into an aggregate distribution. The number of times each sample enters into the aggregate distribution depends upon the fraction of families in the universe represented by the sample. It will be convenient subsequently to speak of the first operation as the application of a "wealth weight"; the second, the application of a "population weight." A simple example will clarify the procedure.

Assume that we have two samples, each adequately representing one of the two components of the universe under study. Suppose that we want to find out the shares of wealth held by the four quartiles of the universe. The sample distributions are as follows:

	A	B
First quartile	90%	75%
Second quartile	8	15
Third quartile	2	8
Fourth quartile	0	2

Suppose that wealth held per family in the component represented by B is twice the value of wealth held per family in the component

² Simon Kuznets, "Economic Growth and Income Inequality," *The American Economic Review*, March 1955.

represented by A. Suppose, further, that B represents three times as many families as A. Then we multiply the B distribution by two and enter it into the calculations three times, to produce wealth holdings of the quartiles of the universe:

First quartile	$150 + 150 + 150 + 90 = 540$
Second quartile	$30 + 30 + 30 + 16 = 106$
Third quartile	$16 + 16 + 8 + 4 = 44$
Fourth quartile	$4 + 4 + 2 + 0 = 10$
	<u>700</u>

Dividing through by seven yields the following percentile distribution for the universe:

First quartile	77%
Second quartile	15
Third quartile	6
Fourth quartile	1
	<u>100</u> (99, due to rounding)

Now the evidence assembled in the appendix suggests that in 1860 the distribution of wealth was much more unequal in large cities than in rural areas, the contrast being especially striking when one considers the shares of wealth held by the richest 1 per cent of families. Additionally, while wealth per family varied somewhat from city to city and state to state, the only truly striking differences appear when one compares average wealth per family in the plantation South with average wealth per family elsewhere. In the sugar, rice and cotton territories of the South wealth per family ran about \$12,000, whereas in the rest of the country it averaged about \$3,000. The evidence relating to the distribution of wealth and average holdings per family suggest, then, that for purposes of assembling a size distribution for the country as a whole one can work effectively with samples drawn from three sub-universes: cities, the plantation South, and other rural areas. The question then arises as to how representative the samples provided in the appendix are in fact.

So far as the plantation South is concerned, we lack only a sample from the rice economy. However, the weight such a sample would have in determining the aggregate distribution would, necessarily, be

very small. Furthermore, the distribution within the rice economy is not likely to differ markedly from the distribution within the sugar economy, and we do have evidence relating to the latter. The Louisiana sample can be treated as roughly representative of both the sugar and rice economies.

We have samples relating to the third, fifth and seventh largest cities in the U. S. in 1860. The three cities are quite different, in terms of geography, hinterlands, and industrial mix. One is an old East Coast port; the second, a gulf port, outlet for western goods and the products of the plantation South; the third, a western river city, located within an important trading nexus but also heavily committed to manufacturing.³ The three are quite different, yet they exhibit essentially the same wealth distribution, suggesting that the composite distribution for the three may be broadly representative of large cities.⁴ How far down the scale of size the distribution remains representative, we have no way of knowing. We arbitrarily assume that the distribution for the three sampled cities adequately represents the distribution in the largest twenty cities, the smallest of which had a population of 43,000 in

³ The very rich in this city tended to be manufacturers, whereas in Baltimore and New Orleans they were more often merchants.

⁴ But perhaps not for very large cities. The richest 1,062 families in New York City in 1855 held property equal in value to about 62 per cent of the wealth returned at the Census of 1860 by all New York citizens, according to Moses Beach. (*The Wealthy Citizens of New York*, 12th Edition, New York, 1855.) This group accounted for between .6 and .7 per cent of the families in New York. The combined distributions of Baltimore, St. Louis, and New Orleans (Appendix Table 1, "Three Cities, Adjusted") attributes 45 per cent of the wealth held by families in large cities to the richest 1 per cent of families. Beach's estimate of the wealth-holdings of the richest 1,062 families in New York may be excessive and, additionally, the census return of property owned by New Yorkers in 1860 may be somewhat too low. Nonetheless, there appears to be good reason to believe that wealth concentration in New York was greater than in other cities. Therefore, we developed a separate distribution intended to reflect circumstances in New York. See the notes to Table 1.

According to "A Member of The Philadelphia Bar" (*Wealth and Biography of the Wealthy Citizens of Philadelphia*, by a Member of the Philadelphia Bar, 1845) the richest 711 families in Philadelphia held property valued at about \$75 million in 1845. The 1860 Census (*Population*, p. XVIII) returns 101,361 families in Philadelphia County, owning about \$394 millions of property. These two scraps of information suggest that it is unlikely that the richest 1 per cent of families in Philadelphia owned substantially more or less than 45 per cent of wealth owned by Philadelphians in 1860. We therefore assume that the combined distribution of the three sample cities adequately represents circumstances in Philadelphia.

1860.⁵ Our ultimate results are not unduly sensitive to the precise location of the cutoff point. Had we confined the definition of "large cities" to the largest fifteen, or expanded it to include the largest thirty-five, our ultimate results would not have been markedly different.

We are left, then, with the "all other rural areas" subuniverse. The only sample we have relating to the subuniverse is the sample of Maryland, outside Baltimore. To treat the Maryland sample as representative of so large, and perhaps heterogeneous, a territory may appear outrageous; however, several good reasons can be advanced for doing so. First, the sample may very well be roughly representative of an important part of the "all other" subuniverse, the upper South and Middle Atlantic States.⁶ Second, if the Maryland sample is unrepresentative, we can be quite sure that it exhibits a distribution somewhat more *unequal* than the distribution appropriate to the "all other" subuniverse.⁷ Therefore, we can specify the direction of bias in the computed distribution for the United States. Third, the principal object of constructing the U. S. distribution for 1860 is to provide the means of investigating the effects of structural changes of various kinds on the wealth distribution. For that purpose a precisely accurate distribution is not required, since we are less concerned with *levels* of concentration than with *changes* in concentration. Finally, with respect to the level of concentration, the proof of any pudding is in the eating. The one check we have on the estimates generated in this paper tends to confirm our results (see below).

Accepting the sample distributions as sufficiently representative, we compute the distribution identified as 1860 A in Table 1.

⁵ Most of the census data on wealth and family population are reported by county, rather than by city. The wealth and population weights we used, therefore, relate to the counties in which the largest twenty cities are located. Consequently our population weights give to the "three cities" distribution an importance somewhat greater than the text suggests.

