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POVERTY AND PROSPERITY:
A LONGITUDINAL STUDY OF WEALTH ACCUMULATION, 1850-1860

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ABSTRACT

This paper depicts and analyzes the wealth distribution and wealth mobility in a national sample of nearly 1,600 households matched in the 1850 and 1860 manuscript schedules of the census. Gini coefficients, a transition matrix, the Shorrocks measure, and a regression model of wealth accumulation are estimated from these data. The findings shed light on theories of the wealth distribution, life-cycle behavior, regional economic performance, and the empirical basis for critiques of capitalism. Blacks accumulated slowly but the foreign born performed remarkably well. The distribution of wealth was relatively unequal on the frontier but the region performed well in reducing propertylessness. Residents of eastern cities were less fluid than other residents of the rural North. Blue collar workers and the unskilled declined relative to farmers and white-collar workers during the decade, which suggests that other aspects of wealth determination may have outweighed stretching of the wage structure as an explanation of growing inequality during industrialization. Comparisons with data on net family assets collected by the National Longitudinal Survey in the 1960s and 1970s show that mid-nineteenth century households were less mobile at the lower end but more mobile at the upper end of the wealth distribution.

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Scholars have long sought explanations for the distribution and accumulation of wealth in nineteenth-century America. Henry George (1881) argued that distributional inequality could be traced to land rents that accumulated during the process of settlement but Frederick Jackson Turner (1920) emphasized the leveling effect of the frontier, through the availability of cheap land and as a "safety-valve," in promoting equality. Jeffrey Williamson and Peter Lindert (1980) cite a capital-deepening process of industrialization that favored skilled labor while Edward Pessen (1973), Robert Gallman (1978), Lee Soltow (1975), Stanley Lebergott (1976), and others have debated the extent to which discrimination and other social barriers restricted economic mobility.

This paper investigates these hypotheses by estimating measures of wealth distribution and mobility and by estimating a model of household wealth accumulation. Earlier efforts have studied these issues with cross-section data, which depict the distribution of wealth but are incapable of addressing questions of mobility (c.f. Soltow, 1975; Atack and Bateman, 1981), while work based on longitudinal data has involved relatively small geographic areas such as Utah or eastern Texas (Kearl and Pope, 1984; Schaefer, 1987). This study departs from previous research in its use of a national sample of longitudinal data. Gini coefficients, a transition matrix, Shorrocks, and other measures portray the distribution of wealth and mobility that occurred during America's industrial revolution.

I. THE DISTRIBUTION OF WEALTH IN 1850 AND 1860

Enumerators of the 1850 and 1860 federal censuses recorded an individual's socioeconomic characteristics, such as age, sex, color, nativity, occupation, and wealth. Wealth included real (1850 and 1860) and

personal (1860 only) property. Through a process of census matching a national sample of longitudinal data was created for 1,581 male-headed households (Steckel, 1988). The matching technique used alphabetical indexes of households heads, which exist for each state in the 1850 census, to track families. By imposing the requirement that households selected in 1860 had at least one native-born child aged 10 or above, the reported state of birth of the youngest child aged 10 or above acted as a pointer to locate the family in 1850. The procedure obviously confined the sample to a subset of the total population but a large share of the population was contained in the category of established households.¹ Nevertheless, the sample differs in composition from those of earlier wealth studies, a point that should be noted in comparing results. In particular, compared with adult males in 1860 the household heads in the sample were older (average age was 46.8) and contained fewer foreign born (8.3 percent), more farmers (61 percent), and more southerners (46.6 percent if Texas is included). After adjusting for differences in composition, however, the findings were similar to those of Soltow (1975) and Atack and Bateman (1981; 1987).²

Because the 1850 census did not report personal wealth it is important to consider the composition of a household's wealth in the study of mobility. In comparing values of real estate one must not mistake shifts in portfolio composition for changes in net worth. Yet, study of the 1860 cross section, which reports real estate and personal wealth, indicates that the composition of holdings was similar for most subgroups of the population.³ Moreover, only a small share of the value of real estate was mortgaged during this era.⁴ Because real estate was a fairly good index of net worth the analysis emphasizes this aspect of total wealth. However, results that might arise from differences in the household's portfolio of

wealth are noted throughout and the paper makes some comparisons of real wealth in 1850 with total wealth in 1860.

Before discussing results it is appropriate to consider the major economic features of the decade under study. The industrial revolution in the United States was well underway by the 1850s but the end points of the time period were not marked by unusual prosperity or depression. Gold discoveries and growing agricultural exports to Europe contributed to economic growth from the late 1840s to the middle years of the decade. The upswing was halted by the Panic of 1857, a financial convulsion from which recovery was substantially complete by 1860.

