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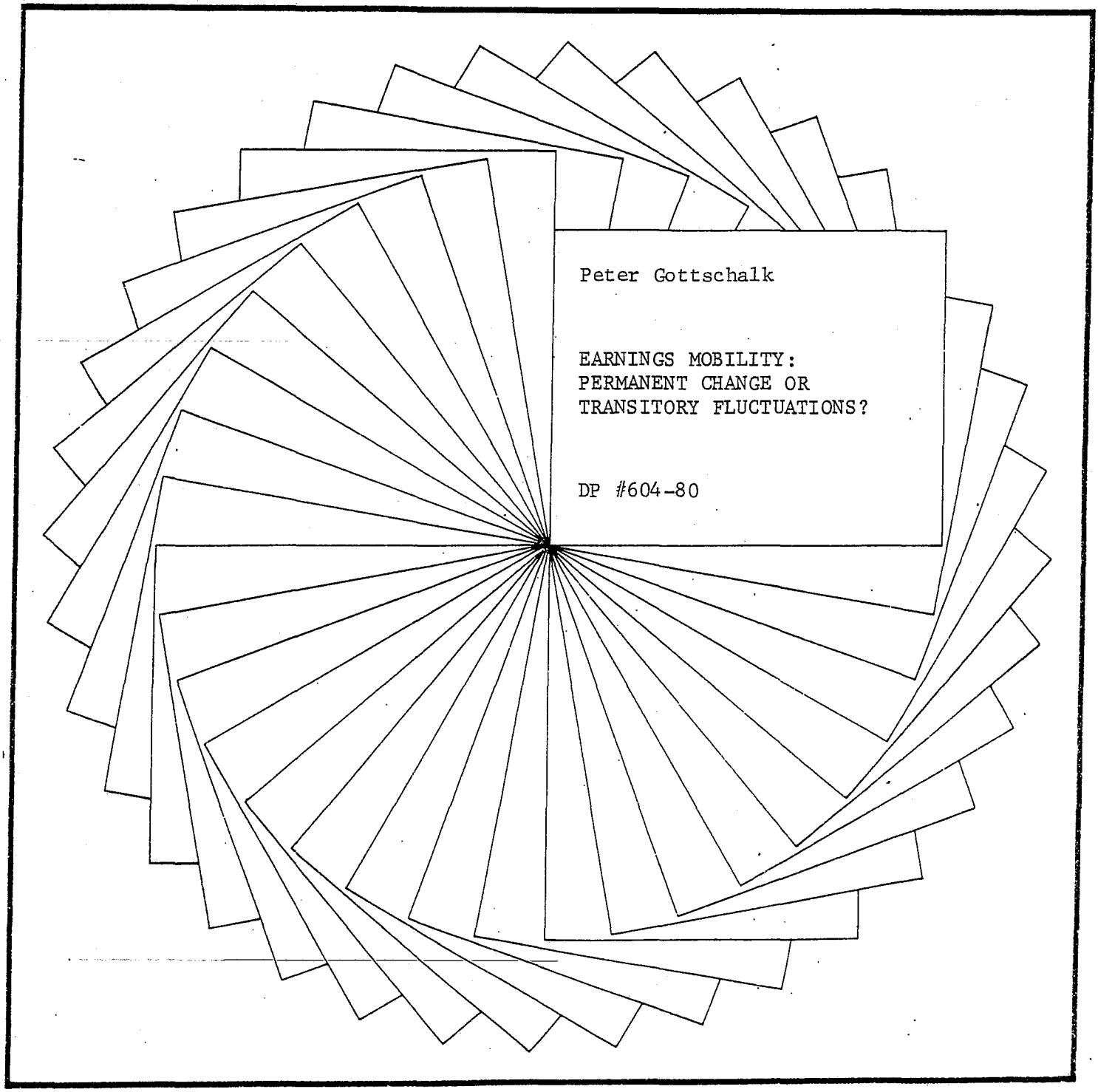

Earnings Mobility: Permanent Change or Transitory Fluctuations?

