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# Family Characteristics and Macroeconomic Factors in U.S. Intragenerational Family Income Mobility, 1978–2014

**Katharine Bradbury**

**Abstract:**

Family economic mobility has been a policy concern for decades, with interest heating up further since the 1990s. Using data that tracks individual families' incomes during overlapping 10-year periods from 1978 through 2014, this paper investigates the relationships of factors—family characteristics and macro influences—to intragenerational mobility and whether the importance of those factors has changed over time. Family characteristics include both levels of work behavior and family structure and within-period changes in those factors, as well as time-invariant characteristics of the family head, such as race. Macro factors include indicators of GDP growth and inflation during each 10-year period. The positions families occupy in the income distribution and the degree to which they are stuck or able to move up (or slide down) over time are critical determinants of their current well-being and their children's prospects.

**JEL Classifications:** D31, I32, J62, E24

**Keywords:** intragenerational mobility, economic inequality, family income distribution, macroeconomic influences, family structure

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Family economic mobility has been a policy concern for many decades, with interest heating up further in the last three decades as inequality has expanded. The positions families occupy in the income distribution and the degree to which they are stuck or able to move up over time are critical determinants of both their current well-being and their children's prospects.<sup>1</sup> By the same token, the ability of richer families to hold on to top positions in the income distribution is central to their well-being. (It is useful to distinguish between intragenerational and intergenerational mobility. Intergenerational mobility reckons individual children's gains or losses in income or relative position in the income distribution when adults compared with their parents while they were growing up, while intragenerational mobility — this paper's focus — tallies specific families' income gains and losses or movements up and down the family income distribution during a period of years.)

The growing inequality of the family income distribution in the United States is well documented. Rising intragenerational mobility could offset some of the effects of rising cross-sectional inequality on longer-term or lifetime inequality, while falling intragenerational mobility would likely exacerbate such effects.

Furthermore, families' upward moves while children are growing up can enhance children's prospects; that is, rising intragenerational mobility may lead to rising intergenerational mobility. For example, Plewis and Bartley (2014) find "strong and consistent evidence, obtained from two rather different studies and across different cohorts of children, to support the hypothesis that children who experience *parental* social mobility, either up or down, during their school years attain levels of qualifications in later life that lie between those from families who remained stable in the relevant classes of origin and destination" (emphasis added, p. 9).

In this context, it behooves economists and others to understand the extent of family intragenerational income mobility, how it has changed over time, what factors are strongly related to an individual family's economic mobility prospects, and whether those factors (or

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<sup>1</sup> An extensive literature on intergenerational mobility concludes that the income group a child's parents occupy when he or she is growing up is a key determinant of the child's adult economic prospects.

their importance) have changed over time.

The Panel Study of Income Dynamics (PSID) has been following the incomes and other characteristics of 5,000 American families and their offspring since the late 1960s. To examine economic mobility, I create 14 overlapping 10-year periods beginning with 1978 to 1988 and ending with 2004 to 2014 (even-year endpoints only); each period has consistent PSID data on the family incomes of family heads and spouses.<sup>2</sup> While some factors may be altered by an individual's or family's behavioral changes, many are exogenously determined. This paper investigates the relationships of family characteristics and other factors to individual families' moves up and down the income distribution during 10-year periods (intragenerational mobility) and whether these factors' importance has changed since the 1980s. Family characteristics include both levels of work behavior and family structure and within-period changes in those factors, as well as time-invariant individual characteristics of family heads, such as race. Macro factors include such indicators as real GDP growth and inflation during each 10-year period.

## I. Overview of Related Literature

Earlier research documents either level or declining intragenerational family income mobility over the last several decades in the United States (Acs and Zimmerman 2008, Hungerford 2011, Bradbury 2016). But little research has been done to understand the sources of mobility variations over time or among individual families. One exception, at least as regards family characteristics, is a study by Gittleman and Joyce (1999), who use PSID data to examine relative mobility of families (movement among quintiles, or fifths, of the family income distribution) for five-year periods from 1967 through 1991. They find the family head's age, race, and educational attainment to be important contributors (or barriers) to upward mobility for the poor and to downward moves by those near the top of the income distribution. Changes during the period in labor market status and in family composition further help to determine

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<sup>2</sup> I augment the PSID income data to analyze post-tax, post-transfer incomes for families by using the NBER's TAXSIM model. The TAXSIM estimates are incomplete before 1978 in that they are missing some state tax systems, so the periods included in this study begin in 1978.

the extent and direction of relative mobility. Gittleman and Joyce also find that, in the periods after 1979, the effects of some factors were different from what they were before 1979. Specifically, the positive contribution to family upward mobility of wives entering the labor force or moving from part-time to full-time employment was less pronounced or even zero in later periods, and the positive effect of marriage on men's upward mobility was more pronounced in later periods.

Another exception, a study by Acs and Zimmerman (2008), focuses on families entering and leaving the poorest quintile during two 10-year periods, 1984 to 1994 and 1994 to 2004. They 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 race and educational differences on upward mobility appear to have diminished over time. The factors associated with increased downward mobility are being non-white and having a disability" (p. 12). The authors also determine that the importance of these latter factors increases over time.

Jansson (2014) examines household income mobility in Sweden over three 11-year periods, 1925 to 1936, 1947 to 1958, and 1983 to 1994. She concludes, "The results indicate that income mobility is largely linked to the life cycle. For all periods, young adults had a high odds ratio for upward income mobility and, after reaching middle age, the odds ratio decreases. The other major conclusion is that the life-cycle pattern of income mobility has changed in several respects. Two classic poverty risks, starting a family and old age, no longer include the same high odds ratio of experiencing downward income mobility. Yet two new groups are identified as being more vulnerable, however, young adults and immigrants" (p. 34).

Maume and Wilson (2015) focus on wage mobility and ask "whether the relative importance of ascription, family background, education, skills, and work histories have changed in determining rates of career mobility" (p. 36). They compare baby boomers and millennials and find that upward career mobility has slowed overall and that "avenues for upward mobility used by previous generations of workers—that is, employment in manufacturing and union membership—were weakened significantly as predictors of mobility

chances for the millennial cohort compared with boomers” (p. 62). Furthermore, they “found that more so among millennials than boomers, the growing precarity (i.e., more part-time work) and polarization of employment (more low-end service employment) increased the difficulty of launching a career” (p. 62).

Aristei and Perugini (2012) do not examine changes over time, but they investigate the “microeconomic drivers” of two-year absolute household mobility (2004 to 2006) across many nations in Europe and conclude that “higher education, experience and younger age of the household head favour mobility, also higher for the families headed by women. A larger size and an increasing share of components participating into the labour market also boost household income growth. Conversely, the presence of children and elderly limits income prospects” (pp. 21–22).

Based on PSID data on families during overlapping 10-year periods spanning 1978 to 2014, this paper asks questions similar to those of Gittleman and Joyce (1999) and Acs and Zimmerman (2008). It uses a range of mobility measures as dependent variables and raises additional questions related to macroeconomic forces also affecting families’ economic mobility. This paper’s main contributions to the literature are that it examines results for a rich set of mobility measures that include absolute changes in income, analyzes the relationships between mobility and change-in-status variables for families as well as beginning-of-period characteristics, includes a 35-year span of overlapping 10-year periods that are compared with shorter and longer periods, and investigates possible associations of mobility with macroeconomic conditions.

## **II. Measuring Mobility**

The literature reports a range of measures of intragenerational income mobility; the most commonly used measures are based on families’ movements among quintiles of the relevant income distribution (in this study, household incomes are adjusted for family size). Gittleman and Joyce (1999), for example, examine movements out of the bottom and top quintiles as well as among and out of the middle three quintiles. Some analysts look also at “absolute” mobility

across dollar-denominated *groups*, hence not simply relative mobility.<sup>3</sup> Acs and Zimmerman (2008) look at movement across both quintiles and groups. In this analysis, I focus on two measures of mobility that indicate not only whether movement out of (up or down from) a household's origin quintile or group occurred, but also how large the move was; results for these measures are compared with results for other mobility measures, as discussed below.

- Quintile movement tallies the number of quintiles a family moved and the direction of movement (sign) between the beginning and end of a period.
- Group movement similarly tallies the number of dollar-denominated groups a family moved and the direction, where five groups are defined by carrying forward in real dollar terms the beginning-of-period quintile boundaries.

The values of these two measures range from  $-4$  to  $+4$ . Figure 1 plots the evolution of the distributions of these “rich” measures over the 14 10-year periods from 1978 through 2014. The fraction of families *not* moving from their quintile or group of origin (measure = 0) gradually increased from the early periods covering the 1980s to more recent periods encompassing the 2000s and early 2010s.

For quintile movement, the fractions moving a small distance (a quintile) in either direction show little trend, but larger movements have decreased. Quintile mobility, like any rank-based measure, is entirely relative, so when one family moves up, another must move down; hence the distribution is fairly symmetric around zero.

For group movement, the fraction not moving at all has also risen, along with the fraction moving down by small amounts. Because U.S. real incomes have generally grown over time, the fraction moving up is larger than the fraction moving down in all years, but the fractions moving up declined in recent periods compared with earlier.

The drawback of the quintile-movement and group-movement measures is that they express in quantitative terms something that is partly ordinal and partly quantitative. They are

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<sup>3</sup> The five dollar-denominated groups are the same as the five quintiles in the first year of the period (year  $t$ ), but they are defined in the final year of the period by carrying forward to year  $t+10$  the real dollar cutoffs of those year- $t$  quintiles.

quantitative in that a quintile encompasses one-fifth of the size-adjusted family income distribution; they are ordinal in that a movement across two quintiles or two groups, for example, represents different dollar amounts of income increase or decrease in different parts of the distribution—not necessarily twice the amount of a move to an adjacent quintile or group. Nonetheless, far movements (across two or more quintiles or groups) are likely to result from factors that are different from those that cause moves into an adjacent quintile or group, or they may require a bigger push from the same factors.

This paper also analyzes more continuous measures of relative and absolute mobility—a family’s change in percentile (rank) in the distribution and change in logarithm of family income—and examines how they differ depending on where in the distribution the family begins the period. Specifically, the paper measures those relative and absolute changes separately for families beginning in the poorest quintile or group, the middle three quintiles or groups, and the richest quintile or group.

Regression results are also reported—in the appendix tables—for other measures of individual families’ 10-year movements in relative or dollar-denominated terms. These indicators include the all-families measures of change in rank (percentile) and change in logarithm of family income, plus more commonly used measures of relative and absolute mobility by origin quintile or group. These latter measures, in simple zero-one terms, indicate only whether a family moved or stayed where it started; the direction of the move is indicated, but not the size of the move. That is, the indicators reflect whether a family moves out of (up or down from) its origin quintile or group, or stays put:

- Poorest quintile or group members stay or move up (range 0 to +1)
- Members of middle quintiles or groups move down, stay, or move up (–1, 0, +1)
- Richest quintile or group members move down or stay (–1, 0)

With 10-year periods, I compare income (or position) in year  $t$  with year  $t+10$ . Research by others has attempted to sort out “transitory” and “permanent” income movements. The year  $t$  and year  $t+10$  incomes used in the mobility measures include both transitory and permanent elements; the transitory elements are typically assumed to be small relative to total income and



assumed (indeed often defined) to have mean zero over the long run. Thus the 10-year changes should reflect changes in permanent income, on average.<sup>4</sup> Nonetheless, the coefficient estimates will pick up any *systematic* relationships between characteristics and ensuing changes in transitory income as well as permanent income.

### III. Theory and Estimation Approach

Theories about why families move up and down the income distribution—or gain or lose (dollar-denominated) income—during long (10-year) periods of time are fairly simple: Determinants of (size-adjusted) family income are central to predicting changes during a period. All families’ real incomes can rise during a period—as quantified by group movement or change in log of income—with some changing more than others; by contrast, the purely relative measure (quintile movement) has a zero (weighted) mean in each period. Nonetheless, in relative and dollar-denominated terms, individual families with specific characteristics still move up and down relative to other individual families with similar or different characteristics.

What do we learn by examining both absolute and relative measures of mobility? Research indicates that people judge their own success in both relative and absolute terms. “Keeping up with the Joneses” is a relative concept, but absolute dollars define the poverty line. Those who favor absolute measures note that we would not care about relative mobility if the income distribution were compressed: If income differences from the top to the bottom of the distribution were very small, it might matter little whether an individual was in the second or fourth quintile. However, the U.S. family income distribution is not compressed; indeed, the widening spread in incomes in comparison with other nations currently and the United States in the past has been convincingly documented.<sup>5</sup> Policymakers often focus their efforts on

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<sup>4</sup> If family income in year  $t$  ( $Y_t$ ) includes permanent ( $Y^{P_t}$ ) and transitory ( $Y^{S_t}$ ) elements, then the 10-year income change reflected in any mobility measure is  $Y_{t+10} - Y_t = (Y^{P_{t+10}} + Y^{S_{t+10}}) - (Y^{P_t} + Y^{S_t}) = (Y^{P_{t+10}} - Y^{P_t}) + (Y^{S_{t+10}} - Y^{S_t})$ . Thus the closeness of the actual income change to the change in permanent income depends on the relative smallness of the transitory element in any year.

<sup>5</sup> According to the PSID family income data used in this study, the dividing lines between adjacent deciles in constant-dollar (real) post-tax-and-transfer family income adjusted for family size expanded fairly steadily over the entire time span. The ratio of ninth decile cutoff (median of richest quintile) to first decile cutoff (median of poorest quintile) rose from 3.5 in 1978 to 5.6 in 2004.

improving the situations or prospects of the poorest families defined in absolute terms, for example, those below the poverty line.<sup>6</sup> As reported below, the key factors in relative and absolute mobility are remarkably similar, so the focus may not matter. For example, one would advise individuals to obtain more education to rise relative to other families and also to gain in real dollar terms.<sup>7</sup>

The empirical approach is a broadly descriptive one, incorporating explanatory variables expected to be associated with (and potentially interpretable as causal for) individual families' moves up and down the income distribution in each period relative to other families and in dollar terms.<sup>8</sup> The data observations used in the analysis refer to individual family heads and spouses (if present) in the PSID who are working age and whose family incomes are not missing at both the beginning and the end of a 10-year period.<sup>9</sup> The 10-year periods stretch from 1978 through 2014, with even-year endpoints only—yielding 14 periods. Shorter and longer periods are also examined as a robustness check (Section VI). As described in section II above, the dependent variables are various measures of individual families' moves up and down the family income distribution, in relative or absolute (dollar-denominated) terms.

Several broad categories of variables are modeled as determinants of mobility:

- Beginning-of-period family characteristics, distinguishing married couples from male-single-head families and female-single-head families and indicating presence of children in the family and family size. Alternative versions include during-period changes in family type and presence of children.
- Beginning-of-period characteristics of the family head and wife (if present), including the age of the head, the race of the head, the educational attainment of both the head and the

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<sup>6</sup> In simple definitional terms, no progress can be made in reducing the number of people who are poor when poverty is defined as the poorest quintile—a relative concept that always includes one-fifth of all families.

<sup>7</sup> Over the long term, however, if everyone obtains additional education, we might ask if absolute gains continue to be possible without structural changes in the distribution of jobs in the economy.

<sup>8</sup> Being descriptive, the regressions are estimated in unweighted terms.

<sup>9</sup> Working age is defined as ages 16 to 62. The PSID considers couples of opposite sex as if they were married after one year of cohabitation.

wife, and the labor force status and work hours of the head and the wife. (PSID considers the husband as the family head in all husband-wife families.) Because family labor income, represented by employment status and hours of work, is the largest source of family income among these working-age heads and wives, the analysis focuses on its determinants. Alternative versions include during-period changes in the head's (and wife's) educational attainment, labor force status, and work hours.

- Family income decile of the family in the beginning year of the period or other indicator of beginning-year family income, depending on mobility measure (dependent variable).
- Mobility period (dummy variables for each period after 1978 to 1988). Because the strength of the macroeconomy and federal policies are also expected to be associated with families' mobility, estimated coefficients on the period dummies from the individual family mobility regressions are used to examine such influences. Alternative versions use interactions to investigate whether coefficients on other family and individual variables (described above) change across periods.

Because the PSID follows families over time, specific heads and wives appear in multiple periods. As noted above, they are included in the analysis if their family income data are observed at both the beginning and end of a period, so any person in the PSID sample for 12 or more years is likely to appear in multiple periods. For example, a person classified as head or wife and reporting family income data for all the even years from 1978 through 1992 would appear in the 1978 to 1988, 1980 to 1990, and 1982 to 1992 periods. To account for multiple appearances, I cluster the observations on person ID.

Table 1 reports sample statistics for the dependent and explanatory variables included in the analysis of 10-year mobility periods. Appendix Table A.1 reports sample statistics for additional dependent variables analyzed and reported in Appendix Tables A.2 and A.3 but discussed only briefly in the paper's text, as well as control variables used in the 10-year analysis, including initial income indicators (such as starting decile) and period.

