

## **Earnings Mobility and Instability, 1969-1995**

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**Abstract.** We study earnings mobility and instability using data from the Panel Study of Income Dynamics. Our main contribution is to update mobility and instability calculations to include data from the 1990s, although we also provide a number of tests of robustness across mobility and instability indicators and sample definition. All in all, we find few trends in earnings mobility and instability that persist over the 27-year period we study. As with Gottschalk and Moffitt, we find an increase in earnings instability since the 1970s, particularly among younger workers. However, we find no evidence that instability continued to increase throughout the 1980s and early 1990s. With regard to mobility, we find greater upward mobility and less downward mobility of middle-income workers in the 1980s relative to the 1970s. The former trend appears to have reversed itself by the middle of the 1990s. Employment-based indicators are consistent with the earnings-based indicators in showing increased employment instability between the 1970s and later periods.

## **Earnings Mobility and Instability, 1969-1995**

### **I. Introduction**

Countless studies documenting increases in earnings inequality (reviewed in Levy and Murnane 1992) have created a popular impression that individual lifetime earnings patterns are changing. However, much of the research on these trends is based on comparisons of the distribution of earnings in a given year. While such comparisons provide useful information, careful observers have recognized that cross-sectional patterns for the population do not necessarily translate into individual lifetime outcomes and that, even in a cross-section, increases in inequality can result from increased dispersion in a static earnings distribution or from increased variability of earnings offers to perfectly mobile individuals.

These recognitions have prompted a number of longitudinal studies based on direct measurement of the earnings trajectories of individual workers. In many cases, these longitudinal studies have yielded wildly disparate results. Among the most optimistic views of individual mobility in United States are two investigations of absolute mobility based on data from the Panel Study of Income Dynamics (PSID) (Cox and Alm 1996; The Alexis de Toqueville Institute 1997). Both of these studies, featured on the editorial and opinion pages of the Wall Street Journal and New York Times, examined the absolute mobility of individuals over their lifetimes. Both found that a majority of the individuals who started out in the bottom quintile of the income distribution in the mid 1970s ended up in the middle or top income classes by the 1990s. For example, Cox and Alm found that only five percent of income recipients in the bottom quintile of the 1975 individual income distribution had 1991 incomes below the inflation-adjusted breakpoint of the 1975 quintile. More surprisingly, they found that over one-half of those in the bottom quintile in

1975 had moved to the top 40 percent of the inflation-adjusted 1975 income distribution by 1991. These initially low-income individuals enjoyed, on average, a 22-fold increase in real income! As improbable as these results seem, a replication and extension of this analysis by Daly (1997) shows that, if anything, mobility as measured by the Cox-Alm samples and methodology was somewhat larger than they reported.

Other studies, using the same data but focusing on relative income mobility have produced more modest estimates of lifetime earnings progression. For example, Condon and Sawhill (1992) found that more than one-half of those who started at the bottom of the income distribution in 1967 and 1977 remained at the bottom of the distribution ten years later—in 1976 and 1986. Moreover, only ten percent of those in the bottom in 1967 and 1977 had moved to the top 40 percent of the distribution by the end of the ten year period. Most importantly, examining changes in quintile transition rates between the two ten year periods, they found no substantial changes in the structure of earnings mobility over time. This finding is consistent with research by Burkhauser, Holtz-Eakin, and Rhody (1996) who reported no change in one and five year mobility rates during the 1970s and 1980s.

Until recently, the fact that the variance in cross-sectional earnings was increasing was taken to mean that the distribution of permanent earnings was becoming more disperse. Gottschalk and Moffitt (1993,1994) challenged this logic and showed that a significant fraction of the increased dispersion in the earnings distribution is related to transitory shifts in earnings (i.e., instability) rather than permanent changes in earnings trajectories. They found that during the period when inequality was increasing, the instability of earnings was also increasing. In fact, their results suggest that between one-third and one-half of the increase in annual earnings inequality

during the 1980s is attributable to increases in the transitory rather than the permanent component of earnings.

