



Panel Study of Income Dynamics Technical Paper Series

Evolution and Change in Family Income, Wealth and Health: The Panel Study of Income Dynamics, 1968-2000 and Beyond

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Chapter 6

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The origins of the Panel Study of Income Dynamics (PSID) were in Lyndon Johnson's War on Poverty, when the Office of Economic Opportunity (OEO) directed the U.S. Bureau of the Census to conduct a nationwide assessment of the extent to which the War on Poverty was affecting people's economic well-being – in short, were we winning or losing? This Census Bureau study, called the Survey of Economic Opportunity (SEO), completed interviews with about 30,000 households, first in 1966, and again in 1967.

Interest in continuing this survey of economic “trajectories” in a flexible, university-based research environment, led James D. Smith and his OEO colleagues to approach James Morgan and his Economic Behavior Program (EBP) colleagues at the Survey Research Center (SRC) at the University of Michigan. The proposal was to interview for five years a nationally representative subsample of approximately 2,000 low-income SEO households. Morgan and his EBP colleagues (Lansing, Katona, Mueller, Stafford and others) had among them extensive prior experience in economic surveys, especially in the Post War study of income, spending and wealth.

Initially, Morgan was reluctant to take the study on because the OEO design called for following only low-income households. He argued for the virtues of complete population representation, pointing out, for example, that understanding why non-poor households fell into poverty was at least as interesting as knowing why poor households climbed out. Fortunately for scientific progress, he was able to convince OEO to fund a different design. In this new design 2,000 randomly chosen OEO households who were in poverty at the time were combined with a fresh cross-section of about 3,000 households from the SRC national sampling frame. When weighted, the combined sample was representative of the entire population of the United States, including non-poor as well as poor households. And as a further research advantage, the disproportionately large number of low-income households produced large analysis samples of blacks and other disadvantaged groups.

In The Beginning (and Implications Beyond)

The other innovative design element, widely discussed within the EBP and the sampling section of SRC, was the idea of following the children of sample families as they left to form their own households. To follow such ‘splitoffs’, it was argued, would offset the problem of panel attrition. The PSID research planners realized that including the newly formed families of children who left to live on their own would both provide continued representation of such young families, and, in addition, would support the study of early adult experiences of children from different economic backgrounds and poverty exposures (Hill 1992). Use of this insight opened up the eventual study of intergenerational connections.

Response rates have been high and largely random with respect to observable variables (Fitzgerald et al. 1998). When played out over 30 plus years, these design features enable the PSID to provide:

- i) Data on a nationally representative cross-section of families and individuals in 1968;
- ii) Data on nationally representative annual cross-sections from 1969 through 1999 of families and individuals descended from the original 1968 sample (but excluding effects of immigration, which were corrected for in 2001);
- iii) 30-year plus longitudinal data on individuals in the initially-representative 1968 sample, including generational outcomes for children observed both when they were living with their parents and long after striking out on their own in adulthood; and
- iv) Shorter-run comparative longitudinal data on representative cohorts of individuals at any point between 1968 and 1999.

These design features and other tangible and intangible elements of data quality¹ have combined to make the PSID one of the most widely used and influential data sets in the social science research community. As of early 2000, over 1,000 PSID-based articles have appeared in over 100 different refereed journals; and the bibliography lists about 3,000 publications,

dissertations, and working papers. From 1972 to 1999 over 250 Ph.D. dissertations have used PSID data. In 1995-1999 over 325 published papers have appeared using PSID data. This represents a significant rise in the rate of publication over prior 5-year intervals, indicating that the research value of such a panel can accelerate decades after the initial wave. The uses are so broad that these are surely undercounts. In the 1990s, publication rates were approximately five per year in the top four economics journals, six per year in the top labor-economics journals, and five per year in the top five sociology and family journals.ⁱⁱ This extensive use of the PSID has led it to be on the National Science Foundation's list of its 50 most significant projects in its 50 year history. In this group of the 'Nifty Fifty' as they are called, the PSID is the only social science project. One cannot hope to present a comprehensive summary of what has been learned from these many studies. Our approach is decidedly selective.

Probably unappreciated at the design phase was the enormous long-run challenge of keeping track of all these family histories which were to accumulate from this genealogical or steady state design. Remember, the study had been established to continue for five years and continuance beyond that was just the normal researcher's hope of study longevity. The first interview was a simple respondent-friendly 32-page questionnaire, and pages 31 and 32 were by interviewer observation only.

Elements of the Post-War study of consumer behavior were evident. In Section C (CARS): "What year model/make is it?" was asked of each car, along with condition (good, fair, poor), insurance, car payments and annual repair costs. Multiple cars, like multiple individuals within a family, give rise to various types of relational data. The learning from earlier efforts to create files (for General Motors and Ford) with cars as the units of observation combined with characteristics of their owners provided important lessons. From this experience the PSID team was able to pioneer the construction of relational data files connecting individual family members and their personal characteristics to the characteristics (such as shared housing or family wealth holdings) of the families to which they belonged.

