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Longitudinal Lessons from the Panel Study of Income Dynamics

by

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Longitudinal Lessons from the Panel Study of Income Dynamics[1]

The Panel Study of Income Dynamics is about to begin its fifteenth year of collecting annual economic information from a representative national sample of about 6,000 families and 15,000 individuals. The data have been analyzed by the project staff at Michigan and by scores of other economists, demographers and sociologists all over the United States and in several foreign countries as well. It is impossible to summarize all of the research that is based on the Panel Study data. However, the task is easier if the summary is limited to the findings of those who have exploited the panel nature of the data rather than just its cross-sectional character. Social scientists seem to have become so accustomed to the methods of analyzing cross-sectional data sets that the majority of the work done with the Panel Study has ignored its panel nature and has treated the data as if it had been gathered at a single point in time. Our task becomes even more manageable if its focus is on descriptive findings from the data. While the meaning of these findings is of ultimate interest, the facts themselves have been so surprising to social scientists and lay audiences alike that it is important to start by summarizing them and the lessons they can teach us.

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[1]This paper summarizes many of the results presented in an as yet untitled, forthcoming book on Panel Study results written by Greg J. Duncan, with Richard D. Coe, Mary Corcoran, Martha S. Hill, Saul D. Hoffman and James N. Morgan. References and further discussion of the material presented here can be found there.

Stability-Change

The classic example of erroneous inference of stability from cross-sectional evidence concerns the economic mobility of the poor. Each year, the Census Bureau surveys the population and estimates the extent of poverty and the characteristics of the individuals and families found to be poor. When placed side by side, these successive snapshots show a steady decline in the extent of poverty during the 1960's but little change during the 1970's. Year to year changes are typically less than one percent. The patterns differ somewhat if in-kind benefits are added into the income measure or if the poverty standard is adjusted for changes in real living standards rather than just for inflation, but these modifications do not change the basic picture of year-to-year stability in the extent of poverty. Furthermore, the demographic characteristics of the poor change little from one year to the next. These facts appear to confirm the stereotype that the same families found to be poor in one year are also found to be poor in the next. But while cross-sectional evidence is consistent with a picture of an unchanging poverty population, it is also consistent with a picture of complete turnover, as long as an equal number of initially nonpoor people with similar characteristics fell into poverty between the two surveys. Cross-sectional evidence has virtually nothing to say about individual economic mobility in and out of any group that is less than half the total population.

In fact, longitudinal evidence from the Panel Study shows extensive turnover. Only about two-thirds of the individuals found to be living in families with incomes below the poverty line in a given year were found to be poor in the following year, and only about one-third of them longitudinal evidence from the Panel Study paints a very different picture. Welfare receipt during the 1970's was quite widespread--nearly one-quarter of the population received cash benefits or food stamps for at least one period during the decade. But fewer than one-fifth of these recipients could be characterized as dependent upon this income for extended periods of time.[2] Many of the families receiving welfare were in the early stages of recovery from an economic crisis caused by the death, departure or disability of a husband--a process often culminated in full-time employment, or remarriage, or both. Furthermore, most of the children coming from welfare families did not themselves receive welfare benefits after they had left home to form their own households. Thus fears of dependency caused by the welfare system appear largely unfounded.

The hazards of making inferences about the dynamics of change from cross-sectional evidence applies equally well to various labor market outcomes. Successive cross-sections over the past several decades have shown little change in the shape of the distribution of wage rates or labor incomes--facts often taken to indicate little <u>individual</u> economic mobility. As with cross-sectional evidence on the incidence of poverty, this cross-sectional fact is consistent with a picture of either no economic mobility or of complete mobility. Parabolic age-earnings profiles estimated from cross-sectional data are taken as the shape of the earnings trajectory for a typical worker, even though they show average, not individual growth and could result from wildly fluctuating

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[2]More precisely, fewer than one-fifth lived in families where cash payments or food stamps received by the head and wife accounted for at least half of the total income of the head and wife in at least eight of the ten years between 1969 and 1978. Cash benefits include AFDC, SSI, and General Assistance.