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ABSTRACT

This study uses the National Longitudinal Surveys of Labor Market Experience, 1966-1975, to separate two sources of earnings mobility: steady life-cycle changes in earnings, and random fluctuations in earnings. Analysis of always-married, middle-aged couples indicates that a considerable amount of variation in measured earnings reflects transitory variation. After these fluctuations are eliminated, about 75 percent of the low earners in any one year had low earnings in more than one-half of the six survey years. The relative importance of transitory fluctuations is found throughout the earnings distribution.

Multinomial logit analysis of demographic characteristics indicates that the permanently low earners had a high probability of being nonwhite, old, and living in rural areas. Those with temporary low earnings were younger and had a higher probability of living in an SMSA.

Earnings Mobility:
Permanent Change or Transitory Fluctuations?

Are people with low earnings in one year experiencing a transitory drop in earnings, or do they have permanently low earnings? The answer to this question has important implications.[1] If a person's low earnings reflect an unforeseen but transitory experience, then an appropriate public policy response might be to focus on income maintenance or other policies which ease the burden during the transitional period. If temporary low earnings reflect voluntary life-cycle decisions to invest in human capital by people who expect subsequently to receive high lifetime earnings, then there is little reason for public policy to alter that personal choice. On the other hand, if a substantial proportion of people have permanently low earnings, there may be more serious structural problems in labor markets which need to be addressed: some workers may have inadequate stocks of human capital, or demand for their skills may be insufficient to yield adequate earnings.

This study uses longitudinal data to determine whether the income and earnings mobility among the poor that has been described in previous studies (see Morgan, 1974; Levy, 1977; and Coe, 1978) reflects steady increases in lifetime earnings or random fluctuations. A separate time trend is fitted to each person's earnings history. The variation in observed earnings is then decomposed into the variation caused by movement along the person's trend and variation around its trend.

Several other studies have fitted time trends to individuals' earnings histories. Their objectives have, however, been different. David (1971) and Benus (1974) fit trends to the ratio of a person's earnings relative to the earnings of other members of his cohort. This was done to determine the characteristics which were associated with changes in relative earnings positions within the cohort. Hause (1980) estimated individual specific slopes and intercepts to test the implications of an on-the-job training model. The modest contribution of this paper is to apply similar techniques to a different question--to what extent do changes in a person's absolute (real) earnings reflect permanent or transitory changes?

Section 1 shows the relationship between the underlying earnings functions and the equation fitted to each person's data to capture its trend. Section 2 measures the degree to which mobility reflects systematic movements rather than random fluctuations. The systematic movements are examined to see whether those who started with high earnings had significantly different growth paths. Section 3 shows how patterns differ by economic and demographic characteristics. In Section 4 the conclusions of the study are presented.

1. RELATIONSHIP BETWEEN FITTED TREND AND EARNINGS FUNCTION

In this section, I show how fitting time trends to each person's earnings history extracts the key information for eliminating random fluctuations while making relatively weak assumptions. I start with a general earnings function and derive the form of the estimated equations.

Individuals' earnings patterns, whether they are smooth movements along a trend or movements around a trend, may differ for two conceptually different reasons: People may accumulate or use income-producing characteristics at different rates, or they may differ in their ability to translate these inputs into earnings. The first can be viewed as differences in inputs into each person's earnings function and the latter as differences in the earnings functions themselves. This suggests that, ideally, a study of earnings mobility would start with a separate earnings function for each individual.[2]

It is of course impossible to follow individuals with cross-sectional data, which give only one observation on each individual. In the future, however we may be able to estimate individual earnings functions with sufficiently extensive longitudinal data. Since existing longitudinal data sets have less than a dozen observations on each individual, this is not currently possible.

If one is interested in the structural coefficients of the earnings functions, there is no alternative to assuming that large groups of people have the same function. This assumption, of course, introduces the possibility of aggregation bias. However, for some purposes weaker assumptions can be made.

For example, consider the i^{th} person's earnings function:

$$E_{it} = a_{0i} + \Sigma_j a_{ji} X_{jit} + e_{it}, \qquad (1)$$

where E_{it} is the earnings of the i^{th} individual in the t^{th} period, X_{jit} is the amount of the j^{th} input devoted to producing earnings by

the i^{th} individual in the t^{th} year, e_{it} is an error term whose structure is described below, and the a_{it}'s are coefficients.

