

**LIKE WATCHING GRASS GROW?**

**ASSESSING CHANGES IN U.S. INTRAGENERATIONAL  
ECONOMIC MOBILITY OVER THE PAST TWO DECADES**

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#### I. INTRODUCTION

Rising income inequality and economic insecurity have garnered considerable attention in recent months from researchers, reporters, and policy makers. Even President Bush has begun to talk about rising economic inequality as a growing problem. Yet the problems posed by rising inequality may be mitigated or exacerbated by changes in economic mobility.

Income inequality and economic mobility are two distinct concepts, with *income inequality* denoting the distribution of income at a given point in time and *economic mobility* describing the ability of families to move up and down through the income distribution. Rising mobility can offset the long-term distributional effects of rising income inequality. Indeed, if families are becoming more likely to change their positions in the income distribution, the overall long-term distribution of income may be growing more equal even if income inequality is growing from year to year. Further, the consequences of changes in economic mobility may be offset by economic growth: even if mobility is falling, the standard of living of all individuals, even those in the bottom of the income distribution, may be rising.

This paper examines changes in economic mobility in the United States over the past two decades and compares mobility today to that of earlier decades. As such, it builds on and extends research that examined economic mobility during the 1970s, 1980s, and early 1990s. Using data from the Panel Study of Income Dynamics (PSID), we find that intragenerational economic mobility between 1994 and 2004 among a cohort of adults ages 25 to 44 in 1994 is quite similar to the mobility experienced by earlier cohorts. In other words, we find very little difference in overall economic mobility over time.

We also examine the characteristics associated with both upward and downward mobility and find that whites, men, those with more education, and those

who own homes are more likely to exit the bottom income quintile than are other individuals; however, the effects of racial and educational differences on upward mobility appear to have diminished over time, although this may reflect changes in the composition of individuals in the bottom quintile as measured in the PSID. The factors associated with increased downward mobility are being non-white, having less education, and having a disability. Over time, the importance of these characteristics in contributing to downward mobility has increased. In addition, the chances that an individual in the third income quintile will fall into the bottom income quintile have increased over time.

In the following sections, we first discuss issues in measuring economic mobility then briefly review research on the topic. Next, we describe the data and methods used in this paper and then present our findings. The paper concludes with a discussion of the implications of our findings.

## **II. ISSUES IN MEASURING ECONOMIC MOBILITY**

There are four key components that must be considered when assessing intragenerational economic mobility: (1) the income measure or status metric used; (2) the population assessed; (3) the standard of measurement, whether absolute or relative; and (4) the accounting period considered.

### **Income Measure**

Studies of economic mobility can focus on movements in the distribution of earnings, family incomes, pre- or post-tax and transfer incomes and earnings, and incomes adjusted for family size. Further, the sources of information on incomes and earnings such as self-reported survey data and data from tax records may differ in their ability to accurately measure total income as well as various components of income. As such, assessments of economic mobility and changes in mobility over time may be sensitive to the income concept used.

### **Population Assessed**

Mobility may also differ across populations, and this can influence assessments of mobility in two ways. First, if income is highly volatile for young individuals, studies that include young adults (16- to 24-year-olds) may show more mobility than do studies that focus on adults 25 and up, who are usually more established. Second, studies that try to compare mobility across time periods (e.g., the 1980s and the 1990s) may be influenced by changes in the underlying populations. For example, a large increase in the number of single-parent families could swell the lowest ranks of the income distribution at the start of a time period; if these single parents are less (or more) likely than married parents and childless adults to move up the income distribution, then mobility over the period may appear to be lower (or higher) than in periods marked by smaller shares of single-parent families.

### **Absolute or Relative Standard**

Economic mobility can be measured either relative to one's peer group (relative mobility) or against an absolute standard (absolute mobility). Measuring absolute mobility captures the effects of economic growth, but it does not indicate whether one's position in society has changed. Both concepts are useful, but they can produce very different assessments of intragenerational mobility depending on how broadly the population of interest is defined. For example, if the measurement includes younger workers who expect to experience substantial earnings growth, the resulting findings are likely to suggest substantially more absolute mobility than relative mobility.

### **Accounting Period**

Finally, the accounting period used to assess the distribution of income may have significant effects on the assessment of mobility. There are two aspects to this issue: the time span over which mobility is considered and the number of months or years used to measure income at the beginning and end of any particular time span. Most studies of economic mobility assess movements through the income distribution

over relatively long time spans, often a decade or longer. Studies that consider mobility over shorter periods, like year to year, are more concerned with volatility—how unstable income or a particular position in the income distribution may be in the short term. Clearly, income volatility and economic mobility are very similar concepts, largely distinguished by the time horizon considered. Much recent research documents a rise over the past two decades in the year-to-year volatility of family income, though not without controversy.<sup>1</sup>

If single-year income is quite volatile, income mobility—as measured over longer time spans, like decades—will appear to be quite high,<sup>2</sup> and if income volatility is increasing over time, mobility will also appear to be increasing. By broadening the accounting period at the start and end of any particular time span to two, three, or even five years, much of the random noise in annual incomes will be averaged away, and the resulting distribution will better reflect “permanent income.” Thus, assessments of mobility using longer accounting periods to define starting and end positions will show less mobility than studies that use shorter accounting periods.

### **III. RESEARCH REVIEW**

Given all the factors that can influence assessments of mobility, it is remarkable how consistent the research findings have been over the past three decades. With few exceptions, the research shows that about half of those in the bottom income quintile will rise out of the bottom over a decade, and this is the case in the 1970s, 1980s, and 1990s. For example, Sawhill and Condon (1992) examine relative income mobility of individuals ages 25 to 54, using data from the PSID, and find that 44 percent of those in the bottom income quintile in 1967 moved up and out of the bottom by 1976; between 1977 and 1986, the upward mobility rate rose to 47 percent. Bradbury and Katz (2002) also use PSID data but focus on family heads under age 65 and adjust income for family size. They find that upward mobility rates out of the bottom quintile were 51 percent between 1969 and 1979, 50 percent between 1979 and 1989, and 47 percent between 1988 and 1998. Another

PSID-based study, that by Hungerford (2008) reports upward mobility rates of just over 50 percent between both 1980 and 1989 and 1990 and 1999. Finally, Gottschalk and Danziger (1998) also use PSID data but consider a longer time period, 1968 to 1991, adjust incomes for household size, and focus on 22- to 39-year-olds; they find an upward mobility rate of 53 percent. When they broaden their accounting period, averaging incomes over three years, they find the upward mobility rate falls to 46 percent.

The data in the PSID are self-reported, but even studies using tax records draw similar conclusions about relative income mobility. For example, Carroll, Joulfaian, and Rider (2006) report an upward mobility rate of 54 percent between 1979 and 1995 when using data on taxpayers between the ages of 30 and 50. Focusing on taxpayers aged 25 and over in 1987, Auten and Gee (2007) find that 45 percent of those in the bottom quintile in 1987 moved to higher quintiles between 1987 and 1996. More recent work by the U.S. Department of the Treasury (2008) examines the mobility of taxpayers aged 25 and over between 1996 and 2005 and finds virtually identical upward relative mobility rates: about 45 percent of those in the bottom quintile in 1996 were in a higher quintile in 2005.

Several studies consider absolute mobility and assess the extent to which individuals in the bottom quintile enjoy real income growth and income growth beyond key benchmarks like the threshold for the bottom or top income quintiles. For example, Cox and Alm (1996) use the PSID and find that over 97 percent of those in the bottom income quintile in 1975 had incomes exceeding the 1975 inflation adjusted income threshold for the bottom quintile in 1991. Nearly 40 percent actually crossed the threshold for the top income quintile. The extraordinarily high upward mobility portrayed by Cox and Alm reflects their use of individual, not family, income and their inclusion of individuals down to the age of 16. Indeed, a 16-year-old with an income of \$500 from a summer job who lives with his upper-middle class parents would fall in the bottom quintile in 1975. Sixteen years later, it would not be at all surprising to find his real annual income considerably higher.

Other researchers who assess family income and focus on household heads or restrict their studies to more established individuals find considerably less absolute mobility. For example, Gottschalk and Danziger (1998) find an absolute upward mobility rate from the bottom quintile of 69 percent between 1968–1970 and 1989–1991 when looking at 22- to 39-year-olds and considering family income adjusted for family size. Only 11 percent of those in the bottom quintile saw their incomes cross the threshold for the top quintile. Other studies of absolute income mobility focus on the growth in real income among those in any particular income quintile. For example, Auten and Gee (2007) report that 47 percent of heads of taxpaying units in the bottom income quintile in 1987 saw their real incomes increase at least two fold by 1996 while 23 percent saw no growth or even experienced declines. The trends are quite similar for the 1996 to 2005 period, with half of the heads of taxpaying units (ages 25 and up) in the bottom quintile in 1996 experiencing a doubling of their real income by 2005 while about 18 percent experienced real income declines (U.S. Treasury 2008). Note that even substantial growth in real income may leave individuals below the absolute income threshold for the bottom quintile if their initial incomes are sufficiently low (e.g., experiencing a threefold increase in income from \$500 to \$1,500 a year still leaves one well below the 20<sup>th</sup> percentile in the income distribution). Duncan, Smeeding, and Rodgers (1991) define lower, middle, and upper classes using fixed dollar amounts and assess both upward and downward absolute mobility over two-year periods.<sup>3</sup> They find that about one-third of low-income families climb into the middle class and that about 7 percent of those in the middle class fall into the lower class over any given two-year period. They also note that upward mobility rates were lower in the 1980s than in the 1970s while downward mobility rates rose.