⁶ Additionally, the agricultural characteristics of the sample and the subuniverse are presumably of special importance. Leaving out the two relatively new states of California and Oregon, the average size of farm varied from state to state in the non-South within the fairly narrow range of 99–211 acres. The average in Maryland falls within this range, at 199 acres. Whereas in the South (Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia) the range was from 245–591. (*Census of 1860, Agriculture*, p. 222.)

⁷ See, for example, the distribution of farms by size of farm, *Census of 1860, Agriculture*, p. 221.

6 *Distribution Trends in Nineteenth Century*

TABLE 1

ESTIMATES OF THE SIZE DISTRIBUTION OF WEALTH IN THE UNITED STATES IN 1860 AND PROJECTIONS TO 1810 AND 1900
(per cent)

Families	Shares in Personally Held Wealth ^a				
	1810	1860 A	1860 B	1900 C	1900 D
First (richest) percentile	21	24	24	26	31
Second percentile	11	11	11	11	11
Third percentile	8	8	7	7	7
Fourth percentile	6	6	6	6	6
Fifth percentile	5	5	5	5	5
Sixth percentile	4	4	5	4	4
Seventh percentile	4	4	4	4	3
Eighth percentile	3	3	4	4	3
Ninth percentile	3	3	3	3	3
Tenth percentile	3	3	3	2	2
First decile	69	71	72	73	74
Second decile		17	16		
Third decile		7	7		
Fourth decile		3	2		
Fifth decile		1	1		
First half		100	100		
Second half		0	0		

SOURCES: 1860 A—Five sample distributions were combined in the manner described in the text. Four of the distributions were taken from Appendix Table A-1 ("Three Cities, Adjusted"; Maryland, ex Baltimore; Louisiana, ex New Orleans, and "Cotton Counties"). The fifth distribution (taken to represent New York City) is similar to the "three cities, adjusted" distribution, except that the richest 1 per cent is assumed to own 55 per cent of the wealth. The basis for the "New York" distribution is described in text footnote 4.

The two distributions, Louisiana (ex New Orleans) and "cotton counties," were each given a wealth weight of 4. All other distributions received a wealth weight of 1. (See text.)

The population weights (see text), which are based on the number of free families represented by each distribution, are as follows:

Louisiana (ex New Orleans)	2
Cotton Counties	6
New York City	3
"Three Cities, Adjusted"	12
Other Rural Areas	77

TABLE 1 SOURCES (continued)

Southern rural areas receive slightly too heavy a weight, since several cotton counties are represented in both the "cotton counties" distribution and the Louisiana (ex New Orleans) distribution (the latter taken to be representative of rural Louisiana and South Carolina).

1860 B—The distribution differs from 1860 A only in that slaves are regarded as potential property owners, not as property. The text describes the procedure by which the 1860 A distribution was adjusted to produce the 1860 B distribution. In order to make the adjustments we had to estimate (for Louisiana, ex New Orleans, South Carolina, and the Cotton County sample):

- 1—the value of slaves
- 2—the number of slave families
- 3—the size distribution of nonslave wealth.

We estimated the relevant slave values from the number of slaves returned at the census in Louisiana (ex New Orleans) and South Carolina and the number covered in the Cotton County sample, together with an estimated value per slave of \$900.

We computed the number of slave families in Louisiana (ex New Orleans) plus South Carolina and in the Cotton County sample by multiplying each slave population by the ratio of free families to free population in the relevant area.

Average wealth per family (free and slave) came to a value, in each case, close to the value of average wealth per family in the non-South. Consequently, each distribution was given a wealth weight of 1 in the calculation of the national distribution.

The population weights were necessarily revised:

Louisiana (ex New Orleans)	5
Cotton Counties	12
New York City	3
"Three Cities, Adjusted"	10
Other Rural Areas	70

We assumed that the ratio of slave families to free families derived for Louisiana (ex New Orleans) and South Carolina was also relevant to the Louisiana (ex New Orleans) sample and in this way estimated the number of slave families covered by the sample.

We assumed that slave families owned no property and therefore could be introduced at the bottom of the wealth distributions.

We assumed that total nonslave property was distributed among wealth-holding families exactly as was the value of real property. Since both samples distinguish real property, we were then able to compute wealth distributions for nonslave wealth. Our results are as follows:

	<i>Louisiana (ex New Orleans)</i>	<i>Cotton Counties</i>
First (richest) percentile	50%	30%
Second percentile	15	11
Third percentile	9	7
Fourth percentile	6	5
Fifth percentile	4	5
Sixth percentile	4	4
Seventh percentile	3	4
Eighth percentile	2	4
Ninth percentile	2	3
Tenth percentile	1	3
First decile	96	79

TABLE 1 SOURCES (concluded)

1810—The 1860 A distributions were combined, but by means of population weights presumably relevant to 1810. We assumed that in 1810 the "Three Cities, Adjusted" distribution was relevant to all large cities, including New York. We projected the 1860 weights backward on the following population series: Cities over 50,000; Louisiana and South Carolina; Georgia, Alabama, Mississippi; All others. (*Historical Statistics*, Tables A123-180 and 195-207.)

Ideally, the extrapolating series would refer to only free population. However, the improvement in results over those achieved by total population series (used here) would be negligible.

The weights generated are as follows:

Louisiana (ex New Orleans)	4
Cotton Counties	3
"Three Cities, Adjusted"	3
Other Rural Areas	90

1900 C—Computed in exactly the same way as the 1810 distribution, except that the 1860 B distributions were used and the New York City distribution was taken to represent all cities of 1,000,000 population or more. The population weights assigned are:

Louisiana (ex New Orleans)	4
Cotton Counties	9
New York City	9
"Three Cities, Adjusted"	13
Other Rural Areas	65

1900 D—Computed in exactly the same way as the 1900 C distribution, except that the New York City and "Three Cities, Adjusted" distributions were each assigned a wealth weight of 2.

^a Details may not add to totals, due to rounding.

II. Effect of the Slave System on the Distribution

The 1860 A distribution is affected by the existence of the slave system in the South. We can judge the significance of the slave system in this context by recomputing the distribution and treating slaves not as property, but as potential property owners. The calculation has interest since it represents a convenient approach to the assessment of the effect of abolition on the distribution of wealth. Additionally, we need the distribution in order to draw appropriate comparisons with experience at the end of the century.⁸

⁸ A sample drawn from the 1870 census would presumably show the full effects of abolition and the Civil War. We have not yet drawn an 1870 sample for the South and there is some question as to whether the project would be fruitful. The population census was notoriously defective in the South in 1870. One would anticipate that questions relating to wealth would be especially resisted, not only in the South, but also in the North, in view of tax developments during the War. However, it is by no means certain that the wealth returns are unworthy of investigation. Preliminary work with the St. Louis, Baltimore and

If slaves are treated as property holders, rather than as property, each of the three steps in the calculation of the national wealth distribution is affected.