With time, the instrument grew dramatically longer and more involved. These factors of family evolution and instrument complexity operate multiplicatively in conjunction with temporal accumulation of prior information to challenge both the researcher's imagination and

the archiving and processing team. For researchers it is safe to say there are analysis domains which have yet to be even explored.

The year 1972 proved momentous for the PSID. Its original five years were coming to an end and, dramatically, then President Nixon abolished the OEO virtually overnight. Responsibility for the PSID was transferred to the Assistant Secretary for Planning and Evaluation (ASPE) of the Department of Health, Education and Welfare (now Health and Human Services), where visionary ASPE officials such as Larry Orr saw the value of continuing to support the PSID.

The year 1972 was also the first of Greg Duncan's 25 years with the project. As a second-year economics graduate student at Michigan, he was attracted to work at the Survey Research Center by Morgan's mile-a-minute course on survey methods and by the invaluable experience of spending his senior undergraduate year in Costa Rica as part of a field studies program. His first PSID tour of duty was as a data editor, reading the often lengthy interviewer explanations of complications that rendered responses to the PSID's many closed-ended questions problematic. Making sense of the individual family's demographic and economic data was required, and this allowed observing the myriad events behind families' seemingly tumultuous economic fortunes, and learning which pieces of data deserved the greatest trust.

The poverty focus of the PSID's early years had led to the inclusion of an eclectic set of supplemental measures that might be expected to differentiate families that climbed out of poverty from those who stayed poor. Thus, the first five annual questionnaires are filled with measures of locus of control, future orientation, achievement motivation, employment barriers, entrepreneurial activity, trust/hostility, avoidance of unnecessary risks, access to sources of information and help, and a short sentence-completion test. Given the short interview length, these measures represented a large share of the early total content.

Inclusion of subjective measures in the PSID had some interesting intellectual history behind it. Some years earlier Milton Friedman had remarked that for the Michigan EBP group, to study behavior was the most important objective. "Don't ask people what they think, ask them what they do!" The name of the research unit 'The Economic Behavior Program,' has its origins partly in this exhortation. So the use of subjective measurements and assessments had to meet the

test of whether these variables could predict interesting economic behavior. The Program, as it evolved, acquired a multi-disciplinary flavor both from the active involvement of psychologists like George Katona and from the interest of a small but highly effective group of mainstream economic advisors like Jim Tobin, Larry Klein, and Guy Orcutt (two of them Nobel Laureates).

In more recent work there are results indicating that some of the social-psychological measures included in the early PSID waves are much more predictive of long-run and intergenerational success than of short-run outcomes. Early analyses of the short-run (i.e., five-year) effects on labor-market earnings of measures such as personal control and achievement motivation failed to show robust and important connections (Duncan and Morgan 1981; Augustyniak et al. 1985). However, when levels of labor-market success in the early 1990s are related to the early-wave measures of personal control and components of achievement motivation, much more powerful linkages emerge. The collection of 25-year-old social-psychological measures accounted for as much of the variation in current earnings as did completed schooling! Thus, some of the measures have proved quite powerful in differentiating individuals according to their long- (but not short-) run successes and failures.

While these influences are intriguing, simply populating the PSID instrument with a selection of interesting social-psychological measures would come at the cost of reduced coverage of the current core – a heavy price to pay. However, some measures might be asked for only 1 or 2 waves, but not included as core variables. An example is the 1996 module on risk tolerance (Barsky et al. 1997). One hint that risk tolerance may matter for the long run comes from recent work on the intergenerational effects of these early-wave measures (Yeung, Duncan and Hill 1999). A boy's future success, as measured by eventual completed schooling and early-career attainment, is shown to be enhanced by having a risk-averse father (i.e., reports fastening his seat belt, having car or medical insurance, etc.). Perhaps having a father who dampens rather than reinforces the excesses of youth is beneficial for boys. At any rate, these two sets of long-run results suggest the value for attainment research of taking a very long view.

In The Middle Years, 1980-1992

Based on this early lack of predictive power, however, attitudes and aspirations dwindled as a share of the questionnaire content. Other, more manageable, analyses led to chapters published in the first of ten Five Thousand American Families volumes. By the late 1970s, after a decade of operation, the status of the PSID properly evolved from a “poverty study” into a unique longitudinal data resource for social scientists from several disciplines. The genealogical design was already paying off. Not only were there panel observations for analysts to work with, but the sample, with weights, could be used to describe the economic circumstances of the full U.S. population, not just the surviving remnant of an initial sample.

The broadening research themes beyond poverty spells, combined with ASPE’s declining budget fortunes, led to a transfer of primary funding for the study from ASPE to the National Science Foundation (NSF). A major threat to the continuation of the PSID emerged when the first Reagan budget proposal for the NSF arrived on the scene; it recommended a 75% cut in Social and Economic Science funding, a cut that was seen as a way station toward zero, and would have done in the PSID. Had it not been for three years of emergency funding, orchestrated by then ISR Director Tom Juster from the Ford, Sloan and Rockefeller Foundations, the PSID would have ended. Albert Rees of the Sloan Foundation remained deeply committed to the PSID and was an important sponsor well beyond the financial support which he helped to provide.