Haider (1997), building on the Gottschalk and Moffitt study, developed a more general method of partitioning variance into persistent and transitory components. Haider used a model of heterogeneous earnings growth that allows individual earnings to differ from the mean earnings profile and for this difference to change over time. Using this model Haider calculated lifetime earnings inequality and earnings instability during the period from 1967 to 1991. He found that the largest change in lifetime earnings inequality occurred during the early 1980s. He also found that instability and persistent inequality were equally important in the increase in earnings inequality over the period, but that instability was more important during the late 1970s and persistent inequality was more important during the 1980s.

Despite the finding that earnings instability played an important role in the growth in earnings inequality during the 1980s comparatively little research on exists on this topic. One of the key components of earnings stability is job stability. As detailed in Marcotte's (1995) recent review, there have been two approaches to addressing the question of trends in job stability. One set of studies, recently exemplified by Diebold et al. (1996, forthcoming), Neumark et al. (1997), Swinnerton and Wial (1995, 1996), and Farber (1995), all of whom used data from the Current Population Survey; and Marcotte (1994) and Rose (1995), both of whom used data from the PSID; focus on responses to questions regarding job and employer tenure. A second approach is to study involuntary job losses directly, as illustrated in Farber's (1993, 1996) studies of job losses reported in the retrospective Displaced Worker Survey and Monks and Pizer (1995) study using data on voluntary and involuntary job changes from youth cohorts of the National Longitudinal

Surveys.

Most of the tenure-based studies agree that job stability has declined for certain labor market subgroups, in particular the overlapping groups of workers without a college education and black workers. These studies disagree on whether declining stability is a more general characterization of the labor market. The two PSID-based studies (Marcotte, 1994 and Rose, 1995) and one of the CPS-based studies (Swinerton and Wial, 1995) suggest such a general decline, while the other two CPS-based studies (Diebold et al., 1994 and Farber, 1995) do not support the hypothesis of a general decline. An interchange between the latter sets of authors reduced the scope of their differences somewhat (Diebold et al., 1996; Swinerton and Wial, 1996). Preliminary evidence in Neumark et al. (1997) suggests that CPS-based estimates of job tenure may have declined in the 1990s, especially among older and better educated workers.

We study earnings mobility and instability using data from the Panel Study of Income Dynamics. Our contributions are three. First, we update mobility and instability calculations to include data from the 1990s. Neither Gottschalk and Moffitt nor Sawhill and Condon use data after 1987 and Haider's analysis stops in 1991. We use data through 1995 and are thus able to add one more business cycle to the PSID's longitudinal coverage. Second, we extend sample coverage and earnings measurement in the Gottschalk and Moffitt study to explore the robustness of their finding of greater instability. Third, we explore various mechanisms that might account for the increase in earnings instability.

## **II. Methodology**

Our data come from the 1970-96 waves of the Panel Study of Income Dynamics, which provide data on the earnings, work hours and other employment conditions of a continuously

representative sample from the U.S. population over the period between 1969 and 1995.

Gottschalk and Moffitt (1994) report that earnings data in the PSID track earnings data in the CPS reasonably well, while Fitzgerald, Gottschalk and Moffitt (1996) demonstrate no worrisome biases in the weighted PSID sample with regard to a wide variety of intragenerational dimensions. All of our analyses use the PSID's sample weights from the most recent year of the given period under examination. As explained below, we treat the PSID's 29-year longitudinal data as though it came from four 11-year panels covering the periods 1969-79, 1979-89, 1981-91, and 1985-95. In determining cutpoints of annual distributions, we use PSID data as though they came from 27 single-year cross-sections spanning the years 1969 to 1995.

Myriad choices regarding samples, time periods and measures of earnings, mobility and instability exist and can have profound effects on the estimated outcomes. The Cox and Alm (1996) study provides a good example of the sensitivity of the findings to the definitions chosen. In the Cox and Alm study the baseline (1975) sample consisted of all individuals age 16 and above with at least one dollar of income from earnings, assets or transfers. Thus, by design many of the sample members were students, homemakers, or elderly with only marginal attachments to the labor force. Cox and Alm count as mobility any real increase in annual income in 1991 as compared with the 1975 level. Given this framework it is not surprising that many individuals substantially increased their incomes between 1975 and 1991, but in many cases this increase is not what most people count as true mobility.