#### **IV. DATA AND METHODS**

This paper builds on and extends this prior research by examining mobility trends to 2004, showing how sensitive or robust findings are when different accounting periods and mobility concepts are used, and by assessing the factors

associated with upward and downward mobility. Before presenting our results, we first describe our data and analytic approach.

## **Data**

We use data from the PSID. Begun in 1968 with a sample of approximately 5,000 families, the PSID follows individuals and their descendants over time, tracking changes in incomes, behaviors, and living situations. The PSID was administered annually between 1968 and 1997, and biannually thereafter. The most recent wave, administered in 2005, includes weighted data on more than 8,000 families and 16,000 individuals.<sup>4</sup>

The PSID collects data on many types of annual pre-tax income, including earned income, asset income, and cash transfer income. For this paper, we focus on family income—the sum of earned, asset, and transfer income over all family members—on the grounds that an inclusive measure best captures overall economic well-being. For the same reason, we adjust income for family size using the PSID-provided United States Department of Agriculture needs standard.

We limit our sample in five ways. First, we consider only individuals who were either family unit heads or significant others because the PSID only reports comprehensive information for such individuals. Second, we eliminate individuals younger than 25 or older than 45 in the base year to exclude the abrupt income changes that often accompany the shift from school to work and from work to retirement from our analysis. Third, individuals must be observed in both the start and end years of the analysis period.<sup>5</sup> Fourth, we exclude individuals whose family incomes are below \$1200 in 2005 dollars or within the top 1 percent of the adult income distribution in either the base-year or the end-year in order to limit the effect that high- and low-income outliers have on our results.<sup>6</sup> Fifth, and finally, we include only individuals observed as family heads or spouses or partners in both the base and end years.<sup>7</sup> This requirement eliminates about one-quarter of the weighted individuals present in the start year. The attrition rate for individuals in the bottom quintile is somewhat higher than the overall attrition rate, hovering around one-third.

We assess income mobility over two 10-year intervals: 1984 to 1994 and 1994 to 2004.<sup>8</sup> In addition to our primary analysis focusing on annual income, we also consider two-year average income, calculated using data from two PSID waves, to smooth over transitory fluctuations in income. Although we would ideally consider income averaged over consecutive years, the PSID's shift to biannual data collection requires the use of alternate years for a consistent measure. Thus, to compute two-year average income in, say, 1984, we average incomes, adjusted for needs, from 1982 and 1984. When averaging income, we also use income data from 1992 for the 1992–1994 average, and 2002, for the 2002–2004 average. The unweighted samples for our single-year analyses comprise 2,681 individuals in the 1984 to 1994 period and 2,288 in the 1994 to 2004 period. For our two-year average income analyses, our samples comprise 2,441 individuals for the early period and 2,070 for the later period.

The years we use to anchor our analyses are drawn from similar points in the business cycle: 1984, 1994, and 2004 are all early recovery years in which the economy is recovering from a recession but has not yet reached a business cycle peak. Nevertheless, the economy as measured by unemployment rates was a bit stronger in 1994 than in 1984 and a bit stronger in 2004 than in 1994.<sup>9</sup> These differences may influence mobility trends. For either year pair, that unemployment is lower in the end year than the base year may lead us to find higher upward mobility rates: the unemployed are more likely to be in the bottom quintile than in higher quintiles, and when unemployed individuals find work their earnings may move them up and out of the bottom. Thus, when comparing mobility rates across periods, we may find more mobility over periods that start with higher unemployment rates—in other words, there may be more potential mobility in the 1984 to 1994 period than the 1994 to 2004 period because of the overall strengthening of the economy between 1984 and 2004. On net, however, these differences in the strength of the economy are not likely to have large effects on our findings because not all non-workers are in the bottom quintile, starting work does

not guarantee moving across quintile lines, and the change in the share of the population that is working is relatively small given the size of the total population.<sup>10</sup>

## **Methods**

We use several straightforward approaches to assess changes in economic mobility over time. First, we follow the work of other researchers and examine transition matrices that show the distribution of individuals across base- and end-year income quintiles. We present transition matrices based on relative mobility as well as absolute mobility (where end-year “quintiles” are not truly quintiles but are based on the real value of the quintile cutoffs from the base year). To assess if mobility is changing over time, specifically, from the early period of 1984–1994 to the later period of 1994–2004, we compare total mobility, that is the share of the population that changed quintiles across the year pairs, as well as upward mobility out of the bottom quintile across the year pairs.

Next, we take a closer look at upward mobility out of the bottom income quintile as well as downward mobility into the bottom quintile. Again, we consider both relative and absolute mobility and single-year and two-year average income. To assess the factors that influence upward and downward mobility, we examine the characteristics of individuals in the lower and upper quintiles in different years and estimate linear probability regression models to identify the characteristics that are associated with mobility.<sup>11</sup> The characteristics we consider include race or ethnicity (white, non-Hispanic), sex, age, educational attainment, presence of a spouse or partner, presence of other adults, presence of children, disability status, homeownership, hours worked, and hours worked by spouse or partner (set to 0 if no spouse or partner is present)—all measured at the base year.

To assess whether any changes in mobility reflect changes in the population or changes in the influence these characteristics have on mobility, we simulate mobility rates using the characteristics of individuals from the earlier period, 1984–1994, and coefficients estimated using the later period, 1994–2004. The difference between actual later-period mobility and simulated mobility is the amount of the

change in mobility due to the changing composition of the population of the quintile(s) in question; the difference between early period mobility and simulated mobility can be attributed to changes in the influence of characteristics on mobility.

## **V. RESULTS**

Relative mobility rates for the 1984–1994 and 1994–2004 periods appear in Table 1 (all tables appear at the end of the paper).<sup>12</sup> Computed using single-year income, Table 1 demonstrates that overall relative mobility and upward mobility out of the bottom quintile remained nearly static between the 10-year windows beginning in 1984 and 1994. In the earlier period, 60.4 percent of individuals switched quintiles, including 46.5 percent of those who started out in the bottom quintile. The equivalent figures for the later period were 60.5 percent and 45.4 percent, respectively. Mobility out of the bottom quintile thus accounted for 15.4 percent of total mobility between 1984 and 1994, and 15 percent between 1994 and 2004.

Overall relative mobility trends computed using two-year average income were nearly identical to single-year mobility trends: Table 2 shows that approximately 60 percent of individuals moved from one quintile to another over the course of each ten-year period. Income averaging does, however, dampen upward mobility out of the bottom quintile, particularly between 1994 and 2004. Of individuals in the bottom income quintile of average income in 1984, 44.4 percent moved up by 1994, but only 39 percent of the people in the bottom average-income quintile in 1994 had moved up by 2004. However, even this difference is not statistically significant ( $p=0.16$ ). Accordingly, mobility out of the bottom quintile made up 14.8 percent of total mobility between 1984 and 1994, and 13.1 percent of total mobility between 1994 and 2004.

Though consistently higher than relative mobility rates, Table 3 demonstrates that rates of absolute mobility, when calculated using single-year income, are also fairly stable over time. Between 1984 and 1994, 61.1 percent of individuals saw their positions relative to the initial quintile boundaries change; between 1994 and 2004, that figure was 62.6 percent. In the earlier window, 52.8 percent of individuals in

the bottom quintile moved into a higher income group, compared to 54.1 percent in the later window. In each year, mobility out of the bottom quintile accounted for 17.3 percent of total mobility.

Unlike the case for relative mobility, there are a few statistically significant differences in absolute mobility in the middle and top of the income distribution. The probability that an individual in the fourth quintile had income growth that would move him or her across the base-year boundary for the top quintile fell from 49.9 percent in the early period to 41.2 percent in the later period. In addition, an increasing share of individuals in the top quintile saw their real incomes fall below the top income quintile boundary. There is some evidence of increasing upward absolute mobility for individuals in the second and third quintiles as they have become increasingly likely to experience income growth that would lift them above the threshold for the fourth quintile.