The content domains of the PSID data collection have always been two-fold. The first is to maintain a clean and consistent time series of core content - employment, family income and family structure – based on the study’s annual interviews. An illustration of the long-term payoff of this microdata-based panel is illustrated by work with the PSID to study wage dynamics over the business cycle (Abraham and Haltiwanger 1995). Only micro panel data can be used successfully to show that, net of a composition bias (changes in participation rates by different wage groups over the business cycle and specifically a disproportionate reduction in employment by low wage workers in recessions), wages of individual workers really are flexible and move in phase with the business cycle.

The second data agenda item, dictated by the desire to maintain the capacity of the PSID to address contemporary research issues and, eventually, by the longer term funding structure of the study, has been to complement the core with question supplements. Some of these topics, introduced originally as supplements, have proven to be of sufficient and persistent value that they have evolved into core content items. Notable among the components which have achieved the hard-earned right to be core topics are: the National Institute on Aging sponsored modules on wealth (1984, 1989, 1994 and every interviewing year starting in 1999 – the first year of biennial interviewing). More recently an enhanced set of health conditions (Section H) has moved to the category of core topics, and automobile ownership and purchases, originally in the PSID to understand transportation as a factor in poverty dynamics, has been reinstated as a core topic after a 27 year hiatus. The reason: to understand better the level and timing of durable expenditures *and* to understand transportation barriers to employment under state-specific limits to vehicle ownership of welfare recipients.

The surge of labor-market research in the 1970s led to the elimination of the PSID gender bias in the detail of questions asked of married women.ⁱⁱⁱ Question supplements on work histories, labor-market attachment and on-the-job training were added. In 1980, Morgan anticipated the interest in “social capital” and altruism by leading an effort to develop a question supplement on both past and possible future flows of time and money help between households (see Boisjoly et al. 1995; Hofferth et al. 1998, 1999; Hofferth and Iceland 1998). These were exciting times, since the research team had the freedom to conceive and develop supplements on contemporary topics. Coupled with the ever-expanding PSID time series of core content, this provided a growing national network of analysts with unique data drawn from a large national sample of households.

The nature of PSID operations changed somewhat when its major funding was taken over in the early 1980s by the National Science Foundation (NSF). An NSF Board of Overseers began to review and pass judgment on PSID operations. While many of their suggestions have improved the PSID considerably, the burdens of dealing with academic overseers proved considerable, at least in the initial stages of the arrangement. Perhaps this was because the study team had enjoyed such a high degree of autonomy up to that point. The creative elements of the

PSID shifted more and more to the invention and design of question modules that supplemented the PSID's demographic and economic core. About 70 percent of what it took to collect and process the data was funded by NSF, so the project became increasingly dependent on Federal agencies and, occasionally, private foundations to fund question supplements that would help cover the \$2.5 million (current dollar) annual cost.

The question supplements developed in the 1980s and early 1990s were funded primarily by the National Institute of Child Health and Human Development, Department of Health and Human Services, and the National Institute on Aging. This funding enabled the PSID to add valuable question supplements on fertility, health, wealth, children's schooling and intergenerational transfers. A Ford-Foundation-funded supplement sample of Latino households was implemented, 1990 - 1995. Funding was also secured for projects establishing links between PSID sample members and the National Death Index and between PSID respondent addresses every year and geographic identifiers. Having geographic identifiers such as census tracts, zip codes and counties, has enabled analysts to match contextual information from the decennial census and other sources to the interview information to explore the nature of neighborhood effects. These efforts have recently been revitalized and improved – to the benefit of the larger research community. Most exciting is that new methodologies are developing for the analysis of spatial data. These will allow for formal modeling of to-be-estimated spatial aggregates and modeling of changes in the environment resulting either from persons moving to a different location or from the environment at the location changing through time. This may give a boost to an empirical and theoretical literature in spatial economics, an area long dormant but believed to be due for renewed interest.

Operationally, these supplemental activities required a great deal of proposal writing and other entrepreneurial effort. This was carried out by a group of colleagues, in particular Greg Duncan (PSID Co-Director at the time), Martha Hill, Dan Hill, Charlie Brown and Jim Lepkowski. Although burdensome, the process forced the team to branch out and develop a network of contacts in government agencies and to seek occasional private sector funding. The process was facilitated by a remarkably capable and perceptive set of individuals heading research programs in government agencies, in particular Richard Suzman in NIA, Daniel Newlon

in the NSF, and Jeffrey Evans in NICHD, all of whom understood both the scientific issues and the mechanisms for converting research opportunities into funding. In 1994 Sandra Hofferth joined the PSID as Co-Director. In 1995 Frank Stafford joined as Co-director and serves as Director and Principal Investigator of the PSID today. In 201, Bob Schoeni became co-director of the study.

Some Lessons from a Long, Genealogical Panel

What a family's "life cycle" is really like

Despite the study's longitudinal nature, most analysts typically approached the first decade of PSID data as though they were drawn from a cross section. Longitudinal methods were not widely used in the 1970s, and the PSID questionnaire provided many novel measures that, when analyzed using cross-sectional methods, produced interesting and, most importantly, publishable articles. Many studies were inspired by the active program of research by the community of labor economists and focused on then-popular topics, such as earnings differences between men and women and between union and nonunion workers. Many papers were written on the economic rewards of on-the-job training, childcare choices of working parents, and, using retrospective reports, intergenerational models of completed schooling.