1. The value of slaves must be deducted from the census reports of the value of property owned in the plantation South, and the number of families augmented by the number of slave families.⁹ Both operations reduce the value of wealth per family in the plantation South and, therefore, the wealth weights assigned to the Southern distributions.

2. However, if slaves are treated as potential property holders, then each of the two Southern distributions represents a larger population of families and therefore must receive a larger population weight in the calculation of the national distribution.

3. Finally, the Southern distributions are altered, both because a large number of propertyless families (slaves) are introduced into the universe of families and because the definition of wealth is narrowed.

The detailed procedures followed to carry out the adjustments to the 1860 A distribution described above are contained in the notes to Table 1. It is sufficient to say here that the effect of the change in the Southern wealth weight is opposite in direction, and almost exactly compensates for, the effects of the changes in the Southern distributions and population weights. Consequently, the adjusted distribution, 1860 B, is virtually identical to the original distribution, 1860 A. The size distribution of wealth in the United States in 1860 is almost entirely independent of the convention adopted for the handling of slaves. Virtually the same national distribution eventuates when slaves are treated as potential property owners as when they are treated as property.

III. Effect of Population Trends on the Distribution

The 1860 size distributions for the U. S. were computed by applying population and wealth weights to sample distributions. The analysis of trends in the size distribution can be organized in the same way. That

New Orleans schedules suggests that at least the first two may warrant further examination. We have drawn small samples from each and they yield distributions similar to those obtained for these cities in 1860.

⁹Slaves were held in two of the three sampled cities, but their number and value were not appreciable and therefore we confine the adjustment to the samples relating to the plantation South.

is, we can conceive of three factors affecting the size distribution across time: (1) trends in population weights, (2) trends in wealth weights, (3) trends in the distributions within the sampled universes. Evidence with respect to the last two factors is difficult to come by. This paper offers none bearing on the last¹⁰ and very little relating to the second, but it is a simple enough matter to measure the effects of changing population weights on the size distribution. Adequate population series by which the weights of 1860 may be extrapolated to other years are readily available. Table 1 contains estimates for 1810 and 1900 (1900 C) computed from the 1860 sample distributions and wealth weights, together with population weights relevant to 1810 and 1900. We have projected the 1860 A distribution backward to 1810 and the 1860 B distribution forward to 1900. Details are contained in the notes to the table.

The estimates indicate that changing population weights operated in the direction of increasing the share of wealth held by the richest 1 per cent of families. But the shares of the other members of the richest decile are virtually unaffected. The impact on the share of wealth held by the richest decile is very slight, indeed. The share rises over the ninety year period from 1810 to 1900 by only 4 percentage points, against an original holding of 69 per cent.

How far the wealth weights shifted over time we do not know. However, there is some basis for the presumption that wealth per family in the cities rose relative to wealth per family in the countryside, at least after 1860. For example, between 1860 and 1900 the population of cities of 50,000 and over increased roughly five-and-a-half-fold, while the value of national assets, other than agricultural assets, increased almost ninefold, intangible assets, by perhaps thirteenfold, and tangible assets of industry, commerce and public utilities, by roughly seven-and-a-half-fold. On the other hand, the population outside these cities more than doubled, while the value of agricultural assets increased by only two-and-a-half-fold.¹¹ Clearly, this evidence does not bear directly on the value of property owned by city dwellers and those outside large

¹⁰ But see footnote 8.

¹¹ The wealth data (current prices) are from Robert E. Gallman, "The Social Distribution of Wealth in the United States of America," paper delivered to the International Economic History Congress, Munich, 1965; the population data, from *Historical Statistics*, Series A-195 through A-209.

cities. However, it may represent a reasonable guide as to the direction of change of relative wealth-holdings of these groups. If it does, then wealth per family in large cities increased relative to wealth per family outside these cities over the period 1860 to 1900. How markedly the change took place, we cannot say. However, it seems reasonable to suppose that the urban wealth weight in 1900 could not have been as much as double the rural weight. We can, therefore, estimate the maximum effect of changing relative wealth weights between 1860 and 1900 by recomputing distribution 1900 C, giving the two urban distributions wealth weights of 2 and the rural distributions, wealth weights of 1. Distribution 1900 D, in Table 1, was computed in this way. The impact of the adjustments is confined almost entirely to the share of the richest 1 per cent of families, where it is substantial. The share of wealth held by the richest decile is almost identical in the 1900 C and D distributions.

The exercises with changing population and wealth weights suggest that there were forces at work in the American economy during the nineteenth century that tended to produce greater inequality in the distribution of wealth over time. The impact of these forces is seen most clearly when one focuses on the share of wealth held by the richest 1 per cent of families. We therefore turn to another body of evidence that bears directly on the wealth holdings of the very rich, in the hope of finding a means of appraising these results. But before moving on to this evidence, it is worth remarking that in at least one important particular the wealth distributions projected to 1900 are roughly confirmed by the independent estimate of another worker. According to G. K. Holmes, the richest 9 per cent of families in 1890 owned 71 per cent of personally held wealth in the United States, a rather remarkable confirmation of the results achieved in this paper.¹²

IV. Other Wealth Distributions

During the nineteenth century various lists of rich families were drawn up, sometimes including estimates of the fortunes of these families and a few biographical notes concerning their members. Holmes used such a list as the basis of his estimate that the millionaire families in the United

¹² See C. L. Merwin, Jr., "American Studies of the Distribution of Wealth and Income by Size," *Studies in Income and Wealth*, Volume 3, New York, NBER, 1939, p. 6.

States owned \$12 billion of property in 1890.¹³ According to Watkins, the list Holmes used was reasonably accurate, but perhaps somewhat too long.¹⁴ We use the Holmes figure, then, to serve as the upper bound of a set of bench-mark estimates for 1890.

If Holmes, in fact, had too many millionaires on his list, we can adjust his estimate of the value of property held by the richest families in the country by reducing either the number of very rich families he assumed or his estimate of average wealth per family. We choose to make two alternative estimates, one based on Holmes' list of 4,000 families and an assumed average holding of \$2 million; the second, based on Holmes' estimate of the average value of property held by millionaire families (\$3 million) and an estimate of 2,000 millionaire families. The bench-mark estimates for 1890 then become: the richest 4,000 families owned between \$8 and \$12 billion; the richest 2,000 families owned \$6 billion.

In 1890 there were just under 12.7 million households in the United States. Consequently, the bench-mark estimates relate to the holdings of the richest .016 and .031 per cent of American families. The wealth holdings of the richest .031 per cent represent between 9 and 14 per cent of total national assets in 1890 and between 14 and 19 per cent of domestic tangible assets, while the holdings of the richest .016 per cent represent between 6 and 7 per cent of total national assets and roughly 10 per cent of domestic tangible assets (see Table 2).