Table 1 shows that a slight decline occurred in the overall concentration of real wealth in the linked sample.⁵ Between 1850 and 1860 the Gini coefficient fell from 0.783 to 0.771 but the top 1 percent of households increased their share of real wealth from 19.6 percent to 23.8 percent. A decline in propertylessness from 40.9 to 25.9 percent helped to offset the growth in concentration at the top. As measured by a Gini coefficient, wealth became more concentrated in urban areas but less concentrated in rural areas and in the South and the frontier West. Although the Gini coefficient declined slightly in the North, the share of real wealth held by the very rich increased by several percentage points.⁶

II. MOBILITY

The transition matrix in Table 2 reveals a substantial undercurrent of movement that cannot be seen from cross-section data.⁷ Rates of movement were lowest near the extremes of the distribution. Among those with zero real estate in 1850, for example, about 48.4 percent also had zero real estate in 1860 but nearly 30 percent made it to the sixth decile or

beyond and 4.6 percent reached the top decile. Among those in the top decile in 1850, 46.2 percent remained in that position while 11.5 percent fell at or below the fifth decile in 1860 and 7.7 percent plummeted to zero real wealth. Those near the middle of the distribution tended to fall back rather than advance; About 23.9 percent of those who began in the sixth decile, for example, fell to zero real wealth while only 14 percent attained one of the top 3 deciles in 1860.

Compared with a frontier population in Utah studied by Kearn and Pope (1984), this sample experienced less upward mobility among the lower classes but roughly the same pattern of movement among those who were initially rich. In Utah about 46.4 percent persisted in the top decile (using the wealth of the linked households in 1860 and 1870), and 5 percent fell to the lowest decile in 1870. Only 17 percent (versus 48.4 percent in the national sample) remained at the zero-wealth category while 22.3 percent (versus 20.9 percent in the national sample) of those in the four lowest deciles made it to the top four deciles. These comparisons suggest that conditions on the frontier were favorable for reducing the incidence of propertylessness.

Who got ahead? Comparisons of the average decile position (Table 3) attained by various groups in 1850 and 1860 clearly show life-cycle patterns of behavior, results largely unaffected by use of real or total wealth in 1860. Real wealth increased with age in the 1850 cross-section; the average decile position grew monotonically from 3.6 for the under 25 group to 6.9 among those aged 55 and above.⁸ By 1860 the average decile position of those under age 35 (in 1850) had increased while the position of those aged 45 and above had declined. Thus, the young accumulated real wealth relatively rapidly, a process that was probably boosted by inheritances and

inter vivos transfers, while the wealth of households headed by older men tended to grow slowly or to diminish. The average decile position advanced among farmers and white collar workers but declined for blue collar workers and the unskilled. Farmers and white collar workers, who owned relatively more real estate than blue collar workers or the unskilled, benefited from agricultural prosperity that was heavily fueled by growth of grain and cotton exports to Europe during the 1850s. The relative position of the native born, urban residents and northerners remained approximately the same, rural residents and southerners advanced slightly, and the foreign born improved in holdings of real wealth.⁹

The Shorrocks (1978) measure focuses on the "stayers," or those who remained in the same decile position. Defined as $(N - \text{tr}(r_{ij})) / (N-1)$ where N is the size of the matrix, the measure ranges from zero to one, with a number closer to one indicating greater mobility. It takes on the value of 1.0 if the probabilities of movement to other deciles were equal regardless of starting position, i.e. if all the diagonal elements of the transition matrix equalled 0.10, and it equals 0.0 if all households remained at the same decile position. The measure is uninformative about movements within that part of the distribution that are off the diagonal of the transition matrix. According to the Shorrocks measures given in Table 4, high rates of mobility occurred among those under age 25 (.738) and among white collar workers (.639), blue collar workers (.635), and the unskilled (.642). The least mobile included the foreign born (.569), southerners (.587), farmers (.594), and those aged 35 to 44 in 1850 (.597). As a group the members of the linked sample were much less mobile than the Utah sample examined by Kearn and Pope. The Shorrocks measure ranged from .874 to .936 in the Utah

data, but rates of persistence in the highest decile were similar in both samples.

The off-diagonal elements of the transition matrix convey additional insights about the experiences of particular subgroups. Table 5 shows that the most upwardly mobile groups, defined by the share who rose two or more deciles, included white collar workers (.284), residents of the West (.253), and those under age 35 in 1850. Those subject to the greatest downward mobility, defined by the share who declined two or more deciles, included older persons (.367 among those aged 55+ and .435 among those aged 45 to 54 in 1850), residents of the North (.359), and the native born (.315). About 20 percent of all families had no real estate in both 1850 and 1860, which is substantially above the figure of about 1.8 percent who remained at zero wealth (real and personal) in the Utah data. The most likely groups to have remained at zero real wealth in both years were the unskilled (.555), those under age 25 (.393), urban residents (.342), and blue collar workers (.327). The most rapid rates of movement out of the zero real wealth category occurred among farmers (.879), those aged 55 or more (.878), white collar workers (.866), and residents of the frontier West (.846).

Comparisons with modern data suggest that households in the mid-nineteenth century were less mobile at the lower end but more mobile at the upper end of the wealth distribution.¹⁰ According to data on net family assets collected over a ten year period by the National Longitudinal Survey in the 1960s and the 1970s (samples of older women and mature men) the persistence rate was 29.0 percent in the lowest decile but 59.4 percent in the highest decile (N = 4244). Comparisons with Table 4 show that persistence in the top decile in modern data exceeded that of mid-nineteenth century southerners. Mobility as measured by the shares who moved two or

more deciles was slightly lower in the modern data. In the NLS about 17.9 percent of the households advanced by two or more deciles while 17.2 percent declined by two or more deciles. The Shorrocks measure was 0.788 in the modern data, which is 0.183 above that found for the mid-nineteenth century.

