WEALTH MOBILITY: THE MISSING ELEMENT

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ABSTRACT

We consider the problems that may arise when cross sectional data alone
are used for inferences about individual welfare, the existence of elites,
the possibilities of class boundaries, the openness of a society, etc.   We
also consider problems with alternative measures of socio-economic position.
We then use a sample of 2400 households observed over one or two decade
intervals together with data on the population of households at each observation
point to examine mobility within the distribution of wealth for an almost
closed economy, Utah, 1850-1870.   We use information on households to examine
those characteristics that contribute to mobility.   We find considerable
mobility, much apparently stochastic, within quite highly skewed distributions
of wealth that also exhibit increasing inequality through time.

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Introduction

Often inferences about economic and social opportunity are based solely on distributional data. For example, in his study of the distribution of wealth in mid-nineteenth century United States, Soltow compares the Gini coefficients for 1850, 1860 and 1870 wealth distributions based on a sample drawn from the census manuscripts. He finds that there was remarkable stability in the distribution of personal property and real estate and then concludes that, "There is no question that a sizable portion of total wealth was held by a small proportion of the people in each census year studied. . . . There very definitely was an elite upper group in America in terms of control of economic resources."[1] Williamson and Lindert compare inequality in the U.S. and Europe for the early twentieth century and find that "by the eve of World War I, wealth-- or at least decedents' wealth--was as unequally distributed here as in Western Europe. DeTocqueville was right; less than a century after his visit, the American equalitarian 'dream' had been completely lost."[2] Henretta, examining the distribution of property in Boston in 1687 and in 1771, found a trend toward more inequality. The upper ten percent of the wealthholders in 1687 owned about 42% of the taxable wealth in 1687 and 65% in 1771. He concludes "Society had become more stratified and unequal."[3]

Comparable conclusions about the presence of elites, the existence of social stratification or the validity of the equalitarian ideal, based solely on the level or trend in inequality are numerous in studies of the distribution of wealth in the eighteenth and nineteenth centuries.

But one element is missing from the story of wealth inequality told in increasing detail by economic historians. This missing element, central to any judgment that we might make about the normative or political implications of unequal distributions of wealth, is the economic mobility of individual households as they accumulate or lose wealth and change position relative to other households. We must know how individuals or households moved within the rather stable distributions of wealth in order to evaluate America's fulfillment of the egalitarian ideal. We cannot conclude that there was an elite if households move in and out of the upper strata of the distribution with frequency. We should not puzzle over the quiesence of the lower class if the probabilities of moving to richer strata in five or ten years were substantial even though a stable distribution of wealth were observed. Indeed the idea of class loses meaning or takes on significance as individual mobility or immobility characterizes the situation within the cross sectional distributions that have been collected and studied. Thus an increase in inequality or persistent inequality may or may not imply loss of the American dream or the existence of social stratification since such an increase may be accompanied by more or less mobility.

It is possible, of course, for an economy to have great disparity in wealth holdings and no movement or change in relative position through time for any household. Alternatively, it is possible to have great disparity in wealth holdings and more or less random movements by individual households through time. In the first case, we might expect political discontent or repression but in the second case simply expect to find comment on the capricious nature of economic life. Unfortunately, most normative judgements of interest require strong, but unverified,

assumptions about the level of individual household mobility. However, an unequal distribution of wealth that persists through time cannot be used to verify such assumptions and thus cannot be used alone to conclude that there were elites. Similarly, DeTocqueville's egalitarian ideal cannot be evaluated by comparing summary measures of wealth distributions for the United States and Europe unless there is evidence that the same pattern of mobility exists in both areas. Unequal distributions of wealth in precolonial times cannot be made into convincing evidence of political or social unrest. Each of these conclusions would have to be based, in part, on an assumption that there was little or no mobility.

Others have also noted the importance of basing normative judgments on mobility as well as cross-sectional inequality. Kuznets has stressed the importance of measuring long-term inequality so that mobility and cross-sectional inequality are merged together. Lebergott has also argued for an approach that combines movement with inequality.[4] Nevertheless, economic historians have devoted few resources to measurement of economic mobility even though there is significant interest in distributional issues as evidenced by the work of Jones, Soltow, Gallman, Williamson, Lindert and others.[5] A number of factors have undoubtedly contributed to the emphasis on cross-sectional data. Much contemporary work has the same focus. Data of the sort required to effectively examine mobility or to test for assumptions about mobility are costly to acquire and hence not readily available. Mobility issues introduce additional measurement problems into an area already fraught with ambiguity. However, many of the inferences based on cross-sectional data alone remain unverified and unverifiable and, consequently, it is important to begin a careful development of the relevant data.

The focus of this paper is on the testing of the implied assumptions about mobility within a sample capable of describing both cross-sectional distributional inequality and movements through distributions by individual households across time intervals. In the following section we provide a brief discussion of the methods of measuring economic mobility. We then turn, beginning in Section III, to a consideration of a fairly large sample case study of mobility and distribution based on records drawn from the censuses of Utah from 1850 to 1870.

II. Measurement of Economic Mobility

Three alternative measures have been used in both contemporary and historical studies of economic mobility--occupation, income and wealth. The most common measure of change of the economic position of a household has been occupation.[6] Most of the historical studies of occupational mobility have followed the analytical design of Thernstrom in his study of Newburyport, Massachusetts with the primary measure of economic or social movement being change in occupational class by blue-collar workers or their sons. While occupational change is a useful measure of mobility, it does present certain difficulties.[7] The observed mobility or rigidity is influenced by the arbitrary decisions made relative to the scaling and classifying of occupations. Should the movement from carpenter to brick-mason be considered as upward or lateral? How much of the mobility observed in occupational studies represents slight movements across boundaries where both occupations observed could just as easily have been included in the same category? Just as classification may generate illusory mobility, it may mask true mobility since each occupation is likely to encompass a hierarchy.[8] As a particular craftsman moves from apprentice to journeyman to master or even small manufacturer, it is

possible that the occupational designation, often self-described, may not change.

A second difficulty with the use of occupation as a measure of economic mobility is the ever changing context within which the individual movements are observed. The distribution of occupations among classes (blue collar, skilled, professional etc.) changes with time and economic growth so that the probability of being in a particular occupational class changes regardless of the flexibility or openness of the society. Increases in the percentage of jobs classified as white collar or professional create upward mobility that is deceptive as a measure of the openness of the society while being real in terms of absolute improvement for the individual.

Finally and most importantly for historical studies, occupational mobility is not a useful mode of analysis in an agrarian economy or in an economy with significant rural-urban migration. Farm occupations such as farmer or farm laborer have little or no use as indicators of economic position. Further, it is very difficult to scale movements from the farm to urban occupations since agriculture includes the total spectrum of economic success.