Now we want to know whether this degree of concentration characterized earlier periods of nineteenth century history. Limits on the evidence we were able to assemble require us to restrict our attention to the years 1840, 1850 and 1860.

We have estimates at decade intervals from 1840 onward of the value of national assets and the value of domestic tangible assets and while these figures are, conceptually, imperfect denominators for ratios of wealth concentration, they appear to be the best available. In any case, we can specify with some certainty the direction of bias over time produced by their use. Without much doubt, they tend to minimize the measures of concentration for the later years, relative to the earlier

¹³ *Ibid.*

¹⁴ G. P. Watkins, "The Growth of Large Fortunes," *Publications of The American Economic Association*, 3rd Series, VIII, 1907, pp. 141, 142.

TABLE 2

RATIOS OF WEALTH HELD BY THE RICHEST .016 AND .031 PER CENT OF FAMILIES IN THE UNITED STATES TO THE VALUE OF TOTAL NATIONAL ASSETS AND TOTAL DOMESTIC ASSETS, 1840, 1850, 1860 AND 1890
(per cent)

	1840	1850	1860	1890
<i>Ratios to total national assets</i>				
<i>Variant A</i>				
Richest .016		3.9-4.1		5.8
Richest .031		5.4-5.6		8.7-11.5
<i>Variant B</i>				
Richest .016	4.5		3.1	7.0
Richest .031	5.9			10.5-14.0
<i>Ratios to total domestic assets</i>				
Richest .016	5.2	5.3-5.5	3.6	9.6
Richest .031	6.9	7.2-7.6		14.3-19.1

SOURCES: *Value of Total National Assets and Total Domestic Assets*: Gallman, "The Social Distribution of Wealth . . .," Appendix Table 1.

FAMILIES: 1850, 1860, 1890—Assumed equivalent to "households," *Historical Statistics*, Series A-255.

1840: Estimated from total population. (*Historical Statistics*, Series A-2) and an estimate of average population per household of 5.6 (see *Historical Statistics*, Series A-255).

WEALTH OF RICHEST .016 AND .031 PER CENT OF FAMILIES: 1890, See text, especially text footnote 11.

1840: See text. The lists of rich families used were: *Wealth and Biography of the Wealthy Citizens of Philadelphia, 1845*, by a Member of the Philadelphia Bar; *Present Value of Real Estate in New York City Compared with that of 1842*. Also a *List of the Wealthy Citizens of New York City 40 Odd Years Ago, 1884* (presumably a list constructed by Moses Beach).

1850: See text. Two variants were produced. The Philadelphia list, cited above, figured in both. Each variant was based in part on one of the following New York lists: Moses Yale Beach, *The Wealth and Biography of the Wealthy Citizens of the City of New York, 1846* (the estate of Steven Van Rensselaer, which by that time had been divided between his two sons, was treated as the wealth holding of two families; the wealth of J. J. Astor was treated in the manner described in the text) and Moses Beach, *The Wealthy Citizens of the City of New York, New York, 1855*.

1860: See text. The lists of rich families used were: the Beach list for New York City for 1855; families in Maryland, Louisiana, South Carolina, and St. Louis which held, in 1860, at least \$500,000 of wealth each, according to the manuscript census.

MILLIONAIRE FAMILIES IN THE U.S.: 100 in 1850 (see Gallman, "The Social Distribution . . .," p. 14 and fn. 23); 60 in 1840 (see text); 150 in 1860 (see text).

years. Surely the share of assets owned by natural persons drifted downward over time and, therefore, the value of total national assets is a less perfect proxy, in 1890 than, say, in 1840, for property owned by natural persons. Additionally, the estimates of national assets exclude slave property, whereas the estimates of property owned by the very rich in the years before the Civil War, which we will produce, are without doubt influenced by fortunes held in the form of slaves. The denominator we must use, then, surely biases our results.

The numerators we require for the concentration ratios must measure the value of wealth held by the richest .016 and .031 per cent of families. We know the total number of households in the U. S. in 1850 and 1860 and can easily and safely estimate the number in 1840; therefore, we can arrive at the number of rich families whose wealth must enter the denominator in these three years (see Table 2). The problems posed in the estimation of the wealth held by these families are more serious.

We have gathered lists of the wealth-holdings of the richest families in Philadelphia, New York City, Louisiana, Maryland, South Carolina, and St. Louis at various dates before the Civil War. We also have an estimate of the number of millionaire families in the country in 1850, which we have extrapolated to 1840 and 1860 on the number of millionaire families in New York City. We assume that our list of rich families at each of these dates contains the same fraction of the richest .016 and .031 per cent of families in the United States as it does of millionaire families. Furthermore, with one adjustment, we assume that the average value of property held by those members of our list who are among the richest .016 and .031 per cent of United States families is equal to the average value of property held by *all* United States families composing the richest .016 and .031 per cent.

The adjustment has to do with the 1840 and 1850 estimates, which use the New York City lists. Both contain the Astor fortune, which was so far the largest in the United States at that time that it cannot meaningfully enter into the calculation of the average wealth holding.¹⁵ Even with this adjustment it is likely that the procedure overstates the average value of property held by the richest families in the United States.

¹⁵ Freeman Hunt, *Lives of American Merchants*, Volume II, New York, 1858, p. 425.

An example may clarify the procedure. We estimate that there were sixty millionaire families in the United States in 1840. We know that there were twenty-one millionaire families in Philadelphia in 1845 and New York in 1842 and assume that the same numbers are relevant to the year 1840. Therefore, we assume that roughly one-third, or 150, of the richest .016 per cent of (450) families in the United States in 1840 lived in New York City and Philadelphia. We then sum up the wealth of the richest 150 New York and Philadelphia families (again, assuming that the 1842 and 1845 lists are adequately representative of 1840), subtract out the wealth of J. J. Astor, multiply the result by 3, and add the Astor fortune back into the total. The result—\$265 million—is the estimated value of wealth owned by the richest .016 per cent of families in the United States in 1840.

Table 2 contains the estimated concentration ratios for 1840, 1850, 1860, and 1890. Surely the data on which they rest are fragmentary and the procedures adopted to produce them, crude. Still, the results do not lack all interest. They do suggest that the share of wealth held by the very rich was substantially higher in 1890 than in the few decades before the Civil War, and this despite the fact that at every step in the estimating procedure the estimates were biased against this finding. Presumably, then, the upward movement of the concentration ratio understates the true movement of wealth concentration over time.