Successive cross-sectional surveys have also shown dramatic improvement in the economic position of black workers over the past two decades. When compared to the average white male worker, the average black male earned less than three-fifths as much in the late 1950's, two-thirds as much in the late 1960's, and more than three-quarters as much in the late 1970's. This evidence is usually taken to indicate that a typical black worker has improved his economic status relative to his white counterpart. But comparisons of two cross-sections of workers in a given age range (e.g., between the ages of 25 and 54) involve a changing set of individuals. Workers falling into the specified age range at both points in time are indeed part of the wage comparison. But there is also a group too young to meet the age requirement in the first cross-section but who are old enough to be in the second cross-section. There is also a group that becomes too old to be included in the second cross-section. Panel Study data show that more than half of the apparent improvement in the wages of black workers between the late 1960's and late 1970's can be attributed to the favorable position of the youngest black workers and not to the gradual improvement in the relative position of blacks who were working during the entire time. Even matching birth cohorts in cross sections, comparing the 30-34 year olds in 1970 with the 35-39 year olds in 1975 is not completely satisfactory because the fraction of a birth cohort that is in the labor force changes over its life span.

Changing Family Composition

The second set of longitudinal lessons concern the family. A major goal of the Panel Study is to discover what it is about families or their environments that causes some people to improve their status family in the first year with that same family in the fifth year. But families change composition, some of them in fundamental ways. How should these fundamentally changed families be treated? In the case of a divorce or a child leaving home, one family splits into two, each with its own level of family well-being. Should it be counted as two families, one of which has undergone more of a change than the other? In the case of the child leaving home, the economic status of the new family can be compared to that of the parental family in the first year, but this is not what we generally think of as a change in family well-being. Should the families that have undergone fundamental change be eliminated, as several analyses of family income dynamics with Panel Study data have done? Such a restriction excludes nearly half of the Panel Study families that were interviewed in the twelfth wave of the study! Furthermore, it is for the changed families that the most dramatic and interesting changes have occurred. We have found that for analyses of family income dynamics, it is necessary to switch from the family to the individual as the unit of analysis. At any point in time, individuals are assembled into families, can be identified by their relationship to the head of that family, and attain a level of economic well-being that can be measured by the family income or income relative to needs of that family.[5] Over time, families change in their composition, but the economic fortunes of each individual can be identified. Indeed, family composition change can be modelled as part of the general explanation of family economic change.

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[5]In keeping with accepted practices in the mid-1960's, the husband was designated as the "head" of husband-wife families. It should also be noted that the Census Bureau's "unrelated individuals" are treated in the Panel Study as single person families.

responsibility for the children make them an extraordinarily vulnerable group in our society.

The ambiguities of the concept of the family in a dynamic context have implications that extend beyond studies of family income mobility. It is quite common to conduct cross-sectional analyses of groups defined by their marital status--for example of the labor force participation of married women or female heads of households. But while marital status is unique at a point in time, it can change over time. Restricting the sample in a dynamic analysis to individuals who remained in a given marital state is one tactic, but that runs into the same problem as an analysis of family income mobility or unchanged families--it excludes substantial numbers of individuals who are likely to undergo some of the most interesting changes in the behavior under investigation. Restricting a labor force participation analysis to women who either remained married or unmarried excludes those who undergo divorce or remarriage--changes that are often accompanied by dramatic changes in labor force participation. The task of treating changes in family composition as both a cause and a result is a messy one, but necessary in light of the potent effects of composition changes on a wide range of economic behavior.

Even the most basic, descriptive findings from the Panel Study of Income Dynamics are surprising because they contradict many of the stereotypes built up from many years of cross-sectional analysis. The economic environment that most people face is not stable but rather quite volatile. It creates large numbers of workers or families who are occasionally poor, on welfare, or in certain sectors of the labor market, but it also produces fairly small numbers who are persistently