## IV. Determinants of Mobility

This section describes the results from analyzing mobility during 10-year periods; there are 14 such periods from 1978 through 2014. I report and compare coefficient estimates across the mobility measures described above (and additional measures in the appendix tables) and among two specifications in terms of explanatory variables.

### A. Regression estimates including beginning-of-period characteristics

Table 2 reports estimated coefficients on beginning-of-period family characteristics for selected mobility measures (dependent variables). The regressions in columns 1 and 2 include all the families in all the periods and measure either the number of quintiles that a family moves up or down the distribution during a period or the number of constant-dollar-defined groups that a family moves across (up or down) during a period. The signs, significance, and even magnitudes of the coefficients are similar in columns 1 and 2, with most family characteristics associated with mobility in expected ways. Female-headed families with children generally have less positive mobility than other family types. Married-couple families without children do not move up as much as married-couple families with children (omitted category). Wives in married-couple families do worse, on average, than husbands.<sup>10</sup> Larger families move up somewhat more than smaller families. Families with a head aged 35 to 43 do better than families with younger or older heads. Families with a nonwhite head show more downward/less upward mobility than families whose head is white. Higher educational attainment of the family head and the wife contributes to upward mobility, with the head's education more important than the wife's. If the head or wife is unemployed or not in the labor force, the family's upward mobility is lower than if he or she were working. High work hours improve prospects for upward mobility.

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<sup>10</sup> Recall that the analysis follows the family-size adjusted family income of individual heads and wives from beginning to end of period. If a married couple separates/divorces/becomes widow(er), women are likely to end the period with lower family-size-adjusted income than their husbands: Wives earn lower incomes than husbands, on average, and are more likely than husbands to bring any children into their end-of-period family; this implies a lower numerator (family income) and larger denominator (square root of family size) for wives than husbands at end of period, on average, even though these results include all the wives who stay married.

Columns 3 through 8 examine mobility by starting point, estimating separate equations for families beginning in the poorest quintile or group, the middle three quintiles or groups, and the richest quintile or group. As background, note that, on average, families starting at the bottom move up in terms of percentile or income and families who start at the top move down—see Table 1.

When we focus on the degree to which families beginning a period in the poorest quintile or group move up (columns 3 and 6), the signs and even significance are remarkably similar to those in columns 1 and 2. One exception is the age of the family head: When it comes to moving from the bottom, young heads do the best and older heads (aged 44 to 62) have the worst prospects. The finding in columns 1 and 2 of strong upward mobility for families whose heads are aged 35 to 43 apparently is based on families that start above the poorest quintile (see columns 4, 5, 7, and 8). Among the richest families, those with the oldest heads (aged 44 to 62) appear to do the best.

A separate analysis allowing different coefficient estimates depending on whether the head is younger than age 36 or older than 35 (results not shown) finds that very few relationships are significantly different for families with young heads. One difference, however, is for single mothers: Female-headed families with children do worse only if the head is 35 or younger. (However, if a female-headed family is rich at the beginning of the period, it does worse than other family types regardless of the mother's age). A family head's attainment of a college degree or more is strongly positive for all ages and especially positive if he or she is young. Perhaps relatedly, a household head's being out of the labor force is negative, but markedly less so if the head is young. This might reflect the tendency for not-in-labor-force status among the young to be associated with being enrolled in school. All told, life-cycle differences exist but do not appear to be important factors in mobility.

A comparison of coefficient sizes across the columns suggests that the head's educational attainment is most important for families starting at the bottom, while the wife's schooling makes a greater difference for rich families. Furthermore, female-headed families with children fall the most, on average, when they start in the richest quintile or group. By contrast, the head's

work status (unemployed, out of the labor force) at the beginning of the period is more important for rich families than those starting lower in the income distribution.

Appendix Table A.2 reports estimated coefficients for regressions with alternative dependent variables—alternative measures of mobility. They need only a brief discussion here, because they differ little from the just-discussed results in Table 2. The dependent variable in column 1 of Table A.2 tallies the change in family income *percentile (rank)* as the dependent variable, and it obtains results very similar to those in column 1 of Table 2 (quintile movement). Column 2 reports results for the change in logarithm of family income—for comparison with column 2 of Table 2, which counts moves among five constant-dollar-defined groups. Again, the signs and significance levels are very similar.

The mobility measures in the six right-hand columns of Table A.2 are the commonly used zero-one indicators of moving in relative (columns 3 through 5) or absolute (columns 6 through 8) terms away from one’s starting point (or not). Levels of statistical significance for these coarser measures of mobility are somewhat lower, but the estimated signs are very similar to the more granularly defined measures of mobility by origin in columns 3 through 5 (relative) and columns 4 through 6 (absolute) of Table 2.<sup>11</sup>

## **B. Regression estimates including during-period changes in status**

Many of the explanatory variables in Table 2—beginning-of-period characteristics—can change during a 10-year period, and indeed, they are likely to affect a family’s mobility if they do. For example, one might expect more upward mobility by families in which the wife goes to work than by ones in which she remains not working (out of the labor force or unemployed). Table 3 reports coefficient estimates for the same dependent variables (mobility measures) as in Table 2, but the explanatory variables include *changes* in family type, presence of children, educational attainment, and labor force status. These changes are measured between the first

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<sup>11</sup> When I estimate probit (or ordered probit) versions of the equations reported in columns 3–5 of Appendix Table A.2—along the lines of Gittleman and Joyce (1999)—the signs and significance are virtually identical to those in Appendix Table A.2 (results not shown). This is also the case for probit and ordered probit versions of columns 6–8 of Appendix Table A.2; Gittleman and Joyce do not report results for staying or moving from dollar-defined groups.

and last year of each period. Recall that the mobility measures follow family heads and wives (if present) and similarly measure changes in family income (adjusted for family size) between the first and the last year of the period.

Because the PSID categorizes men as the head in married-couple families and women in married-couple families as the spouse (hence wife), a man is always head of his own family (whether it's a married-couple or single-head family) and a woman moves in and out of headship status depending on marital status. To simplify interpretation and measurement, changes in educational attainment are measured for individuals (the heads and wives who comprise the observations) and coefficients are allowed to differ depending on the individuals' headship status as of the beginning of the period. Specifically, coefficients are estimated on "added education" separately for men (always heads), women who are female heads at the beginning of the period, and women who are wives at beginning of the period. In addition, the estimated effects of changes in marital status (the marriage ends or the marriage begins) are allowed to differ for men and women. For labor force status, by contrast, the change variables are household measures, reflecting the difference in labor force status of the head (or the wife, if present in the household) in the individual household between the beginning and end of the period, even if the makeup of the household has changed.

The results in Table 3 confirm that changes in families' characteristics and status during a period are associated with their mobility in the period. Overall, the equations including status changes explain more of the variation in mobility among families than do beginning-of-period characteristics alone. Becoming married has positive effects on (upward) mobility for both men and women, while divorcing/separating/becoming a widow(er) has positive effects on men's mobility (except for men who start at the top) but pulls women down (except for poor women).<sup>12</sup> Adding a first child or children to a family who was childless at the beginning of the period also reduces upward mobility.<sup>13</sup> Greater educational attainment of both husbands and

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<sup>12</sup> This confirms the earlier interpretation of the negative coefficient on "wife in married family" indicated in the Table 2 results—footnote 10 on page 11.

<sup>13</sup> This may reflect simple computational effects (family-size denominator increases) along with possible changes in behavior by the head or wife.

wives as of the beginning of the period still shows substantial positive effects on mobility, and *additions* to schooling help female heads generally and men who begin at the bottom.

Families whose head stays employed (omitted category) do better than families in which the head's labor force status changes, even those whose head begins the period without a job and becomes employed.<sup>14</sup> Similarly (controlling for the head's status), families in which the wife is employed at both the beginning and end of the period show the most upward mobility, followed by those in which the wife becomes employed.<sup>15</sup> Beginning-of-period work hours of the family head and wife (when present) contribute to upward mobility, and so do *additions* to family work hours (the head's plus the wife's) during the period.

Families with nonwhite heads experience less upward mobility than other families, although the coefficient sizes are smaller in Table 3 than in Table 2, presumably because controlling for changes in family status and in labor market status accounts for some of the racial mobility gap. By contrast, the coefficients on age-of-head variables in Table 3 are somewhat different from those in Table 2. Families with an older head (aged 44 to 62) show more positive mobility after the estimation controls for during-period changes in status. This is especially true for families with a poor older head (for whom the estimated coefficient is negative and significant in column 3 of Table 2). Overall, the signs and significance of the age-of-head variables in Table 3 are more consistent than those in Table 2; this may reflect that the age-of-head variables in Table 2 are picking up typical changes in status associated with age (such as marrying, adding a child, or ending employment). When the coefficients on all explanatory variables are allowed to differ for families with a young head (younger than 36), only a few of the change-in-status variables show statistically significant differences (results not shown). The end of a marriage hurts the upward mobility of families headed by a woman over age 35, but not those headed by a younger woman, and it augments upward mobility for families headed by a man under age 36, but not those headed by an older man. Having children

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<sup>14</sup> Note the unemployed and not-in-labor-force statuses used in Table 2 regressions are combined into "not employed" in the Table 3 specification.

<sup>15</sup> The omitted category for wife's labor force status is no-spouse at both the beginning and end of period.



is more negative for young families than for older families. Changes in the family head's labor force status have differential effects by age: going to work is less negative (compared with staying employed) for the young, especially for the poor young, while stopping work is more negative for the young. The wife's work hours and added family work hours are more of a plus for the young.

Appendix Table A.3 reports estimated coefficients from regressions that use alternative mobility measures as dependent variables, including changes in status among the explanatory variables; the pattern of results is very similar to those shown in Table 3.

An alternative interpretation of some of Table 3's results for variables indicating changes in status is that they could reflect reverse causation. For example, if the wife is the sole beginning-of-period worker in a married-couple family and her pay goes down or fails to grow during the period, her husband might go to work in an attempt to offset the income loss—causation running from downward mobility to the husband's work. This might lead to a significant negative estimated coefficient on "head becomes employed" (as Table 3 reports in all columns, even more negative overall and more negative for the rich than the estimated coefficient on "head no longer working") despite the fact that when a husband goes to work it should help move the family up. Similarly, if the husband is the sole worker in a married-couple family and he experiences a significant boost in pay, his wife might see no reason to seek a job; in this case, a positive estimated coefficient on "wife stays not employed" (as shown in Table 3, except for rich families) reflects upward mobility influencing the wife's labor force status. Other coefficients in Tables 3 and A.3 may similarly reflect a combination of causation running in both directions.

In any case, the results for beginning-of-period characteristics suggest a few possible policy levers or behavioral changes for families to improve their economic mobility prospects. As all such studies find, higher educational attainment (of the family head or wife) at a point in time is associated with greater upward mobility for the family in the ensuing 10 years. The family head or the wife or both being employed and working longer hours are similarly associated with brighter family prospects. The regressions also document some well-known patterns less (or

not) subject to individual adjustment or choice; for example, female-headed families and families headed by nonwhites have poorer mobility outcomes than do other families.

Once during-period changes in status are included, the education and work-hours findings are reinforced: Beginning-of-period educational attainment of the family head and wife is still a plus, and female heads and poor men who obtain more education during a period have greater upward mobility. Similarly, the family head's and the wife's beginning-of-period work hours and *increases* in family work hours both augment upward mobility. As is the case for beginning-of-period employment status, families in which the head, the wife, or both remain employed during the period fare best. Men's and women's mobility outcomes diverge when a marriage ends, but men and especially women who marry during a period have more favorable mobility outcomes than couples who are married at the beginning and the end of the period.

## **V. Investigating Effects of Macroeconomic Conditions on Family Income Mobility**

Because all the families observed during a given 10-year period are subject to the same macroeconomic conditions, one cannot include measures of period-specific conditions in regressions estimated across individual head and wife observations as if they varied across individuals as well as periods. At least two approaches address this issue: (1) allowing coefficient estimates on the individual variables to differ across periods and (2) including period fixed effects in the individual regressions and regressing those estimated period-dummy coefficients on measures of macroeconomic conditions. Both approaches are severely hampered by the limited number of (only 14) 10-year periods from 1978 through 2014 and the overlap among them.

### **A. Coefficients may vary across periods: Interaction approach**

Allowing coefficients to vary across periods can provide an indirect indication of how macro conditions affect household income mobility patterns. I interact all the explanatory variables with a dummy indicator of macroeconomic conditions to explore whether individual characteristics and changes have different effects on mobility in periods with strong or weak macroeconomic conditions. Two versions identify specific 10-year periods with (i) a weakening

economy or (ii) low unemployment.<sup>16</sup> These interaction terms double the number of regression coefficients to be estimated and very rarely obtain coefficient estimates significantly different from zero (results not reported); even the separate intercept for the identified set of periods (the interaction dummy) rarely obtains a coefficient estimate significantly different from zero.<sup>17</sup>

### Changes over Time

An alternative question is whether the estimated coefficients have changed to a significant degree over time, specifically from the first seven “early” periods (1978 to 2000) to the second seven “late” periods (1992 to 2014); this question ignores macroeconomic conditions and asks simply about evolution of effects over time, as the studies by Gittleman and Joyce (1999) and Acs and Zimmerman (2008) do.<sup>18</sup> These results (not shown) display only a few estimated coefficients on late-period interactions that are significantly different from zero: In the versions that use beginning-of-period measures of family characteristics, across most mobility measures, families with nonwhite heads are at less of a disadvantage in later periods in terms of both relative and dollar-denominated mobility as well as moving up from the bottom. In addition, the mobility advantage conferred by the wife’s educational attainment is greater in later periods both overall and for those beginning at the bottom or in the middle. Furthermore, the advantage of having an “older-middle-aged” head (35 to 43) is considerably smaller in the later periods than earlier.

Once I include *during-period changes* in status/characteristics (Table 3 specifications), the late-period results for families with nonwhite heads and families with older-middle-aged

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<sup>16</sup> Four of the 14 periods (1998 to 2008, 2000 to 2010, 2002 to 2012, and 2004 to 2014) showed a weakening economy, defined by a higher unemployment rate in the end year than in the beginning year; these four periods also were the only ones in which annual real GDP growth fell below the average of the entire 1978-through-2014 span. Five periods (1990 to 2000, 1992 to 2002, 1994 to 2004, 1996 to 2006, and 1998 to 2008) had 10-year-average unemployment below 5.75 percent.

<sup>17</sup> The weakening-economy dummy obtains a negative and significant coefficient in equations explaining the dollar-denominated group movement measure; the low-unemployment dummy obtains a significant positive coefficient in equations for change in log of income for those starting at the bottom.

<sup>18</sup> Note, however, that the later periods were weaker economically, on average, than the earlier periods, since the last four of the seven “late periods” — 1998 through 2014 — overlap the Great Recession and fall into the “weakening economy” category described in the footnote before last.

heads continue to hold. In addition, families who move from no-child status to child(ren)-present status during a 10-year period are at a significantly smaller disadvantage in terms of mobility in the later periods. Furthermore, additions to the head's and wife's (family) work hours during the period add more to upward mobility in later periods.

## B. Estimate macro effects directly: Period dummies

The regressions reported earlier in Tables 2 and 3 (and Appendix Tables A.2 and A.3) include fixed effects for periods. To investigate macro effects, the estimated coefficients on period dummies are regressed on macroeconomic characteristics of the periods. Table 4 reports estimated coefficients on those macro factors. The top panel reports results including only measures of annual real GDP growth and average CPI inflation during each period; the lower panel also includes a measure of change in U.S. household income inequality during the period. Note that these regressions are attempting to explain the differences across periods in family mobility *not* explained by family characteristics (and changes), including labor market involvement.<sup>19</sup>

The results in Table 4 suggest a modest role for macro factors; it is impossible to know whether these results reflect the very limited number of periods (and hence, few observations in these regressions) or a truly small influence of macro factors in determining individual-level family income mobility during 10-year periods.<sup>20</sup> In the top panel (“two macro variables”), the statistically significant results are twofold: (1) faster GDP growth is associated with more upward mobility in real-dollar-denominated terms (group movement and change in log of family income); (2) higher inflation is associated with greater moves upward in a relative sense

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<sup>19</sup> Even though the quintile-movement measure has a mean of zero by definition in each period—it is a purely relative measure, so for every family that moves up, another must (by definition) move down—there can be a non-zero mean amount of quintile movement not explained by the other included factors, such as family characteristics, etc.

<sup>20</sup> As reported in the next section of this paper, macroeconomic measures are more strongly associated with family mobility outcomes (controlling for all the included family-level variables) when there are 16 6-year periods than when there are only 11 16-year periods. This suggests part of the difficulty is indeed statistical power.

(quintile movement and change in family income rank).<sup>21</sup> Interestingly, some of the signs are reversed for relative versus absolute measures. In particular, stronger GDP growth is associated with more relative downward movement from the richest quintile.