Suppose that each X_{jit} is given by

$$X_{jit} = X_{ji0} + b_{ji}t + v_{jit}. \tag{2}$$

The person starts in period zero devoting X_{ji0} of his stock of the j^{th} input to producing earnings. The size of the stock or its rate of utilization grows at a rate b_{ji}. The actual amount of input varies around this trend in a random pattern, reflected by v_{jit}. Of course, some of the coefficients may be zero.

The nonrandom component of equation 1 reflects differences in a person's potential earnings. Actual earnings may differ from potential earnings because of macroeconomic conditions. This is captured in the error term

$$e_{it} = c_{0i} + c_{1i}U_t + e_{it}^*, \tag{3}$$

where U_t, a measure of relative labor market tightness, captures the deviations of macro conditions from their trend. By definition it is independent of the trend. The remaining random component, e_{it}^*, is also independent of the cycle. The fact that some individuals are more susceptible to changes in cyclical conditions is captured by allowing each individual to have his or her own coefficient on U_t.

Substituting 2 and 3 into 1 gives earnings wholly in terms of initial stocks of inputs, growth rates of inputs, and random shocks:

$$E_{it} = \gamma_{0i} + \gamma_{1i}t + \varepsilon_{it} \quad (4)$$

where

$$\gamma_{0i} = a_{0i} + c_{0i} + \Sigma_j a_{ji} X_{ji0}$$

$$\gamma_{1i} = \Sigma_j a_{ji} b_{ji}$$

$$\varepsilon_{it} = \Sigma_j a_{ji} \; v_{it} + c_{1i} U_t + e_{it}^*.$$

Since v_{it} and U_t are independent of t, the expected value of ε_{it} t is zero. The estimation of equation 4 is a straightforward application of the random coefficient model developed by Swamy (1970).

The constant term in equation 4 incorporates information on the returns from the initial stock of inputs devoted to market production. The slope coefficient on time, γ_{1i}, measures the rate at which the person is accumulating or increasing his or her use of each input, multiplied by its contribution to the person's earnings. The trend in earnings, therefore, summarizes the outcome of a much more intricate process which generates earnings.[3] We cannot estimate this process with only a half dozen observations on each individual, but we can estimate individual growth trends.

Earnings functions are summarized by simple time trends only under certain restrictive conditions. For example, I assume that purely cyclical effects enter linearly, through the error term. An alternative would be to assume that actual earnings fell below potential earnings because of a cyclical change in the amount of an input (X_{jit}). This implies that U_t

enters equation 2. This modification changes the algebra but not the conclusion of this section. Cyclical conditions could also affect the rates of return, the a_{ji}'s, which implies that the sensitivity to cyclical conditions changes as the person accumulates inputs into his or her earnings function. This formulation results in an interaction term (between t and U) entering equation 4. There is then no straightforward relationship between an earnings function and a simple fitted time trend.

2. EXTENT OF MOBILITY

This section is composed of three parts. I first describe the data set and the earnings concept used. The second part summarizes the way in which the overall distribution of earnings changed over the period. In the next part I decompose mobility into movement along fitted trends and transitory changes in earnings.

Data Set and Earnings Concepts

The National Longitudinal Survey of middle-aged women (30 to 44 years old in 1966, the first year of the survey) is used to construct a sample of always-married, middle-aged couples. (See Parnes, 1980, for a general description of this data base.) Households are excluded if the husband had zero earnings in all years, indicating total lack of attachment to the labor market. Valid earnings data in each of the

six survey years were obtained for 1418 such couples. This is the largest longitudinal data set which gives detailed information on demographic characteristics for people in this narrow age range.

Restricting the study to middle-aged married couples has both advantages and disadvantages. By excluding female-headed households and households headed by very young or near retirement male heads, we reduce the amount of mobility which reflects labor supply decisions. This is appropriate in a study which tries to isolate the earnings opportunities available to persons with strong labor force attachment. If, on the other hand, one is interested in the total amount of mobility, including voluntary life-cycle changes, then it would be more appropriate to include all ages. This procedure is followed by Schiller (1977) in his pioneering study of relative earnings mobility which includes people as young as 16 in the first year and as old as 64 in the last year of his survey.[4]

Two alternative earnings measures are examined. First, since the concept of an earnings function is most appropriate to an individual decisionmaker, I examine the trend and fluctuations in the earnings of the head of the household. Second, I analyze the trend and fluctuations in husband-wife earnings. Recent theoretical and empirical research has suggested that labor supply may reflect joint household decisions about the optimal allocation of time to market work over each household member's life cycle. This suggests that, in order to capture compensating work decisions by the spouse, the couple may be the appropriate observational unit.