Mobility can also be measured by the average value of wealth held in 1860 relative to wealth held in 1850, a technique useful for monitoring performance by wealth class. Figure 1 shows that this relationship was approximately linear over the range of values where the data were concentrated although the estimated regression was a cubic:

$$R60 = 1846.5 + 1.56(R50) + 0.0000187(R50)^2 - 0.00000000503(R50)^3 \quad (1)$$

(5.16) (7.09) (1.30) (-2.75)

where R60 is real estate in 1860 and R50 denotes real estate in 1850, $R^2 = 0.20$, $N = 1581$, and t-values are given in parentheses. The rich were getting richer in the sense that they had relatively large absolute increases in real wealth but this outcome was attributable to large amounts of real estate held in 1850. Instead, one should compare rates of growth. That the rate was highest for those with little real wealth in 1850 reflects a shift in portfolio composition noted in footnote 3, and therefore comparisons with the low end of the distribution are uncertain. The rich, however, had slightly lower average annual rates of accumulation than the middle class.¹¹ The rate was 8.0 percent at \$3,000, for example, but 6.4 percent at \$9,000 of real wealth in 1850. While it is possible that middle class households pursued more aggressive investment strategies, seeking to become rich, while the rich avoided high yielding but high-risk portfolios that might spell disaster, it is also likely that older individuals, who owned more wealth than the young, engaged in relatively more consumption as part of a life cycle strategy. The lower rates of accumulation for the rich

accords with Stanley Lebergott's (1976) conclusion that the wealth of rich grew less rapidly than that of the economy as a whole from from the late nineteenth century through the mid-twentieth century.

III. STATISTICAL ANALYSIS

The preceding discussion identified several influences on wealth distribution and accumulation. A regression model of household movement within the wealth distribution clarifies the independent role of these factors. A conventional model would include economic and demographic characteristics of the household and region of residence. The specific model employed here is:

$$P_{60} - P_{50} = \beta_0 + \beta_h X_h + \beta_o X_o + \beta_r X_r + e \quad (2)$$

where P_i denotes the percentile position of the household within the cumulative wealth distribution of year i , X_h is a vector of characteristics of the household or its head, X_o is a vector of the occupational choices of the household head in 1850 and 1860, X_r represents the regional location possibilities for the household in 1850 and 1860, and e is an error term. Equation (2) is motivated by a variant of the life-cycle model of savings proposed by Modigliani and Brumberg (1954) and modified by Tobin (1967) and others. Because the dependent variable measures the change in household position the household vector includes a linear term in age of the head. Yet recent research shows the inadequacies of life-cycle factors alone and indicates the importance of earnings in explaining the distribution and accumulation of wealth (White, 1978; Wolff, 1981).¹² Therefore equation (1) incorporates proxies for earnings that would follow from a human-capital model (see, for example, Mincer, 1974). These proxies include a measure of education (literacy), the occupational path followed by the household head,

and the regional location path of the household. In addition, work on the sources of earnings in nineteenth-century households points to the importance of child employment (Goldin, 1979) and therefore the equation includes variables for the ages of children. The vector of household characteristics incorporates variables for ethnicity based on the hypothesis that discrimination and barriers to social mobility influenced earnings.

The plausible nature of the findings, reported in Table 6, supports the credibility of the underlying micro data base.¹³ The similarity of results for regressions involving real or real and total wealth suggests that composition effects were relatively unimportant. As expected, the change in percentile position declined with age, reaching zero at approximately age 37.2 in both regression models if other independent variables are evaluated at their sample means. As anticipated, the illiterate and blacks added less to wealth but interestingly, the variables for the age composition of children were statistically insignificant, which suggests that the earnings of children may have been approximately offset by expenditures on them. The foreign born from England actually accumulated more than the native born but the non-English speaking foreign born probably accumulated personal wealth less rapidly than the native born.

The effect of occupation paths on accumulation must be considered in light of patterns of wealth composition noted in footnote 3. The negative coefficients shown for changes from farmer to blue collar or to unskilled could reflect, in part, less desire to hold real estate but the results in the second regression indicate that their total wealth also declined relative to those who remained farmers. Those who continued as unskilled or blue-collar workers, however, declined unambiguously relative to those who remained farmers or white-collar workers.

Interregional migration was not systematically associated with improved performance; in fact, those who moved from the North to the West had relatively less real wealth by 1860 than those who remained.¹⁴ Western residents in both census years probably moved to that region in the 1840s and by 1860 had done significantly better than all other regional location possibilities. These results point to a long recovery period on investments in interregional migration, a finding consistent with studies on nineteenth-century and on modern data that report a negative or no significant positive effect of migration on wealth or income within a time span of a few years (Schaefer, 1987; Grant and Vanderkamp, 1980; Wertheimer, 1970).¹⁵ It is also possible that the measured relationship between migration and accumulation was influenced by sample selectivity: those who had a good accumulation experience may have been less likely to migrate.