Daly (1997) shows that applying all other aspects of the Cox-Alm methodology but restricting the sample to prime age (25-45) men reduces the fraction of those initially in the bottom quintile who moved to the top quintile from 29.3 percent to 17.9 percent. Using a relative

rather than an absolute definition of mobility—defining 1991 quintile position by 1991 as opposed to inflated 1975 income—the percentage who moved to the top falls to less than ten percent. These differences in outcomes based solely on differences in sample and mobility definitions underscore the importance of creating a conceptual link between the questions we would like to answer and the methods selected to address them.

Choice dimensions and decisions taken in the present analysis include:

Earnings measure. Studies have used both annual and hourly measures of earnings. We focus on annual earnings, although are in the process of replicating our calculations using hourly earnings. Since low work hours have a much greater element of choice than low hourly earnings, the welfare implications of hourly earnings are more straightforward than those of annual earnings. However, since our analysis is of prime-age male workers, for whom low levels of labor supply are more likely to reflect involuntary factors such as unemployment, the incidence of low annual earnings is an important aspect of earnings stability and mobility.

Sample. Two important analytic choices here are of samples used to define a worker's position in the income distribution and the set of workers whose earnings mobility or instability is being analyzed. In determining percentile cutpoints of distributional position in a given year, we use complete cross sections of the working population, defined as all individuals age 21 to 64 who were not self-employed and worked at least 250 hours in that year.

For the sample of individuals whose mobility or instability is being analyzed, we choose men between the ages of 25 and 44 who were not self-employed, had positive annual earnings and worked at least 250 hours in the first year of a given longitudinal period. We would have preferred to include younger men, but the extensive information we sought on labor-market

earnings, job changes, self-employment status, and extra jobs is available only for PSID "heads" of households, and it is only at around age 25 that a substantial majority of men head their own households.

A second issue with the analytic sample is what to do with zero earners. In the case of hourly earnings, an observation with zero earnings is best considered as missing. But in the case of annual earnings, zero earners are indeed individuals with no earned income, so, where feasible, they are included in our calculations. (Couch and Lillard, 1996 and Couch and Dunn, 1997 have shown that estimates of inter-generational mobility and instability are sensitive to the inclusion and exclusion of zeros.) To avoid the difficulties of accurately measuring self-employment earnings we set annual earnings to missing in years where the individual reports being self-employed. Finally, since other analysts (e.g., Gottschalk and Moffitt) often opt to exclude zero earners from all of their analyses, we also report mobility and instability calculations on samples that exclude zero earners. Sample sizes are presented in Appendix Table 1.

Longitudinal time periods. Important considerations for analytic time period include timeliness, macroeconomic conditions, and sufficient duration to produce an acceptable ratio of signal to noise in the mobility measure. We chose two 11-year "peak to peak" periods -- 1969-79 and 1979-89; the 11-year "trough to trough" period 1981-91; and the 11-year "growth to growth" period 1985-1995. In the case of the latter interval, data constraints imposed by the "early-release" nature of the labor-supply information from the 1993-1996 PSID interviews make it impossible to provide a complete set of calculations over the 1985-95 interval.

Absolute versus relative mobility. Are individuals who enjoy real earnings growth during their careers "upwardly mobile"? In defining end-year quintiles as inflation-adjusted beginning-



year quintiles, Cox and Alm assume an affirmative response and analyze what amounts to absolute earnings mobility. In defining end-year position using end-year relative earnings, Sawhill and Condon (1992) assume a negative response and analyze what amounts to relative mobility.

Our own analyses use measures of both absolute and relative mobility. In the case of what we term absolute mobility, we tabulate year-11 vs. year-1 earnings-quintile transitions where year-11 quintile breakpoints are defined by year-1 quintile breakpoints of the entire year-1 working population inflated to year-11 price levels using the CPI-UX1. In the case of what we term relative mobility, we tabulate year-11 vs. year-1 earnings quintiles where year-11 quintile breakpoints are defined by the entire year-11 working population. As in the case of absolute mobility, the year-1 breakpoints are defined by the entire year-1 working population.