A principal focus of this study is on the earnings mobility of those in the lower tail of the earnings distribution. In determining whether a head (or couple) had low earnings, I use two alternative low earnings thresholds. The first is the earnings of a full-time year-round worker receiving 125 percent of the 1975 minimum wage, i.e., $5,460 in 1975 prices. An alternative, which captures differences in household needs, is the household's earnings in relation to the official poverty line in each year. Because the poverty threshold reflects household needs, using this measure allows changes in needs, as well as earnings, to alter the household's classification, a factor which Morgan (1974) has found to be important.

Changes in the Earnings Distribution over Time

Table 1 shows how the distribution of husbands' earnings and husband-wife earnings changed over time. It shows that the earnings experience of our narrowly defined sample was similar to that found for more broadly defined samples. Column 1 shows that in spite of the 1975 recession, the average earnings of husbands increased between 1966 and 1975. The rate of increase from 1966 to 1973 (the last nonrecessionary year in the sample) was 1.8 percent per year. Columns 4 and 6 show the well-documented increase in women's contribution to family earnings. Husband's earnings (E_H) as a percentage of husband-wife earnings ($E_H + E_W$) declined from 85 to 77 percent, with the result that the couples' combined earnings grew at 2.7 percent per year between 1966 and 1973.

Table 1

Time Series on Earnings of Middle-Aged Couples, 1966-1975 (1975$)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Husband's Earnings			Husband-Wife's Earnings				
	Mean	Var/Mean	Prob. (E_H<$5460)	Mean	Var/Mean	Mean $\frac{E_H}{E_H+E_W}$	Prob. (E_H+E_W<$5460)	Prob. (E_H+E_W<PL)
1966	$12,667	4.2	.126	14,889	4.1	.85	.087	.112
68	13,624	4.6	.109	16,231	4.4	.84	.074	.091
70	13,860	6.0	.134	16,782	5.2	.82	.085	.101
71	14,343	5.6	.124	17,506	5.0	.81	.069	.084
73	14,407	6.1	.153	17,962	5.8	.79	.093	.099
75	13,008	5.9	.194	16,553	5.6	.77	.121	.127
Rate of Increase, 1966-73[a]	.018	.053	.027	.027	.050	-.001	.010	-.018

[a]1975 excluded because it was a recession year.

Columns 2 and 5 show that the variances of both husband and husband-wife earnings were increasing faster than their respective means. Since we are following the same people over time it is impossible to separate the impact of aging from the impact of time period effects on the variances. Therefore, we can only conclude that our evidence is consistent both with Mincer's (1974) observation that the variance of earnings increases as a cohort ages and Henle and Ryscavage's (1980) evidence that the cross-sectional distribution of earnings was becoming less equal over time.

Columns 3, 7, and 8 show that in the late 1960s and early 1970s the variances grew sufficiently fast to counter the effect of increasing means, leading to a growth in the proportion of low earners. This is consistent with evidence in Gottschalk (1978). The proportion of husbands with less than $5,460 of earnings reached its lowest value in 1968. The increasing earnings of women resulted in the proportion of couples with earnings under $5,460 reaching its lowest value in 1971.

Column 8 shows the impact of changing needs by comparing the couple's earnings with their household's poverty line. As children left the households, needs were reduced. This resulted in a net decline of households with earnings below their poverty lines between 1966 and 1973. Comparing columns 7 and 8 clearly shows the impact of decreasing needs as children were leaving the household.

These data show that, where comparisons are possible, the time series for this sample are similar to patterns found in more inclusive data sets. The results in the following sections may therefore reflect patterns found in the wider population.