Juxtaposed to the cross-sectional patterns, however, were results indicating a striking degree of economic turbulence and perhaps genuine mobility at all income levels (Morgan et al., 1974; Duncan et al., 1984). The hallmark finding, suggested by prior panel studies at EBP and strongly supported by the early panel analysis of the PSID, was great income fluctuation from one year to the next, producing many transitions into and out of both poverty and affluence, and onto and off the welfare rolls. Moreover, other important changes frequently took place: roughly one in five families changed composition from one year to the next and a comparable fraction pulled up stakes and moved from one location to another. These changes in family composition were important for implementing the sample design (which included following geographic movers out of their initial clustered sample design) *and* understanding income dynamics.

What was going on? Were the income changes merely the result of measurement errors, or were families' economic fortunes really more volatile than previously believed? If the

turbulence was real, what caused it and to what extent was it voluntary or at least anticipated? And how much of the turbulence reflected true mobility – permanent changes in economic and, perhaps, social position? The data patterns were in sharp contrast to the prevalent academic conceptions of social and economic position in the 1970s. These views included unchanging social class; the slow, steady building of stocks of economically valuable (human capital) skills; and fairly predictable life-cycle changes experienced by individuals as they age. In the life-cycle view, early adulthood is usually seen as a period of relatively low income as career and marital arrangements are being sorted out. Income was expected to grow as careers stabilize and, in some cases, blossom, and as multiple earners in households increase the household's total income, whereas retirement was seen as occasioning a drop in real income, cushioned by Social Security and private pension payments and by declines in work-related expenses.

Since that time there have been many conceptions of the need to deal with fluctuating income via use of buffer stocks of liquid assets or lines of credit (Deaton 1992; Carroll 1994), but this was not a central element in empirical social science of the 1970s. Lenore Weitzman's (1985) sensational but overstated depiction of the dire economic consequences of divorce was still years in the future and had not yet been integrated into life-cycle theories. Elder's landmark studies of the Great Depression (1974) provided a vivid picture of the consequences of severe macroeconomic disruptions, but few thought that these kinds of disruptions were a regular feature of many families' lives in the prosperous second half of the twentieth century.

The prevailing, life-cycle view of income evolution, however, conformed closely to (and, indeed, has been developed from) family-income data drawn from representative cross-sections of the population showing higher levels of household income for older individuals until the late 40s, and then lower levels at older ages. If we succumb to the temptation to use these cross-sectional data on different families at various life cycle stages to represent the likely economic path of individuals as they age, we might view individual income trajectories as fairly smooth, with fluctuations occurring infrequently and at discrete points of the life cycle, such as early adulthood and retirement.

PSID as well as subsequent longitudinal household and administrative data reveal economic and social trajectories that are much more disparate and chaotic than envisioned by

early formulations of the life-cycle perspective. An idea of the scope of these fluctuations can be gleaned from Table 1, which is taken from Duncan's (1988) PSID-based analysis of household income trajectories over the eleven-year period between 1969 and 1979.^{iv} Since the longitudinal experiences of men and women are quite different, data are presented separately by gender.

\Insert table 1 about here\

The first column shows the average level of family income over the 11-year period and displays typical life-cycle patterns. Household incomes are highest for individuals who spent the entire period in their prime earning years, are somewhat lower for the initially 46-to-55-year-olds, some of whom will have retired during the 11-year period, and are lower still for the next older cohort, who were between the ages of 56 and 65 when the 11-year period began. The gap between the family incomes of men and women increases substantially over the life cycle as a result of the increasing proportion of women who are not living with spouses or partners.

To what extent do these averages conceal diverse individual experiences? The second and third columns of Table 1 show the fractions of the sample in various age and sex groups with either very rapid growth (more than 5 percent per year) or sharp declines (falling by at least 5 percent per year) in inflation-adjusted living standards over the period.^v Several startling facts emerge, the foremost of which is the prevalence of either large positive or large negative trajectories. With the exception of 46-55-year-old men, at least 40% of all groups displayed either large positive or negative economic trajectories. Life-cycle average income figures do indeed obscure a great deal of offsetting change at the individual level.

Consistent with early life cycle theory, the *average* direction of the trajectories varies predictably across the age groups. Rapid increases are concentrated in the early adult years, while most of the rapidly decreasing average trajectories are experienced by the cohort of retirement age. But there are many exceptions to these life cycle age patterns. Duncan (1988) also estimated the incidence of adverse income "events," which he defined as instances in which family-size-adjusted income fell by 50 percent or more in consecutive years. This yardstick is similar to that employed by Elder (1974) and his colleagues in their studies of the effects of the Great Depression, which found long-lasting effects of income drops of one-third or more.