The lower panel of Table 4 (“three macro variables”) adds a measure of inequality change: the period (10-year) change in the Gini coefficient measured across U.S. households. The hypothesis here is that growing inequality makes it more difficult to move across the income distribution as the quintile boundaries move farther apart in dollar terms. The addition of this variable has virtually no effect on the patterns described in the paragraph above: The relationships for GDP growth and CPI inflation persist in this richer version. In addition, there is weak evidence that rising inequality is associated with greater upward movement across dollar-denominated groups (column 2) but a smaller likelihood that members of the *poorest* group experience income gains.<sup>22</sup>

## VI. Shorter or Longer Periods: What Can We Learn?

The analysis above examines 10-year mobility periods. For comparison and as a robustness check, I also estimate equations using 6-year and 16-year periods. Almost by definition,<sup>23</sup> families move farther up and down the income distribution during longer periods. For example, more than 9 percent of families move three or four quintiles (up or down) during the average

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<sup>21</sup> This GDP result also applies to other dollar-denominated mobility measures, including the all-families change in log of family income and whether families move up across dollar-denominated groups by origin (see Appendix Table A.4). The inflation result also applies to some of the other relative mobility measures, including all-families change in family income rank and a lower incidence of relative downward moves by those who start in the richest quintile (Appendix Table A.4).

<sup>22</sup> An alternative approach to analyzing the influence of the “macro” economic environment on individual families’ mobility is to include state-level economic indicators for each family’s state of residence. Just as for U.S. macroeconomic indicators, it is econometrically inappropriate to include state-level measures in regressions estimated across individual head and wife observations as if they varied across individuals within states. When I include state fixed effects in the regressions that also include period fixed effects, the estimated coefficients on the family-characteristic variables are unchanged (results not shown). Future work may include regressions of estimated state-by-period dummy coefficients on state-level economic indicators observed in each period, including industry mix (for example, Bartik shocks).

<sup>23</sup> “Almost by definition” in the sense that for any annual rate of mobility, measuring over a longer period will tally more moves, unless each year’s moves are purely random and therefore as likely to be reversed as not.

16-year period, and only 5 percent move that far in six years; in parallel terms, 46 percent of families are in the same quintile of the distribution after six years, while only 36 percent do not move (or come back to where they started) during the average 16-year period. Figure 2 compares the distances of moves during 6-, 10-, and 16-year periods. In terms of group movement, the upward moves, reflecting real income growth, are especially augmented in longer periods, as one would expect. Appendix Figures A.1 and A.2 plot the evolution over time of the 6-year and 16-year quintile movement and group movement measures.

### **A. Mobility regressions for shorter and longer periods**

The basic patterns of signs for 16-year and 6-year mobility regressions (regression results shown in Appendix Tables A.5 and A.6) are very similar to those shown in Tables 2 and 3 for 10-year mobility, but significance levels are somewhat weaker for 16-year mobility, presumably reflecting smaller sample sizes.<sup>24</sup> Most coefficients on beginning-of-period characteristics or status are larger in absolute value in the longer-period estimates, as one might expect, reflecting more time to realize their effects; for example, the estimated coefficients on the variables indicating a nonwhite family head and the educational attainment of the head and the wife are larger in the equations explaining 16-year mobility than 6-year mobility for both quintile movement and group movement. Interestingly, however, some coefficients are larger for the 6-year periods. Specifically, female-headed families with children appear to move down more (quintiles or groups) in a 6-year period than in a 10- or 16-year period; this might indicate that single motherhood is not a long-term state. Similarly, the negative coefficients on the wife-not-in-labor-force variable are larger in the six-year period.<sup>25</sup>

Examining the versions that include during-period changes in status (Appendix Table A.6) reveals that most beginning-of-period indicators, including the race of the family head and the

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<sup>24</sup> The number of observations is smaller per period for 16-year periods (2,500 vs. 4,400), and there are only 11 16-year periods from 1978 through 2014, but 16 6-year periods. The 10-year periods have about 3,600 observations per period.

<sup>25</sup> Since this is not the case consistently for head's labor force status nor for wife's or head's unemployment, it may reflect women's tendency to take a *temporary* break from the labor force when their children are young.

educational attainment of the head and wife, have larger coefficients in the 16-year regressions than in the 6-year, although the age-of-head and child-present-at-beginning-of-period variables are not strongly associated with subsequent mobility in 16-year periods, despite being significant in 6-year periods. However, the results for during-period changes in status are more variable. With the exception of those for the marriage-ends-woman variable, the coefficients on changes in marital status are larger for the 6-year periods than for the 16-year.<sup>26</sup> By contrast, obtaining additional education boosts upward mobility more during longer periods and shows very little association with mobility in 6-year periods.

### **B. Macro regressions for shorter and longer periods**

The interaction approach to period effects is somewhat more illuminating for 6-year periods than for 10-year or 16-year periods; in particular, the effects of a wife's educational attainment on upward mobility are estimated to be significantly stronger in (6-year) periods of low unemployment than in higher-unemployment periods. Comparing results based on "early" versus "late" 6-year periods, the positive results for families with older-middle-age and older heads are much smaller in the later 6-year periods than in the earlier ones.<sup>27</sup> As with 10-year periods, the negative outcomes for families with nonwhite heads are less pronounced in later periods than in earlier periods. Furthermore, the effects of the wife's educational attainment are larger in later periods. The stronger interaction results for 6-year periods may reflect that there are more periods over which to identify such effects compared with 10-year and 16-year periods; alternatively, it may indicate that a 6-year period is a more coherent entity, in the sense that "the macroeconomy" becomes more difficult to characterize the longer the period.

Using the two-stage process that builds on the estimated period dummies, the results of the macro-factor regressions for longer and shorter periods (shown in Table A.7) are fairly similar

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<sup>26</sup> For marriage-ends-woman, the six-year coefficient is indistinguishable from zero, whereas the 10-year coefficient and, especially, the 16-year coefficient are significant and negative. Note that all these changes in status variables compare the end-year status with the beginning-year status, with no consideration of what may have happened in the intervening years.

<sup>27</sup> "Early" includes the 1978-to-1984 period through the 1992-to-1998 period; "late" periods cover from the 1994-to-2000 period through the 2008-to-2014 period.

to the 10-year-period results. However, significance levels are somewhat stronger for the 6-year periods than the 10-year periods, and they are quite weak for the 16-year periods; the latter is not surprising with only 11 observations in the 16-year period macro regressions. As in the 10-year periods, group movement and growth in real income are more positive in periods with faster real GDP growth, and quintile movement and changes in rank are more positive when inflation is higher. Indeed, even after taking account of the stronger influence of many beginning-of-period characteristics on 16-year mobility, as compared with 10-year and 6-year mobility, the annual rate of real GDP growth is associated with the greatest absolute upward mobility (group movement and change in log of family income by origin) during 16-year periods, followed by 10-year periods, and then by 6-year periods. The period indicator of changes in family income inequality shows no relationship to mobility in 6- or 16-year periods, except that poor families are more likely to experience declines (or see smaller increases) in dollar income when inequality is rising.

## **VII. Discussion and Conclusions**

This paper analyzes family mobility patterns during 10-year periods from 1978 through 2014, investigating the role of family characteristics and macroeconomic factors in individual families' moves up and down the income distribution in both relative and dollar-denominated terms. Family type (marital status, presence of children), educational attainment, and labor market involvement of the head (and the wife if present) as of the beginning of a period are all strongly related to mobility during the period, as is the race of the family head. In addition, the specific 10-year period during which a family's mobility is measured also makes a difference. In particular, families tend to move up more in real dollar terms during periods with stronger real GDP growth and, controlling for family characteristics, there is more upward relative mobility when inflation is higher. It appears that some characteristics' effects on mobility have weakened or strengthened over the last 30 years; specifically, nonwhite families have faced less disadvantage in recent periods than in the 1980s, and high educational attainment of wives has given more of a positive boost to mobility in recent periods than it did earlier.

The characteristic that has the biggest effect on a family's mobility is the educational



attainment of the head and the wife (if there is one in the family). Controlling for other characteristics, a family with a college-educated head will rise more than three-quarters of a quintile (or more than four-fifths of a group) higher during 10 years than a family with a head who lacks a high school diploma. Similarly, a family with a more-educated head is more likely to move up from the poorest quintile or group, move up when starting in the middle three quintiles or groups, and lose less income or rank when starting in the richest quintile or group. Furthermore, controlling for the head's education, a family with a wife who is college-educated will rise one-half a quintile (or one-half a group) more than a family in which the wife has not completed high school. These results reinforce the longstanding advice to parents and children to focus on getting a good education as a way to move up. Note, however, that producing a more-educated workforce does not, in itself, change the distribution of jobs in the economy, and most projections show faster growth in low-end occupations requiring few formal credentials than in mid-level jobs.<sup>28</sup> Nonetheless, attaining more education is still advisable, because it allows individuals to move up *relative* to others who do not add credentials.

The macroeconomic (period) results are fairly weak. Taken at face value, however, they suggest that families benefit—via more upward mobility in dollar terms—when real GDP growth is faster. In addition, higher inflation is associated with greater upward moves in a relative sense across the income distribution (quintile movement and change in rank), including somewhat less relative downward mobility for the rich.

Do these results regarding intragenerational mobility suggest policies that might improve equality of opportunity or intergenerational mobility? The education findings are certainly relevant in the intergenerational, as well as intragenerational, context. By the same token, improving job access and job quality for disadvantaged parents (through training, apprenticeships, better pay) would improve mobility prospects for their families. Furthermore, given that families with single female heads or nonwhite heads face mobility disadvantages in

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<sup>28</sup> See, for example, the U.S. Bureau of Labor Statistics occupational projections 2016–2026 for “Number of new jobs (projected),” which shows the top two new-job-adding occupations as personal care aides and combined food preparation and serving workers, including fast food (<https://www.bls.gov/ooh/most-new-jobs.htm>); both these occupations have median pay under \$25,000 per year.

6-year, 10-year, and 16-year periods, it seems useful to consider developing some extra “compensatory” supportive attention in and out of school for the children in such families; one example is universal preschool, which appears to reduce income-related disparities in children’s school success and longer-term outcomes.

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Figure 1  
 More families stayed where they started in recent periods than earlier; fewer moved up or down by a lot  
 Note asymmetry in group movement reflecting real income growth

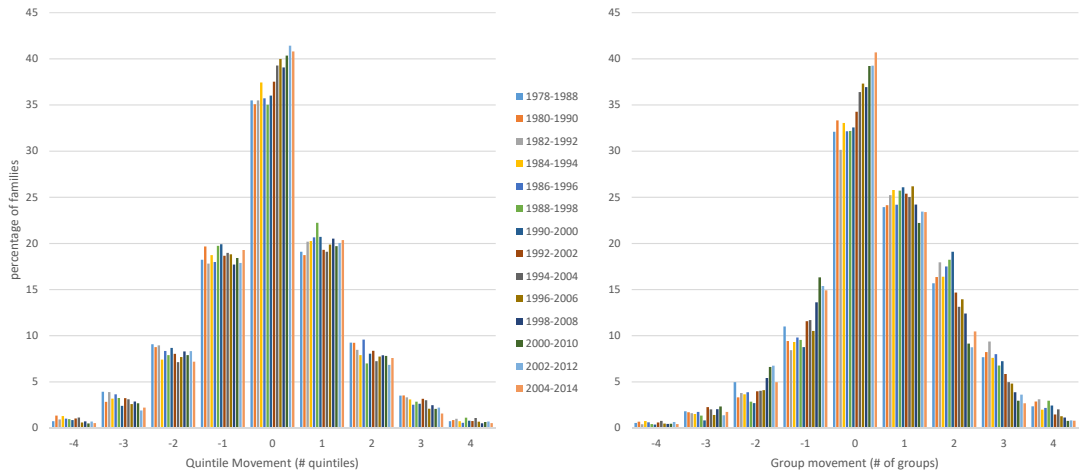


Figure 2  
 Distribution of Moves  
 Varying period lengths

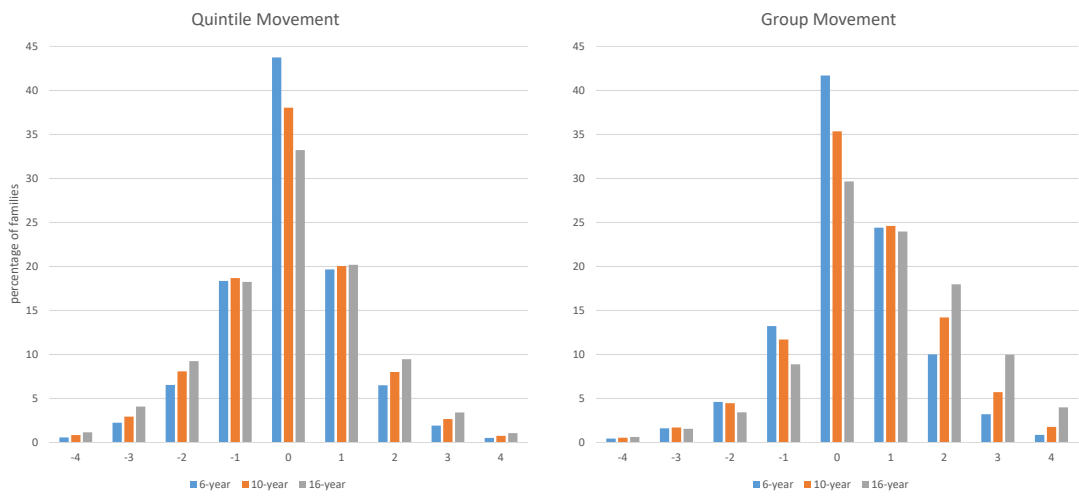


Table 1. Descriptive Statistics

	Mean	Standard Deviation		Mean	Standard Deviation
<i>Measures of mobility:</i>					
Quintile movement (# of quintiles)	0.000	1.337	<i>Education:</i>		
Group movement (# of groups)	0.494	1.379	Head education less than h.s.	0.116	0.320
Change in family income rank	0.00	26.52	Wife education less than h.s.	0.067	0.249
Families starting in the poorest quintile <sup>a</sup>	15.53	22.07	Head education some college	0.219	0.414
Families starting in the middle three quintiles <sup>b</sup>	0.69	25.30	Wife education some college	0.169	0.375
Families starting in the richest quintile <sup>c</sup>	-17.62	23.58	Head education BA or more	0.314	0.464
Change in log of family income	0.225	0.651	Wife education BA or more	0.209	0.407
Families starting in the poorest group <sup>a</sup>	0.568	0.748	Added education -- man	0.026	0.160
Families starting in the middle three groups <sup>b</sup>	0.215	0.575	Added education -- female head	0.019	0.136
Families starting the richest group <sup>c</sup>	-0.088	0.593	Added education -- wife	0.036	0.187
<i>Characteristics of family:</i>					
Family Size	3.14	1.48	<i>Labor force status:</i>		
Married-couple family, no children	0.213	0.409	Head not in labor force	0.048	0.214
Male-head family, w/children	0.008	0.091	Head unemployed	0.046	0.208
Female-head family, w/children	0.080	0.271	Wife not in labor force	0.203	0.402
Female-head family, no children	0.084	0.278	Wife unemployed	0.017	0.131
Single-head family	0.266	0.442	Head's work hours (per week)	40.21	15.05
Marriage ends -- man	0.040	0.195	Wife's work hours (per week)	17.44	18.24
Marriage ends -- woman	0.058	0.234	Head becomes employed	0.053	0.224
Marriage begins -- man	0.049	0.215	Head no longer working	0.109	0.311
Marriage begins -- woman	0.048	0.214	Head stays not employed	0.039	0.194
Stay single-head family	0.169	0.375	Spouse stays employed	0.360	0.480
Child present at beginning of period	0.610	0.488	Spouse becomes employed	0.174	0.379
Family no longer childless	0.116	0.320	Spouse no longer working	0.153	0.360
<i>Characteristics of head/wife:</i>					
Individual is wife in married family	0.361	0.480	Spouse stays not employed	0.088	0.284
Age head young (16-25)	0.087	0.282	Change in family work hours	-1.32	29.20
Age head older middle (35-43)	0.326	0.469			
Age head older (44-62)	0.278	0.448	Observations	49,933	
Head's race is nonwhite	0.177	0.381			

Notes: Weighted means.

Variables listed above have minimum of 0 and maximum of 1, except for the following: quintile movement and group movement (-4, +4), change in family income rank (-98, +99), change in log of family income (-4.46, +4.83), family size (1, 14), head's or wife's work hours (0, 112), change in family work hours (-181, +188).

Number of observations = 49,933 with the following exceptions: <sup>a</sup> N=13,977 <sup>b</sup> N=28,349 <sup>c</sup> N=7,607

Source: Author's calculations based on Panel Study of Income Dynamics and TAXSIM.