Mobility

Table 2 summarizes information on mobility. For each earnings concept two columns are shown. The first classifies husbands (or couples) by comparing their actual earnings to the relevant low-earnings threshold. The second compares nontransitory earnings with the threshold. Nontransitory earnings are calculated by fitting a linear time trend[5] to the six observations on each husband's (or couple's) earnings. Values along the fitted trends are called nontransitory earnings.

Row 1 of Table 2 shows that the incidence of low earnings was considerably smaller when nontransitory earnings rather than actual earnings are compared to thresholds. The average incidence of low earnings for husbands was 14.0 percent based on actual earnings but only 10.6 percent when nontransitory earnings are counted. Similar patterns are found for couples. The fact that the incidence of low actual earnings is greater than the incidence of low nontransitory earnings indicates that there were more people with transitory shortfalls placing them below the threshold than there were people with earnings temporarily above the threshold. This partially reflects the increasing density of the earnings distribution at higher earnings levels.

In order to determine the amount of mobility, I show the proportion of husbands (or couples) who had low earnings in at least one survey year, in more than one-half the survey years, and all survey years. These proportions are shown for actual earnings and nontransitory earnings.

Table 2

Mobility of Low Earners by Earnings Concept (Averages over All Years)

	Husband's Earnings < $5,460		Husband-Wife's Earnings < $5,460		Husband-Wife's Earnings < PL	
	Actual	Nontransitory	Actual	Nontransitory	Actual	Nontransitory
Average incidence of low earnings	.140	.106	.088	.055	.102	.077
Proportion of sample with low earnings in						
(a) at least one survey year	.345	.193	.236	.116	.272	.159
(b) more than half of survey years	.090	.060	.048	.044	.059	.061
(c) all survey years	.021	.046	.012	.022	.013	.024
Proportion of low earners in a given year who had low earnings in						
(a) more than half of the survey years	.532	.783	.368	.673	.433	.702
(b) all survey years	.150	.433	.136	.400	.127	.312

The use of nontransitory earnings to determine mobility has the additional advantage of containing information on earnings gaps as well as the incidence of low earnings. Measuring mobility as the proportion who had low actual earnings does not distinguish between households with earnings barely above the line in some years and those with earnings well above the line in the same number of years. However, comparing thresholds with actual earnings averaged over all years does take account of whether the surpluses in some years were large enough to cover the deficits in other years.

It is easy to show that the proportion of people with nontransitory earnings below the threshold in more than one-half the years is identical to the proportion of people who experienced a net shortfall over the survey period (i.e., whose actual earnings in the six years averaged less than the threshold). This can be seen by recognizing that the trend regression goes through mean actual earnings in the mean year. If mean actual earnings are less than the threshold, then, assuming the trend is positive, the unit will already have spent half its years with nontransitory earnings below the threshold. It will spend at least a portion of the remaining years below the line. Hence, it will spend more than half its years below the line. A similar reasoning holds if the trend is negative.

Column 1 of Table 2 shows the amount of mobility based on actual earnings for husbands. While 35 percent of the sample was earnings poor in at least one year, only 9 percent had low earnings in more than one-half the years and only 2 percent were earnings poor in all years. The two

bottom rows show that if an earnings-poor husband was selected at random, this person would have a .532 probability of being earnings poor in more than half the survey years and a .150 probability of having low earnings in all survey years. Thus we can say that, depending on how strict a definition we use, between one-seventh and one-half of the husbands with low actual earnings in any one year were permanently earnings poor. Whether this represents "a lot" or a "little" mobility is a subjective question which depends on one's prior assumptions about how much mobility one expects to find in this group of prime-aged married males.[6]

How much difference does it make if we classify husbands according to their nontransitory earnings? As expected, smoothing out earnings in this way reduces the percentage who were earnings poor in at least one year (from 35 to 19 percent). However, the proportion earnings poor in more than one-half the years drops only to 6 percent (from 9 percent), and the proportion earnings poor in all years is higher, 4.6 percent, than the actual earnings figure, 2.1 percent. This means that when transitory fluctuations are eliminated, the permanently low earners make up a considerably larger proportion of the earnings poor. Instead of finding one-seventh to one-half permanently earnings poor, the range rises to 43 to 78 percent--over three-quarters of the husbands with low nontransitory earnings in a given year were earnings poor more than half the time.