V. Conclusions

The conclusions reached in this paper can be summarized quite readily.

1. Wealth holdings in the South in 1860 are markedly more concentrated when slaves are treated as property owners than when they are treated as property, for purposes of computing the size distribution of wealth. However, the national distribution of wealth by size is almost unaffected by the convention adopted to handle the slaves. Whether slaves are treated as property or as property owners virtually the same distribution emerges.

2. Changes in the distribution of population among the three locations—large cities, the plantation South, and other rural areas—tended, during the nineteenth century, to raise the share of wealth held by the rich.

16 *Distribution Trends in Nineteenth Century*

3. Changes in the relative levels of wealth-holdings per family in large cities and in the rest of the country probably tended to raise the share of wealth held by the very rich between 1860 and the end of the century.

4. The effects of changes in the structure of population and wealth-holdings (2 and 3, above) appear to have been quite limited, except with respect to the share of wealth held by the richest 1 per cent of families.

5. The effects of changes in the structure of population and wealth-holdings might have been countered by changes in the wealth distributions in large cities and in rural areas. However, direct evidence relating to the holdings of the very rich suggests that, in fact, the share of wealth held by this group rose between the two decades before the Civil War and 1890.

Appendix

WEALTH DATA IN THE MANUSCRIPT CENSUS
1850, 1860, 1870¹⁶

Census enumerators were required to report the value of real property owned by respondents to the population questionnaire of the Census of 1850. In 1860, and again in 1870, each respondent was to be asked the value of real property and the value of personal property he owned. The standard of valuation was to be gross market value. Personal property was to include intangibles and consumer durables, but not clothing. Holdings of personal property of less than \$100 were not to be enumerated.¹⁷

These data could have been tabulated by size of holding or by the response to any other question answered by the respondent; e.g., in 1860, the age, sex, color, place of birth, marital status, occupation, family size and other family characteristics, place of residence, and mental or physical disability (if any) of the respondent. In fact, in 1850 and 1870 they were not tabulated at all; in 1850, no doubt because the

¹⁶ The first six paragraphs of this appendix are taken, almost verbatim, from Robert E. Gallman, "Social Distribution of Wealth in the United States of America," a paper delivered at the International Economic History Congress, Munich, 1965.

¹⁷ 56th Congress, 1st Session, *Senate Document No. 194*, Washington, 1900, p. 157, instructions to enumerators in 1870.

Census Office lacked the resources to carry out the work; in 1870, for the same reason and possibly because the Office doubted the value of the returns. In 1860 the returns were tabulated only by county and state.

In 1860 the census officials seem to have performed conscientiously and to have received the cooperation of respondents. At the very least it can be said that the property return was not widely ignored or neglected. The aggregate value of property reported on the population schedules exceeded the value of property assessed for tax purposes by more than 50 per cent and the estimated true value of taxable property, by almost 20 per cent. Of course not all property was subject to tax, but on the other hand some of the property listed on the tax rolls belonged to corporations and other institutions which were not enumerated in the population census.¹⁸ Additionally, individuals owning personal property worth less than \$100 were apparently not obliged to list their property in the census but presumably were obliged to list for tax purposes. Therefore, the large value of property reported on the population schedule, relative to the estimated true value of taxed property, is good evidence that the enumerators and respondents met their obligations.

Most of the original census sheets have been preserved and recorded on microfilm. The library of the University of North Carolina holds microfilms of census returns for virtually the entire South and we have had available to us two sets of samples drawn from the 1860 materials. The first consists of 1 per cent samples of the families in Baltimore, New Orleans, St. Louis, Maryland outside Baltimore, and Louisiana outside New Orleans. The second is a sample of farm operators drawn from all counties producing at least 1,000 bales of cotton in 1860.

SAMPLES FOR BALTIMORE, NEW ORLEANS, ST. LOUIS,
MARYLAND (EX BALTIMORE) AND LOUISIANA (EX NEW ORLEANS)

The samples for the three cities and two states were drawn in the following way: the first family in each sample was selected at random from the first page of the census relating to the sampled region. We then selected every hundredth family thereafter. The smallest sample is 314, the largest, 496.

¹⁸ Some were, however. For example, one railroad was returned on the population schedule in South Carolina, complete with age and occupational designation ("railroad"). See, also, the discussion of institutions below.

We carried out two chi square tests, relating to the distribution of occupied persons among industries and occupations. The test of industrial distribution gave no evidence against the hypothesis that the samples (Maryland, including Baltimore, and Louisiana, including New Orleans, the only samples for which these tests can be conducted) were properly drawn from the appropriate universes; the test of the occupational distribution showed that the samples could not have been properly drawn. But neither test can be taken very seriously. The industrial test involved very few classes and the failure of the occupational test can be ascribed to problems of classification. For example, in one case a chief cause of failure was that the sample contained too few sales clerks and too many clerks. But examination of the census tabulation suggests very strongly that the census personnel who gathered the occupational data for the published tables classified most persons who reported themselves as clerks in the group, sales clerks.

We also tested the samples by using them to predict the total wealth of the relevant universes, with the following results:

	Predicted Wealth/Actual Wealth
Baltimore	.998
Maryland, ex Baltimore	.781
New Orleans	.631
Louisiana, ex New Orleans	.938
St. Louis	.731

Three of the predictions are very far from being correct. Four plausible explanations of these results can be advanced.

1. The New Orleans sample relates to the city, whereas the published census wealth total with which the prediction is compared relates to Orleans Parish, a slightly larger unit.

2. The predictions were made by multiplying sample wealth by 100, since the samples, in fact, contain 1 per cent of the families listed by the census for each universe. However, the samples contain only true families and there is reason for supposing that the number of true families in each universe is larger than the total listed by the census. The census enumerators tended to treat hotels, boarding houses and, in at least one ward in New Orleans, multifamily dwellings as families,

rather than enumerating separately the families living in these dwellings. Consequently, our estimating multipliers are too small.¹⁹

3. The census was apparently intended to collect data on wealth owned by natural persons and we have treated the reported totals as though that intent had been realized. However, some institutionally owned property was, in fact, listed on the schedules. For example, we found property owned by convents on the Maryland schedules.

4. Wealth is very unequally distributed among the rich in the sampled regions and the samples are very small. Therefore, it is not likely that the samples accurately represent the average wealth-holdings of the very rich. Furthermore, it seems more likely that the samples understate the holdings of the rich, than that they overstate them. This proposition is subject to test. Additionally, it is possible to obtain an impression of the extent to which the failure of the samples to represent the rich distorts the size distributions computed from the samples.