The incidence of sharp drops in income-to-needs over the life course is shown in the fourth column of Table 1. The overall risk is high: between 18% and 39% of the various groups are estimated to have experienced such a drop at least once during the eleven-year period. Most of these decreases left the individuals involved with, at best, modest incomes. Not shown in Table 1 is the fact that 87% of the individuals experiencing these decreases saw their family incomes fall to less than \$25,000. The PSID has questioned respondents about their expectations of future changes in economic status. This makes it possible to calculate what fraction of the 50%+ income drops were preceded in either of the previous two annual interviews by a report that the respondent expected his or her family economic status to decline. The fifth column of Table 1 shows that a majority of all income declines and the vast majority of pre-retirement income drops were unexpected.

Taken together, longitudinal PSID data show that it is a mistake to treat the “path” of average incomes as the typical income course of individuals as they age. Family incomes are quite volatile at nearly every point in the life cycle, making rapid growth or decline in living standards more the rule than the exception. We do not have to look with Elder and his colleagues to the Great Depression to find frequent instances of economic loss and hardship; the risk of sharp decreases in living standards is still significant at virtually every stage of life. Most of the losses are unexpected. These losses occur despite our system of government safeguards (unemployment insurance, Aid to Families with Dependent Children) and intrafamily transfers that might be expected to reduce or eliminate them.

So what?

Should these newly-discovered economic fluctuations be a concern? Elder’s (1974) data provide compelling but historical evidence of circumstances in which economic shocks can have devastating effects on both adults and children. In Falling From Grace, (1988) Katherine Newman draws data from the 1980s to document the psychological and other damage brought about by downsizing, divorce and other events. Countless more specialized studies focus on the consequences of individual events such as layoffs, divorce and widowhood (e.g., Yeung and

Hofferth 1998). Perhaps contemporary economic dislocations are even more damaging than those in the 1930s, since there is much less of a sense that these events are shared by others.

On the other hand, some events producing economic losses may have benign or even beneficial effects. Children leave parental homes and older parents decide not to move in with their adult children, despite the financial advantages they would otherwise enjoy, because they value their independence. Although their incomes are lower than before retirement, retired individuals may be better off because they have more leisure time than when they were working, and the predictability of retirement has allowed them time to prepare for its financial and psychological consequences. Despite their unstable incomes, construction workers may be well off because their higher rates of pay compensate them for the instability of their jobs, while the self-employed may value “being their own bosses” over a stable salary. In short, not all instances of income instability have the same negative implications. Indeed, some have argued explicitly that income variability over the life cycle is of little analytic and policy interest (Murray, 1986). Work with the PSID data collected on housing equity, other wealth and financial flows have been used to assess the ability of families to smooth over periods of income decline.

Research on the consequences of economic fluctuations is difficult because few data sets combine reliable longitudinal information on family income with well-measured subsequent physiological or psychological outcomes. An interesting exception using PSID data related the level and stability of income to mortality, McDonough et al. (1997) treated PSID data as if they were a series of independent 6-year panels, the first spanning calendar years 1972-78, the second spanning 1973-79, and so forth, with the last one spanning the decade from 1983-1989. Within each six-year period they use the first five years to measure the level and stability of household income and the sixth and final year to measure possible mortality.

Key results are presented in Table 2. They are taken from a logistic regression in which the dependent variable is whether the individual died during the sixth and final year of the given period. Income level and stability over the preceding five-year period are combined into a single classification of families:

- i) Low and unstable income (i.e., mean income under \$20,000 and at least one big income drop^{v1} over the given five-year period;

- ii) Low but stable income;
- iii) Middle-class (mean income between \$20,000 and \$70,000) and unstable;
- iv) Middle-class and stable;
- v) Affluent and unstable; and
- vi) Affluent individuals with stable incomes (the reference group).^{vii}

\Insert table 2 about here.\

Consistent with a number of other studies, mortality risks fall as income level rises. Individuals with low incomes have 3 to 4 times the mortality risk of the affluent individuals in the reference group (see chapter 9). New in the analysis is the result that *unstable* incomes also contribute to mortality risk, but only among the middle class. When compared with the reference group of the consistently affluent, middle-income individuals with stable incomes had a marginally significant 1.5-times elevation of mortality risk. In contrast, an individual with middle-class but unstable income had a risk ratio more than three times that of individuals in the reference group, and almost as high as individuals in the two low-income groups. Instability mattered neither at the low nor high end of the income distribution, perhaps because the disadvantages of low incomes and the advantages of affluence overwhelm the possible effects of instability. An important item for future research is whether it is the income fluctuations per se or the events (e.g., unemployment, widowhood) producing them that increase the mortality risks.