Using average incomes rather than single year incomes increases absolute mobility rates for the earlier period but decreases rates for the later period, as reflected in Table 4. Overall mobility computed using two-year average incomes was 62.7 percent between 1984 and 1994 (compared with 61.1 percent using single year income), and 59.8 percent between 1994 and 2004 (compared with 62.6 percent using single year income). Over each period, approximately 55 percent of individuals in the bottom quintile moved into a higher income group, with this mobility accounting for 18.5 percent of the total mobility between 1994 and 2004 and 17.5 percent of total mobility between 1984 and 1994.

Again, there are a few specific changes that are statistically significant. Although net movement out of the bottom quintile did not change, those who did move out are far less likely to have crossed the threshold for the top quintile in the later period than in the early period. Indeed those that exceed the bottom quintile threshold are much more likely to only reach the second quintile during the later period. In addition, as was the case using single year income, we again find that individuals in the fourth quintile are less likely to cross the top quintile income threshold between 1994 and 2004 than they were between 1984 and 1994.

## **Understanding Upward Mobility**

Specific characteristics affect movement into and out of the bottom quintile (or, in the case of absolute mobility, the bottom income group). We focus on single-year income, but present results for average income in tables A1 through A9.

### **Characteristics of Individuals in the Bottom Quintile**

Consider first the characteristics of people at the lower end of the income distribution. Table 5 demonstrates that individuals in the bottom quintile of the initial 1984 and 1994 samples differ significantly from the sample as a whole. They are less likely to be white and more likely to be women. They tend to be less educated, are less likely to own homes, and are more likely to be disabled. Further, although they are more likely to live in families with children, they are less likely to live with a spouse or partner. Finally, they work fewer hours, on average, during the year than does the sample as a whole, and if they have a spouse or partner, that person also works fewer hours than other spouses and partners in the whole sample.

### **Correlates of Upward Relative Mobility**

Many of these traits are associated with the rate of relative mobility out of the bottom quintile, as shown in Table 6. Between 1984 and 1994, 54.7 percent of whites in the bottom quintile moved up to a higher position in the income distribution, compared to 26 percent of non-whites. Men were 11.7 percentage points more likely to leave the bottom quintile than women, and individuals with college degrees were nearly three times as likely to move up as individuals with less than a high school education. Homeowners and healthy individuals were also much more likely to move up than non-homeowners and people with disabilities, respectively. Similar relationships held for mobility over the 1994–2004 period, with one notable exception: the association between upward mobility and the presence of a spouse or partner increased dramatically. Between 1984 and 1994, individuals living with partners were about 2.4 percentage points more likely to leave the bottom quintile

than single individuals; between 1994 and 2004, they were 14 percentage points more likely to do so.

In Table 7, a linear probability model helps isolate the individual correlations of each trait with upward mobility out of the bottom quintile. A few themes emerge. First, education is extremely important. During both 1984–1994 and 1994–2004, the probability that an individual leaves the bottom quintile is over 30 percentage points higher for individuals with more than a high school education than for those who did not complete high school.

Second, the independent impact of race or ethnicity on upward mobility appears to have decreased over time. Between 1984 and 1994, the probability that a white, non-Hispanic person will leave the bottom quintile is 21 percentage points higher than a non-white's chances of upward mobility. Between 1994 and 2004, both the size and the significance of the race or ethnicity coefficient had substantially diminished.<sup>13</sup>

Third, those who work more hours are more likely to move up and out of the bottom quintile, and the relationship between work and upward mobility has grown over time. An extra 1,000 hours of work increases the probability of leaving the bottom quintile by nearly 5 percentage points between 1984 and 1994; between 1994 and 2004, an extra 1,000 hours increases the probability of upward mobility by over 12 percentage points.

The relationships between upward mobility, marital status, and spousal work are complex and have changed over time. Between 1984 and 1994, married or partnered individuals in the bottom quintile whose spouses or partners do not work were 18 percentage points less likely to be upwardly mobile than are non-partnered individuals; however, an additional 1,000 hours of the spouse or partner's work increased upward mobility by over 5 percentage points. Between 1994 and 2004, neither the presence of a spouse or partner nor that person's hours of work are significantly correlated with upward mobility.

Finally, several factors that are significantly correlated with upward mobility during the early period no longer influence mobility during the 1994 to 2004 period. These factors include sex, disability status, and home ownership.

### **Understanding Changes in Upward Relative Mobility**

Overall, there is little difference in relative upward mobility rates between 1984–1994 and 1994–2004; 46.5 percent of those in the bottom quintile in 1984 had risen out of the bottom by 1994 while the comparable figure for the 1994 to 2004 period is 45.4 percent—a 1.1 percentage point decrease in upward relative mobility. This decline is due in large part to changes in the characteristics of individuals in the bottom quintile. When we use our coefficients from the linear probability model on upward mobility outcomes between 1994 and 2004 to simulate what the upward mobility rate would have been had the individuals in the bottom quintile resembled those from 1984, we find that the upward mobility rate would have been 46.4 percent. In other words, structural changes, as measured by changes in the regression coefficients, would have led to a 0.1 percentage point decrease in upward mobility, and mobility decreasing changes in the characteristics of individuals in the bottom income quintile account for 1 percentage point of the decline.

### **Upward Absolute Mobility**

Traits associated with higher levels of relative mobility out of the bottom income quintile are generally also associated with higher rates of absolute mobility out of the bottom quintile, whether viewed through a descriptive or linear probability framework. As such, we do not discuss our findings in detail, but they are described in Tables 8 and 9.

Absolute upward income mobility increased slightly from 52.8 percent in the 1984–1994 period to 54.1 percent in the 1994–2004 period. If the individuals in the bottom quintile in 1994 had the characteristics of those in the bottom quintile in 1984, upward absolute mobility would have increased even more, to 54.8 percent, between 1994 and 2004. Thus, structural changes (as measured by changes in the

coefficients) worked to increase absolute upward mobility, but these changes were offset by mobility-reducing changes in the characteristics of individuals in the bottom income quintile.

### **Understanding Downward Mobility**

The characteristics that make individuals less likely to leave the bottom quintile typically make them more likely to enter it, as is reflected in Table 10. In both periods, whites, people with more education, homeowners, the non-disabled, and people with spouses or partners present are less likely to fall into the bottom quintile than other individuals. Similarly, people who start off in higher income quintiles are less prone to fall to the bottom quintile than people who start off in lower quintiles. The risks associated with other characteristics have changed over time: for instance, those with a work-limiting disability have grown more likely to fall to the bottom.

The linear probability regression framework shown in Table 11 again helps parse the effects of each of the above covariates, holding all else equal. As would be expected, starting income quintile has large and significant correlations with the probability of falling into the bottom quintile in both periods and the higher one begins, the less likely one is to fall into the bottom quintile.

Other factors also influence downward relative mobility, although the effects have shifted over time. For example, being white did not significantly reduce the chances of downward relative mobility between 1984 and 1994, but it does between 1994 and 2004. Note however that the magnitude of the difference is modest: 7.5 percentage points in the later period compared with 5.3 percentage points in the earlier period. Similarly, having a disability had no significant correlation with downward relative mobility between 1984 and 1994, but those with a disability are 14.1 percentage points more likely to fall to the bottom quintile than those without a disability between 1994 and 2004. Although men were more likely to fall to the bottom than were women during the earlier period, there is no significant difference by gender during the later period.

The number of hours an individual works is uncorrelated with downward mobility in both periods. Having a spouse or partner and that person's work effort influenced downward mobility between 1984 and 1994 but not between 1994 and 2004. Those with a spouse or partner were less likely to move down to the bottom quintile than were those who were not partnered, but the more that the spouse or partner worked, the higher the odds of downward mobility. This may seem surprising, but it is consistent with the idea that if a working spouse or partner is what is keeping someone out of the bottom income quintile, then a reduction of the spouse or partner hours could drop him or her down to the bottom—hence, in the 1984–1994 period, those with working spouses or partners are at elevated risk for downward mobility.

As was the case with upward mobility, the overall rate of downward relative mobility is quite similar in the earlier and later periods. Further, the effects of population composition on trends in the rate of movement into the bottom quintile are quite small. The observed downward mobility rate, 11.5 percent, differs from the downward mobility rate predicted by applying 1994 base-year-only coefficients to the 1984 sample by only 0.3 percentage points.

### **Assessing Downward Absolute Mobility**

Table 12 demonstrates that the associations between individual characteristics and relative mobility into the bottom quintile do not necessarily hold when the focus turns to absolute mobility into the bottom income group. This is not surprising because incomes tend to rise with age. As such, many fewer people experience absolute mobility into the bottom quintile than relative mobility into the bottom income group. Those who experience relative mobility into the bottom quintile include people experiencing absolute mobility into the bottom income group, but the overall group is substantially larger and may be composed of different populations.