IV. IMPLICATIONS

Several cross-section studies show that the foreign born had relatively low wealth during the nineteenth century (see, for example, Soltow, 1975). Language barriers, illiteracy, unfamiliarity with American conventions and institutions, lack of inherited wealth, and discrimination have been cited as factors contributing to the low economic status of this group. Analysis of data from the linked sample suggests that explanations should focus more on their condition at the time of arrival rather than long-term barriers to progress thereafter. Based on changes in average decile positions reported in Table 3, progress of the foreign born exceeded slightly or was about about the same as that of natives while a test on the coefficients in the second regression shows that the English-born outperformed the non-English speaking, a finding that supports Soltow's (1975)

emphasis on language and communication skills as an ingredient in the progress of the foreign born. The finding that many foreign born were upwardly mobile suggests that the small wealth holdings of newly arrived foreigners reported by others may be explained by factors other than institutional constraints on upward mobility, such as their youth and relatively high illiteracy rates. Moreover, analogies with interregional migration in the United States indicate that the poor were more likely to move, long-distance moves reduced or depleted assets, and that the recovery period on investments in migration were reasonably long (see Atack and Bateman, 1987; Steckel, 1987).

Edward Pessen (1973) drew conclusions about rigidity in antebellum American society in part from tax rolls which, he argued, showed a perpetuation of the very rich in four eastern cities. The linked sample of households gives perspective on his sample. Were eastern cities different from the rest of the country? How complete is the picture of mobility based only on study of the very rich? The results are mixed on these questions. The Shorrocks measure of mobility differed little between urban (.609) and rural (.604) areas but the share that remained in the top decile was considerably higher in urban (.571) compared with rural (.438) locations. According to these measures, urban areas were most like the South, where the Shorrocks measure was .581 and the repeat rate in the top decile was .551, and least like the North as a whole where the Shorrocks measure was .619 and only 36.5 percent of households remained in the top decile. Thus the rural North exhibited considerably more mobility than eastern cities. Therefore generalization from Pessen's data would overstate the perpetuation of the rich in the country as a whole.

A focus on the rich misses the important and interesting issue of the cycle of propertylessness. In the linked sample about 19.8 percent of the households reported zero real wealth in both census years but the figure was nearly twice as high in urban (.342) versus rural (.183) areas. Thus the greater average wealth and higher persistence rates of the rich typical of the cities were highly visible against the urban backdrop of a large share of propertyless households (.520), many of whom failed to accumulate real wealth. The high percentage without real property in urban areas was attributable substantially to large concentrations of foreign born, the young, and the unskilled. Yet the rate of upward mobility, measured by the share who climbed two or more deciles, was relatively high among the young and about the equal among foreign (.182) and native born (.173), while the unskilled had the lowest rate of advancement (.082). These results suggest that the cycle of propertylessness in urban areas during the 1850s was driven in part by the poor economic performance of the unskilled.

Jeffrey Williamson and Peter Lindert (1980) argue that inequality of wealth and income increased in the United States after 1820 through a process of wage "stretching," which their general equilibrium analysis attributes principally to higher growth rates in the demand for skilled as opposed to unskilled labor. Others have debated the conceptual and empirical basis of their claims (Gross, 1985; Margo and Villaflor, 1987). The results of this analysis are mixed for the argument of wage stretching. As predicted, the relative position of the unskilled declined relative to other workers. But the large decline of blue-collar workers compared with farmers and white-collar workers and the small decline of the unskilled relative to blue-collar workers suggest that other dimensions of inequality increase may have outweighed any stretching of the wage structure.

The results on wealth distribution and accumulation engage the debate over regional economic performance. Inequality was relatively great in the cities and in the South while the rural North came closest to what Jeremy Atack and Fred Bateman (1981) refer to as the "egalitarian ideal" in the distribution of wealth. Yet, contrary to democratic and egalitarian notions of the frontier West held by Turner (1920) and others, inequality of real wealth, as measured by a Gini coefficient and by the share held by the top 20 percent, substantially exceeded that of the North as a whole and was nearly as high as that in urban areas and in the South. The frontier West, however, performed better than any other region in eliminating poverty as measured by the share who reported zero wealth in both census years. Moreover, those who resided in the West in 1850 and 1860 added to their wealth more rapidly than residents who followed other regional location possibilities, which confirms the importance of early settlement on or near the frontier to economic success reported by Kearl and Pope (1984) for Utah and more recently by Schaefer (1987) for the antebellum Southwest. Thus the West had egalitarian attributes that emanated from rapid accumulation, whereby a broad spectrum of households increased their wealth, and from conditions that tended to reduce propertylessness.

By the early twentieth century scholars and commentators had espoused nearly every possible position about the size and trend in the distribution of income and wealth in industrial countries (Lindert, 1986). Marx and Engles, for example, deplored the concentration of wealth among the rich and the high rate of propertylessness under capitalism while, a generation later, Alfred Marshall alleged that inequality was declining. The case of the United States at mid-century shows that less than 20 percent of the households were without real property in both census years and

although the rich had large gains in wealth their rate of accumulation was slightly below that for the middle class. This example casts doubt on the socialist critique of capitalism as a system that perpetuated a high degree of inequality.