Instability. We employ various measures of instability. Building on Gottschalk and Moffitt (1994), we calculate the variance in transitory, permanent and total earnings.<sup>1</sup> Less formal measures of instability/stability include: i) the average of absolute year-to-year percentage changes in earnings; ii) the number of years the individual was in his year-1 earnings quintile; and iii) the number of times that year  $t+1$  earnings were less than 50 percent of year  $t$  earnings.

Employment conditions. Corroborating evidence on the nature of employment conditions for sample individuals over the 11-year periods is provided by the following measures: i) average annual hours of unemployment; ii) number of job changes; iii) number of involuntary job changes; iv) number of years held extra jobs; v) variance of the transitory component of work hours<sup>2</sup>; and vi) total variance of work hours. As with mobility itself, the number of measures of employment conditions available from the 1993-1996 PSID data files is limited.

### III. Results

Earnings correlations. The simplest summary measure of (im)mobility is the correlation coefficient. By comparing the position of a given set of workers at the beginning and end of some interval, the correlation coefficient is a completely relative measure of mobility. We present in Table 1 correlations— for both the log of annual earnings and the level of annual earnings— calculated over three, six and eleven-year intervals for male workers who were between ages 25 and 44 in the first year of the period. We report the unlogged versions in order to compare the sample with and without zero earners. The logged annual earnings correlations are made only for those men with positive annual earnings in each period.

Not surprisingly, the correlations fall as the time period lengthens, particularly as the interval lengthens from six to eleven years. Also unsurprising are lower correlations for young as opposed to older workers, indicating more career developments—perhaps both favorable and unfavorable—during early career stages. Correlations do not differ substantially between our two samples.

Key for our inquiry is whether these correlations change by historical period. Drops in fixed-interval correlations from one historical period to the next may reflect a greater degree of mobility. But, as pointed out by Gottschalk and Moffitt (1994), mobility measures such as the correlation coefficient, especially if computed over relatively short time periods, mix together genuine mobility (i.e., long-run changes in position) and instability. If, as they and Haider (1997) claim to find, earnings instability has increased since the early 1970s, then we would expect lower correlations for that reason alone, especially over the three- and six-year intervals, where the relative importance of transitory variance is greatest.

Focusing on the logged annual earnings correlations, Table 1 shows a decrease in earnings correlations between the first period under study (1969-79) and the 1979-1989 period. Following a large drop in earnings correlations between the 1969-79 and 1979-89 period, earnings correlations actually increased among younger workers (25-34 in year 1). Older workers (35-44 in period 1) experienced a different pattern. Earnings correlations among older workers have gradually declined over the past 25 years.

Suffice it to say that simple correlations indicate that relative earnings mobility/instability appears to have increased between the 1970s and the 1980s, particularly among younger workers. The results in Table 1 also suggest that some of the patterns observed in the 1980s may have reversed themselves in the 1990s. However, it is important to note that these patterns are not terribly robust across samples or logged and unlogged annual earnings values.

Mobility. We next turn to a common tool of mobility studies—the transition matrix. Table 2 shows earnings quintile positions for 25-44 year-old male workers in the first and eleventh years of the four eleven-year intervals provided by the PSID. An additional sample restriction, relaxed for the data presented in Appendix Table 2, is of positive annual earnings in every one of the eleven years. Within each time period, year-1 quintile breakpoints are defined by the larger population of all men and women age 21-64 with positive annual earnings, who were not self-employed and who worked 250 hours or more in that year. The data in Table 2 thus reflect "absolute" mobility in the sense that the year-11 quintile breakpoints are CPI-inflated values of the year-1 breakpoints. In contrast to the correlation coefficient, general earnings increases due to either real macroeconomic growth or life-cycle factors are counted as mobility in the transition matrices defined in this way.