Nevertheless, regression results indicate that, in both analysis periods, the drivers of absolute movement into the bottom group are similar to the drivers of

relative mobility into the bottom quintile, shown in Table 13, but there are some interesting differences. In particular, the security of those in the third income quintile diminishes over time: Although individuals in the third quintile are significantly less likely to fall to the bottom than those in the second quintile during 1984–1994, they enjoy no significant advantage during 1994–2004. In addition, whites are consistently less likely to experience downward absolute mobility than non-whites during both periods, not just in the earlier period as is the case for relative downward mobility. Finally, the person’s own work effort, the presence of a spouse or partner and that person’s work are uncorrelated with absolute downward mobility in either period.

The impact of disability on absolute mobility is similar to that observed in the relative mobility regression: people with disabilities in the start year, 1984, were not significantly more likely than other individuals to move into the bottom income group, but people with disabilities in the start year 1994 were more likely to sink to the bottom.

Overall, the rate of absolute mobility into the bottom income group changed very little, increasing from 7.3 percent between 1984 and 1994 to 7.7 percent between 1994 and 2004. However, had population characteristics remained constant between the two intervals, downward absolute mobility would actually have decreased slightly, to 7 percent. This finding is consistent with the analysis of upward absolute mobility presented above, which also points towards a structural shift towards upward mobility counterbalanced by a population becoming more likely to suffer declines in real income.

## **VI. DISCUSSION**

Historically, research on relative and absolute economic mobility in the United States focused on whether mobility was different in the 1980s and early 1990s than in the 1960s and 1970s and found that mobility had not changed that much. Since this research, the economy experienced marked growth during the mid- to late-1990s, with particularly strong growth among middle- and lower-income

families, and a recession followed by several years of sluggish growth in the early years of the twenty-first century. This paper builds on prior research by assessing absolute and relative income mobility for the 1994–2004 period.

Using data from the PSID, we find that intragenerational economic mobility between 1994 and 2004 among a cohort of adults ages 25 to 44 in 1994 is quite comparable to the mobility experienced by an earlier cohort from 1984 to 1994. In other words, we find very little difference in overall economic mobility over time. Specifically, in both 10-year spans, about 60 percent of individuals changed their income quintiles relative to their peers. Upward mobility rates out of the bottom quintile are quite similar as well, with about 47 percent of those in the bottom rising to higher quintiles. Our findings are quite similar to those reported by other researchers covering various time periods from 1968 forward. Further, our findings on mobility are rather robust to changes in accounting periods, from single-year to Two-year average incomes, as well as to considerations of absolute and relative mobility. For example, total economic mobility rates are slightly over 60 percent regardless of mobility concept, and absolute upward mobility rates hover just above 50 percent while relative upward mobility rates hover just below 50 percent.

In examining the characteristics associated with both upward and downward mobility, we find that non-Hispanic whites, men, those with more education, and those who own homes are more likely to exit the bottom income quintile than are other individuals; however, the effects of race or ethnicity and educational differences on upward mobility appear to have diminished over time. This may reflect changes in the composition of individuals in the bottom income quintile as measured in the PSID. The factors associated with increased downward mobility are being black or Hispanic, having less education, and having a disability. Over time, the importance of these characteristics in contributing to downward mobility has increased. In addition, the chances that an individual in the third income quintile will fall into the bottom income quintile have increased over time.<sup>14</sup>

It is rather striking that mobility rates have largely remained stable over the past few decades despite notable changes in the economy. Some may point to the

levels of mobility in the economy and suggest that the level of mobility should offset concerns about income inequality. Of course, it is hard to know how much economic mobility is enough. Although rising income inequality does not necessarily imply decreasing economic mobility,<sup>15</sup> it is important to note that in the context of rising inequality, stable mobility rates suggest that the distribution of lifetime income must be growing more unequal; that is, lifetime or long-term income inequality is rising.<sup>16</sup> Further, that middle class status offers increasingly less protection against income falling below the threshold of the bottom income quintile, that is, absolute downward mobility, should also be a point of concern.

**Table 1: Quintile Transitions, Single-Year Income (Relative Mobility)**

2004 Quintile					
1994 Quintile	Lowest	Second	Middle	Fourth	Highest
Lowest	0.546	0.255	0.088	0.076	0.035
Second	0.215	0.333	0.245	0.144	0.063
Middle	0.152	0.204	0.268	0.201	0.176
Fourth	0.067	0.151	0.262	0.312	0.208*
Highest	0.026	0.056	0.132	0.269	0.517
<b>Overall mobility</b>					
<b>0.605</b>					
<b>Mobility out of bottom quintile</b>					
<b>0.454</b>					
<b>Bottom quintile mobility share</b>					
<b>0.150</b>					

1994 Quintile					
1984 Quintile	Lowest	Second	Middle	Fourth	Highest
Lowest	0.535	0.242	0.106	0.071	0.046
Second	0.199	0.370	0.223	0.158	0.050
Middle	0.113	0.209	0.280	0.231	0.166
Fourth	0.060	0.119	0.256	0.293	0.271
Highest	0.037	0.045	0.151	0.267	0.501
<b>Overall mobility</b>					
<b>0.604</b>					
<b>Mobility out of bottom quintile</b>					
<b>0.465</b>					
<b>Bottom quintile mobility share</b>					
<b>0.154</b>					

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Asterisks indicate significant differences in quintile-to-quintile transition rates between the 1984–94 and 1994–2004 periods.

Note: Tables represent authors' tabulations of PSID data.

**Table 2: Quintile Transitions, Two-Year Average Income (Relative Mobility)**

2004 Quintile					
1994 Quintile	Lowest	Second	Middle	Fourth	Highest
Lowest	0.610	0.233	0.090	0.058	0.009**
Second	0.231	0.335	0.246	0.105	0.083
Middle	0.115	0.232	0.255	0.262	0.137
Fourth	0.039	0.129	0.279	0.300	0.252
Highest	0.013	0.063	0.125	0.277	0.522
<b>Overall mobility</b>					
<b>0.596</b>					
<b>Mobility out of bottom quintile</b>					
<b>0.390</b>					
<b>Bottom quintile mobility share</b>					
<b>0.131</b>					

1994 Quintile					
1984 Quintile	Lowest	Second	Middle	Fourth	Highest
Lowest	0.556	0.241	0.098	0.072	0.033
Second	0.230	0.339	0.235	0.143	0.052
Middle	0.106	0.228	0.285	0.250	0.131
Fourth	0.034	0.129	0.254	0.292	0.291
Highest	0.016	0.058	0.136	0.265	0.526
<b>Overall mobility</b>					
<b>0.600</b>					
<b>Mobility out of bottom quintile</b>					
<b>0.444</b>					
<b>Bottom quintile mobility share</b>					
<b>0.148</b>					

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Asterisks indicate significant differences in quintile-to-quintile transition rates between the 1984–94 and 1994–2004 periods.

**Table 3: Transitions Across Start-Year Quintile Boundaries, Single-Year Income (Absolute Mobility)**

	2004 Income Group				
1994 Quintile	Lowest	Second	Middle	Fourth	Highest
Lowest	0.459	0.228	0.132	0.108	0.073
Second	0.131	0.214	0.272	0.225**	0.159
Middle	0.112	0.115	0.170	0.298**	0.305
Fourth	0.044	0.073	0.136	0.336**	0.412**
Highest	0.022	0.022	0.056	0.206**	0.693
<b>Overall mobility</b>					
<b>0.626</b>					
<b>Mobility out of bottom quintile</b>					
<b>0.541</b>					
<b>Bottom quintile mobility share</b>					
<b>0.173</b>					

	1994 Income Group				
1984 Quintile	Lowest	Second	Middle	Fourth	Highest
Lowest	0.472	0.217	0.118	0.094	0.099
Second	0.147	0.249	0.272	0.161	0.171
Middle	0.076	0.131	0.219	0.226	0.348
Fourth	0.048	0.067	0.123	0.264	0.499
Highest	0.022	0.036	0.062	0.138	0.741
<b>Overall mobility</b>					
<b>0.611</b>					
<b>Mobility out of bottom quintile</b>					
<b>0.528</b>					
<b>Bottom quintile mobility share</b>					
<b>0.173</b>					

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Asterisks indicate significant differences in quintile-to-quintile transition rates between the 1984–94 and 1994–2004 periods.

**Table 4: Transitions Across Start-Year Quintile Boundaries, Two-Year Average Income (Absolute Mobility)**

	2004 Income Group				
1994 Quintile	Lowest	Second	Middle	Fourth	Highest
Lowest	0.448	0.291**	0.125	0.104	0.033***
Second	0.111*	0.262	0.259	0.222	0.145
Middle	0.059	0.133	0.218	0.281	0.309
Fourth	0.029	0.052	0.128	0.383***	0.408***
Highest	0.009	0.032	0.053	0.206	0.699*
<b>Overall mobility</b>					
<b>0.598</b>					
<b>Mobility out of bottom quintile</b>					
<b>0.552</b>					
<b>Bottom quintile mobility share</b>					
<b>0.185</b>					

	1994 Income Group				
1984 Quintile	Lowest	Second	Middle	Fourth	Highest
Lowest	0.451	0.210	0.156	0.082	0.102
Second	0.156	0.236	0.234	0.199	0.174
Middle	0.064	0.124	0.183	0.266	0.362
Fourth	0.014	0.059	0.132	0.232	0.563
Highest	0.016	0.023	0.045	0.156	0.761
<b>Overall mobility</b>					
<b>0.627</b>					
<b>Mobility out of bottom quintile</b>					
<b>0.549</b>					
<b>Bottom quintile mobility share</b>					
<b>0.175</b>					

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Asterisks indicate significant differences in quintile-to-quintile transition rates between the 1984–94 and 1994–2004 periods.