Economists have tended to use income to study contemporary economic mobility.[9] Income represents the flow of purchasing power for a household and may closely approximate economic fortunes for that particular period of time. The use of income to measure mobility by examining relative movement between two periods (e.g. from one decile or grouping in the first period of observation to another decile or grouping in the last period of observation) eliminates the problems of scaling that are

present with the use of occupation. However, a new problem is created
by the use of income to measure mobility. It is well known that income
has both permanent and transitory components so that part of the observed
mobility is due to the random effects of transitory income and does not
reflect fundamental change in a household's economic position.[10] Thus,
an important task of the researcher who uses income as a criterion for
mobility is the decomposition of mobility into permanent and transitory
elements.[11]

Ultimately, the question of how to measure mobility is an empirical
issue. What measure (wealth, occupation or income) will correlate most
closely with economic or social status?[12] Wealth has attractive features
as a measure of mobility. It requires no scaling. Rural mobility can
be measured effectively with changes in wealth. Rural-urban migration
and the resultant occupational changes present no particular problems of
measurement if wealth is used as a measure of mobility.[13] The transitory
component of wealth should be much smaller than that of income so that
wealth mobility should reflect rather permanent changes in a household's
economic position.[14] Hence, wealth may be the best single measure of
economic if not social mobility. This would certainly be the case if a
full measure of wealth in both physical and human capital forms were
available. Unfortunately, accurate measures of human capital are rare.

While studies of contemporary wealth mobility are rare, there have
been several historical studies of the wealth mobility of households.[15]
However, these historical studies are limited to study of the richest
tail of the wealth distribution or confined to very limited segments of
the economy. For example, Pessen's conclusion that Jacksonian America
was not an "age of fluidity" is based in large part on the lack of

movement in and out of the list of very wealthy taxpayers in New York
and Boston.[16] Since Pessen's analysis includes the top 1% of the wealth
distribution or even less, there could well be substantial mobility
within the bottom 99% of the distribution while the extreme of the
distribution contains the same households through time.[17] It would seem
useful to consider mobility within the full distribution of wealth.
There is an additional interpretive problem with measures of the move-
ment in and out of the richest tail of the wealth distribution at dif-
ferent points in time. The group at risk constantly changes as people
migrate, die, form new households or disappear from the tax lists so
that comparison of two points in time may involve groups of quite differ-
ent people. To illustrate, Pessen finds that 57% of the wealthholders
in Boston who possessed wealth in excess of $40,000 in 1833 had accumu-
lated more than $50,000 in wealth by 1848, while 15% had wealth of less
than $50,000.[18] This means that 28% of the rich housholds of 1833 were
not on the tax list of 1848. There is no way of knowing whether these
households no longer existed because of the death of the household head;
or because of migration from Boston, remaining wealthy or becoming poor;
or because they became so poor that they were not on the tax list.
Similarly, the origins of the wealthy of 1848 who were not on the tax
list of 1833 are also unknown. It would seem more useful to hold the
group at risk constant between two periods of time so that the initial
and terminal wealth of each household is known.

Those studies confined to smaller communities can hold the group at
risk constant more easily.[19] However, confinement of the analysis to a
small group within a larger economy increases the migration in and out
of the sample so that a new question becomes very important--was the

experience of the migrants significantly different from that of the non-migrants? This is a difficult but important question for open economies with high levels of geographical movement across the boundaries of the study. Thus, such studies are able to examine a group of households with initial and terminal wealth observations, but the group is a small percentage of the total population.

With the Utah data presented in this paper, we attempt to analyze a fairly large group of households with wealth observations in both 1860 and 1870. Since Utah was quite isolated from the rest of the U.S. economy and the migration to Utah was induced largely by religious beliefs, the problems created by self-selected migration would appear to be minimal.[20] Since Utah has a large agrarian sector with substantial urban-rural migration as well as rural-urban migration, wealth would appear to be a better measure of economic mobility than occupation. Future work will compare mobility as measured by the three alternatives-- occupation, income and wealth. In this paper we report the results using wealth as a measure of economic movement.

III. Wealth Mobility in Utah Between 1850 and 1870

We consider wealth mobility for an almost completely independent economy--Utah from 1850 to 1870. Wealth, occupational and demographic information have been collected for the population of households in each census year.[21] Thus we are able to observe the complete distributions of wealth in this economy. We have linked a large number of households across decade intervals so that mobility within the same group of indi- viduals can be observed. (We refer to this group as the "linked sample.") Since we observe both the population of households and a sample of households drawn from the population that can be linked through time, we

are able to place the study of wealth mobility within the distributional context. Finally, we observe a number of household characteristics and can, as a consequence, roughly separate stochastic from household characteristic effects in relative movements. These elements of our data allow us to address some of the issues suggested in the preceding sections and to illustrate and draw conclusions about the importance of mobility, the missing element, in distributional studies. We begin with the distributional setting.

Table I summarizes the distributions of wealth in Utah in 1850 and 1870 and compares these distributions with those of the United States.[22] In 1850 Utah was clearly more egalitarian than the U.S. Utah households were also much poorer than their U.S. counterparts, and this shared poverty was undoubtedly a contributor to the more equal distribution of wealth. In part the poverty and equality can be attributed to the recent settlement of the area, the Mormons first arriving in Utah in 1847.

Summary measures also indicate that by 1870 Utah displayed a distribution that was almost as unequal as the distribution of wealth for the U.S. This two-decade period was characterized by rapid population growth as Mormon converts from the East and especially from northern Europe migrated to Utah (over 87 percent of the households in the 1870 census were not present in the 1860 census). This period also saw a growing urban population within Salt Lake County (23 percent of the households) that supported the usual occupational structure. Both rapid growth and the development of interdependent urban market activities probably contributed to the increasing inequality. This increasing distributional inequality contrasts with the more common circumstance of

a stable or slowly changing distribution of wealth. Was this increase
in inequality accompanied by social stratification? Did the increasing
dispersion limit or enhance opportunity?[23]

We model economic mobility with transitional matrices summarizing
relative movements of households between two distributions of wealth.
Given a specific group of households (the population, the linked sample
or some sub-group within the population) we construct decile boundaries
for the distribution of wealth in a given year. Distributional deciles
for 1850 or 1860 are rows in the matrices; decile positions within the
1860 or 1870 wealth distributions are columns (See Table 2). Relative
movement or mobility is reflected by changes in distributional position
from year to year, specifically measured by which decile of the wealth
distribution the household occupied in each year.[24] There are at least
three interesting comparisons that can be considered. One can consider
relative movement of the linked sample against the entire population of
the economy in any given year. In this case, the decile occupied in
each year would be determined by the boundaries drawn from the population
distribution of wealth. Alternatively, one can consider relative movement
within the sample of linked households itself. That is, the distributional
positions would be determined by the distribution of wealth held by the
sample of individuals that we observed through time. Finally, one can
consider relative movement against a subgroup of interest. For example,
it might be interesting to consider relative movement of those in the
linked sample living in the urban area against the distribution of
wealth within the urban area.[25] We have used each of these three alter-
native comparisons in our analyses since each allows us to factor out
important elements that might contribute to the observed mobility.