Table 2. Mobility Regressions Based on Beginning-of-Period Characteristics

Estimated coefficients, with standard errors below

	Quintile movement (# of quintiles)	Group movement (# of groups)	Change in Family Income Rank			Change in Log of Family Income		
			Families starting in poorest quintile	Families starting in middle three quintiles	Families starting in richest quintile	Families starting in poorest group	Families starting in middle three groups	Families starting in richest group
Characteristics of family:								
Family Size	0.051 *** 0.007	0.045 *** 0.008	0.56 *** 0.16	1.58 *** 0.21	1.07 ** 0.41	0.012 0.006	0.034 *** 0.005	0.029 ** 0.010
Married-couple family, no children	-0.171 *** 0.023	-0.161 *** 0.023	-0.41 0.96	-4.33 *** 0.60	-2.64 ** 0.94	-0.048 0.033	-0.081 *** 0.014	-0.062 ** 0.022
Male-head family, w/children	0.006 0.072	0.006 0.078	-2.26 1.86	2.15 1.84	-1.33 4.34	-0.008 0.067	0.056 0.045	-0.008 0.115
Female-head family, w/children	-0.202 *** 0.036	-0.233 *** 0.040	-3.39 *** 0.95	-5.57 *** 1.09	-13.09 *** 3.07	-0.096 ** 0.033	-0.113 *** 0.027	-0.280 *** 0.070
Female-head family, no children	-0.063 0.039	-0.065 0.041	-1.68 1.12	-0.99 1.01	-3.38 2.24	-0.053 0.036	-0.010 0.024	-0.077 0.055
Single-head family	-0.019 0.041	-0.096 * 0.044	2.35 1.22	-0.73 1.12	-0.11 2.11	-0.048 0.041	-0.039 0.026	0.008 0.051
Characteristics of head/wife:								
Individual is wife in married family	-0.093 *** 0.019	-0.103 *** 0.020	-1.84 ** 0.62	-2.32 *** 0.46	-1.35 0.79	-0.066 *** 0.020	-0.051 *** 0.010	-0.038 * 0.019
Age head young (16-25)	0.040 * 0.020	0.021 0.023	1.82 *** 0.52	0.31 0.60	-6.47 ** 2.04	0.047 * 0.018	0.008 0.014	-0.095 * 0.045
Age head older middle (35-43)	0.134 *** 0.016	0.112 *** 0.016	0.31 0.47	3.07 *** 0.42	4.41 *** 0.89	0.009 0.017	0.049 *** 0.010	0.090 *** 0.021
Age head older (44-62)	0.064 *** 0.019	0.015 0.020	-1.89 *** 0.57	0.66 0.52	4.52 *** 0.93	-0.045 * 0.021	0.001 0.012	0.104 *** 0.021
Head's race is nonwhite	-0.333 *** 0.019	-0.370 *** 0.021	-6.31 *** 0.54	-7.02 *** 0.47	-7.08 *** 1.14	-0.213 *** 0.017	-0.163 *** 0.011	-0.161 *** 0.026
Education:								
Head education less than h.s.	-0.242 *** 0.022	-0.309 *** 0.026	-3.88 *** 0.44	-5.06 *** 0.71	-8.96 *** 2.12	-0.164 *** 0.019	-0.127 *** 0.018	-0.177 *** 0.045
Wife education less than h.s.	-0.178 *** 0.030	-0.218 *** 0.035	-1.58 * 0.64	-3.80 *** 0.86	-4.22 3.41	-0.061 * 0.024	-0.091 *** 0.022	-0.113 0.083
Head education some college	0.188 *** 0.023	0.216 *** 0.024	4.86 *** 0.68	3.97 *** 0.54	0.13 1.15	0.156 *** 0.023	0.093 *** 0.012	0.001 0.026
Wife education some college	0.114 *** 0.026	0.110 *** 0.027	3.65 *** 1.06	2.11 *** 0.59	2.78 * 1.20	0.073 * 0.030	0.045 *** 0.013	0.066 * 0.027
Head education BA or more	0.545 *** 0.026	0.522 *** 0.026	16.02 *** 1.24	10.92 *** 0.61	8.29 *** 1.09	0.455 *** 0.032	0.233 *** 0.013	0.192 *** 0.025
Wife education BA or more	0.348 *** 0.029	0.277 *** 0.027	8.39 *** 1.78	6.46 *** 0.67	7.05 *** 1.15	0.156 *** 0.045	0.128 *** 0.014	0.170 *** 0.026
Labor force status:								
Head not in labor force	-0.196 *** 0.027	-0.295 *** 0.030	-3.60 *** 0.62	-4.78 *** 1.15	-9.21 *** 2.58	-0.191 *** 0.024	-0.157 *** 0.031	-0.212 *** 0.062
Head unemployed	-0.189 *** 0.021	-0.261 *** 0.025	-3.46 *** 0.50	-4.40 *** 0.78	-10.04 *** 2.25	-0.168 *** 0.021	-0.146 *** 0.022	-0.240 *** 0.057
Wife not in labor force	-0.167 *** 0.020	-0.184 *** 0.021	-1.59 * 0.67	-4.04 *** 0.52	-3.83 *** 1.08	-0.068 ** 0.021	-0.092 *** 0.012	-0.076 ** 0.026
Wife unemployed	-0.186 *** 0.036	-0.228 *** 0.040	-1.88 1.05	-3.84 *** 1.00	-5.78 * 2.35	-0.095 * 0.038	-0.089 *** 0.025	-0.113 * 0.052
Head's work hours (per week)	0.0020 *** 0.0005	0.0023 *** 0.0005	0.046 ** 0.015	0.055 *** 0.015	-0.011 0.028	0.0025 *** 0.0005	0.0014 *** 0.0004	-0.0001 0.0007
Wife's work hours (per week)	0.0017 ** 0.0006	0.0016 ** 0.0006	0.106 *** 0.024	-0.006 0.015	0.057 * 0.025	0.0030 *** 0.0007	-0.0001 0.0003	0.0016 ** 0.0006
Constant	0.779 *** 0.050	1.309 *** 0.055	18.79 *** 1.36	22.47 *** 1.43	14.79 ** 5.46	7.693 *** 0.169	4.704 *** 0.170	6.555 *** 0.359
R-squared	0.3260	0.3234	0.1613	0.2203	0.1517	0.2634	0.1607	0.2043
Number of observations	48,738	48,738	13,504	27,762	7,472	13,504	27,762	7,472
Origin decile dummies included	yes	yes	no	no	no	no	no	no
Period dummies included	yes	yes	yes	yes	yes	yes	yes	yes

Notes: See Table 1 for sources. Significance levels: \* = p&lt;.05; \*\* = p&lt;.01; \*\*\* = p&lt;.001

Table 3. Mobility Regressions Including During-Period Changes in Status

Estimated coefficients, with standard errors below

	Quintile movement (# of quintiles)	Group movement (# of groups)	Change in Family Income Rank			Change in Log of Family Income		
			Families starting in poorest quintile	Families starting in middle three quintiles	Families starting in richest quintile	Families starting in poorest group	Families starting in middle three groups	Families starting in richest group
<i>Family type &amp; changes:</i>								
Family Size	0.044 ***	0.036 ***	0.54 ***	1.39 ***	0.74	0.011 *	0.030 ***	0.022 *
	0.007	0.007	0.14	0.19	0.39	0.005	0.004	0.009
Marriage ends -- man	0.228 ***	0.229 ***	7.58 ***	6.04 ***	-0.55	0.174 ***	0.121 ***	0.014
	0.039	0.042	1.24	0.99	2.02	0.041	0.024	0.050
Marriage ends -- woman	-0.131 ***	-0.221 ***	2.04 *	-3.22 ***	-8.22 ***	-0.016	-0.102 ***	-0.170 ***
	0.031	0.034	0.91	0.76	1.59	0.031	0.020	0.037
Marriage begins -- man	0.419 ***	0.345 ***	11.22 ***	9.92 ***	5.27 **	0.212 ***	0.204 ***	0.096 *
	0.038	0.038	1.27	0.96	1.95	0.036	0.021	0.048
Marriage begins -- woman	0.516 ***	0.463 ***	10.65 ***	13.30 ***	8.71 **	0.207 ***	0.273 ***	0.220 ***
	0.038	0.038	0.99	1.06	2.69	0.026	0.023	0.063
Stay single-head family	0.128 ***	0.063	4.82 ***	4.37 ***	1.69	0.057	0.104 ***	0.029
	0.038	0.041	1.01	1.10	2.71	0.033	0.027	0.064
Child present at beginning of period	-0.120 ***	-0.131 ***	-3.08 ***	-2.08 ***	-2.01 *	-0.084 ***	-0.054 ***	-0.044
	0.020	0.021	0.62	0.54	0.92	0.022	0.013	0.022
Family no longer childless	-0.389 ***	-0.355 ***	-4.15 ***	-8.14 ***	-9.14 ***	-0.103 ***	-0.167 ***	-0.203 ***
	0.025	0.025	0.85	0.61	1.02	0.026	0.014	0.023
<i>Age and race:</i>								
Age head young (16-25)	0.000	-0.033	0.37	-0.13	-5.92 **	-0.004	-0.008	-0.085 *
	0.018	0.020	0.44	0.53	1.80	0.015	0.012	0.039
Age head older middle (35-43)	0.159 ***	0.149 ***	1.87 ***	3.60 ***	2.65 **	0.070 ***	0.066 ***	0.052 **
	0.014	0.014	0.40	0.36	0.87	0.014	0.008	0.020
Age head older (44-62)	0.186 ***	0.169 ***	2.27 ***	3.58 ***	4.31 ***	0.127 ***	0.081 ***	0.105 ***
	0.018	0.018	0.51	0.46	0.93	0.019	0.011	0.022
Head's race is nonwhite	-0.230 ***	-0.254 ***	-4.04 ***	-4.83 ***	-5.98 ***	-0.129 ***	-0.110 ***	-0.138 ***
	0.016	0.018	0.46	0.39	1.00	0.014	0.009	0.024
<i>Education &amp; changes:</i>								
Head education less than h.s.	-0.183 ***	-0.240 ***	-2.69 ***	-3.98 ***	-7.62 ***	-0.112 ***	-0.098 ***	-0.148 ***
	0.019	0.022	0.38	0.60	1.90	0.016	0.015	0.040
Wife education less than h.s.	-0.121 ***	-0.155 ***	-0.86	-2.49 **	-3.82	-0.037	-0.061 **	-0.103
	0.027	0.031	0.57	0.77	2.77	0.019	0.019	0.068
Head education some college	0.171 ***	0.192 ***	3.83 ***	3.65 ***	0.33	0.112 ***	0.083 ***	0.006
	0.019	0.020	0.55	0.46	1.02	0.018	0.010	0.023
Wife education some college	0.108 ***	0.104 ***	2.96 **	1.98 ***	3.34 **	0.049	0.042 ***	0.078 **
	0.023	0.023	0.97	0.51	1.08	0.026	0.011	0.025
Head education BA or more	0.514 ***	0.479 ***	13.20 ***	10.13 ***	8.51 ***	0.332 ***	0.208 ***	0.198 ***
	0.023	0.023	1.07	0.52	0.98	0.026	0.011	0.023
Wife education BA or more	0.292 ***	0.215 ***	6.22 ***	5.19 ***	6.48 ***	0.069	0.100 ***	0.157 ***
	0.026	0.024	1.62	0.59	1.02	0.040	0.012	0.023
Added education -- man	0.076	0.086 *	3.40 **	1.15	2.43	0.124 ***	0.020	0.071
	0.043	0.043	1.30	1.05	2.33	0.036	0.023	0.053
Added education -- female head	0.107 **	0.109 **	2.16 **	1.90	-0.70	0.052	0.039	-0.016
	0.033	0.037	0.71	1.15	3.23	0.027	0.028	0.083
Added education -- wife	0.027	0.038	1.64	0.34	2.63	0.060	0.009	0.064
	0.033	0.035	1.10	0.79	1.59	0.033	0.017	0.037
<i>Labor force status &amp; changes:</i>								
Head becomes employed	-0.104 ***	-0.148 ***	-1.18 *	-1.87 **	-6.45 ***	-0.058 ***	-0.062 ***	-0.145 **
	0.021	0.023	0.50	0.70	1.85	0.017	0.017	0.044
Head no longer working	-0.065 ***	-0.133 ***	-1.41 **	-2.08 ***	-1.71	-0.157 ***	-0.103 ***	-0.039
	0.019	0.021	0.50	0.54	1.12	0.019	0.014	0.028
Head stays not employed	-0.053 *	-0.206 ***	-1.06	-4.13 ***	-7.28 *	-0.188 ***	-0.214 ***	-0.184 *
	0.024	0.028	0.55	1.03	3.13	0.024	0.032	0.080
Spouse stays employed	0.357 ***	0.400 ***	5.67 ***	8.25 ***	8.11 ***	0.092 **	0.183 ***	0.140 **
	0.035	0.037	1.17	0.96	2.23	0.033	0.024	0.052
Spouse becomes employed	0.209 ***	0.268 ***	4.94 ***	5.06 ***	2.95	0.082 **	0.117 ***	0.040
	0.032	0.034	0.90	0.92	2.11	0.027	0.022	0.049
Spouse no longer working	0.025	0.080 *	0.37	1.82 *	2.57	0.040	0.082 ***	0.028
	0.030	0.032	0.84	0.86	2.07	0.029	0.022	0.049
Spouse stays not employed	0.113 **	0.128 ***	2.68 **	3.97 ***	4.45	0.069 *	0.128 ***	0.069
	0.035	0.038	0.96	1.01	2.32	0.030	0.025	0.055
Head's work hours (per week)	0.012 ***	0.012 ***	0.25 ***	0.28 ***	0.17 ***	0.010 ***	0.007 ***	0.004 ***
	0.001	0.001	0.02	0.02	0.03	0.001	0.000	0.001
Wife's work hours (per week)	0.012 ***	0.012 ***	0.32 ***	0.24 ***	0.22 ***	0.012 ***	0.006 ***	0.006 ***
	0.001	0.001	0.02	0.02	0.03	0.001	0.000	0.001
Change in family work hours	0.014 ***	0.015 ***	0.28 ***	0.33 ***	0.24 ***	0.011 ***	0.008 ***	0.006 ***
	0.000	0.000	0.01	0.01	0.02	0.000	0.000	0.000
Constant	0.000	0.475 ***	3.35 *	2.56	0.08	7.370 ***	4.585 ***	6.218 ***
	0.052	0.056	1.43	1.48	5.63	0.144	0.151	0.351
R-squared	0.4512	0.4611	0.3618	0.3916	0.2820	0.4704	0.3513	0.3139
Number of observations	48,367	48,367	13,372	27,570	7,425	13,372	27,570	7,425
Origin decile dummies included	yes	yes	no	no	no	no	no	no
Period dummies included	yes	yes	yes	yes	yes	yes	yes	yes

Notes: See Table 1 for sources. Significance levels: \* = p&lt;.05; \*\* = p&lt;.01; \*\*\* = p&lt;.001

Table 4. Period Regressions on Macroeconomic Variables

Estimated coefficients, with standard errors below

<i>Period dummy coefficients estimated in equation for --&gt;</i>	Quintile movement (# of quintiles)	Group movement (# of groups)	Change in Family Income Rank			Change in Log of Family Income		
			Families starting in poorest quintile	Families starting in middle three quintiles	Families starting in richest quintile	Families starting in poorest group	Families starting in middle three groups	Families starting in richest group
<b>Two macro variables:</b>								
<i>Period dummy coefficients estimated with beginning-of-period explanatory variables:</i>								
Real GDP growth (annual rate)	0.001	0.254 ***	0.310	0.082	-1.528 **	0.070 *	0.090 ***	0.028
	0.014	0.047	0.335	0.335	0.455	0.028	0.012	0.015
CPI inflation (annual rate)	0.043 ***	0.080 *	0.753 **	0.848 **	0.667	-0.033	-0.015	-0.024 *
	0.010	0.033	0.231	0.231	0.314	0.019	0.008	0.011
Constant	-0.219 ***	-1.125 ***	-4.881 ***	-4.559 **	1.473	-0.091	-0.193 ***	0.050
	0.043	0.146	1.033	1.034	1.404	0.085	0.038	0.047
R-squared	0.6084	0.7750	0.4924	0.5077	0.4500	0.2988	0.8032	0.2676
<i>Period dummy coefficients estimated with level and change-in-status explanatory variables:</i>								
Real GDP growth (annual rate)	-0.040	0.208 **	-0.795	-0.794	-2.025 **	0.028	0.065 ***	0.018
	0.021	0.048	0.450	0.507	0.457	0.025	0.011	0.015
CPI inflation (annual rate)	0.051 **	0.088 *	0.898 *	0.972 *	1.028 **	-0.027	-0.015	-0.014
	0.015	0.033	0.311	0.350	0.315	0.017	0.008	0.010
Constant	-0.129	-1.019 ***	-1.950	-2.364	1.058	0.025	-0.111 **	0.032
	0.065	0.147	1.389	1.565	1.410	0.076	0.034	0.046
R-squared	0.4597	0.7267	0.3578	0.3265	0.6258	0.0733	0.7195	0.0482
<b>Three macro variables:</b>								
<i>Period dummy coefficients estimated with beginning-of-period explanatory variables:</i>								
Real GDP growth (annual rate)	0.005	0.200 ***	0.630	0.086	-1.302 *	0.102 **	0.079 ***	0.024
	0.016	0.042	0.331	0.397	0.517	0.025	0.012	0.018
CPI inflation (annual rate)	0.044 **	0.070 *	0.812 **	0.849 **	0.709	-0.027	-0.017	-0.025 *
	0.010	0.026	0.205	0.245	0.319	0.015	0.008	0.011
Change in household inequality	-0.611	7.620 *	-45.128	-0.597	-31.776	-4.412 *	1.514	0.555
	1.063	2.779	21.740	26.047	33.904	1.622	0.816	1.171
Constant	-0.221 ***	-1.105 ***	-5.000 ***	-4.561 **	1.390	-0.102	-0.189 ***	0.052
	0.044	0.116	0.907	1.087	1.415	0.068	0.034	0.049
R-squared	0.5830	0.8587	0.6098	0.4585	0.4439	0.5566	0.8390	0.2121
<i>Period dummy coefficients estimated with level and change-in-status explanatory variables:</i>								
Real GDP growth (annual rate)	-0.029	0.161 **	-0.432	-0.585	-1.694 **	0.060 *	0.061 ***	0.016
	0.024	0.046	0.473	0.584	0.492	0.019	0.013	0.018
CPI inflation (annual rate)	0.053 **	0.079 *	0.965 **	1.011 *	1.090 **	-0.021	-0.016	-0.015
	0.015	0.029	0.292	0.360	0.304	0.012	0.008	0.011
Change in household inequality	-1.497	6.641	-51.149	-29.509	-46.730	-4.583 **	0.630	0.212
	1.569	3.048	31.007	38.292	32.277	1.263	0.829	1.150
Constant	-0.133	-1.002 ***	-2.085	-2.442	0.935	0.013	-0.109 *	0.032
	0.065	0.127	1.294	1.598	1.347	0.053	0.035	0.048
R-squared	0.4553	0.7962	0.4447	0.3007	0.6597	0.5599	0.7083	-0.0435
Number of observations	14	14	14	14	14	14	14	14

Notes: Significance levels: \* = p&lt;.05; \*\* = p&lt;.01; \*\*\* = p&lt;.001

Sources: U.S. Bureau of Economic Analysis (GDP), U.S. Bureau of Labor Statistics (CPI), U.S. Bureau of the Census (inequality), and Haver Analytics.