**Table 5: Bottom Quintile and Sample-Wide Characteristics**

Characteristic	Bottom Quintile		Full Sample		Significance
	1984	1994	1984	1994	
White	0.71	0.62	0.86	0.81	a, b, c, d
Male	0.41	0.39	0.49	0.47	c, d
Less than high school education	0.33	0.22	0.13	0.08	a, b, c, d
High school education	0.44	0.49	0.4	0.38	c, d
More than high school education	0.23	0.29	0.47	0.54	a, b, c, d
Homeowner	0.44	0.32	0.65	0.62	a, c, d
Disabled	0.16	0.19	0.08	0.1	b, c, d
Children present	0.82	0.76	0.71	0.64	a, b, c, d
Spouse or partner present	0.6	0.47	0.77	0.7	a, b, c, d
Other adult present	0.11	0.14	0.11	0.11	d
25–34 years old	0.59	0.48	0.55	0.46	a, b, c
Work hours (1000s)	1.31	1.29	1.72	1.77	b, c, d
Spouse or partner's hours, if present (1000s)	1.36	1.37	1.63	1.76	b, c, d
Sample Size	790	637	2681	2288	

*a: Proportion/mean in bottom quintile of the 1984 sample significantly different from proportion/mean in bottom quintile of the 1994 sample at the  $p=.10$  level.*

*b: Proportion/mean in full 1984 sample significantly different from proportion/mean in full 1994 sample at the  $p=.10$  level.*

*c: Proportion/mean in bottom quintile of the 1984 sample significantly different from proportion/mean in quintiles 2-5 of the 1984 sample at the  $p=.10$  level.*

*d: Proportion/mean in bottom quintile of the 1994 sample significantly different from proportion/mean in quintiles 2-5 of the 1994 sample at the  $p=.10$  level*

**Table 6: Probability of Leaving Bottom Quintile, by Characteristic (Relative Mobility)**

<b>Characteristic</b>	<b>1984</b>	<b>1994</b>	<b>Significance</b>
<b>Race/Sex/Age</b>			
White	0.547	0.52	a, b
Non-white	0.26	0.345	
Male	0.534	0.535	a, b
Female	0.417	0.404	
25–34 years old	0.432	0.485	
35–44 years old	0.513	0.426	
<b>Education</b>			
<High school	0.289	0.314	a, b
High school	0.473	0.401	b
>High school	0.699	0.649	a, b
<b>Household Type</b>			
Spouse or partner present	0.474	0.528	b
No spouse or partner	0.45	0.388	
Children present	0.453	0.458	
No children	0.517	0.441	
Other adult present	0.376	0.342	b
No other adult present	0.475	0.472	
Homeowner	0.531	0.514	a
Not a homeowner	0.413	0.426	
<b>Disability Status</b>			
Disabled	0.297	0.404	a
Not disabled	0.497	0.466	
<b>Labor Force Participation</b>			
Full-time worker	0.557	0.582	a, b
Not a full-time worker	0.408	0.363	
Spouse or partner full-time worker, if present	0.523	0.539	
Spouse or partner not full-time worker, if present	0.445	0.519	
<b>Total</b>	<b>0.465</b>	<b>0.454</b>	

*a: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1984 sample significant at the  $p=.10$  level.*

*b: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1994 sample significant at the  $p=.10$  level.*

*Note: significance only reported for one variable in each pair of complementary variables.*

**Table 7: Linear Regression of the Probability of Leaving the Bottom Quintile (Single-Year Income, Relative Mobility)**

	(1) 1984--1994	(2) 1994-- 2004
White	0.209*** (0.0471)	0.0816 (0.0567)
Male	0.102* (0.0536)	0.0475 (0.0600)
25–34 years old	-0.0413 (0.0500)	0.0431 (0.0506)
High school education	0.129** (0.0511)	0.0600 (0.0597)
>High school education	0.329*** (0.0626)	0.314*** (0.0696)
Children present, start year	0.0515 (0.0641)	0.0596 (0.0650)
Disability, start year	-0.192*** (0.0566)	0.0312 (0.0687)
Homeowner, start year	0.0972* (0.0511)	0.0662 (0.0588)
Spouse or partner present, start year	-0.180*** (0.0640)	0.00767 (0.0841)
Work hours (1000s)	0.0478* (0.0259)	0.125*** (0.0298)
Spouse or partner hours (1000s), if present	0.0525* (0.0289)	0.0208 (0.0403)
Other adult present	0.0236 (0.0726)	-0.0535 (0.0741)
Constant	0.112 (0.0803)	0.000513 (0.0833)
Observations	790	637
$R^2$	0.191	0.169

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table 8: Probability of Leaving the Bottom Income Group, by Characteristic (Absolute Mobility)**

<b>Characteristic</b>	<b>1984</b>	<b>1994</b>	<b>Significance</b>
<b>Race/Sex/Age</b>			
White	0.612	0.624	a, b
Non-white	0.318	0.404	
Male	0.608	0.62	a, b
Female	0.473	0.492	
25–34 years old	0.503	0.564	
35–44 years old	0.564	0.521	
<b>Education</b>			
<High school	0.358	0.376	a, b
High school	0.536	0.528	
>High school	0.755	0.691	a, b
<b>Household Type</b>			
Spouse or partner present	0.555	0.622	b
No spouse or partner	0.488	0.469	
Children present	0.52	0.558	
No children	0.562	0.488	
Other adult present	0.46	0.461	
No other adult present	0.536	0.554	
Homeowner	0.614	0.587	a
Not a homeowner	0.461	0.52	
<b>Disability Status</b>			
Disabled	0.319	0.454	a
Not disabled	0.568	0.563	
<b>Labor Force Participation</b>			
Full-time worker	0.625	0.681	a, b
Not a full-time worker	0.468	0.442	
Spouse or partner full-time worker, if present	0.62	0.628	a
Spouse or partner not full-time worker, if present	0.515	0.618	
Total	0.528	0.541	

*a: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1984 sample significant at the  $p=.10$  level.*

*b: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1994 sample significant at the  $p=.10$  level.*

*Note: significance only reported for one variable in each pair of complementary variables.*

**Table 9: Linear Regression of the Probability of Leaving the Bottom Income Group (Single-Year Income, Absolute Mobility)**

	(1) 1984–1994	(2) 1994–2004
White	0.210*** (0.0490)	0.140** (0.0569)
Male	0.139*** (0.0519)	0.0592 (0.0603)
25–34 years old	-0.000453 (0.0489)	0.0178 (0.0497)
High school education	0.117** (0.0510)	0.128** (0.0605)
>High school education	0.322*** (0.0609)	0.297*** (0.0703)
Children present, start year	0.0691 (0.0650)	0.127* (0.0658)
Disability, start year	-0.243*** (0.0562)	0.000897 (0.0705)
Homeowner, start year	0.131** (0.0510)	0.00684 (0.0564)
Spouse or partner present, start year	-0.181*** (0.0641)	-0.0340 (0.0865)
Work hours (1000s)	0.0410 (0.0266)	0.129*** (0.0306)
Spouse or partner hours (1000s), if present	0.0696** (0.0294)	0.0444 (0.0414)
Other adult present	0.0699 (0.0682)	-0.0216 (0.0759)
Constant	0.111 (0.0808)	-0.000354 (0.0828)
Observations	790	637
$R^2$	0.210	0.173

*Standard errors in parentheses*

*\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$*

**Table 10: Probability of Entering Bottom Quintile, by Characteristic (Relative Mobility)**

<b>Characteristic</b>	<b>1984</b>	<b>1994</b>	<b>Significance</b>
<b>Race/Sex/Age</b>			
White	0.094	0.1	a, b
Non-white	0.179	0.209	
Male	0.105	0.105	
Female	0.1	0.125	
25–34 years old	0.114	0.13	
35–44 years old	0.088	0.103	
<b>Education</b>			
<High school	0.183	0.207	a, b
High school	0.12	0.16	a, b
>High school	0.077	0.082	a, b
<b>Household Type</b>			
Spouse or partner present	0.095	0.103	a, b
No spouse or partner	0.137	0.153	
Children present	0.107	0.112	
No children	0.093	0.12	
Other adult present	0.096	0.099	
No other adult present	0.103	0.117	
Homeowner	0.084	0.091	a, b
Not a homeowner	0.145	0.171	
<b>Disability Status</b>			
Disabled	0.145	0.25	b
Not disabled	0.099	0.104	
<b>Labor Force Participation</b>			
Full-time worker	0.096	0.107	
Not a full-time worker	0.115	0.135	
Spouse or partner a full-time worker, if present	0.1	0.108	
Spouse or partner not a full-time worker	0.087	0.094	
Second	0.199	0.215	a, b
Third	0.113	0.152	b
Fourth	0.06	0.067	a, b
Fifth	0.037	0.026	a, b
Total	0.102	0.115	