Poverty and welfare dynamics

Published in 1984, the book Years of Poverty, Years of Plenty was an attempt to summarize the most important lessons from the first ten years of the PSID. It included chapters on family economic and labor-market mobility, labor market differences between blacks and whites and between men and women, and poverty and welfare dynamics. It was to be an accessible summary of findings and to a large extent found its way into classrooms and policy discussions. The interest generated by the book focused overwhelmingly on its findings on the dynamic nature of poverty and welfare use. As with the more general life-cycle results, there was a huge gap between popular perceptions of these phenomena and the data's clear message of

turbulence and mobility. When the PSID began, and continuing today, popular perceptions of the permanence of poverty and welfare receipt are widespread. We speak easily of “the poor” as if they were an ever-present and unchanging group. Indeed, the way we conceptualize the “poverty problem,” the “underclass problem” or “the welfare problem” seems to presume the permanent existence of well-defined groups within American society. Much of our data on poverty is based on large annual Census Bureau surveys in which family annual cash incomes are compared with a set of “poverty thresholds” that vary with family size. In 1998, a three-person family with an income below \$12,802 would be designated as poor; the threshold for a four-person family is \$16,400. Although the poverty rates calculated each year by the Census Bureau generate a great deal of publicity, they rarely change by as much as a single percentage point from one year to the next. Longer-run trends show jumps during recessions and a disturbing secular increase in the poverty rate among families with children.

If, let us suppose, one in five children was poor in two consecutive Census-Bureau survey “snapshots,” and that those poor children shared similar characteristics (e.g., half lived in mother-only families), what conclusion should be drawn? The observation would be consistent with an inference of absolutely no turnover in the poverty population and seems to fit the stereotype that poor families with children are likely to remain poor, and that there is a hard-core population of poor families with little hope of self-improvement. However, the same evidence is equally consistent with 100 percent turnover – or any other percentage one might pick – assuming only that equal numbers of people with similar characteristics cross into and out of poverty.

In fact, a hallmark finding of the PSID is that a great deal of turnover exists among both the poor and among welfare recipients (Duncan et al., 1984). Only a little over half of the individuals living in poverty in one year are found to be poor in the next, and considerably less than one-half of those who experience poverty remain persistently poor over many years. Similarly, many families receive income from welfare sources at least occasionally, but relatively very few do so year after year. Many descriptions of poverty experiences are possible with the PSID; perhaps the simplest is a count of the number of years in which an individual lived in a family with total annual income that fell short of the poverty threshold in that year. In

the case of the eleven-year period used for Table 1, if poverty were a persistent condition, then the sample would cluster at one of two points -- no poverty at all or poverty in all of the eleven years. If much contact with poverty is occasional, then we would expect that the persistently poor would be a small subset of the larger group that had at least some experience with poverty.

The last two columns of Table 1 show what fractions of individuals in the various age-sex groups spent at least one of the eleven years below the poverty line and those who spent more than half of the time (at least six of eleven years) in poverty. The difference in the sizes of these two groups at all stages of the life cycle is striking. Depending on the life-cycle stage, between 20% and 27% of adult women experienced poverty at least once during the eleven-year period. The risk of at least occasional poverty was considerably lower for adult men than women. Persistent poverty, defined as living in poverty for more than half of the eleven-year period, characterized fewer than one-tenth for any of the subgroups, and is usually less than 5%. An older woman's chance of experiencing persistent poverty is roughly twice that of a 25-44-year-old woman and is nearly five times as high as that of a 25-44-year-old man. Poverty rates for children, especially minority children, are much higher, with nearly one-quarter of black children living in persistent poverty (U.S. Department of Health and Human Services, 1997).

Adopting “event history” methods such as the life table and Cox regression (Tuma & Groeneveld, 1979), Mary Jo Bane and David Ellwood (1986, 1994) furthered the transformation in how social scientists and policy analysts viewed poverty and welfare dynamics. These methods enabled them to characterize the nature and determinants of poverty and welfare experiences by the duration of “spells” (i.e., the length in time of continuous periods of poverty or receipt). Essential data from the Bane and Ellwood analyses are presented in Table 3. In the case of poverty, they use the PSID to estimate what fraction of families who first begin a poverty experience do so for the short-run (i.e., 1-2 years), medium-run (3-7 years), or longer-run (8 or more years). They find that while a clear majority of poverty spells are short, a substantial subset of poor families have longer-run experiences. Heterogeneity of experiences is thus key.

\Insert table 3 about here.\

Striving to discover THE correct characterization of poverty - transitory or persistent - is fruitless, since poverty experiences are always a mixture of transitory episodes and long-term

spells. The implications of these data analyses are profound, since the heterogeneous nature of poverty experiences implies a one-size-fits-all policy approach may be ineffective. The needs arising from short duration spells call for social-insurance approaches in which fears of “dependence” need not be a concern. Some have argued that such policies need to be designed in ways to encourage financial reserves as a partial substitute for income support (Hubbard, Skinner and Zeldes 1995). Long-term poverty spells are a different matter, and call for policies that address the causes of the longer-run problems of the poor.

In the data presented in the second column of Table 3, Bane and Ellwood (1994) calculate the likely total number of years of receipt for families just starting to receive Aid to Families with Dependent Children (AFDC).^{viii} They find a roughly even distribution of first-time welfare recipients across the three time intervals; roughly one-third have very short welfare experiences, a third medium-length experiences and the final third long-term receipt. With welfare, as with poverty, heterogeneity is a key feature. Prior to the reforms of 1996, AFDC operated simultaneously as a short-term insurance and long-run support program. As shown in Table 3, many families using AFDC did so for only a few years, received help from it, got back on their feet and never returned. However, a substantial fraction of recipients was indeed long-term, raising all of the rhetoric that seems to surround contemporary discussions of welfare.