First we measure relative movement within the distribution of wealth for the population in each observation year: If a household is observed to be in the third decile of the wealth distribution of the economy in 1860, what is the probability that it will be in the top decile of the distribution of wealth for the 1870 population, etc.? A likely hypothesis is that aging ten years as well as being in the economy for ten years leads to considerable upward mobility. If so, the household would have moved upward relative to the distribution of wealth for the population in the next measurement year.

Second, we have defined relative position by using the distributions of wealth held by households in the linked sample itself. Since the sample consists of exactly the same set of households in each observational year, these transitional matrices give an indication of relative movement within the same group of households. This approach examines mobility for a group within which each member shares a common characteristic--being linked through time (or surviving within the economy through time). In this case, upward movement is less likely and downward movement more probable since drawing the decile boundaries from the distribution of wealth among the linked group controls for immigration, time within the economy, and to some degree for age (households formed after the initial census observation will not be included in the distribution).

Finally, we consider the movement of households with particular characteristics against population subgroups with the same characteristics, such as the same age cohort, similar occupational activities, same residence, etc. The expectation is that age, occupation, place of birth, etc., would affect economic mobility. Therefore, we are likely to observe less mobility when such household characterisitcs are factored

out. This comparison allows us to go beyond distributional-mobility relationships to a preliminary and partial decomposition of mobility into systematic components explained by age, occupation, residence, nativity and other observable household characteristics and the stochastic elements that represented the vagaries of economic life in that economy.

One difficulty with our methodology should be noted. Household wealth estimates exhibit "heaping" on even values such as $100, $500, etc. When a decile boundary occurs on such a value the "decile" boundary has been moved the minimum distance up or down in order to avoid separating households with identical wealth holdings into distinct deciles. This means that the number of households per decile may not be identical as it would be with a continuous distribution. It also means, however, that we avoid introducing spurious relative movement for households with the same wealth who would otherwise have been arbitrarily placed in adjoining deciles. It is, of course, true that if the decile boundaries are drawn from any group except that which is linked, there need not be an equal number of households from the linked sample in each decile since the linked group may not necessarily be a random sample of the group from which the decile boundaries are drawn. This will occur for the first and third comparisons outlined above.

Table 2 summarizes the movement from 1860 to 1870 of our linked sample through the distribution of wealth for the economy within which these households were living. The left hand column indicates the decile position from the 1860 distribution of wealth, 1 being the poorest 10 percent of the population and 10 the richest 10 percent. The first row of numbers (1 through 10) indicates the 1870 deciles. The numbers within the table indicate the percentages that occupy each cell where

each cell represents a particular combination of deciles for 1860 and 1870. For example, 14.9 percent of those who were within the bottom decile in 1860 were in the third decile of the 1870 distribution; 2.1 percent in the fourth decile; 20.6 percent in the top decile and so forth. The column and row labeled "N" indicates the number of households in each decile position. Thus, for example, there were 204 households in the 6th decile of the 1860 distribution but only 185 in the 6th decile of the 1870 distribution. The final column provides a summary measure of mobility, the conditional mean decile position. Again, by way of example, for those in the bottom decile in 1860, the "expected" decile position within the population distribution of wealth in 1870 was 7.2; for those within the top position in 1860, the "expected" position was 9.2. We note, for comparative purposes, that if mobility were a completely random process, each cell in this matrix would have the same expected entry, .1. That is, for any household occupying a given decile position in the 1860 distribution, the chances of occupying any given decile position in the 1870 distribution would be 1 in 10 since there are 10 possible positions in the 1870 distribution. In addition, the expected or mean decile position for such a household if mobility were completely random would be 5.5 and this "expected" position would be independent of the position occupied by the household in the 1860 distribution.

The impact of rapid and costly immigration is illustrated in the 1860-1870 comparisons: in 1860 less than ten percent of the population had no wealth but in 1870 more than twenty percent of the households had zero wealth.[26] The linked sample also includes households with zero

wealth in one or both years (more than 10 percent of the sample) so that zero wealth was not simply an outcome of migration or coming to the economy late (relative to our measurement times).

A perusal of the 1860 cell sizes (the 11th column, under N) indicates that our linked sample is not quite a random sample of the 1860 population. (With a random sample from the population each 1860 cell would be expected to contain one-tenth of the sample or about 220 households.) The poorer deciles have fewer and the richer deciles more members than would be expected with a random selection. This is reflected in the unconditional mean decile position as well, which, for the sample in 1860, is 6.1. The mean decile position for any random sample would be 5.5; this would also be the mean decile position for the population itself by construction.

As hypothesized, the entire group of households present in both 1860 and 1870 censuses moved upward through the population distribution of wealth. Nearly 46 percent of the sample is within the top 20 percent of the 1870 wealth distribution while only 27 percent is in this position in 1860. The unconditional mean decile position for the linked group in the 1870 population distribution of wealth is 7.6, well above the population mean (5.5) and above the unconditional mean decile position for this same group in the 1860 distribution (6.1). Again, this is a reflection of the upward movement of these households. Those fortunate enough to be in the top decile in 1860 faced a probability of only .31 of a decline in relative position. The prospects of moving into the top ten percent of the population wealth distribution or staying there were quite good for this linked group since the probability of being in the top decile in 1870 was .267. Clearly, however, this probability was

dependent upon one's decile position in 1860 (note that the probabili-
ties increase as one reads down the column under "10"). Rags to modest
riches was a practical possibility since the probability of moving from
the bottom decile in 1860 to the top decile in 1870 was .206. While the
probabilities of movement differ in ways that we consider below, the
expected decile position based on one's 1860 relative position (column 12)
was well above the expected position for a random member of population
and above the original 1860 position in every case.[27]

Elsewhere we have noted the effect of time or experience within an
economy on wealth holdings.[28] Time of entry into an economy had a
significant and pervasive effect on mobility; the sample of linked
households occupy a higher position in the 1870 distribution of wealth
than would be expected of a random group of households drawn from the
1870 population and they occupy a higher relative position in the 1870
distribution than they do in the 1860 distribution.