Figure A.1  
Six-year periods: Less movement (more zeroes)

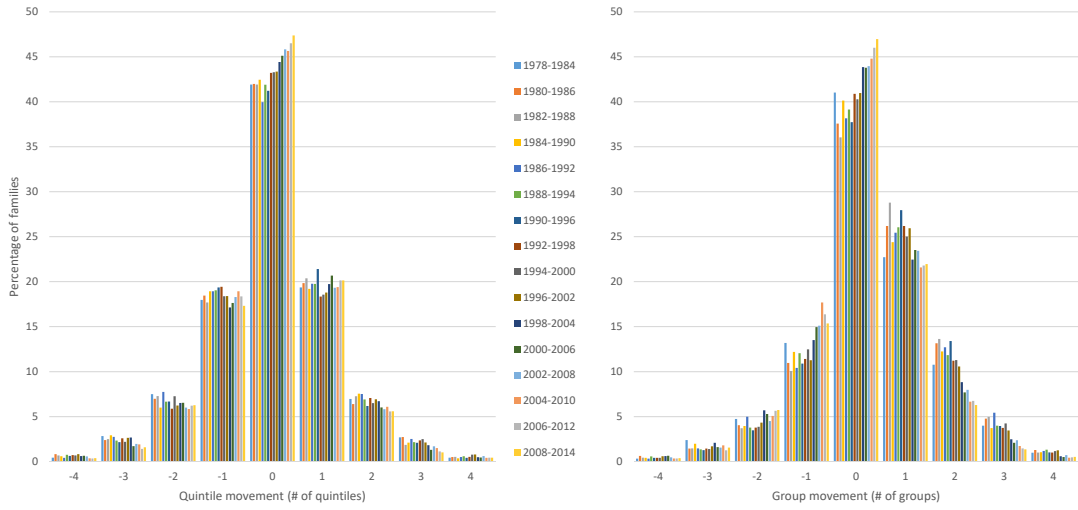
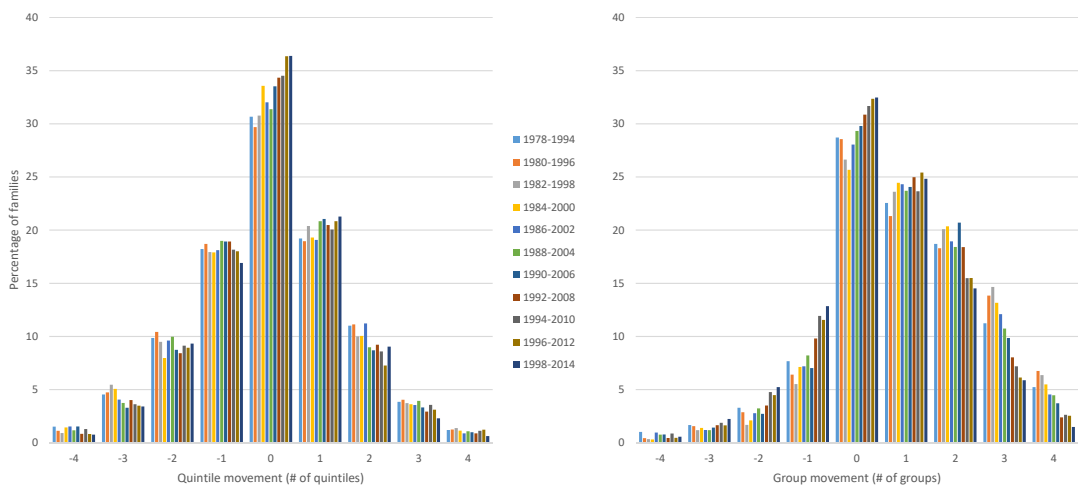


Figure A.2  
Sixteen-year periods: More movement (fewer zeroes)



Appendix Table A.1

## Descriptive Statistics for Alternative Dependent and Additional Explanatory Variables

	Mean	Standard Deviation	Minimum	Maximum
<i>Measures of mobility:</i>				
Change in family income rank	0.000	26.522	-97.9	98.8
Change in log of family income	0.225	0.651	-4.46	4.83
Poorest quintile members stay or move up <sup>a</sup>	0.472	0.499	0	1
Members of 3 middle quintiles down, stay, or up <sup>b</sup>	0.029	0.839	-1	1
Richest quintile members move down or stay <sup>c</sup>	-0.513	0.500	-1	0
Poorest group members move up <sup>a</sup>	0.591	0.492	0	1
Members of 3 middle groups down, stay, or up <sup>b</sup>	0.371	0.799	-1	1
Richest group members move down <sup>c</sup>	-0.312	0.464	-1	0
<i>Period dummies:</i>				
Dummy for period 1980 to 1990	0.062	0.241	0	1
Dummy for period 1982 to 1992	0.062	0.242	0	1
Dummy for period 1984 to 1994	0.065	0.246	0	1
Dummy for period 1986 to 1996	0.062	0.240	0	1
Dummy for period 1988 to 1998	0.064	0.245	0	1
Dummy for period 1990 to 2000	0.065	0.246	0	1
Dummy for period 1992 to 2002	0.070	0.255	0	1
Dummy for period 1994 to 2004	0.074	0.262	0	1
Dummy for period 1996 to 2006	0.087	0.282	0	1
Dummy for period 1998 to 2008	0.084	0.277	0	1
Dummy for period 2000 to 2010	0.083	0.276	0	1
Dummy for period 2002 to 2012	0.081	0.273	0	1
Dummy for period 2004 to 2014	0.081	0.273	0	1
Decile 2 - year 1	0.100	0.300	0	1
Decile 3 - year 1	0.100	0.300	0	1
Decile 4 - year 1	0.100	0.300	0	1
Decile 5 - year 1	0.100	0.300	0	1
Decile 6 - year 1	0.100	0.300	0	1
Decile 7 - year 1	0.100	0.300	0	1
Decile 8 - year 1	0.100	0.300	0	1
Decile 9 - year 1	0.100	0.300	0	1
Decile 10 - year 1	0.100	0.300	0	1
Income in lower half of quintile -year 1	0.500	0.500	0	1
Log of income - year 1	10.28	0.66	6.07	12.79
Income rank - year 1	50.02	28.87	0.00	100.00
Observations	49,933			

Notes: Weighted means.

Number of observations = 49,933 with the following exceptions: <sup>a</sup> N=13,977 <sup>b</sup> N=28,349 <sup>c</sup> N=7,607

Source: Author's calculations based on Panel Study of Income Dynamics and TAXSIM.

Table A.2. Mobility Regressions for Alternative Dependent Variables Based on Beginning-of-Period Characteristics

Estimated coefficients, with standard errors below

	Change in family income rank	Change in log of family income	Poorest quintile members stay or move up (0, 1)	Members of 3 middle quintiles down, stay, or up (-1, 0, 1)	Richest quintile members move down or stay (-1, 0)	Poorest group members move up (0, 1)	Members of 3 middle groups down, stay, or up (-1, 0, 1)	Richest group members move down (-1, 0)
<i>Characteristics of family:</i>								
Family Size	1.047 ***	0.023 ***	0.007	0.078 ***	0.014	0.006	0.050 ***	0.008
	0.143	0.004	0.004	0.007	0.009	0.004	0.007	0.008
Married-couple family, no children	-3.771 ***	-0.067 ***	-0.057 *	-0.220 ***	-0.052 **	-0.063 **	-0.210 ***	-0.050 **
	0.454	0.011	0.022	0.020	0.020	0.023	0.020	0.018
Male-head family, w/children	0.370	0.020	-0.040	0.072	-0.017	-0.042	0.117 *	-0.033
	1.474	0.042	0.048	0.062	0.081	0.049	0.058	0.081
Female-head family, w/children	-4.322 ***	-0.123 ***	-0.060 **	-0.086 *	-0.216 ***	-0.048 *	-0.080 *	-0.177 **
	0.740	0.021	0.022	0.035	0.051	0.023	0.035	0.056
Female-head family, no children	-1.412	-0.037	-0.045	0.006	-0.043	-0.031	0.019	-0.018
	0.802	0.021	0.024	0.031	0.039	0.025	0.030	0.039
Single-head family	-0.706	-0.039	-0.022	-0.076 *	0.043	-0.069 *	-0.141 ***	-0.030
	0.838	0.021	0.029	0.036	0.042	0.030	0.035	0.040
<i>Characteristics of head/wife:</i>								
Individual is wife in married family	-2.007 ***	-0.049 ***	-0.039 *	-0.079 ***	-0.021	-0.045 **	-0.073 ***	-0.018
	0.388	0.009	0.015	0.015	0.017	0.015	0.014	0.015
Age head young (16-25)	1.058 *	0.030 **	0.026 *	0.065 **	-0.072 *	0.019	0.012	-0.115 **
	0.414	0.011	0.012	0.021	0.031	0.012	0.020	0.038
Age head older middle (35-43)	2.643 ***	0.053 ***	0.020	0.043 **	0.112 ***	0.012	0.030 *	0.079 ***
	0.319	0.008	0.011	0.014	0.018	0.012	0.014	0.017
Age head older (44-62)	1.130 **	0.027 **	-0.049 ***	-0.083 ***	0.122 ***	-0.052 ***	-0.079 ***	0.094 ***
	0.391	0.010	0.013	0.017	0.019	0.014	0.017	0.018
Head's race is nonwhite	-6.992 ***	-0.187 ***	-0.126 ***	-0.173 ***	-0.111 ***	-0.128 ***	-0.173 ***	-0.117 ***
	0.386	0.010	0.012	0.015	0.022	0.012	0.015	0.022
<i>Education:</i>								
Head education less than h.s.	-5.190 ***	-0.162 ***	-0.090 ***	-0.120 ***	-0.095 **	-0.112 ***	-0.134 ***	-0.132 ***
	0.449	0.013	0.011	0.022	0.036	0.013	0.023	0.038
Wife education less than h.s.	-3.521 ***	-0.092 ***	-0.054 **	-0.099 ***	-0.015	-0.067 ***	-0.111 ***	-0.026
	0.605	0.017	0.017	0.027	0.053	0.018	0.029	0.054
Head education some college	3.941 ***	0.105 ***	0.099 ***	0.092 ***	0.002	0.084 ***	0.099 ***	0.004
	0.451	0.011	0.016	0.017	0.022	0.016	0.017	0.022
Wife education some college	2.416 ***	0.052 ***	0.055 *	0.029	0.078 **	0.032	0.040 *	0.054 *
	0.525	0.012	0.022	0.019	0.026	0.020	0.018	0.023
Head education BA or more	11.505 ***	0.278 ***	0.252 ***	0.255 ***	0.150 ***	0.220 ***	0.245 ***	0.137 ***
	0.529	0.012	0.022	0.019	0.022	0.019	0.017	0.020
Wife education BA or more	6.897 ***	0.145 ***	0.120 ***	0.131 ***	0.167 ***	0.076 **	0.118 ***	0.124 ***
	0.575	0.013	0.032	0.021	0.024	0.027	0.019	0.022
<i>Labor force status:</i>								
Head not in labor force	-4.784 ***	-0.178 ***	-0.109 ***	-0.160 ***	-0.120 **	-0.135 ***	-0.226 ***	-0.131 **
	0.555	0.018	0.014	0.037	0.044	0.015	0.038	0.048
Head unemployed	-4.404 ***	-0.155 ***	-0.088 ***	-0.106 ***	-0.156 ***	-0.105 ***	-0.159 ***	-0.170 ***
	0.438	0.015	0.013	0.026	0.037	0.013	0.027	0.041
Wife not in labor force	-3.537 ***	-0.089 ***	-0.045 **	-0.108 ***	-0.024	-0.036 *	-0.096 ***	-0.075 ***
	0.399	0.010	0.017	0.018	0.022	0.016	0.017	0.020
Wife unemployed	-3.930 ***	-0.106 ***	-0.042	-0.101 **	-0.064	-0.064 *	-0.120 ***	-0.114 *
	0.718	0.020	0.027	0.035	0.045	0.027	0.035	0.045
Head's work hours (per week)	0.048 ***	0.001 ***	0.001 ***	0.000	0.000	0.002 ***	0.000	0.000
	0.010	0.000	0.000	0.000	0.001	0.000	0.000	0.001
Wife's work hours (per week)	0.031 **	0.001 ***	0.002 ***	-0.003 ***	0.001	0.001 **	-0.002 **	0.001
	0.011	0.000	0.001	0.000	0.001	0.001	0.000	0.000
Constant	22.606 ***	6.017 ***	0.442 ***	-0.061	-0.703 ***	0.589 ***	0.404 ***	-0.386 ***
	1.003	0.089	0.032	0.045	0.054	0.034	0.044	0.052
R-squared	0.3103	0.2598	0.1737	0.1072	0.1258	0.1976	0.1285	0.1174
Number of observations	48,738	48,738	13,504	27,762	7,472	13,504	27,762	7,472
Origin decile dummies included	no	no	yes	yes	yes	yes	yes	yes
Period dummies included	yes	yes	yes	yes	yes	yes	yes	yes

Notes: See Tables 1 and A.1 for sources. Significance levels: \* = p&lt;.05; \*\* = p&lt;.01; \*\*\* = p&lt;.001

Table A.3. Mobility Regressions for Alternative Dependent Variables Including During-Period Changes in Status