These different patterns figured prominently in the debate over welfare reform. David Ellwood (1988) proposed time limits as a means of addressing some of the problems associated with long-run receipt, although in the context of a comprehensive package of supports designed to ensure that families who wanted work could get it and that the incomes of working families remain above the poverty line. In fact, welfare reform is now being implemented in 50 different ways across the states, with some incarnations resembling Ellwood’s recommended policies but others quite different.

Road trip

News and use of data from the PSID soon spread to several European countries and generated interest in launching similar studies. The most ambitious and widely-used are the

German Socio-Economic Panel and the Swedish Household Panel (Hushållens ekonomiska levnadsförhållanden or HUS for short), both of which collected first wave data in 1984, and the British Household Panel Survey, which collected its first wave in 1990. Luxembourg, the Netherlands and the Lorraine region of France ran panels in the 1980s; quite comparable household panels in all European Community countries began in the early 1990s.

Many of these studies were shaped with input from those with PSID experience. One surprising result from comparative longitudinal analyses of income data is that the United States is far from alone in its high degree of economic mobility, particularly among the poor. This issue has important implications for the poverty debate in the United States. The Luxembourg Income Study project has documented the much higher rates of poverty prevailing in the United States than in other Western industrialized countries. Conservatives have argued that these uniquely high rates of U.S. poverty are the price we pay for our economic dynamism. Poverty is certainly less a worry if the economy will ensure that prosperity is a year or two away. To what extent are the lower poverty rates of European countries associated with lower amounts of economic mobility? Based on a project that examined poverty dynamics in the nine countries, we have the results listed in the first column of Table 4 (Duncan et al. 1995).

Data from Canada, Finland and Sweden came from administrative records; all other results were from household panel surveys. Considerable effort was expended to insure that all studies were based on representative and comparable samples and defined income levels and changes in comparable ways. To establish a comparable poverty line across countries, we used a relative threshold – 50% of the median income of all households in the country.

Insert table 4 about here. The first column in Table 4 presents a cross-sectional snapshot of poverty rates across the countries. Consistent with data from the cross-sectional Luxembourg Income Study, the poverty rate is found to be much higher in the United States, particularly among blacks, than in European countries, with the Canadians somewhere in between.

Poverty dynamics can be gauged by the fraction of poor families (defined as having incomes below 50% of the median in year t) which, in year $t+1$, have income above 60% of the median.^{ix} If one calculates the poverty escape rates based on the entire poor population within

each country (data not shown in Table 4), then the U.S. poor rank near the bottom. However, this is due largely to the fact that the U.S. poor are, on average, much further away from the poverty line than are the poor in other countries. If we take only those families with year-1 incomes close to the poverty line (i.e., with incomes between 40% and 50% of the median), then the poverty escape rates are remarkably similar across the countries (second column of Table 4). A more direct calculation of the degree of income instability among low-income families (third column of Table 4) shows, if anything, less instability in the United States.^x

Thus, the surprising result from this comparative study is that patterns of economic turbulence in other industrialized countries are similar to those in the United States. The extent of genuine economic mobility in these data is another matter. Most of the families climbing out of poverty do not end up in the middle class, and more than a few return to below-poverty-level incomes from time to time. A companion analysis of welfare dynamics (Duncan et al., 1995) found, if anything, that the U.S. recipients had shorter-term experiences than recipients in most other countries.

Poverty and child development

The fascinating PSID data on family income and poverty dynamics have also begun to be studied. Can we gain understanding of the patterns of change in family economic well-being? Since family structure itself changed so much and figured so prominently in the income changes, a number of studies were of the economic determinants and consequences of events such as divorce, widowhood and out-of-wedlock childbearing. Economists such as Gary Becker had developed interesting models of these kinds of behavior, but so too had sociologists and psychologists. By the mid-1980s, attention turned to the “so what?” questions. PSID analysts were able to provide a detailed description of the dynamic patterns of poverty, family structure and social conditions. Yet, collectively, little was known of the effects of these changes and events on the psychological and physical health of adults and on the life chances of individuals who experienced these events while growing up.

Addressing the “so what?” questions with the across-generation motion picture of economic, demographic and social conditions and events had become possible by the late 1980s. Early efforts to link economic and other events in the sample produced a mixed record of success, perhaps because older adults’ formative years predated the first PSID waves. Much more promising has been research on child and adolescent development, which has been able to draw upon more complete information, much of it dating from birth and extending to the early-adult point at which developmental and labor market outcomes can begin to be assessed.

No single discipline monopolizes theoretical and methodological insights in this field of research, but there has been remarkably little collaboration of the relevant social-science disciplines. Consequently, developmental studies designed by psychologists and sociologists attend to neither the economic dimension of family life nor economic aspects of the policy implications of the research. Moreover, economist-driven studies give short shrift to the idea of critical periods and to the careful measurement of outcome and process favored by psychologists and sociologists.