Obviously, one of the characteristics that these linked households
share is that they all were in the economy for at least ten years. We
can factor out or control for this effect by considering the movements
of households within the distributions of wealth for the sample itself
rather than for the population of all households. This analysis is
summarized in Table 3 where, again, the deciles in 1860 and 1870 are
based on the distribution of wealth within the linked sample and hence
over exactly the same group of households in each year.

We observe considerable economic mobility up and down through the
distribution of wealth held by the sample. While movement is obviously
not random, there is a high degree of mobility from the lower deciles to
the top and to a lesser degree vice versa. Note that with the exception

of the probabilities of those in the 9th and 10th deciles of the 1860 sample distribution remaining in these attractive positions in the 1870 sample distribution, no probabilities exceed .2. However, the higher probabilities in the bottom right-hand corner of the matrix do indicate some rigidities in the upper tail of the wealth distribution. Moreover, the mean decile attained is clearly dependent upon the initial position in 1860 although the relationship is not strong except for the households in the upper tail of the sample wealth distribution. However, households in 1860 decile positions 6 and below had an expected decile position in 1870 _less_ than that of a random process (all but the bottom two elements of column 12 are less than 5.5).

While the mean decile position in 1870 is dependent upon relative position in 1860, there is clear evidence of regression toward the mean. Households from low decile positions have an expected decile position in the 1870 sample distribution well above their position in 1860; those occupying decile positions above 5 have an expected decile position below their 1860 position. For those households occupying 1860 decile positions 8 through 10, the expected decline is 1.8 deciles. For all other 1860 decile positions the expected change increases with the distance from the mean position of 5.5.

For this sample, even though there is both considerable dispersion in wealth holdings in any given year and an increase in dispersion through time, there does not appear to be economic stratification except perhaps for the very wealthy.

We can push our analysis back one decade by considering the distribution of real property in 1850 and 1860.[29] The movement of households within the sample relative to each other shows more mobility between

1850 and 1860 than it did from 1860 to 1870. (Data not shown here.)
This finding suggests that mobility may be a function of the maturity of
the economy. Kuznets has postulated an "inverted U" relationship between
inequality and the development process: at first, economic development
increases inequality and then diminishes it.[30] The relationship of the
development process to wealth mobility is important as well. If inequality
and mobility move together, the interpretation of the process might be
different from a situation in which more equality also implied more
mobility. If the process of economic development eventually leads to
more equality and less mobility, such a tradeoff makes judgments about
the egalitarian ideal difficult. For Utah from 1850 to 1870 we observe
a considerable increase in inequality with early development and an
apparently small decline in mobility.

Part of the sample (696 households) is observable over a two-decade
interval, allowing observation of longer-term mobility and of the effects,
if any, of the dramatic increase in dispersion over this interval. The
effect of early entry and time within a growing economy is very pronounced.
Fifty-nine percent of the 696 households were in the top two deciles of
the population wealth distribution by 1870. Those in the lowest decile
in 1850 had a .35 probability of moving to the top decile over the
twenty-year period while those already in the top decile in 1850 had a
two-thirds likelihood of remaining there.

Table 4 illustrates this longer-term relative movement within the
sample itself (deciles are drawn from the distribution of wealth among
the 696 households). We note that there is more mobility over the
longer time period than over either of the two ten-year intervals. This
suggests that even some of the stratification observed in the tail of

the wealth distribution decays with time. Those in the bottom half of the sample wealth distribution had a probability of .44 of being in the top half of the 1870 and, consequently, those in the upper half could well fear decline since the probability of falling into the bottom half is also .44.

Thus far, an examination of the transitional matrices suggests the following conclusions. Time with the economy pushes households upward through the cross-sectional population distributions of wealth so that few households who were relatively poor intitially were likely to be among the economy's poor later. Part of this can be attributed to the age-wealth profile that is well-documented in historical data. Further, factoring out this time effect by examining the movement of the sample households relative to each other (as summarized in Tables 3 and 4) does not eliminate the pattern of extensive mobility. This implies, of course, that mobility is not solely a life cycle or duration phenomenon. Households seem to move quite randomly relative to each other in the wealth distribution with the exception of the upper wealth level where movement is less pronounced. However, comparison of mobility in the 1850-1860 decade with the 1860-1870 decade suggests that mobility declined somewhat with the development of the economy. Finally, the extent of long-term mobility as reflected in the comparison of households living in Utah in both 1850 and 1870 is striking. To be sure, the initial decile position does affect the probabilities of a household's final decile position, but the effect does not strike us as large. Moreover, while we observe a decline in mobility in the second decade, there was considerably higher probability of movement for any given household over the two-decade interval than for either one decade interval. These

observations suggest that there was a regression toward the mean, the rate of which may be dependent on the distribution of wealth and hence on those factors leading to increased dispersion.

Are relative movements simply the result of fate or fortune, or is mobility related to characteristics the household can either acquire or already possesses? Alternatively, how much of the observed relative movement would remain if adjustments were made for age differences or other characteristic differences? It is to these questions that we now turn. However, because of the cumbersome nature of the transition matrices, we have chosen to use summary measures in these comparisons. Specifically, we use the unconditional mean or "expected" decile position of the distribution of wealth for different groups in comparison with the distribution of wealth over either the sample, the population or a population sub-group with the same characteristics as the group drawn from the sample. Table 5 provides a comparison of these summary measures against each of these three distributions for groups with the character- istics indicated. For example, we can examine the distribution of wealth for those who were engaged in farming who were also in the linked sample. The third row first indicates the relative position of these households in the 1860 sample wealth distribution and then in the 1870 sample wealth distribution (columns 1 and 2). We also provide comparisons of this group of farmers (who were linked) with the distributions of wealth in 1860 and 1870 for all those engaged in farming within the population (columns 3 and 4). Finally, we consider the relative position of the distribution of wealth for these linked farmers within the distri- bution of wealth over the entire population of the economy in 1860 and again in 1870 (columns 5 and 6).

We have already noted that there is one household characteristic that influences the expected mean decile position in 1870 for any household--the relative wealth position (decile) in 1860. This creates a problem of interpretation. Since we know that mean decile position in 1870 is affected to a degree by the decile from which the household moves in 1860, and a characteristic group of households is not a random sample of the linked sample, relative movement will be affected both by the position of the household group in the 1860 distribution and by the household group's characteristic. We can control for the effect of the beginning position by comparing the expected movement of all households in the same position with that of the households with the characteristic of interest by using Table 3.