*a: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1984 sample significant at the  $p=.10$  level.*

*b: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1994 sample significant at the  $p=.10$  level.*

*Note: significance only reported for one variable in each pair of complementary variables.*

**Table 11: Linear Regression of the Probability of Entering the Bottom Income Quintile (Single-Year Income, Relative Mobility)**

	(1) 1984–1994	(2) 1994–2004
White	-0.0527 (0.0322)	-0.0765** (0.0300)
Male	0.0434** (0.0198)	-0.0169 (0.0202)
25–34 years old	0.0100 (0.0178)	0.00491 (0.0185)
High school education	-0.0419 (0.0343)	-0.0274 (0.0501)
>High school education	-0.0543 (0.0345)	-0.0772 (0.0489)
Children present	0.0160 (0.0217)	-0.0245 (0.0207)
Disability	0.0392 (0.0374)	0.141*** (0.0413)
Homeowner	-0.0309 (0.0217)	-0.0378* (0.0229)
Spouse or partner present	-0.0691** (0.0350)	-0.0125 (0.0353)
Work hours (1000s)	-0.0146 (0.0113)	0.000088 (0.0130)
Spouse or partner hours (1000s), if present	0.0216* (0.0116)	0.00703 (0.0132)
Other adult present	-0.00894 (0.0272)	-0.0498* (0.0291)
Third quintile, start year	-0.0800*** (0.0276)	-0.0557* (0.0294)
Fourth quintile, start year	-0.125*** (0.0268)	-0.129*** (0.0263)
Fifth quintile, start year	-0.141*** (0.0276)	-0.161*** (0.0251)
Constant	0.317*** (0.0549)	0.365*** (0.0682)
Observations	1891	1651
$R^2$	0.059	0.089

*Standard errors in parentheses*

*\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$*

**Table 12: Probability of Entering Bottom Income Group, by Characteristic (Absolute Mobility)**

<b>Characteristic</b>	<b>1984</b>	<b>1994</b>	<b>Significance</b>
<b>Race/Sex/Age</b>			
White	0.066	0.064	a, b
Non-white	0.141	0.158	
Male	0.07	0.074	
Female	0.077	0.08	
25–34 years old	0.079	0.088	
35–44 years old	0.066	0.068	
<b>Education</b>			
<High school	0.167	0.098	a
High school	0.083	0.097	b
>High school	0.052	0.064	a, b
<b>Household Type</b>			
Spouse or partner present	0.067	0.066	a, b
No spouse or partner	0.103	0.113	
Children present	0.073	0.072	
No children	0.073	0.086	
Other adult present	0.072	0.07	
No other adult present	0.073	0.078	
Homeowner	0.06	0.061	a, b
Not a homeowner	0.104	0.115	
<b>Disability Status</b>			
Disabled	0.067	0.206	b
Not disabled	0.074	0.066	
<b>Labor Force Participation</b>			
Full-time worker	0.069	0.071	
Not a full-time worker	0.081	0.092	
Spouse or partner a full-time worker, if present	0.072	0.07	
Spouse or partner not a full-time worker	0.058	0.057	
Second	0.147	0.131	a, b
Third	0.076	0.112	b
Fourth	0.048	0.044	a, b
Fifth	0.022	0.022	a, b
Total	0.073	0.077	

*a: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1984 sample significant at the  $p=.10$  level.*

*b: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1994 sample significant at the  $p=.10$  level.*

*Note: significance only reported for one variable in each pair of complementary variables.*

**Table 13: Linear Regression of the Probability of Entering the Bottom Income Group (Single-Year Income, Absolute Mobility)**

	(1) 1984–1994	(2) 1994–2004
White	-0.0511* (0.0301)	-0.0760*** (0.0278)
Male	0.0125 (0.0167)	-0.000565 (0.0173)
25–34 years old	-0.000474 (0.0153)	0.00678 (0.0161)
High school education	-0.0683** (0.0327)	0.0112 (0.0361)
>High school education	-0.0787** (0.0330)	-0.00179 (0.0353)
Children present	-0.00325 (0.0196)	-0.0172 (0.0170)
Disability	-0.0105 (0.0252)	0.139*** (0.0394)
Homeowner	-0.0174 (0.0194)	-0.0176 (0.0194)
Spouse or partner present	-0.0343 (0.0312)	-0.0280 (0.0291)
Work hours (1000s)	-0.0118 (0.00979)	0.00248 (0.0113)
Spouse or partner hours (1000s), if present	0.00613 (0.0103)	0.00945 (0.0111)
Other adult present	-0.0137 (0.0237)	-0.0253 (0.0244)
Third quintile, start year	-0.0619*** (0.0239)	-0.0171 (0.0251)
Fourth quintile, start year	-0.0858*** (0.0240)	-0.0775*** (0.0217)
Fifth quintile, start year	-0.103*** (0.0243)	-0.0975*** (0.0211)
Constant	0.302*** (0.0522)	0.203*** (0.0525)
Observations	1891	1651
$R^2$	0.047	0.065

*Standard errors in parentheses*

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table A1: Bottom Quintile and Sample-Wide Characteristics, Average Income**

Characteristic	Bottom Quintile		Full Sample		Significance
	1984	1994	1984	1994	
White	0.74	0.65	0.87	0.83	a, b, c, d
Male	0.46	0.4	0.51	0.49	c, d
Less than high school education	0.34	0.22	0.13	0.08	a, b, c, d
High school education	0.44	0.51	0.4	0.38	a, c, d
More than high school education	0.23	0.27	0.47	0.54	b, c, d
Homeowner	0.45	0.34	0.66	0.64	a, c, d
Disabled	0.15	0.2	0.08	0.1	b, c, d
Children present	0.83	0.77	0.71	0.64	a, b, c, d
Spouse or partner present	0.65	0.5	0.78	0.72	a, b, c, d
Other adult present	0.12	0.14	0.11	0.11	d
25–34 years old	0.59	0.49	0.54	0.46	a, b, c
Work hours (1000s)	1.43	1.43	1.75	1.79	c, d
Spouse or partner's hours, if present (1000s)	1.29	1.39	1.61	1.76	b, c, d
Sample size	715	558	2441	2070	

*a: Proportion/mean in bottom quintile of the 1984 sample significantly different from proportion/mean in bottom quintile of the 1994 sample at the  $p=.10$  level.*

*b: Proportion/mean in full 1984 sample significantly different from proportion/mean in full 1994 sample at the  $p=.10$  level.*

*c: Proportion/mean in bottom quintile of the 1984 sample significantly different from proportion/mean in quintiles 2–5 of the 1984 sample at the  $p=.10$  level.*

*d: Proportion/mean in bottom quintile of the 1994 sample significantly different from proportion/mean in quintiles 2–5 of the 1994 sample at the  $p=.10$  level.*

**Table A2: Probability of Leaving the Bottom Quintile, by Characteristic (Average Income, Relative Mobility)**

<b>Characteristic</b>	<b>1984</b>	<b>1994</b>	<b>Significance</b>
<b>Race/Sex/Age</b>			
White	0.527	0.45	a, b
Non-white	0.211	0.279	
Male	0.517	0.454	a, b
Female	0.383	0.347	
25–34 years old	0.413	0.427	
35–44 years old	0.489	0.355	
<b>Education</b>			
<High school	0.301	0.271	a, b
High school	0.458	0.348	
>High school	0.629	0.569	a, b
<b>Household Type</b>			
Spouse or partner present	0.473	0.427	
No spouse or partner	0.389	0.353	
Children present	0.436	0.406	
No children	0.483	0.338	
Other adult present	0.343	0.305	
No other adult present	0.458	0.404	
Homeowner	0.504	0.534	a, b
Not a homeowner	0.395	0.316	
<b>Disability Status</b>			
Disabled	0.258	0.355	a
Not disabled	0.478	0.399	
<b>Labor Force Participation</b>			
Full-time worker	0.54	0.456	a, b
Not a full-time worker	0.366	0.331	
Spouse or partner full-time worker, if present	0.518	0.349	b
Spouse or partner not full-time worker, if present	0.445	0.491	
Total	0.444	0.39	

*a: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1984 sample significant at the  $p=.10$  level.*

*b: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1994 sample significant at the  $p=.10$  level.*