IV. CONCLUDING REMARKS

This paper has investigated the influence of household characteristics and regional attributes on the distribution and accumulation of real wealth in a linked sample of established households. The analysis shows that blacks accumulated slowly but the foreign born performed remarkably well in an model that controlled for age, literacy, and occupation. The rich had large gains in absolute wealth but their rate of accumulation was below that of the middle class. Contrary to egalitarian notions of the frontier, the distribution of wealth in this region was relatively unequal but the area performed well in reducing propertylessness. Eastern cities, which have been the object of earlier generalizations on economic mobility, exhibited considerable less fluidity than the rural North. The finding that blue-collar workers and the unskilled declined relative to farmers and white-collar workers during the decade of the 1850s suggests that other aspects of wealth determination may have outweighed stretching of the wage structure as an explanation of growing inequality during industrialization. Comparisons with data on net family assets collected by the National Longitudinal Survey in the 1960s and 1970s show that mid-nineteenth century households were less mobile at the lower end but more mobile at the upper end of the wealth distribution.

Table 1: Characteristics of the Distribution of Wealth

Year	Group	Type	N	Gini	% with	% of Wealth Held by		
						Zero	Top 1%	Top 5%
1850	Total	Real	1581	0.783	40.9	19.6	46.8	81.7
1860	Total	Real	1581	0.771	25.9	23.8	50.9	79.9
1860	Total	Total	1581	0.761	7.8	20.5	48.5	80.2
1850	Rural	Real	1429	0.779	39.7	21.1	47.1	80.9
1860	Rural	Real	1396	0.760	23.8	23.7	50.2	78.6
1850	Urban	Real	152	0.768	52.0	9.9	36.2	80.9
1860	Urban	Real	185	0.805	42.2	24.5	50.7	84.3
1850	North	Real	728	0.727	40.1	12.3	36.4	75.6
1860	North	Real	627	0.717	26.5	17.8	43.3	73.7
1850	South	Real	671	0.817	42.6	22.3	53.1	86.0
1860	South	Real	609	0.805	27.4	27.0	55.7	84.3
1850	West ^a	Real	182	0.799	37.9	17.2	53.6	84.4
1860	West ^a	Real	345	0.752	22.3	21.8	47.6	78.7

Source: Manuscript schedules of the 1850 and 1860 censuses.

a. This region approximates the frontier and includes Wisconsin, Minnesota, Iowa, Kansas, Oklahoma, Texas, and states and territories further west. The North includes New England, the Middle Atlantic states (including Delaware), and the North Central states excluded from the West. The South includes all states outside the North and the West. Urban includes all cities, towns, and villages enumerated in the manuscript schedules of the census.

Table 2: Transition Matrix of Real Wealth in the Linked Sample, 1850-1860

	1860 Decile								Average		
	3	4	5	6	7	8	9	10	N	Decile	
1850											
Decile 4	.484	.113	.105	.088	.074	.046	.043	.046	647	4.70	
5	.298	.193	.170	.140	.076	.064	.041	.018	171	4.95	
6	.239	.148	.155	.134	.183	.070	.056	.014	142	5.38	
7	.166	.077	.142	.160	.213	.095	.101	.047	169	6.11	
8	.148	.040	.064	.141	.161	.175	.181	.101	149	6.88	
9	.095	.041	.020	.048	.122	.163	.286	.225	147	7.82	
10	.077	.006	.032	.039	.051	.109	.224	.462	156	8.51	
N	474	153	159	161	173	134	164	163	1581		

Source: Manuscript schedules of the 1850 and 1860 censuses.

Table 3: Average Decile Position by Census Year

Group	N	1850	1860, Real	1860, Total
Sample	1581	5.4	5.5	5.6
AGE IN 1850				
Under 25	56	3.6	4.1	4.3
25-34	635	4.8	5.1	5.1
35-44	570	5.7	5.8	5.9
45-54	271	6.4	6.0	6.0
55+	49	6.9	6.8	6.6
OCCUPATION IN 1850				
Farmer	920	5.9	6.0	6.1
White Collar	194	6.2	6.5	6.8
Blue Collar	306	4.7	4.1	4.0
Unskilled	110	3.0	2.5	2.2
ETHNICITY				
Native-Born	1448	5.5	5.5	5.6
Foreign-Born	133	5.1	5.3	5.1
REGION IN 1850				
Rural	1429	5.4	5.5	5.6
Urban	152	5.4	5.3	5.4
North	728	5.6	5.6	5.3
South	671	5.3	5.5	5.8
West (frontier)	182	5.5	5.4	5.7

Source: Manuscript schedules of the 1850 and 1860 censuses.