Examination of the comparable figures for husband-wife earnings shows slightly more mobility. First, comparing the couples' earnings

with the $5,460 threshold indicates that, of those with low actual earnings in a given year, 37 percent experienced low earnings in more than half the years and 14 percent had low earnings in all years. When nontransitory earnings are counted, the proportion with low earnings in a majority of years rises to 67 percent and those with low earnings in all years rises to 40 percent. Again, movements around the trend account for a sizable proportion of the observed mobility.

The picture is somewhat brighter, as might be expected, when changes in needs are taken into account. The last two columns show the result of comparing the actual and the nontransitory earnings of couples in relation to their household poverty lines. Only 31 percent have nontransitory earnings below their poverty lines in all years. This is again, however, considerably higher than the comparable figure based on actual earnings.

The preceding analysis indicates that a large proportion of the observed variation in earnings at the lower tail of the earnings distribution reflects transitory fluctuations rather than steady changes in earnings. Table 3 shows that this pattern is not confined to low earners. It is found throughout the distribution. For each household I calculate the variance in the husband's (or couple's) nontransitory earnings as a percentage of the variance in its actual earnings. This measures the proportion of the variation in actual earnings which was associated with movement along each person's trend. For example, two people may experience equal variance in earnings, but that variance may reflect

Table 3

Relation of Nontransitory Earnings Variation to Total Variation, by Years with Low Earnings

Years with Low Observed Earnings[a]	Variation in Nontransitory Earnings as Proportion of Total Variation	
	Husband's Earnings	Husband-Wife's Earnings
0	.34	.37
1 to 5	.31	.31
6	.29	.34
0 to 6	.33	.35

[a]Observations classified according to the number of years husband's earnings or husband-wife's earnings were below $5,460.

two different patterns. The first person's earnings may have moved steadily along his fitted trend. For this person, 100 percent of the observed variance in earnings was associated with movement along his trend. At the other extreme, the second person may have experienced purely random fluctuations. For this person none of his variance reflects movement along his trend.

The bottom row of Table 3 shows that, on average, only 33 percent of the variation in a husband's earnings was due to movement along his trend. For husband and wife's earnings the proportion is 35 percent. When households are classified according to the number of years that the husband (or husband and wife) had low observed earnings, we find that this proportion does not change very much. Nontransitory movements account for only 34 percent of the total variation in earnings of husbands who were never earnings poor. The comparable figure for couples is 37 percent.

Relationship between Trend and Intercept

The main focus of this paper is on the relative size of transitory and permanent variations in earnings. The data can however, also be used to explore a related question which focuses solely on movements along fitted trends: Was there a systematic relationship between initial nontransitory earnings (γ_{0i}'s) and the growth of these earnings (γ_{1i}'s)?

Comparing growth rates of people who started from different points in the distribution of nontransitory earnings can shed light on the

validity of alternative popular views of earnings behavior. The first popular view is that the rich get richer and the poor get poorer, or at least richer more slowly. This implies that we should find a positive association between starting positions and growth rates. An opposite view is that there is regression toward the mean. Those who start off below the mean grow fastest and those who start above the mean grow slowest. This implies a negative correlation between earnings in the initial year and growth trends (i.e., slopes). The intermediate view, that there is no systematic relationship between slope and original position, might be termed the "random growth" view: because of an underlying stochastic process, some households may have above-average slopes, but these households are spread randomly across the distribution of earnings. The data in this study can be used to test these alternative theories.

To obtain unbias estimates of the covariance between slopes (γ_{1i}'s) and intercepts (γ_{0i}'s) I rely on results found in Swamy (1970). He shows that an unbias estimator of the underlying covariance is given by the covariance between the estimated slopes and intercepts, plus a term which takes into account the inherent negative covariance between OLS slopes and intercepts (see Kementa, 1971, p. 220). Applying his results to our data yields small negative covariances between slopes and intercepts both for husband's earnings (-2.0) and for husband-wife earnings (-2.6).

Since I only have six observations on each household, the asymptotic properties of Swamy's estimator cannot be applied. Monte Carlo experiments were run assuming that slopes and intercepts had a joint normal distribution with zero covariance. The means and variances of this distribution were set equal to the means and variances of the intercepts and slopes estimated from the original data. These are unbias estimates of the population parameters. By assuming that the population covariance is zero, we are assured that any nonzero covariance between slopes and intercepts of the lines fitted to the hypothetical data in the Monte Carlo experiments will reflect only sampling variability.