The first row of the table is based on prime-age men whose 1969 annual earnings placed them in the bottom fifth of all earners in that year. The first entry, 46.3, shows that only half of these men had real earnings 11 years later—1979 in this case—that would have ranked them in the bottom quintile of the 1969 distribution. Although nine times larger than Cox and Alm five percent estimate based on 15-year earnings change, the fact that half of workers crossed at least one quintile threshold is noteworthy and is consistent with what most people would probably regard as a considerable degree of mobility. Relatively few (10.5 percent) of these initially low-earners ended up in the top 40 percent of the earnings distribution—a fraction less than one-fifth that of the 59 percent estimate of Cox and Alm.

The second row repeats these 11-year calculations for initially bottom quintile, prime-age male workers over the 1979-89 period. There are few differences. Differences are more apparent in the 1981-91 interval, where only 30 percent of initially low-earning workers in 1981 were in the bottom quintile 11 years later. This is particularly surprising in light of the heavy overlap between the 1981-91 and the 1979-89 intervals. We suspect (and provide corroborating evidence below) that it results from business-cycle differences, with the severe recession in 1981 producing an unusually high number of transitorily low-earning prime-age males relative to the rest of the working population. Their greater mobility thus reflects an unusually low starting position. This sensitivity should serve as a warning on the importance of adjusting for business-cycle conditions in mobility comparisons.<sup>3</sup>

Before jumping to conclusions regarding the heightened degree of mobility of initially low-earning workers, it is instructive to examine the first four rows of Appendix Table 2, which parallels Table 2 in all respects except that the data are based on a sample of prime age men who

might have had zero earnings for reasons other than self-employment between years 2 and 11. This change increases the sample sizes by roughly ten percent and, more importantly, reduces substantially the apparent mobility of initially low-earnings workers. The fraction of upwardly-mobile bottom quintile workers are five to ten percentage points less than comparable percentages in Table 2. In other words, including workers whose earnings fell to zero in at least one year substantially reduces the estimated degree of upward mobility. For this reason, we include parallel analyses of samples that include zero earners whenever feasible.

Going to the other end of the distribution, the bottom set of rows of Table 2 and Appendix Table 2 show no important trends in the considerable persistence of high earnings. In this case the treatment of zero earners makes little difference; roughly three-quarters of initially top-quintile earners are still in the top quintile 11 years later across all four historical periods. Thus, for these prime-age men, earnings "affluence" is considerably more persistent than earnings "poverty."

The mobility of the middle class is of great interest. The middle rows of Table 2 and Appendix Table 2 provides some evidence that the growing upward mobility of middle-earners during the 1970s and 1980s had reversed itself by the 1990s. In the initial, 1969-79 period, some 37 percent of initially middle-income men had improved their absolute earnings position sufficiently 11 years later to be in one of the top two quintiles. In the two overlapping middle periods (1979-89 and 1981-91), the comparable fraction was much higher —52 to 55 percent, depending on the treatment of zero earners. Over the 1985-95 period, the comparable fractions had fallen back to 31 to 34 percent, which are smaller than the 1969-79 levels. The middle rows of Table 3 shows that this pattern of increasing and then falling upward mobility of initially

middle-income earners held for both younger and older cohorts of workers.

By repeating these calculations for quintile breakpoints defined in all years by the 25 to 44-year old male workers themselves (as opposed to inflation-adjusted thresholds based on the more general group of all workers), the bottom two rows of Table 3 provide information on the relative earnings mobility of the men. That the upward mobility of initially middle-quintile earners is lower in the most recent 1985-1995 period than earlier suggests that the patterns observed for absolute mobility are quite robust to changes in the definition of mobility.

Breaking down these prime-age middle class men into initially younger (25-34 years old in the first of the 11-year period) and older (35-44 years old) age groups produces other suggestive evidence of mobility trends. Most striking is the reduced downward mobility of initially 35-44 year-old middle earning men. The 1970s appeared to produce a great deal more downward earnings mobility for these older men than in any of the later three periods.

The other columns of Table 2 summarize mobility of initially low and high earners. There are few trends that are both large and impervious to treatment of zero earners. The aforementioned remarkable upward mobility of initially low earners over the 1981-1991 interval is especially pronounced among older workers, but disappears completely when, in the bottom two rows, the mobility measure switched from absolute to relative. Evidence of greater downward mobility among initially high-earning younger workers is based on very small case counts.