Table 4: Stayers in the Sample and Shorrocks Measure, 1850-1860

Group	Decile							Shorrocks Measure ^a
	4	5	6	7	8	9	10	
Sample	.113	.170	.134	.213	.175	.286	.462	.605
AGE								
Under 25, 1850	.105	.250	.000	.000	.000	.000	.000	.738
25-34, 1850	.137	.137	.167	.161	.233	.316	.395	.606
35-44, 1850	.103	.191	.111	.257	.193	.277	.491	.597
45-54, 1850	.064	.111	.125	.269	.128	.270	.449	.620
55+, 1850	.000	.500	.000	.000	.000	.285	.583	.626
OCCUPATION, 1850								
Farmer	.115	.219	.150	.235	.183	.333	.423	.594
White Collar	.069	.000	.083	.167	.158	.231	.537	.639
Blue Collar	.110	.069	.111	.172	.136	.227	.462	.635
Unskilled	.154	.067	.000	.000	.000	.000	1.000	.642
ETHNICITY								
Native-Born	.113	.166	.120	.210	.169	.299	.454	.608
Foreign-Born	.108	.214	.333	.250	.286	.154	.539	.569
REGION, 1850								
Rural	.123	.175	.133	.200	.181	.273	.438	.609
Urban	.038	.000	.143	.444	.000	.368	.571	.604
North	.110	.140	.090	.196	.191	.329	.397	.628
South	.108	.206	.182	.235	.188	.268	.532	.587
West (frontier)	.145	.083	.150	.250	.091	.133	.500	.628

Source: Manuscript schedules of the 1850 and 1860 censuses.

a. Households that fell into the first three deciles had zero wealth in both periods. The Shorrocks measure was calculated assuming that the proportion of stayers in each of the first three deciles was 1.00.

Table 5: Percentage Whose Decile Position Declined or Increased
and Percentage with Zero Real Estate in 1850 and 1860

Group	Deciles Declined		Deciles Increased		Remained at Zero
	1 or More	2 or More	1 or More	2 or More	
Sample	.310	.206	.304	.182	.198
AGE IN 1850					
Under 25	.196	.161	.304	.196	.393
25-34	.261	.187	.335	.205	.230
35-44	.311	.198	.318	.181	.168
45-54	.435	.258	.207	.137	.159
55+	.367	.286	.286	.122	.122
OCCUPATION IN 1850					
Farmer	.348	.217	.323	.186	.121
White Collar	.284	.216	.376	.284	.134
Blue Collar	.294	.209	.242	.141	.327
Unskilled	.136	.100	.164	.082	.555
ETHNICITY					
Native-Born	.315	.212	.307	.182	.191
Foreign-Born	.256	.135	.271	.173	.271
REGION IN 1850					
Rural	.320	.212	.311	.183	.183
Urban	.217	.145	.237	.171	.342
North	.359	.229	.265	.152	.194
South	.255	.185	.325	.194	.222
West (frontier)	.319	.187	.385	.253	.126

Source: Manuscript schedules of the 1850 and 1860 censuses.

Table 6: Explaining the Change in Percentile Position Comparing Real Estate in Both Census Years, and Real Estate in 1850 and Total Wealth in 1860

Variable	Real		Sample Mean	Real and Total	
	Coeff.	t-value		Coeff.	t-value
Age in 1850	-0.337	-2.90	36.90	-0.392	-3.46
No. Chil < 10, 1850	-0.509	-0.73	2.57	-0.799	-1.17
No. Chil \geq 10, 1850	0.139	0.24	1.35	-0.141	-0.25
No. Chil < 10, 1860	0.710	1.35	1.92	0.484	0.94
No. Chil \geq 10, 1860	0.102	0.15	2.94	0.635	0.95
Illiterate	-1.87	-0.70	0.077	-4.64	-1.76
OCCUPATION IN 1850, 1860					
White Collar, White Collar	1.01	0.35	0.079	4.14	1.49
White Collar, Blue Collar	-1.36	-0.19	0.0095	-0.354	-0.05
White Collar, Farmer	10.58	2.36	0.026	12.09	2.77
Blue Collar, White Collar	7.32	1.37	0.018	5.16	0.99
Blue Collar, Blue Collar	-7.05	-2.86	0.112	-7.80	-3.25
Blue Collar, Unskilled	-16.55	-2.48	0.011	-17.89	-2.75
Blue Collar, Farmer	2.97	0.86	0.045	0.560	0.17
Unskilled, Blue Collar	-6.16	-0.89	0.011	-8.21	-1.22
Unskilled, Unskilled	-7.65	-1.55	0.022	-8.96	-1.86
Unskilled, Farmer	8.79	2.18	0.032	6.68	1.70
Farmer, White Collar	0.0966	0.02	0.026	1.97	0.45
Farmer, Blue Collar	-6.21	-1.57	0.033	-8.57	-2.22
Farmer, Unskilled	-22.35	-4.93	0.025	-23.56	-5.33
Other	-2.03	-0.68	0.065	-1.83	-0.63

Table 6 (con't)