To generate the hypothetical data, the following steps were taken for each husband. A slope and an intercept were drawn from the joint normal distribution. Six random errors were drawn from a normal distribution with zero mean and a person-specific standard deviation (which was set equal to the standard error of estimate obtained from the husband's time trend through his actual earnings). The hypothetical slope, intercept, and six errors were used to generate six years of earnings data for each husband. A trend line was fitted to these data. The procedure was repeated for each husband, and the covariance of slopes and intercepts was calculated. The procedure was repeated 1,000 times. The procedure was repeated for couples. All the generated covariances were further away from zero than the estimated covariances for husbands and for couples. Therefore, the observed nonzero covariance of slopes and intercepts is consistent with an underlying zero covariance. The observed negative values could result from sampling variability alone.

These experiments indicate that our data support the intermediate position of no relation between initial position and growth rates. Low earners were neither more likely to catch up nor more likely to fall further behind those who started with higher earnings. This is consistent with David (1971) but contradicts Hause's (1980) finding of negative covariance for a set of much younger Swedish males who were likely to have low earnings and high slopes because of life-cycle investment decisions.

3. CHARACTERISTICS OF PERMANENTLY LOW EARNERS

Who were the permanently low earners? The National Longitudinal Surveys contain extensive economic and demographic information which can be used to estimate multinomial logit functions showing the impact of a vector of characteristics, $\underline{X}$, on the probability that a husband had low earnings in all years (P_1), some years (P_2) or in no year (P_3). The form of the estimated equation is

$$\ln P_i/1 - P_i = \underline{X}\beta_i \qquad i = 1,2,3.$$

Table 4 shows the estimated coefficients and their standard errors for two earnings concepts--nontransitory and actual earnings of the husband below \$5,460.[7] Being nonwhite significantly increased P_1, the probability of having low nontransitory (or low actual) earnings in all survey years. It did not, however, have a significant impact on P_2, being earnings poor in some (but not all) years. This is consistent with

Table 4

Demographic Characteristics of Husbands Who Were Low Earners
(Coefficients and Standard Errors of Multinomial Logit)

	Low Nontransitory Earnings			Low Actual Earnings		
	All Years	Some Years	Never	All Years	Some Years	Never
Constant	-2.27	1.17	1.10	-2.737	1.23	1.51
	(.77)	(.57)	(.50)	(1.05)	(.59)	(.60)
Nonwhite	6.53	-.390	-6.13	.925	-.013	-.912
	(1.94)	(1.529)	(1.36)	(.259)	(.154)	(.163)
Residence in South	.668	.330	-.997	.078	.015	-.094
	(.458)	(.334)	(.287)	(.064)	(.036)	(.036)
Residence in SMSA	-1.75	.523	1.23	-.239	.094	.145
	(.31)	(.219)	(.19)	(.047)	(.026)	(.026)
Age	.530	-.300	-.232	.053	-.017	-.036
	(.164)	(.117)	.104	(.022)	(.012)	(.012)
Education (grade attained)	-.992	-.048	1.04	-.090	.008	.083
	(.251)	(.185)	(.17)	(.033)	(.019)	(.019)
Unemployment rate in area	.375	-.340	-.035	-.015	-.014	.030
	(.412)	(.330)	(.285)	(.053)	(.032)	(.032)

Coe's (1978) finding that blacks had a higher one-year incidence of poverty and were more likely to remain income poor. The evidence in this study indicates that this partly reflects permanently low earnings.

The two locational variables display somewhat different patterns. Living in the South significantly increased the probability of having low (actual or nontransitory) earnings in at least one year. Region, however, did not have a significant impact on the division between those who had low earnings in some years and those with low earnings in all years. Living in an SMSA did have a differential effect. It reduced the probability of having low earnings in all years, but increased the probability of being temporarily earnings poor. This may reflect the greater opportunity for changing one's earnings in urban areas.