We first consider the relative movements of households with given characteristics within the sample distribution of wealth, columns 1 and 2. For example, those living in the urban area in 1860 occupy a position consistent with being randomly selected from the 1860 sample distribution (mean decile of 5.6) but have an expected mean decile position in 1870 of 6.1. Since all those occupying the fifth decile in 1860 had no expected positional change (5.4, Table 3), this upward movement may be attributed to the characteristic of residing in an urban area instead of to the average decile position in 1860. Using this method, we find that households characterized as farm, urban, foreign-born and a listing in all three census years (triple) as well as 35-44 and 45-54 age cohorts evidenced upward mobility. Note that for triples the expected decile position in 1870 is less than that for 1860 but not by as much as would be expected for the randomly selected household occupying the 7th decile position in 1860. The same effect of less relative downward movement holds for the age cohort of 45-54 years.

Since the change in the relative positions of the age cohorts is very much like that of a random sample of households occupying comparable 1860 positions, age appears to have only a small effect on relative movement. This observation is reinforced by a consideration of relative movements within age cohorts, columns 3 and 4. The second pair of columns considers the movement of a particular subgroup of the sample against that same subgroup in the population, where the decile boundaries are drawn from the wealth distribution of the population subgroup. The third pair of columns considers the movement through the population distribution of wealth with boundaries being drawn from the population distribution. Thus, farmers in the sample, meaning farmers found in both censuses, move from a mean decile of 6.0 relative to all farmers in 1860 to 6.8 in 1870. This was a more modest movement than most groups achieved. Finally, farmers moved up significantly, relative to the whole population, with mean decile positions of 5.4 in 1860 and 8.2 in 1870.

It is clear from column 5 of Table 6 that, with the single exception of the foreign-born, our sample sits in the upper part of the wealth distribution in 1860 although the effect is not pronounced. It is also clear from column 6 that the relative position of the sample vastly improves by 1870 with the sample occupying the upper portion of the wealth distribution for the whole population by 1870. This positioning and movement is fairly uniform relative to subgroups as well as the population. The exceptions are nonfarmers who are moving up relative to other nonfarmers considerably more than they move relative to the population and farmers for whom the opposite is true. The two age cohorts, 35-44 and 45-54, move up more relative to the population than they do relative to their age groups within the population.

The striking observation about movement within this sample is that no single characteristic generated much differential mobility for households with that characteristic. Farmers, those who lived in the urban area of Salt Lake City, the foreign-born and the young-age cohorts (25-34 and 35-44) improved their position, but the gains were not large. Age cohorts 45-54 and 55-64 as well as the characteristics of being U.S.-born and present in all three censuses produce a decline in the relative position of households with those characteristics. However, there appears to be no observed characteristics which would make a dramatic difference in mobility in this sample.[31] The results are similar for a comparison of 1850 and 1860. It should be noted that the young and the foreign-born, two relatively poor groups, were moving up relatively rapidly, producing convergence toward the mean for those groups. This was not true for the nonfarm occupations.

Mean decile position considers the expected possibilities for any random member of the linked group. We have observed that these possibilities are not independent of initial decile position, and that there is a weak correlation of possibilities with household characteristics. We now consider possible interactions between characteristics and the initial decile of the household. Rather than using a summary statistic (say mean decile position, given an initial position) we provide in Table 6 the leading diagonal of each of the transition matrices. These are the "stayers" who remain in the same relative position from one observation period to the next. If the distribution is random, in the sense that from one period to the next there is an equal chance of landing in any given decile independent of one's starting position, then for each decile ten percent of those observed should be "stayers." We

have provided the leading diagonals for characteristic groups and for the sample itself. The decile boundaries in this case are drawn from the sample wealth distribution. Hence, Table 6 summarizes the comparative probabilities of staying in each decile for subgroups within the sample.

Table 6 suggests that the "staying" patterns observed for the sample are not dramatically different across characteristic groups. The probability of being a stayer bounces around a good deal and appears to have a "U" or "J" shape (higher probabilities at the ends of the distribution, lower probabilities in the middle) but the same pattern occurs for most characteristic groups. There are two exceptions: U.S.-born and the 45-55 age cohort clearly have lower probabilities of remaining in the top decile.

We note that the urban wealthy were especially immune to the possibilities of decline. At the other extreme, those in the poorest decile were less likely to move up in certain instances. The nonfarm, urban and foreign-born poor were less likely to be able to move out of the poorest decile. Hence, we do observe an interaction between household characteristics and expected mobility experience in terms of opportunities when one occupies either tail of the distribution. On the other hand, with the exception of the final column in Table 6, the general observation would be very much consistent with the argument we have developed to this point: while the 1870 wealth distribution cannot be characterized as anything but one with considerable inequality, it was a distribution within which individual households moved upward (relative to the population) and upward and downward (relative to a group of peers present over the same decade intervals) with frequency. Only those in the top wealth decile could be very certain of their

relative position. Even in this case the probability of decline was usually greater than .5.

Conclusion

There is no particular reason to conclude that the patterns of mobility in Utah in the mid-nineteenth century may be generalized to other economies, but the Utah data are instructive and lead to interesting conclusions that may be worth examination in other contexts.

There is a distinct pattern of regression toward mean wealth in Utah. Regression is not complete in a ten-year period but it is substantial. This regression toward the mean implies that any boundaries defining elites or classes were constantly being breached by particular households. If this pattern of movement toward the mean was perceived by the population of the time, then social discontent and pressure for change would be lessened. Therefore, cross-sectional inequality, or its trend, is not sufficient evidence upon which to establish existence of an elite.

Further, much of the observed mobility must be stochastic in the sense that it cannot be explained or controlled by holding particular characteristics such as age, residence, birthplace or occupation constant. In order to explore the full relationship of mobility to particular characteristics, one would need a much larger sample than is present in the Utah data. There simply are not enough households that appear in more than one census. Nevertheless, much of the mobility appears to be stochastic. In particular, the mobility within age cohorts and occupational groupings such as farmers is quite large. Cross-sectional regressions have been used to explain levels of wealthholding by households. Such regressions usually explain less than half of the variance in

wealth.[32] The question has remained as to whether the unexplained variance was due to unobserved variables or was, in fact, stochastic variance. The transition matrices suggest that the variance may be stochastic since we find households moving quite freely through the matrix rather than being confined to particular cells. However, further work disentangling patterned mobility from stochastic mobility would be useful.[33]

If the Utah data are representative, wealth mobility studies should not be confined to analysis of movement in and out of the richest extreme of the distribution. Clearly, mobility within the other nine deciles is different than the mobility of the richest decile. The number of "stayers" in the richest decile is about twice as high as it is for any other. Consequently, studies such as those of Pessen or Lebergott that focus on the richest group do not convey much information about the possibilities for most households.