Variable	Real			Total	
	Coeff.	t-value	Sample Mean	Coeff.	t-value
ETHNICITY					
Foreign-born, England	6.14	1.33	0.024	5.60	1.25
Foreign-born, Ireland	3.33	0.81	0.032	-0.951	-0.24
Foreign-born, Other	-3.30	-0.74	0.028	-5.11	-1.18
Black	-10.47	-1.27	0.0076	-17.44	-2.16
REGION IN 1850, 1860					
Rural, Urban	-0.869	-0.29	0.063	0.676	0.23
Urban, Rural	0.185	0.05	0.042	2.64	0.75
Urban, Urban	-1.65	-0.48	0.054	0.653	0.20
North, West	-8.07	-2.78	0.069	-3.83	-1.35
South, South	1.25	0.75	0.384	7.29	4.48
South, West	-2.83	-0.72	0.035	7.70	2.02
West, West	5.13	2.14	0.114	11.66	4.98
Other	1.22	0.19	0.0089	7.26	1.13
Constant	13.04	2.73		11.50	2.47
Adjusted R ²		0.05		0.08	
Std. Error of Est.		27.50		26.81	
Mean of Dependent Var.		0.15		0.11	
F _{32,1548}		3.34		5.53	
Sample Size		1581		1581	

Source: Manuscript schedules of the 1850 and 1860 censuses. Dependent variable = percentile position in 1860 - percentile position in 1850.

Control Group: Native-born whites who remained farmers in the rural North.

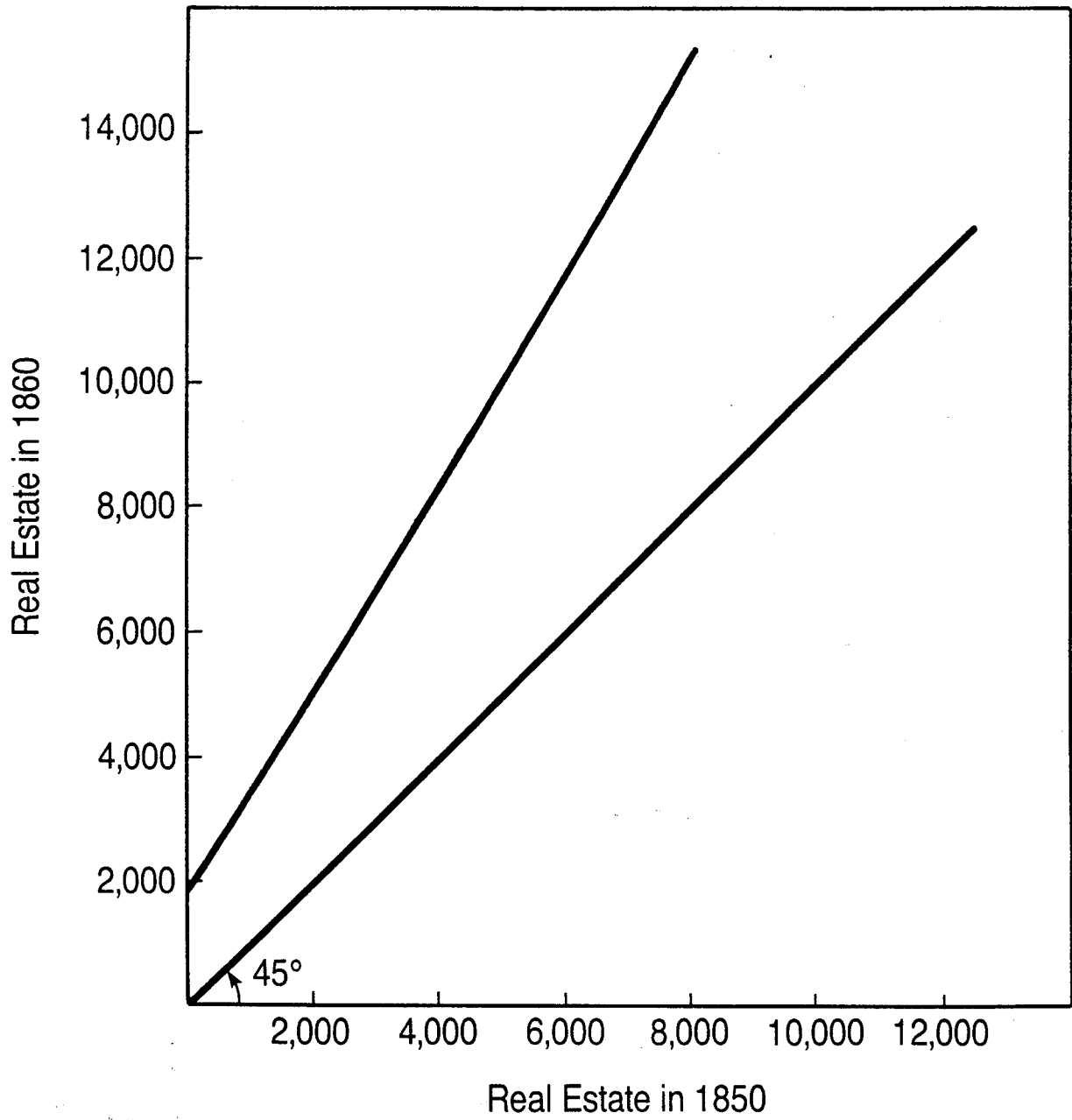


Figure 1
Value of Real Estate in 1850 and 1860

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FOOTNOTES

1. The wealthy in 1860 had slightly lower chances of being found in 1850. The expected probability of a match declined by 2.2 percentage points as the level of real wealth increased from \$0 to \$5,000 (see Steckel, 1988).