We focus on wealth owned by household heads and their spouses, for reasons that should be evident. In any event, household heads and their spouses owned most of the sampled wealth: 90.4 per cent in New Orleans, 94.7 per cent in St. Louis, 83.6 per cent in Baltimore, 95.9 per cent in Maryland, outside Baltimore, and 98.6 per cent in Louisiana, outside New Orleans. The principal test relates to New Orleans, since the wealth prediction made on the basis of the New Orleans sample was least satisfactory and, therefore, the New Orleans sample appears most in need of testing. Finally, the test is conducted with data on the wealth holdings of the richest 900 odd household heads in New Orleans. Ideally the data would include wealth of *spouses*, but the omission appears to be empirically unimportant. For convenience we refer to all wealth data as "family wealth," although the reader should be aware that the measures are imperfect representations of "family wealth." Measures calculated from the test data will be referred to as measures relating to the "Universe," since the test data exhaust the classes of the universe to which they refer. The published census total of all families will be treated

¹⁹ On the other hand, our samples surely do not adequately represent families living in multifamily dwellings. Presumably the wealth holdings of these families were relatively small and therefore the samples may overstate average family wealth, compensating in some measure for the fact that the multipliers are too small.

as the universe of all families, although, as noted above, the total is surely too small.

The mean wealth of the richest 3 per cent of families in Orleans Parish ("New Orleans," hence, for convenience) exceeds the mean wealth of the richest 3 per cent in the New Orleans sample:

	Wealth per Family (<i>thousand dollars</i>)	
	Universe	Sample
Richest percentile	128	86
Second richest percentile	36	27
Third richest percentile	21	12

About two-fifths of the disparity between the predicted and the actual wealth held by all families in New Orleans is accounted for by the failure of the sample to reflect accurately the wealth holdings of the rich.

With the data at hand, limits can be set on the shares of wealth held by the richest 3 per cent of families in New Orleans. The lower bound shares are established by dividing the wealth of the richest 3 per cent by the total wealth held by New Orleans families, as reported in the published census. (They are lower bound estimates since the richest "3 per cent" of families in fact represent something less than 3 per cent of true families, as noted above.) The upper bound shares are the ratios of the wealth held by the richest 3 per cent to total wealth, as predicted by the sample, the prediction adjusted upward to account for the failure of the sample to represent appropriately the richest 3 per cent. (They are upper bound estimates since the adjusted prediction accounts for only about 80 per cent of the value of wealth returned by the census and it is highly unlikely that the relevant universe is so small a fraction of total reported wealth.) The upper and lower bound shares are compared with the sample results, below:

	Shares in Total Family Wealth (<i>per cent</i>)		
	Sample	Universe Lower Bound	Universe Upper Bound
Richest percentile	43	43	51
Second richest percentile	14	12	14
Third richest percentile	8	7	7

The failings of the sample distribution are very nearly confined to the representation of the richest 1 per cent, and even here they are not very serious, in terms of the requirements of this paper.

A simpler, less comprehensive, but perhaps as successful a test was conducted with the St. Louis sample. The richest 1 per cent of the sample was blown up to represent the universe and the richest twenty-five families in the universe (those with \$500,000 of wealth or more) were appropriately substituted into the group. When the prediction of total wealth derived from the sample is adjusted to reflect this change, the prediction accounts for 90.3 per cent of the wealth reported in the published census.

Maximum and minimum shares of wealth held by the richest 1 per cent were also calculated, as in the New Orleans case, and the range turned out to be very narrow. The range falls above the value obtained from the sample, but lies within the range obtained from the sample for New Orleans, and not markedly above the sample value for Baltimore:

	Shares in Total Family Wealth (<i>per cent</i>)			
	St. Louis Sample	St. Louis Universe		Baltimore Sample
		Lower Bound	Upper Bound	
Richest percentile	38	46	48	39

These results are encouraging, since we are interested in this paper chiefly in rural-urban differentials and the findings suggest that the samples are capable of revealing these differentials. For example, the three rural samples show the following shares of wealth held by the richest 1 per cent:

Maryland, ex Baltimore	Louisiana, ex New Orleans	Cotton Counties
16%	24%	17%

Reasoning from the results of the tests of the urban samples, described above, the share of the richest 1 per cent of wealth-holders in Maryland (ex Baltimore) computed from the sample may understate the share of wealth held by the equivalent group in the universe. But the margin for error is surely not so great as to bring into question the existence of a substantial difference between the share of wealth held by the richest 1

APPENDIX TABLE A-1

DISTRIBUTION OF GROSS WEALTH AMONG FAMILIES, ACCORDING TO SAMPLES DRAWN FROM THE MANUSCRIPT CENSUS OF 1860 FOR BALTIMORE, NEW ORLEANS, ST. LOUIS, MARYLAND (EX BALTIMORE), LOUISIANA (EX NEW ORLEANS), AND THE COTTON COUNTIES
(*per cent of gross wealth held*)

Families	Balti- more	New Orleans	St. Louis	Three Cities	Three Cities, Ad- justed	Mary- land (ex Balti- more)	Louisi- ana (ex New Orleans)	Cotton Counties
First (richest) percentile	38.5	43.0	37.6	39.6	45	16.2	23.8	16.6
Second percentile	15.0	13.6	12.6	13.1	12	9.6	13.5	8.8
Third percentile	7.3	7.7	9.0	6.9	6	7.6	7.7	6.5
Fourth percentile	6.0	4.1	4.6	6.8	6	6.5	7.5	5.5
Fifth percentile	4.9	3.2	3.9	4.1	4	5.5	5.0	4.6
Sixth percentile	3.6	2.9	3.7	3.8	4	4.7	4.0	4.1
Seventh percentile	3.5	2.2	2.8	3.0	3	4.1	3.6	3.6
Eighth percentile	3.3	2.2	2.3	2.4	2	3.7	3.0	3.2
Ninth percentile	2.7	2.1	2.3	2.3	2	3.4	2.9	3.0
Tenth percentile	2.0	1.6	1.8	1.2	1	3.2	2.8	2.7

First decile	86.8	82.6	80.6	83.2	85	64.5	73.8	58.6
Second decile	7.9	10.3	12.1	8.7	8	19.2	13.6	18.0
Third decile	3.0	4.0	4.6	4.9	5	9.0	6.2	9.7
Fourth decile	1.4	1.7	1.4	2.0	2	3.9	3.1	5.5
Fifth decile	0.6	0.9	0.7	0.7	1	2.0	1.6	3.2
Sixth decile	0.3	0.4	0.4	0.3	^b	0.9	0.9	2.0
Seventh decile	0.1	^a	0.2	0.1	^b	0.3	0.5	1.3
Eighth decile	^a	0	^a	0	0	0.1	0.2	0.9
Ninth decile	0	0	0	0	0	0	^a	0.6
Tenth decile	0	0	0	0	0	0	0	0.3
Totals	100.1	99.9	100.0	99.9	101	99.9	99.9	100.1

SOURCES: See text. The distribution "Three Cities, Adjusted" was drawn up from the distribution "Three Cities," by incorporating adjustments deemed reasonable in the light of the results of the tests of the New Orleans and St. Louis samples, discussed in the text.