Finally, there appears to be no close relationship between dispersion or cross-sectional inequality and mobility. In particular, one cannot easily relate increasing dispersion with reduced mobility. In Utah, inequality increases from 1860 to 1870 while mobility appears to be at a very high level. Mobility does appear to decrease slightly between the 1850s and the 1860s, but the decrease is small. Furthermore, the observations between 1850 and 1860 must be based on real property rather than the total wealth of a household. Perhaps the most important point about the relationship between dispersion and mobility is that the relationship, if there is any, is so tenuous that historical trends in both cross-sectional inequality and mobility must be measured and compared. It may be that the trend in economic mobility moves with the trend in cross-

sectional inequality so that an increase in dispersion in the wealth

distribution is accompanied by increased mobility. In such a case,

reality and the egalitarian ideal are difficult to compare. It may be

that mobility is inversely related to modernization so that opportunity

gradually fades. Mobility may be more volatile than cross-sectional

inequality where summary measures move slowly, if at all, and convey a

sense of stability that may be illusory. Economic mobility observed

through time and across economies or societies may have more variance

and may be more closely related to periods of political discontent and

change.

One very important issue is raised by the presentation of measures

of mobility. How much mobility should there be? Since there are few

measures of wealth mobility, it is difficult to establish any frame of

reference from which to compare the results presented here. For this

reason each scholar examining wealth mobility has been left free to

reach conclusions relatively unconstrained by the implications of the

data. Moreover, there is a more difficult question. Is mobility good

or bad? Clearly, in the American egalitarian ideal, mobility in terms

of rags to riches or upward movement has been viewed as a beneficial

condition. What about riches to rags or lesser movements downward?

Mobility implies risk, and risky outcomes are generally viewed as bad.

Would completely random movement be optimal?

The American historical and contemporary experience has been filled

with tension between economic efficiency and justice. Economic historians

have tended to judge the issue of fairness or justice largely in terms

of cross-sectional measures of inequality. The Utah experience in the

mid-nineteenth century suggests that cross-sectional measures may not be

sufficient to make such judgments. Temporary or even lifetime inequality may be acceptable relative to the egalitarian ideal that runs through American history if mobility is possible or probable. These are all historical issues worth investigating. They must be considered if wealth mobility is an important element in the story of the egalitarian ideal in American society.

FOOTNOTES

1. Lee Soltow, Men and Wealth in the United States, 1850-1870 (New Haven and London, 1975), 180.

2. Jeffrey Williamson and Peter Lindert, "Long Term Trends in American Wealth Inequality," in James D. Smith, ed., Modeling the Distribution and Intergenerational Transmission of Wealth, (Chicago, Ill., 1980), 60.

3. James A. Henretta, "Economic Development and Social Structure in Revolutionary Boston," William and Mary Quarterly, XXII (1965), 75-92.

4. Stanley Lebergott, The American Economy (Princeton, 1976), 135. Simon Kuznets, "Economic Growth and Income Inequality," American Economic Review XLIII (1953), 3.

5. For examples see Alice H. Jones, "Wealth Estimates for the American Middle Colonies, 1774," Economic Development and Cultural Change, IIXX 1970; _____, "Wealth Estimates for the New England Colonies about 1770," Journal of Economic History, XXXII (1972), 98-127; _____, American Colonial Wealth: Documents and Methods, (New York, 1977); _____, Wealth of a Nation to Be, (New York, 1980); Lee Soltow, Men and Wealth; Robert Gallman, "Trends in the Size Distribution of Wealth in the Nineteenth Century: Some

Speculations," in Lee Soltow (ed.) <u>Six Papers on the Size Distribution of Income</u>, (New York, 1969), 1-25; Jeffrey Williamson and Peter Lindert, "Long Term Trends in American Wealth Inequality," in James D. Smith (ed). <u>Modeling the Distribution and Intergenerational Transmission of Wealth</u>, (Chicago, 1980); Jeremy Atack and Fred Bateman, "The Egalitarian Ideal and the Distribution of Wealth in Northern Agriculture Communities: A Backward Look," <u>Review of Economics and Statistics</u>, 63 (1981), 124-129; Lee Soltow, <u>Patterns of Wealthholding in Wisconsin Since 1850</u>, (Madison, 1971).

6. See as examples, Peter M. Blau and Otis D. Duncan, <u>The American Occupational Structure</u> (New York, 1967); Percy Davidson and H. D. Anderson, <u>Occupational Mobility in an American Community</u> (Stanford, 1937); Seymour M. Lipset and Reinhard Bendix, <u>Social Mobility in Industrial Society</u> (Berkeley, 1963); Stephan Thernstrom, <u>The Other Bostonians</u> (Cambridge, Mass., 1973); Clyde Griffen and Sally Griffen, <u>Natives and Newcomers</u> (Cambridge, Mass., 1978); Michael Katz, <u>The People of Hamilton</u> (Cambridge, Mass., 1975); Alan Dawley, <u>Class and Community</u> (Cambridge, Mass., 1976).

7. See Michael Katz, "Occupational Classification in History," <u>Journal of Interdisciplinary History</u>, III (1972), 63-68; Clyde Griffen, "Occupational Mobility in Nineteenth Century America: Problems and Possibilities," <u>Journal of Social History</u>, V (1972), 310-330.

8. Katz, "Occupational Classification . . .", 65.

9. For examples, see John J. McCall, <u>Income Mobility, Racial Discrimination and Economic Growth</u>, (Lexington, Mass. 1973); P.E. Hart, "The Dynamics of Earnings, 1963-1973," <u>Economic Journal</u>, 86 (1976), 551-65; Lee A. Lillard and Robert J. Willis, "Dynamic Aspects of Earning Mobility," <u>Econometrica</u>, 46 (1978), 985-1012.

10. Milton Friedman, A Theory of the Consumption Function (Princeton, 1957) is the classic statement of the permanent income hypothesis.

11. For techniques of decomposition see Lillard and Willis, "Dynamic Aspects of Earning Mobility" and A.F. Shorrocks, "Income Mobility and the Markov Assumption," Economic Journal 86 (1976), 566-578 and McCall, Income Mobility . . .

12. If alternative methods of measuring mobility or classifying yielded similar results, the issue would be moot. Unfortunately, Katz found poor correlation between wealth scaling and occupational scaling. "Occupational Classification . . .", 88.

13. The main problem raised by consideration of wealth mobility in an economy with urban and rural sectors may be the differential levels of human capital in the two sectors so that the ratio of physical wealth to total wealth (including human capital) is higher in the rural area.

14. Wealth represents the accumulation of savings for life cycle purposes and bequests. It is also a store of the changes in transitory income. One would expect the second aspect of wealth to be small relative to that aspect that reflects permanent income flows.