The coefficient on age indicates either some early retirement or decreased earnings opportunities for older workers. In spite of the fact that the mean age of husbands at the end of the survey period was 48 (and the maximum age was only 57), age significantly increased the probability of being permanently earnings poor. It seems unlikely that this is solely a reflection of early retirement, since the probability of having low earnings in some but not all years decreased with age, indicating that older people were not starting their retirement during the survey period.

The educational attainment variable had the expected impact of decreasing the probability of having low earnings in all years.

Surprisingly, education did not have a significant impact on reducing the probability of having low actual or nontransitory earnings in some years.

The average unemployment rate in the household's area of residence did not have a significant impact on any of the outcomes. This somewhat surprising result may indicate that demand-side variables did not affect cross-sectional outcomes or that this measure is a poor proxy for cross-sectional differences in labor market tightness.

In summary, the multinomial logit analysis indicates that the permanently and temporarily earnings poor have different characteristics. The permanently low earners have a higher probability of being black, less-educated, older workers living in rural areas. The temporarily low earners tend to be the younger (though still middle-aged), less educated, urban workers of all races.

4. CONCLUSIONS

Analysis of always married, middle-aged couples indicates that a considerable amount of variability in measured earnings reflects transitory variation. When these transitory fluctuations are eliminated, about 78 percent of the husbands with low earnings in a random year also had low nontransitory earnings in more than one-half of the years, and 43 percent had low nontransitory earnings in all years. For couples, the comparable earnings figures are 67 percent and 40 percent.

Mobility patterns were found to be similar at different points in the earnings distribution. No evidence was found for the assertion

that those with initial low earnings grew either slower or faster than those who started higher. Furthermore, variations in nontransitory earnings were found to be small compared to variations in observed earnings, both for households who were never earnings poor and those who were always earnings poor.

While mobility patterns were found to be similar across economic positions, demographic characteristics were important in predicting the probability a person would have low earnings in some years, all years, or no years. Being nonwhite, older, or living in a rural area significantly increased the probability the person would have permanently low earnings. Those with only temporarily low earnings were younger and had a higher probability of living in an urban area. Race did not affect the probability of having temporarily low earnings.

NOTES

[1]See Schiller (1977) for a detailed discussion of the implications of earnings mobility.

[2]Decomposing the error term into an individual specific term and a random element (see for example, Lillard and Willis, 1978) is equivalent to allowing the intercept in an aggregate earnings function to vary over individuals. I am suggesting that all coefficients may vary among individuals.

[3]Mirer (1973) uses a similar conceptual framework in which actual income is composed of a component growing at a constant rate and transitional fluctuations around this trend. See Benus (1974), David (1971), David and Menchik (1979), Hart (1976), and Hause (1980) for others who have used similar models. Several authors have estimated autocorrelation parameters as well as a time trend for each individual. Since the evidence on autocorrelated errors around the trend is mixed and since I have relatively few observations on each individual, this refinement was not tried.

[4]As expected, Schiller's study shows much more mobility than I find in my study. This is undoubtedly due in part to his including ages during which there is considerable diversity of earnings patterns (within the age cohort). Other factors may also lead to different conclusions. Schiller's study covers the very prosperous period 1957-1971, while I focus on a more recent period. Also, his sample (the data base is the Longitudinal Employer Employee Data file of

Social Security Administration records) excludes people who were either not covered by Social Security or did not earn $1,000 in 1957. The former is likely to eliminate some low earners and the latter excludes the lowest decile of the 1957 distribution of covered employees.

[5]Ordinary least squares are used to run a simple regression with earnings as the dependent variable and time as the independent variable. A separate regression was run for each husband (or couple).

[6]While comparisons among studies of earnings mobility are difficult because of methodological differences, some rough comparisons indicate my sample is less mobile than Schiller's (1977) but more mobile than Levy's (1977). Let mobility be measured by the probability that a person who was poor in the first year of the survey was also poor in all future years of the survey (a definition necessitated by the fact that Levy drops from his sample people who were not poor in the first year of the survey). The probability that a husband in my sample was immobile is .16 (.021 in Table 2 divided by .126 in Table 1). For couples the probability is .14 or .12 depending on the choice of thresholds. Levy's data yield a value of .25.

[7]Similar results were obtained for husband-wife earnings. They are available on request.

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