^a Less than .05.

^b Less than .5.

per cent in rural Maryland and the share of wealth held by the same group in the three urban areas.²⁰

SAMPLE FOR THE COTTON COUNTIES

The cotton counties sample is a sample of 5,229 farm operators²¹ (taken in clusters of approximately five) drawn from the manuscript census records relating to counties that produced at least 1,000 bales of cotton in the year 1860. (The counties involved produced 98 per cent of U. S. cotton in that year.) The wealth covered by the sample consists of the personal wealth held by farm operators and the value of the farms that they operated.²² Therefore, the sample excludes the value of nonfarm real estate owned by farm operators and may, additionally, attribute the ownership of rental farm property to tenants, rather than owners, although the latter is by no means certain.²³ Consequently, were the sample in all other respects adequate, we would suppose that the

²⁰ For example, if the entire difference between predicted total wealth in Maryland (ex Baltimore) and the census return of wealth is attributed to sampling error with respect to the richest 1 per cent, the holdings of that group can be inflated to 34 per cent of total wealth in Maryland (ex Baltimore). But obviously this assumption is extreme and therefore it is safe to assume that the share of wealth held by this group is well below 34 per cent and, therefore, well below the share of urban wealth held by the richest 1 per cent of city dwellers.

²¹ The sample contains data drawn from the agricultural, free population, and slave schedules of the census. The first step in the sampling procedure was the selection of farms from the agricultural schedule. We then moved to the population schedule to find the farm owner. When it was discovered that the operator owned more than one farm in the sampled region, his farming properties were combined and treated as one property. This is the basis of the assertion that the sample is a sample of "farm operators." As will be evident to the reader, the statement is not precisely accurate, since, presumably, some of the units in the sample consist of farms jointly operated, e.g., by a father and son. Very rarely, however, does the census attribute the operation of a farm to more than one person.

²² This statement requires qualification in two ways. First, the sample was taken by states. Where a farmer operated more than one farm in a given state, we aggregated his property, as footnote 21 indicates. But farm properties located in different states were not aggregated, even when they were held by one man. Second, the census schedule called for the return of the value of each farm. But for several farms in the sample, the entry was not made. We suppose that in these instances the farm was rented and that the value of the farm was not listed on the schedules either because the respondent (the tenant) was regarded as an improper source of information relating to this question or because the enumerator regarded the question as one pertaining to the respondent and, therefore, the entry of the relevant value in the schedule would constitute an incorrect attribution of property to the respondent.

²³ See footnote 22.

size distribution of wealth computed from the sample would *understate* the degree of inequality of the distribution of wealth among farm operators. However, our tests suggest that operators of large farm properties are somewhat overrepresented in the sample, compensating, at least in some measure, for the characteristics of the sample that tend to minimize wealth inequalities.²⁴

COMMENT

LEE SOLTOW, Ohio University

1. Professor Gallman has constructed very interesting wealth distributions for the urban and rural sectors and a composite for the United States in 1860. His findings, particularly for holdings of the rich in the urban and rural sectors, may prove to be close to those of a national sample covering all areas of the country. The amazing thing about the distributions is the evidence of great inequality at such an early stage of development. It would be of interest to know how this might have happened in a land of opportunity.

2. I should like to confine my remarks to the conclusions of the paper. The first is the finding that inclusion or exclusion of slaves in the 1860 distribution does not really change the figures in the national distribution. It is difficult to understand this point other than to say that the number of slaves, as a per cent of the total population, was small and that inclusion of these propertyless in the lower deciles of propertyless would not matter. I certainly see why Professor Gallman used the expedient of including slaves as having no wealth. But is this not a rather callous way of looking at a human problem? Slavery is the ownership of human bodies where a few slaveholders at the top of the distribution own many at the bottom of the distribution and the poor at the bottom do not even own themselves. There were 4 million slaves valued at perhaps \$4 billion or 15 to 20 per cent of our national assets. In taking \$4

²⁴ The tests of the sample are described in *Efficiency and Farm Interdependence in an Agricultural Export Region—Sampling Procedure and Tests of the Sample*, University of North Carolina, October 20, 1965; the results of the principal tests are described in James Foust and Dale Swan, "Productivity of Antebellum Slave Labor—A Micro Approach," a paper given before the University of Chicago Workshop in Economic History, February 1967.

billion from the rich, should we not also give it to the poor as the price of freedom?

I sometimes think this problem is best seen in terms of bodies. Let me largely confine myself to adult males, age 20 and up. There were three groups in the United States: 400,000 who owned an average of ten slaves plus their own bodies; the large number of 6,600,000 adult males owning their own bodies but no slaves; and 800,000 to 900,000 adult male slaves owning nothing. Knowing the slave distribution, one can now compute the Gini concentration coefficient of slaveholders, slaveholders plus nonslaveholders, and all adult males. The addition of the last group increases concentration 20 per cent. One can go beyond bodies and use the census figures plus human-freedom valuations to calculate the effect of slavery. A 10 to 20 per cent difference in the concentration coefficient, plausibly, can be demonstrated, depending on the amount of dollar weight attached to freedom.

The whole concept may break down unless one starts with a valuation of human as well as material wealth. In Adams County, Mississippi, which includes Natchez, the dollar wealth values declared in the 1860 census give a Gini concentration coefficient of .91 for nonslave adult males. If one includes adult male slaves at zero dollars, the coefficient increases to .98. In 1870, all adult males in the county had a coefficient of .96 using the usual dollar calculation. It would certainly seem to be a mockery of emancipation to speak of wealth concentration as decreasing only from .98 to .96.

3. Professor Gallman's second, third, and fourth points deal with a model explaining how wealth inequality may have increased from 1860 to 1890. Since concentration in 1860 was greater in the urban sector than in the rural, and since the population moved, relatively, from the rural to the urban sector, the concentration must have increased. The argument is powerful. Where can one possibly find the counterpart to the valuation of fifty acres when one lives in a city?