2. Lee Soltow (1975) conducted the major earlier study with a national focus on the distribution of wealth in the mid-nineteenth century. From a data base of males aged 20 and above, he reports a Gini coefficient of 0.832 for total estate (real plus personal) in 1860, which exceeds the figure in the matched sample by 0.077. Based on Soltow's regression equation (p. 110), nearly two-thirds of the difference is explained by composition effects of age, nativity, occupation, and region of residence. Much of the remaining difference may be attributable to the exclusion from the matched sample of unmarried men, a group that was probably disproportionately young and poor. Other differences, possibly attributable to contrasts in sample composition or sampling error, also exist. Soltow found, for example, that the share of real estate held by the top 1 percent declined from 30 to 29 percent while the corresponding figures from the matched sample are 19.6 and 23.8 percent, but without knowing more about Soltow's top 1 percent it is difficult to offer an explanation in terms of sample composition.

Jeremy Atack and Fred Bateman (1981; 1987) report a Gini coefficient of 0.63 in their study of rural northern households in 1860, and the corresponding Gini coefficient (real and personal property) in the sample of matched households was 0.671. The data used by Atack and Bateman, however, contained relatively more observations from states, such as Indiana and Illinois, that had low Gini coefficients, and relatively fewer observations from states, such as New Jersey and Pennsylvania, that had high Gini

coefficients. If the state-level Gini coefficients reported by Atack and Bateman are weighted by the proportions in the matched sample then the resulting Gini coefficient equals 0.629, which is nearly identical to their result.

Although no taxes were levied as a function of reported wealth, the census did not verify these reports. Because it would have been difficult to conceal real estate holdings, these figures were probably reported reliably. As noted below, however, results differ little by type of wealth measured.

3. A regression of real wealth on personal wealth and household characteristics such as occupation, age, literacy, ethnicity, and region of residence shows that the only systematic differences occurred by occupation, region, and level of wealth. The unskilled ($t = -1.99$), blue collar workers ($t = -1.94$), and southerners ($t = -2.92$) held relatively less real estate in total wealth. The capitalization of labor under slavery explains the position of southerners and unlike farmers, the unskilled and blue collar workers used relatively little land in their occupations. Surprisingly, white collar workers held relatively more real estate in total wealth than farmers but the difference was not statistically significant ($t = 1.13$). The share of total wealth held in real estate rose rapidly at low levels of total wealth but beyond \$500 was approximately constant at 50 to 60 percent. Therefore, one should be cautious in making inferences about changes in net worth from changes in real estate that were accompanied by moves to or from the South, shifts in occupation to or from blue collar workers and the unskilled, or low levels of real estate.

4. Although the real estate values reported by the census exclude debt, during the 1850s mortgages involved short durations, typically 1 to 3 years

and seldom more than 5 years, and large down payments, frequently 50 to 75 percent or more (Curti, 1959, p. 160; Bogue, 1963, p. 176; Murray, 1933, p. 400). In Ohio, for example, the ratio of outstanding mortgage loans to the value of real estate reported by the census was only 6.2 percent in 1860 (Commissioner of Statistics, 1861, p. 36; U.S. Census Office, 1864, p. 310). Therefore, the census data approximate net worth in real estate. Note that a greater ability to borrow that has been alledged for the rich would enlarge the measured difference between rich and poor in these data.

5. The wealth values were adjusted for regional and temporal differences in prices (United States in 1860 = 100) using information in Coelho and Shepherd (1974) and David and Solar (1977). These adjustments made only slight differences in results, however.

6. As Atkinson (1970) has shown, the Gini coefficient attaches a relatively high weight to transfers affecting the middle of the wealth distribution. Hence there may not be a close correspondence between this measure and the shares of wealth held by the rich.

7. Heaping on popular numbers such as \$100, \$500, and \$1000 resulted in decile boundaries that are approximate. The lowest rank (\$0) occupied more than one decile position.

8. Patterns at the older ages should be interpreted cautiously because the sample is small. Only 49 of the household heads were aged 55 or more in 1850.

9. The higher performance for the South compared with the North as measured by total wealth in 1860 reflects the inclusion of slaves as personal property. It should also be noted that the sample selection procedures required that each family had a native born child listed in the household in 1860, a criteria that may have selected those with relatively more wealth

among heads who were old and that selected among the foreign born those who had been in the country a relatively long period of time before 1850.

10. Explanations for the contrasts in mobility patterns are under investigation. One may conjecture that the greater importance of human capital to income in modern society may have contributed to the greater wealth stability of the top decile.

11. This conclusion also holds for comparisons of real wealth in 1850 with total (real and personal) wealth in 1860 but the relative difference in rates of accumulation across the middle and upper wealth groups was slightly lower.

12. Intergenerational transfers may have influenced accumulation but unfortunately the census manuscript schedules did not record information on inheritance.

13. Unless otherwise noted, the explanatory variables take on values reported in 1850.

14. The performance of southerners appears stronger in the second equation because the dependent variable includes slave wealth. Most southerners who moved to the West resided in Texas, where slaves were an important part of the labor force.

15. However, Polachek and Horvath (1977) found significant, positive gains within four years.