15. Edward Pessen, Riches, Class, and Power Before the Civil War, (Lexington, Mass., 1973); Robert Doherty, Society and Power: Five New England Towns, 1800-1860, (Amherst, 1977); Merle Curti, The Making of an American Community, (Stanford, 1959); Lebergott, The American Economy.

16. "If the logic of the egalitarian myth pointed to economic fluidity, the facts of American economic experience indicate that stability,

if not rigidity, characterized the situation of most wealthholders."
Pessen, Riches, Class and Power, 148.

17. Soltow's sample of the 1870 manuscript census suggests that only
.15% of males in 1870 owned more than $100,000 dollars in wealth.
(footnote 5) While the tax assessments that Pessen uses were to
include personal wealth as well as realestate, it is likely that
the personal wealth was substantially underreported and that
assessment of real estate was below market value. Hence, Pessen is
clearly considering the extreme tail of the wealth distribution in
his study of mobility.

18. Pessen, Riches, Class and Power, 133. Lebergott The American
Economy examines mobility within the most wealthy stratas. He
finds that 60 to 80% of the very wealthy are "new" in any generation.
(p. 174) He also finds that the children of the wealthy have
incomes and wealth that have regressed significantly toward the
mean. Again Lebergott's study does not compare an identical group
at two points in time.

19. Doherty, Society and Power and Curti, The Making of an American
Community.

20. In later work, we plan to use the available demographic records on
Utahns to trace the economic fortunes of out-migrants. Some of the
migration out of Utah to the surrounding states of Idaho, Nevada,
California and Arizona was motivated by Brigham Young's colonizing
plans so that individual households may have undertaken migration
out of Utah at an economic loss.

21. We have collected from the federal censuses of Utah the available
wealth, demographic, occupation and location data for 1850, 1860

and 1870 for the populations of households within the region in each of those years. Using these population data, we have linked all of the households that were clearly identifiable by name, age, birthplace, etc. across the census decades. Every time a linkage is made, we have at least two separate observations on the same household and can observe changes in wealth, demographic, occupational or locational characteristics. Some of these linkages begin in 1860 rather than in 1850; some, beginning in 1850, end in 1860. Others begin in 1850 but miss 1860 with the household not being observed again until 1870. Finally, we have some households that are observed in each of the three censuses. These various time-linked households comprise our "linked" sample. Also, as indicated, we have the populations with the same information, within which the linked sample households were living.

The census data include the following household characteristics: name of household head, gender of household head, age of household head, birthplace of household head, size of household, residence of household, real wealth of household, personal wealth of household (1860 and 1870 only), occupation of household head.

We have coded alphabetic information, excepting name, into numeric information for ease of handling with a computer. Occupations have been identified with a three digit code; location by town and county codes; birthplace by a state or country code.

22. The distribution of wealth for the U.S. has been analyzed by Soltow in Men and Wealth.

23. We approach these questions by considering the opportunities, as measured by ex post relative position in a distribution, of a

sample of all households that appeared in more than one census from 1850 to 1870. We created this sample with hand rather than computer linkage, using place of birth, place of residence and occupation, as well as age and name. Some latitude was given for name spelling variations in the censuses as well as for age differences of more or less than ten years between censuses. Ambiguity about linkages still existed so that the sample was divided into two categories-- those who were linked with certainty and those where the link was ambiguous. We were unable to detect any systematic differences between the certain and ambiguous linked groups and will therefore report analyses using the entire linked sample. We note that a false link may impart spurious mobility to our data since the two households are in reality completely different households who are viewed as the same household.

24. One observes the ex post proportions in each cell of the matrix. These ex post observations provide maximum likelihood estimates of the ex ante probabilities.

25. A fourth possibility would be the consideration of movement within a subsample where the deciles are drawn according to the distribution of wealth of the linked subsample. For example, one could consider relative mobility within the linked group of farmers compared to nonfarmers. Unfortunately, such matrices require more data than we currently have available.

26. Between 1860 and 1870 large numbers of foreign born immigrants came to Utah with very little wealth. This influx raised the proportion of households with no wealth.

27. We note one additional methodological problem at this point. If
    one considers the mean decile position, given initial decile position,
    there is essentially a monotonically increasing relationship excepting
    for the first decile position in the initial year. This decile
    position is always occupied by those with zero wealth. The problem
    is that this zero wealth estimate may be a true estimate or it may
    result if the respondent simply failed to indicate wealth to the
    census marshall. Thus, we undoubtedly have in this cell some with
    a true zero wealth position and some who simply did not respond in
    the initial year even though they did have wealth but did respond
    in the second year. Hence, the mean decile position is likely to
    be an overestimate of that for those in the "true" zero category.
    If appropriate adjustment could be made, we would likely observe a
    monotonically increasing pattern of mean decile positions given
    initial decile position.

28. See J. R. Kearl, Clayne L. Pope, and Larry T. Wimmer, "Wealth in a
    Settlement Economy: Utah 1850-1870," Journal of Economic History,
    XL (1980), 477-496.

29. The census of 1850 reports the value of real property but does not
    report personal wealth. Hence, a comparison involving the 1850
    data can only examine mobility within the distribution of propertied
    wealth. Clearly, mobility relative to a segment of total wealth is
    likely to be higher than mobility within the total wealth distribu-
    tion.

30. Kuznets, "Economic Growth and Income Inequality," 1-28.

31. Multivariate analysis is needed to examine marginal effects of
    various characteristics on the probability of moving from one

decile to another. Unfortunately, very large data sets are needed for such analysis, since a decile breakdown yields 100 probabilities for analysis.

32. Atack and Bateman, "The Egalitarian Ideal," Kearl, Pope and Wimmer, "Wealth in a Settlement Economy."

33. Once sufficient intertemporal observations have been gathered, the techniques developed by A. F. Shorrocks, "Income Mobility and the Markor Assumptions" Economic Journal, 86 (1976), 566-578; Lillard and Willis, "Dynamic Aspects of Earnings Mobility"; McCall, Income Mobility . . . might be applied to wealth data even though the transitory element of wealth is probably small.

TABLE 1

Comparison of Wealth in Utah and the United States

	1850		1870	
	United States	Utah	United States	Utah
Mean real wealth	$1001	$201	$1782	$644
Proportion holding				
real wealth	.41	.70	.43	.64
Share of wealth held				
by top one percent	.30	.14	.24	.27
Share of wealth				
held by top ten percent	.73	.52	.70	.61
Mean wealth of foreign				
born/mean wealth of U.S.				
born (whites)	.49	.77	.61	.70
Gini coefficient				
for real wealth	.86	.69	.84	.74
Gini coefficient				
for total wealth			.81	.70

Note: The sample procedures are such that the means and Gini coefficients
are based on all males over age twenty for the U.S. and are based on all
male heads of household over age twenty for Utah. The top percentiles are
based on males over age twenty in both instances.