Estimated coefficients, with standard errors below

	Change in family income rank	Change in log of family income	Poorest quintile members stay or move up (0, 1)	Members of 3 middle quintiles down, stay, or up (-1, 0, 1)	Richest quintile members move down or stay (-1, 0)	Poorest group members move up (0, 1)	Members of 3 middle groups down, stay, or up (-1, 0, 1)	Richest group members move down (-1, 0)
<i>Family type &amp; changes:</i>								
Family Size	0.904 ***	0.019 ***	0.006	0.073 ***	0.009	0.005	0.045 ***	0.004
	0.130	0.003	0.003	0.006	0.009	0.004	0.006	0.009
Marriage ends -- man	4.875 ***	0.107 ***	0.127 ***	0.181 ***	-0.020	0.108 ***	0.153 ***	-0.019
	0.790	0.020	0.030	0.032	0.038	0.029	0.034	0.038
Marriage ends -- woman	-2.914 ***	-0.101 ***	-0.003	-0.091 ***	-0.108 ***	-0.032	-0.171 ***	-0.159 ***
	0.605	0.016	0.023	0.025	0.027	0.024	0.028	0.030
Marriage begins -- man	8.824 ***	0.178 ***	0.166 ***	0.253 ***	0.085 *	0.076 **	0.172 ***	0.073
	0.754	0.018	0.027	0.032	0.041	0.025	0.030	0.039
Marriage begins -- woman	10.710 ***	0.242 ***	0.139 ***	0.414 ***	0.159 **	0.075 ***	0.234 ***	0.131 **
	0.751	0.017	0.020	0.035	0.058	0.019	0.031	0.050
Stay single-head family	2.736 ***	0.042 *	0.021	0.175 ***	0.003	-0.024	0.145 ***	0.022
	0.759	0.020	0.024	0.035	0.048	0.024	0.036	0.049
Child present at beginning of period	-2.423 ***	-0.078 ***	-0.029 *	0.019	-0.031	-0.031 *	0.016	-0.026
	0.411	0.011	0.014	0.018	0.020	0.015	0.018	0.018
Family no longer childless	-8.033 ***	-0.175 ***	-0.057 **	-0.235 ***	-0.174 ***	-0.043 *	-0.222 ***	-0.158 ***
	0.493	0.012	0.019	0.021	0.022	0.019	0.021	0.021
<i>Age and race:</i>								
Age head young (16-25)	0.168	-0.002	-0.005	0.057 **	-0.055	-0.010	0.006	-0.098 **
	0.354	0.010	0.011	0.019	0.030	0.011	0.019	0.036
Age head older middle (35-43)	3.230 ***	0.076 ***	0.051 ***	0.055 ***	0.074 ***	0.046 ***	0.037 **	0.046 **
	0.277	0.007	0.010	0.013	0.018	0.010	0.012	0.017
Age head older (44-62)	3.869 ***	0.122 ***	0.036 **	-0.003	0.103 ***	0.043 ***	0.000	0.082 ***
	0.352	0.009	0.012	0.016	0.020	0.013	0.015	0.018
Head's race is nonwhite	-4.796 ***	-0.126 ***	-0.075 ***	-0.106 ***	-0.095 ***	-0.077 ***	-0.104 ***	-0.101 ***
	0.325	0.008	0.011	0.012	0.021	0.010	0.012	0.020
<i>Education &amp; changes:</i>								
Head education less than h.s.	-3.845 ***	-0.119 ***	-0.064 ***	-0.086 ***	-0.076 *	-0.083 ***	-0.096 ***	-0.111 **
	0.384	0.011	0.010	0.019	0.035	0.011	0.020	0.035
Wife education less than h.s.	-2.321 ***	-0.063 ***	-0.035 *	-0.054 *	-0.009	-0.048 **	-0.063 *	-0.019
	0.534	0.014	0.016	0.024	0.045	0.016	0.025	0.045
Head education some college	3.506 ***	0.089 ***	0.078 ***	0.082 ***	0.004	0.062 ***	0.083 ***	0.004
	0.383	0.009	0.013	0.015	0.021	0.013	0.014	0.020
Wife education some college	2.297 ***	0.049 ***	0.038	0.023	0.087 ***	0.017	0.034 *	0.065 **
	0.461	0.011	0.020	0.016	0.024	0.018	0.015	0.021
Head education BA or more	10.796 ***	0.248 ***	0.191 ***	0.231 ***	0.155 ***	0.153 ***	0.215 ***	0.140 ***
	0.464	0.011	0.019	0.016	0.020	0.017	0.015	0.018
Wife education BA or more	5.842 ***	0.121 ***	0.062 *	0.083 ***	0.160 ***	0.016	0.066 ***	0.117 ***
	0.511	0.012	0.030	0.019	0.022	0.026	0.017	0.020
Added education -- man	1.854 *	0.053 **	0.037	0.052	0.017	0.055 *	0.012	0.026
	0.866	0.020	0.031	0.035	0.046	0.027	0.032	0.045
Added education -- female head	2.113 **	0.048 *	0.030	0.023	-0.041	0.040 *	0.021	-0.018
	0.665	0.020	0.017	0.042	0.061	0.018	0.040	0.063
Added education -- wife	0.839	0.027	0.023	0.015	0.030	0.013	0.001	0.060
	0.656	0.015	0.026	0.027	0.035	0.025	0.025	0.031
<i>Labor force status &amp; changes:</i>								
Head becomes employed	-2.068 ***	-0.043 ***	-0.052 ***	-0.039	-0.089 **	-0.064 ***	-0.086 ***	-0.102 **
	0.419	0.012	0.013	0.025	0.033	0.013	0.025	0.036
Head no longer working	-1.683 ***	-0.111 ***	-0.043 ***	-0.036 *	-0.001	-0.085 ***	-0.111 ***	-0.010
	0.387	0.011	0.013	0.018	0.021	0.014	0.019	0.020
Head stays not employed	-2.473 ***	-0.226 ***	-0.039 **	-0.107 **	-0.087	-0.096 ***	-0.218 ***	-0.084
	0.492	0.018	0.014	0.033	0.052	0.016	0.037	0.057
Spouse stays employed	7.169 ***	0.147 ***	0.111 ***	0.241 ***	0.031	0.059 *	0.264 ***	0.123 **
	0.701	0.018	0.026	0.032	0.039	0.024	0.031	0.039
Spouse becomes employed	4.122 ***	0.091 ***	0.089 ***	0.173 ***	-0.034	0.050 **	0.188 ***	0.023
	0.637	0.017	0.021	0.030	0.037	0.019	0.030	0.038
Spouse no longer working	0.935	0.070 ***	-0.023	0.023	-0.046	-0.018	0.021	0.031
	0.594	0.017	0.021	0.028	0.035	0.021	0.029	0.036
Spouse stays not employed	2.726 ***	0.093 ***	-0.001	0.089 **	0.012	-0.007	0.127 ***	0.044
	0.706	0.019	0.024	0.033	0.041	0.023	0.033	0.040
Head's work hours (per week)	0.256 ***	0.007 ***	0.005 ***	0.007 ***	0.003 ***	0.006 ***	0.007 ***	0.003 ***
	0.011	0.000	0.000	0.001	0.001	0.000	0.000	0.001
Wife's work hours (per week)	0.252 ***	0.008 ***	0.006 ***	0.005 ***	0.004 ***	0.006 ***	0.006 ***	0.003 ***
	0.012	0.000	0.001	0.001	0.001	0.001	0.000	0.001
Change in family work hours	0.303 ***	0.009 ***	0.006 ***	0.010 ***	0.004 ***	0.006 ***	0.010 ***	0.004 ***
	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Constant	5.402 ***	5.802 ***	0.101 **	-0.778 ***	-0.834 ***	0.265 ***	-0.278 ***	-0.595 ***
	1.033	0.081	0.034	0.046	0.059	0.034	0.046	0.058
R-squared	0.4544	0.4286	0.3261	0.2499	0.2011	0.3518	0.2852	0.2088
Number of Observations	48367	48367	13372	27570	7425	13372	27570	7425
Origin decile dummies included	no	no	yes	yes	yes	yes	yes	yes
Period dummies included	yes	yes	yes	yes	yes	yes	yes	yes

Notes: See Tables 1 and A.1 for sources. Significance levels: \* = p&lt;.05; \*\* = p&lt;.01; \*\*\* = p&lt;.001

Table A.4. Period Regressions on Macroeconomic Variables

Estimated coefficients with standard errors below

<i>Period dummy coefficients estimated in equation for --&gt;</i>	Change in family income rank	Change in log of family income	Poorest quintile members stay or move up (0, 1)	Members of 3 middle quintiles down, stay, or up (-1, 0, 1)	Richest quintile members move down or stay (-1, 0)	Poorest group members move up (0, 1)	Members of 3 middle groups down, stay, or up (-1, 0, 1)	Richest group members move down (-1, 0)
<b>Two macro variables:</b>								
<i>Period dummy coefficients estimated with beginning-of-period explanatory variables:</i>								
Real GDP growth (annual rate)	-0.015	0.075 ***	0.002	-0.016	-0.022 *	0.078 ***	0.163 ***	0.064 *
	0.291	0.011	0.008	0.007	0.008	0.010	0.028	0.023
CPI inflation (annual rate)	0.818 **	-0.025 **	0.012	0.003	0.016 *	0.003	0.022	0.035 *
	0.201	0.007	0.006	0.005	0.005	0.007	0.019	0.016
Constant	-4.102 ***	-0.112 **	-0.059 *	0.034	-0.004	-0.241 ***	-0.577 ***	-0.345 ***
	0.898	0.033	0.026	0.022	0.024	0.029	0.085	0.070
R-squared	0.5530	0.7894	0.1734	0.1728	0.4487	0.8515	0.7650	0.5642
<i>Period dummy coefficients estimated with level and change-in-status explanatory variables:</i>								
Real GDP growth (annual rate)	-0.889	0.048 **	-0.022	-0.043 **	-0.028 **	0.054 ***	0.135 ***	0.056 *
	0.443	0.011	0.010	0.014	0.009	0.010	0.026	0.022
CPI inflation (annual rate)	0.984 **	-0.022 *	0.014	0.005	0.021 **	0.006	0.024	0.041 *
	0.306	0.008	0.007	0.009	0.006	0.007	0.018	0.015
Constant	-2.146	-0.039	0.007	0.111 *	-0.015	-0.175 ***	-0.495 ***	-0.354 ***
	1.368	0.034	0.031	0.042	0.027	0.031	0.081	0.068
R-squared	0.4231	0.6067	0.2698	0.3869	0.5543	0.7231	0.7210	0.5786
<b>Three macro variables:</b>								
<i>Period dummy coefficients estimated with beginning-of-period explanatory variables:</i>								
Real GDP growth (annual rate)	0.098	0.079 ***	0.010	-0.013	-0.017	0.074 ***	0.129 ***	0.042
	0.336	0.013	0.008	0.008	0.009	0.011	0.023	0.022
CPI inflation (annual rate)	0.839 **	-0.024 *	0.013 *	0.003	0.016 *	0.002	0.016	0.031 *
	0.207	0.008	0.005	0.005	0.005	0.007	0.014	0.014
Change in household inequality	-15.94	-0.49	-1.24 *	-0.42	-0.60	0.63	4.86 **	3.05
	22.05	0.82	0.52	0.55	0.57	0.72	1.50	1.46
Constant	-4.145 **	-0.113 **	-0.062 *	0.033	-0.006	-0.239 ***	-0.564 ***	-0.337 ***
	0.920	0.034	0.022	0.023	0.024	0.030	0.063	0.061
R-squared	0.5327	0.7764	0.4230	0.1406	0.4537	0.8483	0.8738	0.6658
<i>Period dummy coefficients estimated with level and change-in-status explanatory variables:</i>								
Real GDP growth (annual rate)	-0.642	0.056 ***	-0.012	-0.034 *	-0.022 *	0.051 **	0.107 **	0.036
	0.498	0.012	0.010	0.015	0.009	0.012	0.025	0.022
CPI inflation (annual rate)	1.030 **	-0.021 *	0.016 *	0.007	0.022 **	0.005	0.019	0.038 *
	0.307	0.007	0.006	0.009	0.006	0.007	0.015	0.014
Change in household inequality	-34.79	-1.14	-1.34	-1.34	-0.80	0.50	3.97 *	2.85
	32.65	0.78	0.65	0.98	0.62	0.76	1.61	1.46
Constant	-2.238	-0.042	0.003	0.107 *	-0.017	-0.174 ***	-0.485 ***	-0.347 ***
	1.363	0.032	0.027	0.041	0.026	0.032	0.067	0.061
R-squared	0.4301	0.6439	0.4356	0.4321	0.5796	0.7082	0.8092	0.6643
Number of observations	14	14	14	14	14	14	14	14

Notes: Significance levels: \* = p&lt;.05; \*\* = p&lt;.01; \*\*\* = p&lt;.001

Sources: U.S. Bureau of Economic Analysis (GDP), U.S. Bureau of Labor Statistics (CPI), U.S. Bureau of the Census (inequality), and Haver Analytics.

Table A.5.a. Mobility Regressions Based on Beginning-of-Period Characteristics --&gt; 16 year periods

Estimated coefficients, with standard errors below

	Quintile movement (# of quintiles)	Group movement (# of groups)	Change in Family Income Rank			Change in Log of Family Income		
			Families starting in poorest quintile	Families starting in middle three quintiles	Families starting in richest quintile	Families starting in poorest group	Families starting in middle three groups	Families starting in richest group
<i>Characteristics of family:</i>								
Family Size	0.073 ***	0.058 ***	0.85 ***	2.50 ***	1.08	0.028 **	0.054 ***	0.036 *
	0.010	0.012	0.25	0.32	0.62	0.010	0.008	0.015
Married-couple family, no children	-0.313 ***	-0.275 ***	-3.83 **	-6.91 ***	-5.28 ***	-0.155 **	-0.150 ***	-0.114 ***
	0.034	0.035	1.46	0.91	1.48	0.056	0.022	0.034
Male-head family, w/children	0.046	0.047	-1.05	1.71	1.40	0.000	0.046	0.080
	0.101	0.123	2.91	2.61	5.29	0.105	0.070	0.137
Female-head family, w/children	-0.136 **	-0.123 *	-0.42	-4.65 **	-11.42 **	0.009	-0.103 **	-0.290 **
	0.051	0.059	1.37	1.49	3.80	0.049	0.039	0.107
Female-head family, no children	-0.061	-0.037	-0.13	-0.83	-4.00	0.025	-0.010	-0.095
	0.057	0.059	1.62	1.41	3.03	0.052	0.036	0.073
Single-head family	-0.100	-0.218 ***	-1.61	-1.23	0.07	-0.137 *	-0.052	0.015
	0.058	0.063	1.74	1.58	2.99	0.060	0.039	0.074
<i>Characteristics of head/wife:</i>								
Individual is wife in married family	-0.112 ***	-0.129 ***	-1.44	-2.46 ***	-2.75 *	-0.053	-0.065 ***	-0.057 *
	0.029	0.028	0.95	0.69	1.17	0.030	0.015	0.027
Age head young (16-25)	0.067 *	0.095 **	3.13 ***	0.87	-6.03 **	0.101 ***	0.037 *	-0.125 **
	0.026	0.029	0.71	0.75	2.03	0.025	0.018	0.047
Age head older middle (35-43)	-0.021	-0.087 ***	-3.63 ***	-0.33	1.55	-0.121 ***	-0.009	0.020
	0.020	0.021	0.62	0.54	1.09	0.023	0.013	0.025
Age head older (44-62)	-0.225 ***	-0.275 ***	-5.80 ***	-5.86 ***	-2.27	-0.190 ***	-0.128 ***	-0.067
	0.031	0.033	1.02	0.81	1.42	0.039	0.021	0.035
Head's race is nonwhite	-0.442 ***	-0.500 ***	-8.46 ***	-9.46 ***	-8.24 ***	-0.278 ***	-0.232 ***	-0.201 ***
	0.029	0.033	0.84	0.70	1.69	0.027	0.017	0.039
<i>Education:</i>								
Head education less than h.s.	-0.250 ***	-0.362 ***	-4.70 ***	-4.84 ***	-11.27 ***	-0.190 ***	-0.136 ***	-0.257 ***
	0.032	0.040	0.65	1.01	3.01	0.028	0.026	0.067
Wife education less than h.s.	-0.194 ***	-0.265 ***	-1.85	-4.60 ***	-3.97	-0.090 *	-0.117 ***	-0.088
	0.045	0.055	1.00	1.28	5.37	0.038	0.034	0.132
Head education some college	0.257 ***	0.283 ***	6.29 ***	4.93 ***	2.88	0.186 ***	0.111 ***	0.046
	0.033	0.034	1.06	0.79	1.68	0.034	0.018	0.039
Wife education some college	0.160 ***	0.133 ***	5.31 ***	3.00 ***	2.99	0.141 ***	0.069 ***	0.077
	0.039	0.038	1.54	0.87	1.79	0.041	0.019	0.041
Head education BA or more	0.626 ***	0.541 ***	17.39 ***	12.56 ***	9.49 ***	0.465 ***	0.276 ***	0.208 ***
	0.038	0.035	1.70	0.86	1.53	0.045	0.019	0.035
Wife education BA or more	0.457 ***	0.287 ***	7.86 **	9.06 ***	9.64 ***	0.153 *	0.188 ***	0.221 ***
	0.042	0.037	2.55	0.98	1.62	0.065	0.022	0.037
<i>Labor force status:</i>								
Head not in labor force	-0.155 ***	-0.305 ***	-1.62	-7.11 ***	-4.70	-0.131 ***	-0.210 ***	-0.104
	0.039	0.047	0.86	1.68	3.98	0.033	0.047	0.096
Head unemployed	-0.225 ***	-0.300 ***	-3.62 ***	-4.93 ***	-7.80 *	-0.159 ***	-0.158 ***	-0.190 *
	0.029	0.036	0.68	1.02	3.17	0.029	0.030	0.075
Wife not in labor force	-0.124 ***	-0.131 ***	-3.00 **	-2.35 **	-1.97	-0.109 ***	-0.049 **	-0.046
	0.028	0.028	0.92	0.73	1.48	0.030	0.018	0.035
Wife unemployed	-0.204 ***	-0.272 ***	-1.42	-5.46 ***	-2.85	-0.117 *	-0.144 ***	-0.058
	0.054	0.059	1.59	1.51	3.40	0.059	0.038	0.082
Head's work hours (per week)	0.002 *	0.003 ***	0.08 ***	0.03	-0.03	0.003 ***	0.001 *	-0.001
	0.001	0.001	0.02	0.02	0.04	0.001	0.001	0.001
Wife's work hours (per week)	0.001	0.002 *	0.05	-0.02	0.10 *	0.002	0.000	0.002 *
	0.001	0.001	0.03	0.02	0.04	0.001	0.001	0.001
Constant	0.933 ***	1.823 ***	22.93 ***	26.44 ***	24.60 **	8.097 ***	5.824 ***	7.728 ***
	0.072	0.080	1.95	2.09	7.95	0.244	0.260	0.520
R-squared	0.3875	0.3877	0.1912	0.2867	0.1745	0.2657	0.2119	0.2276
Number of observations	27,280	27,280	7,559	15,456	4,265	7,559	15,456	4,265
Origin decile dummies included	yes	yes	no	no	no	no	no	no
Period dummies included	yes	yes	yes	yes	yes	yes	yes	yes