*Note: significance only reported for one variable in each pair of complementary variables.*

**Table A3: Linear Regression of the Probability of Leaving the Bottom Quintile  
(Average Income, Relative Mobility)**

	(1) 1984–1994	(2) 1994–2004
White	0.217*** (0.0497)	0.0758 (0.0586)
Male	0.108* (0.0555)	0.0364 (0.0617)
25–34 years old	-0.0535 (0.0556)	0.105** (0.0506)
High school education	0.0929* (0.0533)	0.0407 (0.0615)
>High school education	0.231*** (0.0660)	0.285*** (0.0746)
Children present, start year	0.0150 (0.0720)	0.111 (0.0687)
Disability, start year	-0.200*** (0.0599)	0.0112 (0.0702)
Homeowner, start year	0.0597 (0.0537)	0.219*** (0.0575)
Spouse or partner present, start year	-0.136** (0.0680)	-0.00120 (0.0826)
Work hours (1000s)	0.0566** (0.0253)	0.0650** (0.0284)
Spouse or partner hours (1000s), if present	0.0781*** (0.0281)	-0.0559 (0.0345)
Other adult present	-0.0165 (0.0763)	-0.0645 (0.0716)
Constant	0.110 (0.0908)	-0.0286 (0.0835)
Observations	715	558
$R^2$	0.178	0.158

*Standard errors in parentheses*

*\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$*

**Table A4: Probability of Leaving the Bottom Income Group, by Characteristic (Absolute Mobility)**

<b>Characteristic</b>	<b>1984</b>	<b>1994</b>	<b>Significance</b>
<b>Race/Sex/Age:</b>			
White	0.641	0.629	a, b
Non-white	0.293	0.41	
Male	0.641	0.637	a, b
Female	0.472	0.495	
25–34 years old	0.505	0.61	a, b
35–44 years old	0.614	0.497	
<b>Education:</b>			
<High school	0.358	0.439	a, b
High school	0.585	0.513	
>High school	0.765	0.720	a, b
<b>Household Type</b>			
Spouse or partner present	0.587	0.628	a, b
No spouse or partner	0.477	0.476	
Children present	0.54	0.586	b
No children	0.591	0.439	
Other adult present	0.48	0.461	
No other adult present	0.559	0.567	
Homeowner	0.639	0.677	a, b
Not a homeowner	0.476	0.488	
<b>Disability Status</b>			
Disabled	0.341	0.491	a
Not disabled	0.587	0.567	
<b>Labor Force Participation</b>			
Full-time worker	0.67	0.651	a, b
Not a full-time worker	0.451	0.463	
Spouse or partner full-time worker, if present	0.644	0.619	
Spouse or partner not full-time worker, if present	0.552	0.636	
Total	0.549	0.552	

*a: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1984 sample significant at the  $p=.10$  level.*

*b: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1994 sample significant at the  $p=.10$  level.*

*Note: significance only reported for one variable in each pair of complementary variables.*

**Table A5: Linear Regression of the Probability of Leaving the Bottom Income Group (Average Income, Absolute Mobility)**

	(1) 1984–1994	(2) 1994–2004
White	0.210*** (0.0516)	0.0975 (0.0597)
Male	0.130** (0.0522)	0.0899 (0.0621)
25–34 years old	-0.0728 (0.0509)	0.138*** (0.0518)
High school education	0.164*** (0.0517)	0.0301 (0.0641)
>High school education	0.316*** (0.0634)	0.257*** (0.0732)
Children present, start year	0.00310 (0.0701)	0.214*** (0.0684)
Disability, start year	-0.225*** (0.0624)	0.0264 (0.0687)
Homeowner, start year	0.100* (0.0527)	0.145** (0.0574)
Spouse or partner present, start year	-0.128* (0.0664)	-0.0972 (0.0846)
Work hours (1000s)	0.0700*** (0.0262)	0.111*** (0.0300)
Spouse or partner hours (1000s), if present	0.0800*** (0.0276)	0.0459 (0.0367)
Other adult present	0.0336 (0.0688)	-0.0520 (0.0776)
Constant	0.135 (0.0870)	-0.0529 (0.0884)
Observations	715	558
$R^2$	0.250	0.194

*Standard errors in parentheses*

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table A6: Probability of Entering the Bottom Quintile, by Characteristic (Average Income, Relative Mobility)**

Characteristic	1984	1994	Significance
<b>Race/Sex/Age:</b>			
White	0.088	0.08	a, b
Non-white	0.177	0.235	
Male	0.093	0.087	
Female	0.101	0.113	
25–34 years old	0.107	0.121	b
35–44 years old	0.084	0.083	
<b>Education:</b>			
<High school	0.21	0.229	a, b

High school	0.112	0.147	b
>High school	0.069	0.064	a, b
<b>Household Type</b>			
Spouse or partner present	0.089	0.088	a, b
No spouse or partner	0.129	0.139	
Children present	0.101	0.104	
No children	0.087	0.092	
Other adult present	0.103	0.101	
No other adult present	0.096	0.1	
Homeowner	0.08	0.083	a, b
Not a homeowner	0.14	0.143	
<b>Disability Status</b>			
Disabled	0.145	0.181	b
Not disabled	0.093	0.093	
<b>Labor Force Participation</b>			
Full-time worker	0.087	0.091	a
Not a full-time worker	0.116	0.121	
Spouse or partner a full-time worker, if present	0.09	0.088	
Spouse or partner not a full-time worker, if present	0.089	0.089	
Second	0.23	0.231	a, b
Third	0.106	0.115	
Fourth	0.034	0.039	a, b
Fifth	0.016	0.013	a, b
Total	0.097	0.1	

*a: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1984 sample significant at the  $p=.10$  level.*

*b: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1994 sample significant at the  $p=.10$  level.*

*Note: significance only reported for one variable in each pair of complementary variables.*

**Table A7: Linear Regression of the Probability of Entering the Bottom Quintile (Average Income, Relative Mobility)**

	(1) 1984–1994	(2) 1994–2004
White	-0.0486 (0.0315)	-0.120*** (0.0331)
Male	0.0239 (0.0191)	-0.0266 (0.0205)
25–34 years old	0.00874 (0.0170)	0.0239 (0.0183)
High school education	-0.0610 (0.0396)	-0.0496 (0.0528)
>High school education	-0.0626 (0.0398)	-0.111** (0.0517)
Children present	0.00816 (0.0219)	0.00179 (0.0196)
Disability	0.0386 (0.0403)	0.0883** (0.0394)
Homeowner	-0.0293 (0.0226)	-0.00257 (0.0224)
Spouse or partner present	-0.0456 (0.0344)	0.00186 (0.0354)
Work hours (1000s)	-0.0170 (0.0116)	-0.00729 (0.0133)
Spouse or partner hours (1000s), if present	0.0132 (0.0120)	-0.0162 (0.0132)
Other adult present	-0.00393 (0.0273)	-0.0380 (0.0300)
Third quintile, start year	-0.115*** (0.0294)	-0.0953*** (0.0306)
Fourth quintile, start year	-0.184*** (0.0273)	-0.156*** (0.0269)
Fifth quintile, start year	-0.192*** (0.0274)	-0.168*** (0.0264)
Constant	0.367*** (0.0613)	0.429*** (0.0713)
Observations	1726	1512
$R^2$	0.096	0.120

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table A8: Probability of Entering the Bottom Income Group, by Characteristic (Average Income, Absolute Mobility)**

<b>Characteristic</b>	<b>1984</b>	<b>1994</b>	<b>Significance</b>
<b>Race/Sex/Age:</b>			
White	0.055	0.038	a, b
Non-white	0.129	0.144	
Male	0.062	0.052	
Female	0.063	0.052	
25–34 years old	0.068	0.058	
35–44 years old	0.056	0.048	
<b>Education:</b>			
<High school	0.136	0.068	a
High school	0.074	0.083	b
>High school	0.044	0.033	a, b
<b>Household Type</b>			
Spouse or partner present	0.059	0.041	b
No spouse or partner	0.08	0.091	
Children present	0.066	0.045	
No children	0.055	0.064	
Other adult present	0.068	0.074	
No other adult present	0.062	0.05	
Homeowner	0.051	0.043	b
Not a homeowner	0.092	0.076	
<b>Disability Status</b>			
Disabled	0.085	0.127	b
Not disabled	0.061	0.046	
<b>Labor Force Participation</b>			
Full-time worker	0.054	0.046	a
Not a full-time worker	0.08	0.066	
Spouse or partner a full-time worker, if present	0.061	0.042	
Spouse or partner not a full-time worker	0.055	0.037	
Second	0.156	0.111	a, b
Third	0.064	0.059	
Fourth	0.014	0.029	a, b
Fifth	0.016	0.009	a, b
Total	0.062	0.052	

*a: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1984 sample significant at the  $p=.10$  level.*