Source: United States: Soltow Men and Wealth. Utah: see text.

Table 2

Relative Movement of the Sample Through the Population, 1860-1870

1860 DECILE	1870 DECILE								N	Mean Decile, 1870
	1–3	4	5	6	7	8	9	10		
1	.149	.021	.071	.092	.177	.128	.156	.206	141	7.2
2	.141	.077	.071	.154	.186	.115	.167	.090	156	6.6
3	.236	.060	.126	.132	.132	.120	.108	.090	167	6.1
4	.143	.059	.074	.123	.187	.153	.158	.103	203	6.8
5	.092	.048	.070	.092	.154	.202	.199	.143	272	7.3
6	.059	.029	.069	.103	.137	.186	.250	.167	204	7.6
7	.094	.030	.047	.082	.099	.176	.279	.193	233	7.7
8	.073	.026	.026	.091	.103	.181	.251	.241	232	7.8
9	.089	.007	.037	.037	.085	.107	.203	.435	271	8.3
10	.042	.006	.013	.016	.032	.086	.118	.687	313	9.2
N	224	73	121	185	264	319	420	586	2192	

N: NUMBER IN DECILE, ΣN = 2192

Note: 1 is poorest decile; 10 is wealthiest decile
In 1870, the first three deciles are collapsed together because more
than 20% of the population had zero wealth.

Source: see text.

Table 3

Relative Movement of Households Within the Sample Distribution, 1860-1870

1860 DECILE	1870 DECILE										N	Mean Decile, 1870
	1	2	3	4	5	6	7	8	9	10		
1	.170	.106	.145	.145	.085	.081	.089	.072	.068	.033	238	4.4
2	.179	.184	.143	.161	.081	.058	.076	.054	.031	.031	223	3.9
3	.147	.137	.157	.147	.108	.078	.078	.039	.010		204	4.3
4	.113	.118	.108	.151	.167	.113	.108	.065	.038	.022	186	4.6
5	.055	.046	.114	.126	.122	.110	.151	.092	.089	.050	271	5.4
6	.097	.082	.092	.082	.158	.117	.153	.133	.051	.021	196	5.2
7	.060	.084	.130	.107	.088	.116	.116	.153	.084	.051	215	5.5
8	.081	.031	.085	.085	.090	.094	.166	.135	.135	.099	223	6.2
9	.055	.037	.032	.041	.051	.106	.088	.138	.240	.212	217	7.3
10	.050	.014	.014	.023	.054	.032	.054	.108	.189	.464	222	8.3
N	224	194	224	234	217	203	238	223	214	221	2192	

N: Number in Decile, ΣN = 2192

Note: 1 is poorest decile, 10 is wealthiest decile

Source: see text.

Table 4

Relative Movements of the Households Within the Sample Distributions, 1850-1870

				1870 DECILE								Mean Decile, 1870
	1	2	3	4	5	6	7	8	9	10	N	
1	.140	.180	.090	.130	.120	.060	.120	.050	.080	.030	100	4.5
2	.086	.114	.029	.086	.143	.143	.114	.200	.057	.029	35	5.5
3	.200	.120	.160	.093	.067	.093	.167	.093	.080	.027	75	5.1
4	.053	.079	.211	.132	.026	.158	.158	.053	.053	.079	38	5.2
1850 5	.100	.122	.089	.144	.089	.067	.178	.089	.067	.056	90	5.2
DECILE 6	.056	.113	.127	.155	.141	.042	.085	.113	.085	.085	71	5.4
7	.126	.057	.126	.145	.149	.115	.069	.080	.103	.092	87	5.6
8	.092	.077	.031	.138	.092	.092	.077	.108	.077	.215	65	6.1
9	.033	.049	.033	.066	.115	.213	.066	.082	.164	.164	61	6.6
10	.041	.027	.041	.081	.068	.081	.081	.149	.122	.324	74	7.5
N	69	68	64	83	67	68	71	67	63	76	696	

N: Number in Decile, ΣN = 696

Note: 1 is poorest decile; 10 is wealthiest decile

Source: see text.

Table 5
Mean Decile Position

	SAMPLE		SUB-GROUP		POPULATION	
	1860 (1)	1870 (2)	1860 (3)	1870 (4)	1860 (5)	1870 (6)
Sample	5.5	5.5	--	--	6.1	7.6
Nonfarm	5.0	4.9	6.3	8.0	5.7	7.0
Farm	5.8	6.0	6.0	6.8	6.5	8.2
Urban	5.6	6.1	6.3	7.8	6.2	7.8
Rural	5.5	5.4	6.1	7.2	6.1	7.6
US Born	6.4	5.9	6.4	7.5	7.0	7.8
Foreign Born	4.8	5.3	5.9	7.6	5.4	7.5
Triples	7.4	6.7	--	--	7.9	8.4
Age 25-34, 1860	4.9	5.3	5.9	7.1	5.6	7.5
Age 35-44, 1860	5.3	5.7	6.1	7.1	6.4	7.9
Age 45-54, 1860	6.7	6.1	6.6	7.3	7.3	8.0
Age 55-64, 1860	6.0	5.1	6.1	7.2	6.6	7.2

Source: see text.

Table 6

Stayers Within Sample Distributions, 1860-1870

DECILE

	1	2	3	4	5	6	7	8	9	10
Nonfarm	.295	.169	.119	.110	.058	.046	.077	.122	.171	.511
Farm	.019	.204	.200	.180	.172	.150	.139	.142	.280	.433
Rural	.149	.207	.168	.167	.148	.124	.125	.140	.275	.412
Urban	.229	.119	.122	.095	.018	.074	.077	.115	.156	.568
Foreign Born	.205	.290	.106	.140	.100	.082	.125	.145	.227	.522
US Born	.154	.149	.180	.155	.117	.138	.108	.121	.263	.311
Triples	.120	.330	.077	.100	.200	.030	.151	.080	.213	.492
Age 25-34, 1860	.190	.169	.133	.086	.152	.127	.129	.136	.286	.421
Age 35-44, 1860	.180	.320	.260	.050	.171	.110	.095	.159	.288	.500
Age 45-54, 1860	.059	.167	.158	.330	.063	---	.118	.143	.050	.360
Age 55-64, 1860	.157	.170	.123	.159	.100	.133	.101	.109	.242	.515
Sample	.170	.184	.157	.151	.122	.117	.116	.135	.240	.464

Source: see text.