Notes: See Tables 1 &amp; A.1 for sources. Significance levels: \* = p&lt;.05; \*\* = p&lt;.01; \*\*\* = p&lt;.001

Table A.5.b. Mobility Regressions Based on Beginning-of-Period Characteristics --&gt; 6 year periods

Estimated coefficients, with standard errors below

	Quintile movement (# of quintiles)	Group movement (# of groups)	Change in Family Income Rank			Change in Log of Family Income		
			Families starting in poorest quintile	Families starting in middle three quintiles	Families starting in richest quintile	Families starting in poorest group	Families starting in middle three groups	Families starting in richest group
<i>Characteristics of family:</i>								
Family Size	0.034 ***	0.032 ***	0.40 ***	1.04 ***	0.74 *	0.006	0.019 ***	0.018 *
	0.005	0.005	0.11	0.16	0.32	0.005	0.004	0.007
Married-couple family, no children	-0.023	-0.029	2.74 ***	-1.63 ***	0.13	0.019	-0.034 ***	-0.005
	0.016	0.017	0.73	0.44	0.72	0.025	0.010	0.017
Male-head family, w/children	-0.057	-0.030	-0.12	-0.66	-3.38	0.079	0.009	-0.019
	0.054	0.059	1.52	1.52	3.59	0.048	0.035	0.083
Female-head family, w/children	-0.239 ***	-0.252 ***	-4.49 ***	-5.05 ***	-15.25 ***	-0.123 ***	-0.096 ***	-0.307 ***
	0.026	0.027	0.70	0.79	2.70	0.024	0.020	0.063
Female-head family, no children	-0.071 **	-0.067 *	-0.67	-1.19	-7.14 ***	-0.029	-0.014	-0.186 ***
	0.028	0.029	0.81	0.72	1.81	0.026	0.017	0.047
Single-head family	0.010	-0.046	1.05	0.51	-0.33	-0.088 **	-0.023	0.002
	0.031	0.032	0.92	0.82	1.65	0.031	0.019	0.039
<i>Characteristics of head/wife:</i>								
Individual is wife in married family	-0.071 ***	-0.074 ***	-1.08 *	-1.90 ***	-0.89	-0.045 **	-0.044 ***	-0.024
	0.014	0.014	0.47	0.33	0.56	0.015	0.007	0.013
Age head young (16-25)	0.035 *	0.018	1.89 ***	-0.65	-5.02 **	0.055 ***	-0.022	-0.101 *
	0.017	0.018	0.43	0.50	1.82	0.015	0.012	0.043
Age head older middle (35-43)	0.151 ***	0.163 ***	1.48 ***	3.36 ***	3.92 ***	0.060 ***	0.058 ***	0.076 ***
	0.012	0.013	0.36	0.33	0.74	0.013	0.008	0.017
Age head older (44-62)	0.156 ***	0.147 ***	-0.01	2.79 ***	6.89 ***	0.024	0.045 ***	0.151 ***
	0.014	0.014	0.43	0.37	0.70	0.016	0.009	0.016
Head's race is nonwhite	-0.271 ***	-0.300 ***	-5.33 ***	-5.68 ***	-5.98 ***	-0.180 ***	-0.131 ***	-0.137 ***
	0.014	0.014	0.39	0.34	0.87	0.013	0.008	0.020
<i>Education:</i>								
Head education less than h.s.	-0.198 ***	-0.232 ***	-3.08 ***	-4.51 ***	-6.70 ***	-0.134 ***	-0.107 ***	-0.145 ***
	0.016	0.018	0.34	0.51	1.63	0.014	0.012	0.036
Wife education less than h.s.	-0.123 ***	-0.147 ***	-1.74 ***	-2.95 ***	-0.03	-0.075 ***	-0.073 ***	0.000
	0.022	0.024	0.51	0.63	2.03	0.018	0.015	0.047
Head education some college	0.155 ***	0.176 ***	3.75 ***	3.11 ***	2.82 **	0.132 ***	0.070 ***	0.066 ***
	0.016	0.017	0.49	0.39	0.87	0.017	0.009	0.019
Wife education some college	0.081 ***	0.070 ***	2.22 **	1.29 **	2.74 **	0.046 *	0.026 **	0.067 **
	0.019	0.019	0.76	0.43	0.91	0.022	0.009	0.021
Head education BA or more	0.466 ***	0.469 ***	12.84 ***	9.17 ***	9.06 ***	0.379 ***	0.193 ***	0.207 ***
	0.019	0.019	0.90	0.44	0.81	0.024	0.009	0.018
Wife education BA or more	0.258 ***	0.220 ***	5.79 ***	4.75 ***	5.16 ***	0.115 ***	0.092 ***	0.130 ***
	0.021	0.020	1.33	0.47	0.84	0.034	0.010	0.019
<i>Labor force status:</i>								
Head not in labor force	-0.221 ***	-0.280 ***	-3.84 ***	-5.67 ***	-8.60 ***	-0.191 ***	-0.165 ***	-0.179 ***
	0.020	0.021	0.46	0.81	1.81	0.018	0.021	0.042
Head unemployed	-0.185 ***	-0.217 ***	-2.81 ***	-5.66 ***	-6.83 ***	-0.154 ***	-0.173 ***	-0.157 ***
	0.017	0.018	0.40	0.60	1.63	0.016	0.017	0.042
Wife not in labor force	-0.205 ***	-0.236 ***	-2.93 ***	-4.64 ***	-4.77 ***	-0.102 ***	-0.101 ***	-0.096 ***
	0.016	0.017	0.52	0.41	0.87	0.017	0.010	0.020
Wife unemployed	-0.185 ***	-0.214 ***	-3.67 ***	-3.17 ***	-4.24 *	-0.141 ***	-0.083 ***	-0.106 **
	0.029	0.031	0.81	0.82	1.88	0.030	0.020	0.041
Head's work hours (per week)	0.002 ***	0.002 ***	0.03 **	0.04 ***	0.01	0.002 ***	0.001 ***	0.001
	0.000	0.000	0.01	0.01	0.02	0.000	0.000	0.001
Wife's work hours (per week)	0.001 *	0.001	0.04 *	0.01	0.04 *	0.001 **	0.000	0.001 *
	0.000	0.000	0.02	0.01	0.02	0.001	0.000	0.000
Constant	0.713 ***	0.940 ***	18.68 ***	19.17 ***	8.33 *	7.067 ***	3.749 ***	5.669 ***
	0.038	0.040	1.07	1.08	4.14	0.143	0.130	0.271
R-squared	0.2726	0.2660	0.1322	0.1670	0.1427	0.2490	0.1196	0.1915
Number of observations	68,664	68,664	19,137	39,137	10,390	19,137	39,137	10,390
Origin decile dummies included	yes	yes	no	no	no	no	no	no
Period dummies included	yes	yes	yes	yes	yes	yes	yes	yes

Notes: See Tables 1 &amp; A.1 for sources. Significance levels: \* = p&lt;.05; \*\* = p&lt;.01; \*\*\* = p&lt;.001

Table A.6.a. Mobility Regressions Including During-Period Changes in Status --&gt; 16-year periods

Estimated coefficients, with standard errors below

	Quintile movement (# of quintiles)	Group movement (# of groups)	Change in Family Income Rank			Change in Log of Family Income		
			Families starting in poorest quintile	Families starting in middle three quintiles	Families starting in richest quintile	Families starting in poorest group	Families starting in middle three groups	Families starting in richest group
<i>Family type &amp; changes:</i>								
Family Size	0.068 ***	0.051 ***	0.773 ***	2.283 ***	1.470 *	0.025 **	0.048 ***	0.044 **
	0.009	0.010	0.212	0.274	0.574	0.008	0.007	0.014
Marriage ends -- man	-0.033	-0.058	4.072 *	-0.342	-4.673	0.040	-0.013	-0.072
	0.054	0.059	1.584	1.349	2.498	0.055	0.033	0.067
Marriage ends -- woman	-0.318 ***	-0.409 ***	1.139	-7.117 ***	-13.992 ***	-0.053	-0.196 ***	-0.276 ***
	0.040	0.047	1.213	1.005	1.920	0.044	0.027	0.045
Marriage begins -- man	0.329 ***	0.200 ***	9.085 ***	7.660 ***	7.174 **	0.194 ***	0.170 ***	0.172 **
	0.051	0.050	1.674	1.296	2.563	0.047	0.031	0.060
Marriage begins -- woman	0.391 ***	0.343 ***	9.305 ***	11.096 ***	5.472	0.214 ***	0.241 ***	0.125
	0.050	0.049	1.336	1.389	3.717	0.037	0.031	0.096
Stay single-head family	-0.037	-0.161 **	4.250 **	0.239	-0.561	0.060	0.000	0.010
	0.051	0.057	1.361	1.467	3.581	0.047	0.038	0.090
Child present at beginning of period	-0.064 *	-0.065	-0.922	-1.423	-1.607	-0.037	-0.034	-0.052
	0.033	0.034	0.963	0.843	1.519	0.033	0.021	0.037
Family no longer childless	-0.383 ***	-0.303 ***	-2.960 *	-7.995 ***	-10.195 ***	-0.093 *	-0.168 ***	-0.252 ***
	0.036	0.036	1.188	0.888	1.466	0.039	0.022	0.034
<i>Age and race:</i>								
Age head young (16-25)	-0.001	-0.005	0.890	-0.622	-4.471 *	0.020	-0.008	-0.090 *
	0.023	0.025	0.585	0.661	1.855	0.020	0.016	0.043
Age head older middle (35-43)	0.073 ***	0.038 *	-0.090	1.463 **	1.193	0.016	0.041 ***	0.011
	0.018	0.019	0.533	0.476	1.034	0.019	0.012	0.024
Age head older (44-62)	0.052	0.069 *	1.139	-0.191	1.435	0.081 *	0.025	0.024
	0.028	0.030	0.886	0.731	1.345	0.034	0.019	0.035
Head's race is nonwhite	-0.295 ***	-0.329 ***	-5.363 ***	-6.255 ***	-5.733 ***	-0.168 ***	-0.151 ***	-0.148 ***
	0.024	0.027	0.677	0.587	1.423	0.021	0.014	0.033
<i>Education &amp; changes:</i>								
Head education less than h.s.	-0.180 ***	-0.272 ***	-3.169 ***	-3.559 ***	-8.461 ***	-0.123 ***	-0.097 ***	-0.184 ***
	0.028	0.033	0.547	0.871	2.522	0.022	0.022	0.055
Wife education less than h.s.	-0.118 **	-0.178 ***	-1.083	-2.567 *	-4.645	-0.060 *	-0.060 *	-0.101
	0.040	0.045	0.830	1.126	3.915	0.030	0.030	0.097
Head education some college	0.227 ***	0.242 ***	4.890 ***	4.540 ***	2.184	0.127 ***	0.099 ***	0.036
	0.028	0.028	0.838	0.662	1.422	0.026	0.015	0.034
Wife education some college	0.149 ***	0.122 ***	4.437 ***	2.805 ***	3.327 *	0.125 ***	0.064 ***	0.085 *
	0.033	0.030	1.270	0.730	1.527	0.032	0.016	0.035
Head education BA or more	0.586 ***	0.475 ***	14.072 ***	11.414 ***	10.033 ***	0.319 ***	0.242 ***	0.224 ***
	0.033	0.031	1.433	0.745	1.309	0.036	0.017	0.031
Wife education BA or more	0.339 ***	0.160 ***	4.946 *	6.578 ***	7.717 ***	0.054	0.130 ***	0.179 ***
	0.036	0.032	2.309	0.837	1.393	0.055	0.018	0.032
Added education -- man	0.122 *	0.145 **	6.007 ***	1.624	0.779	0.163 ***	0.028	0.007
	0.051	0.050	1.484	1.172	2.709	0.045	0.027	0.069
Added education -- female head	0.119 **	0.132 **	2.055 **	3.540 *	0.273	0.078 *	0.094 **	0.040
	0.039	0.046	0.796	1.380	4.796	0.032	0.033	0.120
Added education -- wife	0.079	0.067	3.154 *	1.743	0.659	0.095 *	0.040	-0.001
	0.041	0.041	1.282	1.002	1.815	0.040	0.023	0.043
<i>Labor force status &amp; changes:</i>								
Head becomes employed	-0.148 ***	-0.188 ***	-1.647 *	-3.285 ***	-5.266 *	-0.057 **	-0.084 ***	-0.124 *
	0.028	0.032	0.668	0.931	2.499	0.022	0.023	0.058
Head no longer working	-0.061 *	-0.185 ***	-1.324	-1.811 **	-2.247	-0.157 ***	-0.109 ***	-0.070
	0.026	0.029	0.705	0.685	1.471	0.027	0.019	0.040
Head stays not employed	-0.077 *	-0.353 ***	-0.938	-6.391 ***	-3.615	-0.223 ***	-0.335 ***	-0.103
	0.035	0.043	0.772	1.393	4.676	0.033	0.053	0.111
Spouse stays employed	0.324 ***	0.325 ***	8.453 ***	6.737 ***	4.854	0.142 **	0.141 ***	0.106
	0.046	0.048	1.536	1.214	2.639	0.047	0.031	0.065
Spouse becomes employed	0.186 ***	0.226 ***	6.571 ***	3.674 **	1.889	0.111 **	0.079 **	0.040
	0.041	0.044	1.212	1.133	2.325	0.040	0.029	0.060
Spouse no longer working	0.007	0.069	1.169	0.697	1.778	0.070	0.049	0.062
	0.036	0.041	1.036	1.024	2.461	0.039	0.029	0.062
Spouse stays not employed	-0.014	-0.030	1.455	1.252	1.398	0.026	0.069 *	0.052
	0.048	0.052	1.338	1.330	2.962	0.045	0.033	0.076
Head's work hours (per week)	0.012 ***	0.014 ***	0.280 ***	0.261 ***	0.203 ***	0.011 ***	0.007 ***	0.005 ***
	0.001	0.001	0.021	0.022	0.046	0.001	0.001	0.001
Wife's work hours (per week)	0.011 ***	0.013 ***	0.296 ***	0.223 ***	0.299 ***	0.012 ***	0.006 ***	0.008 ***
	0.001	0.001	0.031	0.022	0.043	0.001	0.001	0.001
Change in family work hours	0.014 ***	0.015 ***	0.295 ***	0.312 ***	0.272 ***	0.012 ***	0.008 ***	0.007 ***
	0.001	0.001	0.016	0.013	0.028	0.001	0.000	0.001
Constant	0.158 *	1.020 ***	4.490 *	8.060 ***	1.410	7.733 ***	5.510 ***	6.928 ***
	0.071	0.078	1.981	1.983	7.622	0.207	0.221	0.491
R-squared	0.5163	0.5364	0.4203	0.4530	0.3279	0.4956	0.3978	0.3582
Number of observations	27,058	27,058	7,480	15,350	4,228	7,480	15,350	4,228
Origin decile dummies included	yes	yes	no	no	no	no	no	no
Period dummies included	yes	yes	yes	yes	yes	yes	yes	yes

Notes: See Tables 1 &amp; A.1 for sources. Significance levels: \* = p&lt;.05; \*\* = p&lt;.01; \*\*\* = p&lt;.001



Table A.6.b. Mobility Regressions Including During-Period Changes in Status --&gt; 6-year periods