Permanent vs. transitory variance. Switching our focus from mobility to stability, we present, in Table 4, an update of the Gottschalk and Moffitt (1994) calculations of permanent and transitory variance in real annual earnings. Since these concepts are defined in terms of log earnings, as with Gottschalk and Moffitt (1994), we limit our calculations to men with positive

earnings in all years of the given period.

Gottschalk and Moffitt estimate the permanent earnings variance of 20-59 year-old men over the 1970-78 and 1979-87 periods to be .201 and .284, respectively, an increase of 41 percent. Table 4 shows permanent variance estimates for 25-44 year-old men to be .232 for the 1969-79 period, .276 for 1979-89, .264 for 1981-91 and .241 for 1985-95. Thus, the increase for our more narrowly-defined sample is not as large and, if anything, has fallen since the mid-1980s. Both Gottschalk-Moffitt and we find that permanent variance has grown most among younger workers.

Haider (1997) presents an alternative method for portioning variance into persistent and transitory components. His estimated time series of lifetime inequality changes little between 1967 and around 1980, increases steadily until the mid-1980s and then is flat until 1991 — the end of his observation window. When averaged over the four-year period used in our analysis, he estimates lifetime variance for 30-44 year-old men to be .323 for the 1969-79 period, .392 for 1979-89, .425 for 1981-91, and .456 for 1985-91, the most recent year included in his calculations. The continuing increase in permanent variance he finds is thus at odds with our pattern of increases and then decreases.

In the case of transitory variance, Gottschalk and Moffitt estimate values of .104 for 1970-78 and .148 for 1979-87. Table 4 shows similar levels but smaller growth in transitory variance; transitory variance estimates for 25-44 year-old men are .081 for the 1969-79 period, .111 for 1979-89, .100 for 1981-91 and .114 for 1985-95. Thus, virtually all of the growth in transitory variance occurs between the first and second of our four periods.

Haider's (1997, Table 5) estimates of earnings instability are .130 for 1969-79, .176 for

1979-89, .184 for 1981-91, and .178 for 1985-91, the most recent data year. Thus, Haider's data also show that most of the growth in transitory variance occurred between the first and second of the four periods used in our analysis.

What implications do these changing components have for changes in the cross-sectional earnings variance? As pointed out by Gottschalk and Moffitt, these permanent and transitory variance components sum to the cross-sectional variance. Since the percentage increase in permanent earnings variance between periods I and II (19%) is smaller than the percentage increase between those periods in transitory variance (37%), transitory variance as a share of total variance was somewhat larger in period II than period I (.28 vs. .25 -- 15th and 16th columns of Table 4). By the most recent, 1985-95 period, the combination of falling permanent variance and persistently higher transitory variance pushed the ratio of transitory-to-total variance to .32.

Thus, transitory earnings variance continue to increase in relative importance over the four periods we studied, but not because earnings instability itself has increased. Rather, the increase in instability appears to have run its course by the mid-1980s. But since permanent earnings variance has fallen since the mid-1980s, the relative mixture of transitory to permanent variance has continued to grow.

To investigate the robustness of these trends in earnings instability, we developed a number of ad hoc alternative indicators, the results for which are shown in Table 5. Our indicators include: i) the sample median of the 11-year average absolute value of year-to-year percentage changes in earnings; ii) the number of years that the individual remained in his initial earnings quintile; and iii) the number of times the individual's earnings dropped by a very substantial amount —50% or more. An advantage of these measures is that they can be calculated on both



our positive earner and all-worker samples.

Consistent with the data on transitory variance, the average year-to-year percentage earnings change for the typical male worker increased between the initial, 1969-79 period and the second, 1979-89 period. This jump is quite apparent among younger male workers but, if anything, this measure of earnings instability drops for the older workers in the sample and had reverted by the last (1985-1995) period to its 1969-79 levels.

The middle columns of Table 5 reveal no discernible trends in instability of quintile positions. Younger workers remained in their initial quintile position in roughly four of the remaining ten years and older workers stayed put in about half of those ten years. Extreme earnings instability is captured by our count of the number of years in which earnings fell by half or more. Instability by this measure increased only for younger workers and only between period I and II.