*b: Difference between mobility rate for people with the given characteristic and mobility rate for people without that characteristic in the 1994 sample significant at the  $p=.10$  level.*

*Note: significance only reported for one variable in each pair of complementary variables.*

**Table A9: Linear Regression of the Probability of Entering the Bottom Income Group (Average Income, Absolute Mobility)**

	(1) 1984–1994	(2) 1994–2004
White	-0.0469 (0.0288)	-0.0865*** (0.0285)
Male	0.0236 (0.0167)	0.00749 (0.0165)
25–34 years old	0.00256 (0.0140)	0.00521 (0.0141)
High school education	-0.0344 (0.0321)	0.0304 (0.0324)
>High school education	-0.0371 (0.0312)	-0.00856 (0.0306)
Children present	0.00401 (0.0180)	-0.0170 (0.0154)
Disability	0.0155 (0.0316)	0.0787** (0.0346)
Homeowner	-0.0228 (0.0176)	0.00503 (0.0181)
Spouse or partner present	-0.0296 (0.0272)	-0.0287 (0.0282)
Work hours (1000s)	-0.00902 (0.0103)	-0.00795 (0.0113)
Spouse or partner hours (1000s), if present	0.0138 (0.0106)	0.000130 (0.00961)
Other adult present	-0.00206 (0.0236)	-0.00194 (0.0257)
Third quintile, start year	-0.0865*** (0.0245)	-0.0451* (0.0237)
Fourth quintile, start year	-0.136*** (0.0224)	-0.0663*** (0.0210)
Fifth quintile, start year	-0.126*** (0.0230)	-0.0794*** (0.0198)
Constant	0.246*** (0.0554)	0.202*** (0.0498)
Observations	1726	1512
$R^2$	0.068	0.069

*Standard errors in parentheses*

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

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## NOTES

<sup>1</sup> For research on men's earnings volatility, see Gottschalk and Moffitt (1994, 1995, 2002, and 2006), Haider (2001) and CBO (2007). For research on family income volatility, see Bania and Leete (2007), Batchelder (2003), Gosselin and Zimmerman (2007), and Hacker (2006).

<sup>2</sup> This phenomenon is a measurement issue. For example, if there were no "true" mobility but, in any given year, 10 percent of individuals had an income shock that moved them out of their customary ("permanent") quintile, one could find that up to 20 percent of individuals were in a different quintile at the end of a decade than at the beginning of the decade (10 percent who were in the "wrong quintile at the start moved back to the "right" quintile at the end plus 10 percent of the people at the end were "shocked" into the wrong quintile. If volatility were higher—for example, if 20 percent of the people experience an income shock in any given year—mobility would appear to be even higher.

<sup>3</sup> Duncan, Smeeding, and Rodgers (1991) use PSID data, average income over two-year periods and consider movements between the two-year periods separated by one year (e.g., income position averaged over 1982 and 1983 compared with income position averaged over 1985 and 1986). As such, their work does not fit neatly into either the mobility or volatility literature discussed.

<sup>4</sup> The initial sample consisted of two groups: a nationally representative core sample, and an oversample of low-income families that can be integrated into the core group using survey weights. Over time, the PSID sample has grown as children in the original sample have moved out and formed their own families. In 1997, PSID administrators trimmed some of the original family lines and added a new sample of post-1968 immigrants.

<sup>5</sup> Because the immigrant sample was added in 1997, members of this sample are excluded from both of our study periods, 1984–1994 and 1994–2004. In addition, members of the Latino sample are excluded from the analysis by default because they are assigned a zero weight.

<sup>6</sup> We trim the bottom of the income distribution at a constant dollar value rather than a percentile in response to recent research indicating that the proportion of observations in which the family unit head reports zero earnings varies widely from year to year and is particularly high in the early 1990s, most likely due to measurement error (Dynan, Elmendorf, and Sichel 2007). Because the head's earnings are a primary income source for most families, this measurement error could be expected to artificially inflate the number of individuals reporting very low family incomes. Alternate approaches to trimming outliers have little impact on our results: findings produced using both an untrimmed sample and a sample with a 1 percent trim on the top and bottom of the income distribution are substantively identical to those presented here.

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<sup>7</sup> Note that the PSID assigns zero weights to the spouses of sampled individuals; as such our analysis generally focuses on one individual per family.

<sup>8</sup> Because each PSID wave collects income data pertaining to the previous year, these income years correspond to panel years 1983, 1985, 1993, 1995, 2003, and 2005, respectively. In general, we match income data from the first and last years of each ten-year period to contemporaneous demographic and behavioral data collected in the previous panel. In 2005, however, this is impossible, because there was no 2004 panel. As a substitute, we align the 2004 income data with 2005 information on personal characteristics.

<sup>9</sup> The unemployment rates in 1984, 1994, and 2004 are 7.5 percent, 6.1 percent, and 5.5 percent, respectively (<http://www.bls.gov/web/cpseea1.pdf>, last accessed 3/14/08).

<sup>10</sup> The employment to population ratios in 1984, 1994, and 2004 are 59.5 percent, 62.5 percent, and 62.3 percent, respectively (<http://www.bls.gov/web/cpseea1.pdf>, last accessed 3/14/08).

<sup>11</sup> Standard errors are adjusted for heteroskedasticity and non-random sampling.

<sup>12</sup> The rows in each panel sum to 1 and show where individuals in a given quintile in the base year end up 10 years later, relative to their peers. If there were no mobility at all, then the tables would show “1s” along their diagonals and “0s” on the off-diagonals (i.e., everyone who starts in the bottom quintile stays in the bottom quintile; everyone who starts in the top quintiles stays in the top quintile, and so on). Overall mobility is assessed by examining the share of the population that has changed quintiles (computed by summing the off-diagonal elements and dividing by 5). Upward mobility is assessed by examining the share of individuals in the first (bottom) quintile who move up to higher quintiles.

<sup>13</sup> Because Latinos added to the PSID in 1994 receive 0 weights and the 1997 immigrant subsample is excluded from the analysis, the reference category is largely composed of blacks. Note that the bottom income quintile has become less “white” over time. As such, the declining significance of race/ethnicity for upward mobility may in part reflect unobserved differences in the characteristics of whites (and non-whites) who are in the bottom quintile of the income distribution.

<sup>14</sup> It may appear paradoxical that the importance of race/ethnicity for upward mobility has fallen while its importance for downward mobility has increased. Nevertheless, this is consistent with the observation that non-Hispanic whites represent a shrinking share of individuals in the bottom quintile. Consider this scenario: at time x, there are 50 blacks and 50 whites in the bottom quintile. Between time x and time y, 20 whites and 10 blacks exit the bottom quintile and 15 whites and 15 blacks enter the bottom quintile. The white-black exit rate is 2:1, the white-black entry rate is 1:1, and the bottom quintile is now composed of 55 blacks and 45 whites. Between time y and time z, 15 blacks and 15 white

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leave the bottom quintile while 20 blacks and 10 whites enter it. During this second interval, the white-black relative exit rate falls to 1:1 (the declining significance of race for exit) while the black-white relative entry rate rises from 1:1 to 2:1 (the increasing significance of race for entry). The bottom quintile at time  $z$  is composed of 60 blacks and 40 whites.

<sup>15</sup> This may seem counterintuitive. For instance, one might reason that, if the rungs on the economic ladder are spreading farther apart (inequality is rising), then it must be getting harder to move from rung to rung (reduced mobility). However, this is not necessarily the case. Consider the following simple scenario in which there are only high school graduates and college graduates. All high school graduates earn \$20,000 a year and all college graduates earn \$40,000 a year. Over any given decade, 20 percent of the high school graduates obtain college degrees and move up to \$40,000 a year jobs. There is a change in the economy and high school jobs pay \$10,000 a year and college jobs pay \$50,000 a year. Inequality has increased, but when the high school graduates earn college degrees, they still move up to a college job. So if 20 percent of high school graduates go on to earn college degrees, mobility remains unchanged even though inequality increased.

<sup>16</sup> This point is not obvious but can be demonstrated mathematically. Let  $Y$  = the average of the average lifetime (or multi-period) incomes of individuals in the population. Then  $\text{var}(Y)$  is a measure of the variance of lifetime (or multi-period) income (i.e., long-term inequality). It can be shown that  $\text{var}(Y) = (\text{var}/K) + ((K-1)/K) * \text{cov}$ , where  $\text{var}$  is the average variance of income across the  $K$  years (periods) and  $\text{cov}$  is the average covariance of year to year (period to period) income. Note that the covariance is a measure of income mobility—the lower the covariance in year-to-year incomes, the more mobility. Thus, if single period inequality is rising ( $\text{var}$ ), then lifetime inequality must also rise unless it is offset by decreases in the average covariance of year to year (period to period) income. In other words, rising inequality in annual incomes must be offset by rising mobility—otherwise long-term inequality will also rise. This explanation is due to Gottschalk and Danziger (1998).

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