Estimated coefficients, with standard errors below

	Quintile movement (# of quintiles)	Group movement (# of groups)	Change in Family Income Rank			Change in Log of Family Income		
			Families starting in poorest quintile	Families starting in middle three quintiles	Families starting in richest quintile	Families starting in poorest group	Families starting in middle three groups	Families starting in richest group
<i>Family type &amp; changes:</i>								
Family Size	0.026 ***	0.023 ***	0.336 **	0.823 ***	0.425	0.005	0.014 ***	0.011
	0.005	0.005	0.106	0.142	0.306	0.004	0.003	0.007
Marriage ends -- man	0.398 ***	0.398 ***	10.895 ***	9.956 ***	1.320	0.247 ***	0.209 ***	0.062
	0.034	0.035	1.032	0.850	1.800	0.035	0.020	0.042
Marriage ends -- woman	-0.020	-0.071 *	3.943 ***	-0.937	-5.353 ***	0.010	-0.061 ***	-0.101 **
	0.026	0.028	0.755	0.674	1.582	0.028	0.018	0.035
Marriage begins -- man	0.427 ***	0.385 ***	10.614 ***	9.801 ***	5.021 **	0.179 ***	0.183 ***	0.109 **
	0.031	0.031	1.092	0.786	1.623	0.030	0.017	0.039
Marriage begins -- woman	0.548 ***	0.547 ***	10.608 ***	15.007 ***	2.841	0.209 ***	0.292 ***	0.085
	0.030	0.031	0.811	0.853	2.165	0.022	0.019	0.053
Stay single-head family	0.184 ***	0.155 ***	4.989 ***	5.125 ***	3.130	0.052	0.117 ***	0.055
	0.031	0.032	0.835	0.913	2.475	0.028	0.022	0.058
Child present at beginning of period	-0.184 ***	-0.184 ***	-4.213 ***	-3.441 ***	-3.335 ***	-0.103 ***	-0.070 ***	-0.065 ***
	0.015	0.015	0.449	0.390	0.701	0.016	0.009	0.017
Family no longer childless	-0.434 ***	-0.419 ***	-4.484 ***	-10.429 ***	-8.091 ***	-0.115 ***	-0.205 ***	-0.185 ***
	0.018	0.019	0.665	0.454	0.826	0.021	0.010	0.019
<i>Age and race:</i>								
Age head young (16-25)	0.006	-0.016	0.673	-0.534	-4.640 **	0.012	-0.022 *	-0.096 *
	0.015	0.016	0.366	0.432	1.693	0.012	0.010	0.041
Age head older middle (35-43)	0.143 ***	0.160 ***	2.219 ***	3.128 ***	1.993 **	0.086 ***	0.056 ***	0.033
	0.011	0.012	0.318	0.291	0.728	0.011	0.007	0.017
Age head older (44-62)	0.204 ***	0.208 ***	3.286 ***	3.959 ***	4.924 ***	0.151 ***	0.084 ***	0.110 ***
	0.013	0.013	0.397	0.338	0.741	0.014	0.008	0.018
Head's race is nonwhite	-0.191 ***	-0.213 ***	-3.437 ***	-4.020 ***	-5.363 ***	-0.108 ***	-0.092 ***	-0.124 ***
	0.012	0.013	0.336	0.287	0.798	0.011	0.007	0.018
<i>Education &amp; changes:</i>								
Head education less than h.s.	-0.148 ***	-0.177 ***	-2.084 ***	-3.636 ***	-5.432 ***	-0.089 ***	-0.083 ***	-0.115 ***
	0.014	0.016	0.308	0.445	1.435	0.012	0.011	0.032
Wife education less than h.s.	-0.076 ***	-0.096 ***	-1.224 **	-1.721 **	0.605	-0.060 ***	-0.047 ***	0.015
	0.020	0.022	0.457	0.569	1.777	0.015	0.013	0.041
Head education some college	0.140 ***	0.159 ***	3.109 ***	2.901 ***	2.684 ***	0.103 ***	0.064 ***	0.062 ***
	0.014	0.015	0.403	0.340	0.803	0.013	0.007	0.018
Wife education some college	0.083 ***	0.071 ***	1.778 *	1.251 **	3.398 ***	0.028	0.024 **	0.081 ***
	0.017	0.018	0.708	0.380	0.833	0.020	0.008	0.019
Head education BA or more	0.432 ***	0.431 ***	10.450 ***	8.376 ***	9.119 ***	0.277 ***	0.171 ***	0.207 ***
	0.017	0.017	0.782	0.380	0.754	0.020	0.008	0.017
Wife education BA or more	0.245 ***	0.204 ***	4.818 ***	4.325 ***	5.066 ***	0.064 *	0.080 ***	0.127 ***
	0.019	0.019	1.237	0.429	0.766	0.032	0.009	0.018
Added education -- man	0.061	0.068	2.377 *	1.207	0.942	0.095 **	0.027	0.028
	0.036	0.037	1.136	0.928	2.016	0.034	0.019	0.046
Added education -- female head	0.038	0.042	1.669 *	0.023	-4.668	0.045	-0.013	-0.081
	0.031	0.034	0.655	1.122	3.426	0.023	0.027	0.071
Added education -- wife	0.011	0.025	1.994 *	-0.053	0.831	0.042	-0.001	0.019
	0.030	0.032	0.999	0.750	1.481	0.032	0.016	0.033
<i>Labor force status &amp; changes:</i>								
Head becomes employed	-0.112 ***	-0.130 ***	-1.068 **	-2.492 ***	-5.454 ***	-0.049 ***	-0.068 ***	-0.121 ***
	0.016	0.018	0.403	0.535	1.382	0.013	0.012	0.034
Head no longer working	-0.093 ***	-0.125 ***	-1.405 ***	-3.407 ***	-1.044	-0.143 ***	-0.137 ***	-0.029
	0.015	0.016	0.397	0.443	0.917	0.016	0.012	0.022
Head stays not employed	-0.032	-0.104 ***	-0.668	-3.821 ***	-4.755 *	-0.160 ***	-0.184 ***	-0.096
	0.019	0.020	0.449	0.746	2.113	0.018	0.023	0.051
Spouse stays employed	0.366 ***	0.390 ***	6.457 ***	7.638 ***	10.607 ***	0.114 ***	0.169 ***	0.198 ***
	0.029	0.031	0.918	0.831	2.152	0.027	0.020	0.049
Spouse becomes employed	0.217 ***	0.230 ***	4.886 ***	4.857 ***	5.455 **	0.073 **	0.110 ***	0.088
	0.027	0.028	0.739	0.790	2.025	0.022	0.019	0.046
Spouse no longer working	0.067 *	0.101 ***	2.347 **	1.800 *	5.503 **	0.078 **	0.071 ***	0.096 *
	0.026	0.028	0.723	0.771	2.095	0.025	0.020	0.048
Spouse stays not employed	0.153 ***	0.151 ***	3.911 ***	3.914 ***	7.317 **	0.090 ***	0.119 ***	0.143 **
	0.029	0.031	0.786	0.852	2.266	0.025	0.021	0.052
Head's work hours (per week)	0.011 ***	0.011 ***	0.222 ***	0.240 ***	0.174 ***	0.009 ***	0.006 ***	0.005 ***
	0.000	0.000	0.013	0.012	0.024	0.000	0.000	0.001
Wife's work hours (per week)	0.010 ***	0.010 ***	0.237 ***	0.223 ***	0.188 ***	0.009 ***	0.005 ***	0.005 ***
	0.000	0.000	0.018	0.012	0.023	0.001	0.000	0.001
Change in family work hours	0.013 ***	0.014 ***	0.271 ***	0.320 ***	0.231 ***	0.011 ***	0.008 ***	0.006 ***
	0.000	0.000	0.008	0.008	0.015	0.000	0.000	0.000
Constant	0.050	0.220 ***	4.792 ***	3.201 **	-4.741	6.795 ***	3.658 ***	5.330 ***
	0.041	0.043	1.175	1.204	4.462	0.126	0.119	0.267
R-squared	0.3928	0.3944	0.3196	0.3376	0.2497	0.4378	0.3059	0.2844
Number of observations	68,113	68,113	18,912	38,862	10,339	18,912	38,862	10,339
Origin decile dummies included	yes	yes	no	no	no	no	no	no
Period dummies included	yes	yes	yes	yes	yes	yes	yes	yes

Notes: See Tables 1 &amp; A.1 for sources. Significance levels: \* = p&lt;.05; \*\* = p&lt;.01; \*\*\* = p&lt;.001

Table A.7a. Period Regressions on Macroeconomic Variables, 16-year periods

Estimated coefficients, with standard errors below

<i>Period dummy coefficients estimated in equation for --&gt;</i>	Quintile movement (# of quintiles)	Group movement (# of groups)	Change in Family Income Rank			Change in Log of Family Income		
			Families starting in poorest quintile	Families starting in middle three quintiles	Families starting in richest quintile	Families starting in poorest group	Families starting in middle three groups	Families starting in richest group
<b>Two macro variables:</b>								
<i>Period dummy coefficients estimated with beginning-of-period explanatory variables:</i>								
Real GDP growth (annual rate)	-0.029 0.017	0.456 *** 0.052	-1.682 ** 0.385	-0.171 0.313	-1.808 * 0.742	0.083 ** 0.023	0.176 *** 0.010	0.111 ** 0.025
CPI inflation (annual rate)	0.029 * 0.010	0.100 * 0.030	0.618 * 0.226	0.694 ** 0.184	-0.430 0.436	-0.078 *** 0.013	-0.010 0.006	-0.038 * 0.015
Constant	-0.049 0.050	-1.734 *** 0.156	2.123 1.158	-2.990 * 0.943	7.891 ** 2.234	0.133 0.069	-0.460 *** 0.029	-0.122 0.076
R-squared	0.4304	0.9177	0.6620	0.5551	0.4102	0.7820	0.9721	0.6595
<i>Period dummy coefficients estimated with level and change-in-status explanatory variables:</i>								
Real GDP growth (annual rate)	-0.116 *** 0.020	0.356 *** 0.037	-3.638 *** 0.363	-2.303 ** 0.515	-2.637 ** 0.642	0.008 0.023	0.121 *** 0.009	0.100 ** 0.023
CPI inflation (annual rate)	0.028 * 0.012	0.098 ** 0.022	0.813 ** 0.214	0.499 0.303	-0.119 0.377	-0.067 ** 0.014	-0.017 * 0.005	-0.022 0.014
Constant	0.194 * 0.060	-1.448 *** 0.111	6.423 *** 1.094	3.917 * 1.552	8.685 ** 1.933	0.278 ** 0.071	-0.276 *** 0.027	-0.166 * 0.070
R-squared	0.7630	0.9367	0.9087	0.6447	0.6324	0.6924	0.9461	0.6267
<b>Three macro variables:</b>								
<i>Period dummy coefficients estimated with beginning-of-period explanatory variables:</i>								
Real GDP growth (annual rate)	-0.013 0.027	0.392 ** 0.082	-1.378 0.636	0.196 0.501	-1.989 1.257	0.068 0.038	0.155 *** 0.013	0.054 0.033
CPI inflation (annual rate)	0.040 0.018	0.055 0.054	0.831 0.420	0.953 * 0.331	-0.558 0.830	-0.089 ** 0.025	-0.025 * 0.008	-0.078 ** 0.022
Change in household inequality	-1.013 1.385	4.156 4.169	-19.788 32.256	-23.957 25.404	11.868 63.714	0.977 1.938	1.350 0.645	3.704 1.660
Constant	-0.090 0.076	-1.568 *** 0.228	1.331 1.768	-3.950 * 1.392	8.366 * 3.492	0.172 0.106	-0.406 *** 0.035	0.026 0.091
R-squared	0.3953	0.9176	0.6335	0.5488	0.3293	0.7596	0.9804	0.7726
<i>Period dummy coefficients estimated with level and change-in-status explanatory variables:</i>								
Real GDP growth (annual rate)	-0.075 * 0.028	0.324 ** 0.061	-2.769 *** 0.449	-1.214 0.697	-2.521 1.089	0.018 0.040	0.120 *** 0.015	0.050 0.031
CPI inflation (annual rate)	0.057 * 0.018	0.075 0.040	1.424 ** 0.297	1.265 * 0.460	-0.037 0.719	-0.060 0.026	-0.018 0.010	-0.058 * 0.021
Change in household inequality	-2.637 1.402	2.069 3.069	-56.694 * 22.759	-71.008 35.328	-7.516 55.190	-0.605 2.007	0.102 0.783	3.274 1.580
Constant	0.088 0.077	-1.365 *** 0.168	4.152 * 1.247	1.073 1.936	8.384 * 3.025	0.254 0.110	-0.272 *** 0.043	-0.035 0.087
R-squared	0.8201	0.9321	0.9447	0.7425	0.5810	0.6530	0.9386	0.7356
Number of observations	11	11	11	11	11	11	11	11

Notes: Significance levels: \* = p&lt;.05; \*\* = p&lt;.01; \*\*\* = p&lt;.001

Sources: U.S. Bureau of Economic Analysis (GDP), U.S. Bureau of Labor Statistics (CPI), U.S. Bureau of the Census (inequality), and Haver Analytics.

Table A.7b. Period Regressions on Macroeconomic Variables, 6-year periods

Estimated coefficients, with standard errors below

<i>Period dummy coefficients estimated in equation for --&gt;</i>	Quintile movement (# of quintiles)	Group movement (# of groups)	Change in Family Income Rank			Change in Log of Family Income		
			Families starting in poorest quintile	Families starting in middle three quintiles	Families starting in richest quintile	Families starting in poorest group	Families starting in middle three groups	Families starting in richest group
<b>Two macro variables:</b>								
<i>Period dummy coefficients estimated with beginning-of-period explanatory variables:</i>								
Real GDP growth (annual rate)	0.016 0.008	0.131 *** 0.027	0.350 * 0.121	0.466 * 0.181	-0.554 0.328	0.051 ** 0.016	0.050 *** 0.007	0.008 0.007
CPI inflation (annual rate)	0.028 *** 0.005	0.048 * 0.019	0.507 *** 0.086	0.483 ** 0.129	0.893 ** 0.234	-0.020 0.011	-0.009 0.005	-0.011 * 0.005
Constant	-0.235 *** 0.026	-0.599 *** 0.093	-4.614 *** 0.416	-4.508 *** 0.623	-4.106 ** 1.127	-0.032 0.055	-0.063 * 0.023	0.071 ** 0.023
R-squared	0.6994	0.6829	0.7598	0.5963	0.4796	0.4031	0.7828	0.2075
<i>Period dummy coefficients estimated with level and change-in-status explanatory variables:</i>								
Real GDP growth (annual rate)	-0.010 0.010	0.102 ** 0.029	-0.358 * 0.151	-0.162 0.232	-0.707 0.374	0.022 0.015	0.033 ** 0.008	0.004 0.007
CPI inflation (annual rate)	0.037 *** 0.007	0.057 * 0.021	0.665 *** 0.107	0.694 ** 0.165	0.972 ** 0.266	-0.014 0.011	-0.006 0.006	-0.009 0.005
Constant	-0.210 *** 0.034	-0.570 *** 0.100	-3.603 *** 0.517	-3.977 *** 0.796	-4.080 ** 1.282	0.010 0.051	-0.029 0.028	0.070 * 0.026
R-squared	0.6211	0.5871	0.7198	0.5110	0.4674	0.0798	0.4986	0.0445
<b>Three macro variables:</b>								
<i>Period dummy coefficients estimated with beginning-of-period explanatory variables:</i>								
Real GDP growth (annual rate)	0.016 0.008	0.121 *** 0.024	0.373 * 0.124	0.472 * 0.192	-0.555 0.348	0.059 *** 0.012	0.049 *** 0.007	0.007 0.007
CPI inflation (annual rate)	0.029 *** 0.006	0.044 * 0.017	0.518 *** 0.087	0.486 ** 0.135	0.892 ** 0.245	-0.017 0.009	-0.009 0.005	-0.011 * 0.005
Change in household inequality	-0.129 0.960	6.303 2.915	-14.546 14.820	-3.961 23.054	0.993 41.758	-4.717 ** 1.497	0.434 0.845	0.388 0.830
Constant	-0.234 *** 0.028	-0.639 *** 0.084	-4.523 *** 0.426	-4.483 *** 0.663	-4.113 ** 1.201	-0.002 0.043	-0.065 * 0.024	0.068 * 0.024
R-squared	0.6748	0.7528	0.7591	0.5637	0.4362	0.6462	0.7698	0.1568
<i>Period dummy coefficients estimated with level and change-in-status explanatory variables:</i>								
Real GDP growth (annual rate)	-0.009 0.010	0.093 ** 0.028	-0.322 0.151	-0.109 0.233	-0.683 0.395	0.030 * 0.010	0.034 ** 0.008	0.004 0.008
CPI inflation (annual rate)	0.037 *** 0.007	0.053 * 0.020	0.680 *** 0.106	0.718 *** 0.164	0.983 ** 0.278	-0.010 0.007	-0.006 0.006	-0.009 0.006
Change in household inequality	-0.962 1.240	5.402 3.360	-21.869 18.078	-33.056 27.917	-14.491 47.355	-4.993 ** 1.226	-0.452 1.016	0.068 0.954
Constant	-0.204 *** 0.036	-0.604 *** 0.097	-3.466 *** 0.520	-3.769 *** 0.803	-3.988 * 1.363	0.041 0.035	-0.026 0.029	0.070 * 0.027
R-squared	0.6091	0.6319	0.7294	0.5256	0.4275	0.5816	0.4656	-0.0347
Number of observations	16	16	16	16	16	16	16	16

Notes: Significance levels: \* = p&lt;.05; \*\* = p&lt;.01; \*\*\* = p&lt;.001

Sources: U.S. Bureau of Economic Analysis (GDP), U.S. Bureau of Labor Statistics (CPI), U.S. Bureau of the Census (inequality), and Haver Analytics.