But the urban-rural dichotomy is only one aspect of the problem of population movement. There are, for example, age-nativity considerations. If the concentration among foreign born in 1860 was greater than that of native born, and the per cent of foreign born decreased after 1860, one might expect the concentration to decrease. The average wealth of native born was three to four times that of foreign born in

1860. The per cent foreign born in the ten largest cities in 1860 decreased from 40 per cent in 1860 to 30 per cent in 1900. A city like Milwaukee had a population in which 80 per cent of its adult males were foreign born in 1860, but only 53 per cent in 1900. There were great numbers of propertyless youths who were foreign born which decreased relatively in the period. If, later, native-born groups began to predominate, homogenized by cultural institutions including education and language, wealth in some broader sense than tangible property might have become less concentrated by the turn of the century.

4. One now turns to the actual data for 1840–1860 and the turn of the century. It can not be denied that a few thousand people owned a tremendous share of total wealth in 1890 or 1900. But so did a few own a great share in 1860. A Pareto extrapolation of Gallman's 1860 A curve shows .10 per cent holding the same wealth in 1860 as .03 per cent did in 1890. His urban curve extrapolation shows the same percentage holdings of the top .03 per cent in both years. Such differences would be rather meaningless on a Lorenz curve. If one goes further to the share held by the top 9 per cent, he obtains a figure of 68 per cent from Gallman's 1860 composite and 71 per cent from Holmes' 1890 data. The interesting thing, it seems to me, is the extent of inequality in 1860, not that it might have been minutely smaller than in 1890.

Professor Gallman found little effect from his urban-rural model and felt his 1840–1890 estimates were crude and fragmentary. Perhaps we should hold in abeyance any judgment about whether or not wealth inequality increased in the last half of the last century until we have more information. It is understood that the discussion pertains to wealth distribution, not income distribution, and that it is very largely non-human wealth held by persons. Professor Gallman has presented an extremely stimulating paper.

REPLY

BY ROBERT E. GALLMAN

Since the meetings were held in March at Philadelphia two pieces of evidence have come my way that tend to provide additional support for the findings of my paper. Stanley Lebergott kindly sent me a pamphlet

published in the 1840's relating to the wealthy of Boston. (*Our First Men, A Calendar of Wealth, Fashion and Gentility*, Boston: Published by All Booksellers, 1846.) The pamphlet is similar to those produced by Moses Beach for New York. I have recomputed Table 2 of my paper, introducing the Boston evidence, and have obtained results virtually identical to my original figures.

Table 1 of my paper contains wealth distributions for 1860 that were estimated from sample evidence. An important assumption underlying the estimates was that the size distribution of wealth in the third, fifth and seventh largest cities in the U. S. in 1860 (the sample cities) was representative of the size distribution of wealth in the second through twentieth largest cities. (The precise cut-off point—i.e., the twentieth largest city—is not very important. What is important is that the sample evidence adequately represent large cities. See the fifth paragraph of Section I of my paper.)

Taylor Cousins, of the University of North Carolina, has now shown me a wealth distribution he has derived for Richmond from an 1860 census sample he has drawn. The distribution is very similar to the "three cities" distribution underlying Table 1 (see, also, Appendix Table A-1). Richmond was the twenty-fifth largest city in the U. S. in 1860. The finding lends support to my assumption that wealth was markedly less equally distributed in cities than elsewhere.

I certainly have no quarrel with Professor Soltow's generous and thoughtful review of my paper. Soltow is right to underline the striking inequality of wealth distribution before the Civil War, the limited changes in the distribution across time revealed by my estimating procedures, and the desirability of working with more complicated models than those I used. So far as the last point is concerned, the 1860 census materials permit one to work with many potentially interesting variables (see the first page of the appendix).

There are two points relating to the institution of slavery, however, that call for some comment. First of all, the size distribution of wealth *within* the plantation South in 1860 is decidedly affected by the way in which slaves are regarded, as a comparison of the distributions contained in the notes to my text Table 1 ("Louisiana, ex New Orleans"; "Cotton Counties") with those in Appendix Table A-1 will show. When slaves are treated as potential property holders the distributions are very much

more unequal than when they are regarded as property. Professor Soltow's comments and examples tend to obscure this point.

It is the national distribution that is unaffected by the convention adopted with respect to slaves and the explanation of this result lies not simply in the limited fraction of the total population held in bondage in 1860, as Professor Soltow suggests. If slaves are regarded as property, then the rich (i.e., the richest 1, 2, 3, etc. per cent) in the plantation South are far and away the wealthiest group in the nation and their holdings distend the wealth of those at the peak of the wealth pyramid. However, if slaves are treated not as property, but as potential property holders, the national distribution is affected in two ways. First, the *average* holding of the very rich *falls* markedly. However, now the population of potential wealth holders (families) is augmented by a substantial number of families which, in fact, hold no wealth at all. These two changes compensate, at the national level, so that the various decile groupings (percentile, within the richest decile) hold the same *fraction* of total wealth when slaves are treated as potential wealth holders as when they are regarded as property. (See the last paragraph of Section II of my paper.)

The second point relates to Professor Soltow's proposal that the value of free men be included in aggregate wealth and the ownership of each free man's "body" be attributed to him. Soltow argues that such a procedure would alter the wealth distributions, as well as the effect of emancipation on the wealth distributions.

No doubt he is right, but one cannot be sure how important these changes would be. Soltow attempts one calculation. But it does not really tell us what we want to know, since it is restricted to the distribution of ownership of human capital—indeed, to human capital implicit in and owned by males 20 years old or older—and rests on the assumption that all males 20 years and older are of equal economic value, an indefensible assumption.

Soltow also proposes that the matter of emancipation be dealt with by attributing wealth holdings to each slave equal to the price he would have brought under slavery. But slave prices were formed under a plantation system run by compulsion. The freed slave's economic value might be more or less, under a tenant farm system or a plantation system with less power in the hands of the planter. Additionally, the slave sys-

tem limited the outlets open to slave workers. The freed slave, with his fate in his own two hands, might find opportunities open to him which could not have been exploited under the slave system.

The last point should not be stressed unduly. Indeed, the selection of words used to make it draws attention to another difficulty with the Soltow proposal. How many freed slaves, now tenant farmers, really held their fate in their own two hands after the Civil War? Soltow treats freedom as absolute, but it is not. (My own handling of the problem is subject to the same criticism.) The Negroes in the South simply weren't as free, in any meaningful sense of the term, as western farmers, southern whites, or northern factory workers.

Limitations on their freedom surely restricted the productive value of freed slaves. But there is more to it than that. Soltow hints that the value of a human to himself depends not only on production, but also consumption criteria. Freedom has value to him. Then should not the restrictions on freedom suffered by the freed slaves be also taken into account when Soltow's "human freedom valuations" are assigned?

The point is *not* that Soltow's essential notions are inappropriate, but that they involve more than Soltow was able to suggest in his brief remarks.