All in all, these alternative indicators of earnings instability suggest that increased earnings instability has been most apparent for younger workers and that the increase had run its course by the mid-1980s.

Indicators of employment stability. Underlying these trends in earnings stability are changes in wage rates and in conditions of employment—in particular work hours, unemployment, and job tenure and changes. We were able to construct a number of indicators of employment trends from PSID data: i) transitory variance in work hours, which is developed by Gottschalk and Moffitt and is defined analogously to transitory earnings variance; ii) average annual hours of unemployment; iii) average number of annual job changes <sup>4</sup>; iv) average number of involuntary job changes<sup>5</sup>; v) the average number of years the individual reported holding a

second job; and vi) average end-year job tenure. Data on these measures over the four periods are summarized in Table 6.

Most of the employment-based measures show an increase in employment instability between the first and subsequent periods, particularly for younger workers. Period I and II comparisons show greater unemployment, more overall as well as involuntary job changes and a reduction in job tenure in the final year of the periods. That second-job holding fell may account for at least part of the curious drop in the transitory variance of work hours observed between the two periods.

#### **IV. Discussion**

The 1980s were a remarkably turbulent time for American workers. Several studies have documented heightened levels of both permanent earnings inequality as well as earnings instability relative to the 1970s. The smaller number of studies focused on earnings mobility have been less conclusive about trends.

Our study of earnings mobility and instability has extended the time series of mobility and instability measures into the first half of the 1990s. Remarkable in our results is how few trends in earnings mobility and instability persisted over the entire period we study. As with Gottschalk and Moffitt, we find an increase in earnings instability since the 1970s, particularly among younger workers. However, we find no evidence that instability continued to increase throughout the 1980s and early 1990s.

With regard to mobility, we find a drop in 11-year earnings correlations between intervals centered in the mid-1970s and intervals centered in either the mid-1980s or around 1990. A more detailed examination of transition tables showed greater upward mobility and less downward

mobility of middle-income workers in the 1980s relative to the 1970s. The former trend appears to have reversed itself by the middle of the 1990s. Employment-based indicators are consistent with the earnings-based indicators in showing increased employment instability between the 1970s and later periods.

Overall the findings suggest that many of the patterns observed during the 1980s did not continue into the 1990s. Middle-class mobility, increased earnings inequality and instability, and employment instability appear to have declined in the 1990s. Although in most cases patterns have not returned to their pre-1980s state, the preliminary data on the 1990s suggest that the decade of the 1980s may turn out to be more of an anomaly than the beginning of a new trend in earnings movements and patterns.

Finally, this analysis has underscored the importance of sample and mobility/instability definitions to the results. In many instances the findings we report are extremely sensitive to changes in the sample under study and to how mobility and instability are defined.

## Endnotes

1. As with Gottschalk and Moffitt (1994), the variance in transitory earnings is defined as the mean, across individuals, of:

$$\sigma_v^2 = 1/N [\sum_{i=1}^N (1/(T_i - 1)) \sum_{t=1}^{T_i} (y_{it} - y_i)^2]$$

where  $I$  indexes individuals,  $t$  indexes year. The variance in permanent earnings is defined as:

$$\sigma_\mu^2 = 1/(N-1) [\sum_{i=1}^N (y_i - \bar{y})^2 - (\sigma_v^2/T^*)]$$

where  $T^*$  is the mean of  $T_i$  over  $I$ .

2. This is defined in the same way as the variance of the transitory component of earnings.
3. Another spurious possible reason for differences in transition-matrix-based mobility is differences in the average distance between year-1 earnings and the quintile breakpoints. Appendix Figure 1 shows no consistent trends in these distances across the four historical periods we study.
4. Average number of job changes is calculated using a question from the PSID which asks “what happened to your last job”. Individuals who responded to this question were identified as job changers for that year. Job changes were then summed for each individual over the 11 year period.
5. Involuntary job changes are a subset of total job changes. An involuntary job change is recorded when the respondent reports that the job ended because of layoff or firing, or because the plant closed or moved.

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