Many studies, books and reports have demonstrated correlations between children’s poverty and various measures of child achievement, health and behavior (e.g., Duncan and Brooks-Gunn 1997; Brooks-Gunn and Duncan 1997; Children’s Defense Fund 1994; Mayer 1997). As summarized in Brooks-Gunn and Duncan (1997, Table 1), the strength and consistency of these associations is striking. Relative to non-poor children, poor children are twice as likely to repeat a grade and to become a high school dropout. The ratio is 1.4 for learning disability; 1.3 for parent-reported emotional or behavior problems; 3.1 for a teenage out-of-wedlock birth; 6.8 for reported cases of child abuse and neglect; and 2.2 for experiencing violent crime.

But literature on the causal effects of poverty on children has major shortcomings, the most important of which is that family income is not reported in many data sources that contain crucial information about child outcomes. As a result, studies using these kinds of data have often used variables such as occupation, single-parenthood or low maternal education to infer family income levels. But income is far from synonymous with these other variables. As we

have seen, family incomes are surprisingly volatile, which means that there are only modest correlations between economic deprivation and typical measures of socioeconomic background.

How best to combine the insights from economics and developmental psychology to understand the effects of poverty on children? Psychology emphasizes the importance of conditions surrounding developmental stages and transitions. The greater malleability of children's development and the overwhelming importance of the family (as opposed to school or peer contexts) lead to expectations that economic conditions in early childhood may be far more important for shaping children's ability and achievement than conditions later in childhood.

The possibility that the effects of economic conditions on children's development depend upon childhood stage is foreign to most economists, whose developmental models are very simplistic and tend to focus on the role of "permanent" income. It is often assumed that families anticipate bumps in their life-cycle paths and can therefore save or borrow so as to smooth their consumption across these bumps. But while some economists recognize the potential importance of credit and other constraints faced by poor families, none had attempted to gauge the implications of the bumps in the context of children's development. The long-run scope and careful measurement of PSID income enabled Duncan et al. (1998) to investigate the importance of childhood-stage-specific poverty for completed schooling. Their sample consisted of 1,323 children born between 1967 and 1973, who were observed in PSID families for the entire period between birth and age 20-25 and constitute a representative sample of children in these birth cohorts. To allow for the differential impact of income by childhood stage, they related years of children's completed schooling to measures of family income averaged over the first, second and third five-year segments of the children's lives (Table 5).^{xi}

\Insert table 5 about here.\

Taken as a whole, the results show that the timing of economic deprivation matters a great deal for the schooling outcomes, with income early in life by far the most important. The coefficients reported in Table 5 suggest, for example, that controlling for income in other life stages and other family conditions, children in families with incomes between \$15,000 and \$25,000 during the birth-to-age-five period average two-thirds of a year more schooling. This is about one-third of a standard deviation more when compared to children in families with income

averaging under \$15,000. In contrast, income from middle childhood and adolescence failed to predict strongly to the schooling outcomes.^{xii} In short, economic deprivation occurring early in childhood appears to have the most pronounced and longest-lasting effects on children's achievement. The lens of early childhood as the critical period with respect to economic deprivation has some important policy implications (Duncan and Brooks-Gunn 1998). For example, the five-year time limits in the 1996 welfare reform legislation are not as worrisome as sanctions, since few families hitting five-year limits will contain young children living with them, but many families sanctioned off TANF programs or who have to work at inflexible jobs without paid leave can have young children placed in a very stressful environment with potential for long-term costs for their schooling and achievement (Hofferth et al. 2000; Hofferth 2002).

Children in PSID families, 1997 and beyond

In recent years, the PSID has been used to examine the consequences of events and circumstances during the years children are living with their parents for children's educational and economic successes as young adults (Brooks-Gunn et al. 1993; Duncan, Brooks-Gunn and Klebanov 1994; Duncan et al. 1998; Haveman and Wolfe 1994; McLanahan and Sandefur 1994). Until 1997, such measures were collected annually from interviews with one adult respondent. For all individuals in the sample under age 30, these measures are available from birth. Once children become teenagers, information about their marital, fertility, and labor force activities is obtained, and, once they form their own household, the outcomes of early events, such as completed schooling, are available. However, the only information on children as children had been limited to age, sex, and race. Therefore, we did not know the mechanisms by which early family, school, and neighborhood experiences facilitate or detract from leading a healthy, productive adult life. In 1995, funding from the Assistant Secretary of Planning and Evaluation, Department of Health and Human Services, permitted the PSID to include a set of questions asked of adults about their own and their young children's school successes, and failures. While this was an important first step, the supplement was limited. It contained no direct assessments

of children's development and experiences. The Child Development Supplement to the PSID (PSID-CDS) rectified that situation.

With funding from the National Institute of Child Health and Human Development (NICHD), the Child Development Supplement collected information in 1997 on up to two randomly selected 0-12-year-old children of PSID respondents both from the primary caregivers and from the children themselves (Hofferth et al. 1999).

Child Outcome Measures. For the most part this study used existing measures to assess children and their families. Children's well-being was defined in terms of cognitive/academic, socioemotional, and physical development. Outcome measures included: (1) school progress, including academic achievement and cognitive ability, grade failure/progression, highest grade completed, verbal and math ability and literacy; (2) socio-emotional well-being; and (3) health. Children age 3 and older are assessed. Another set of items measured child health and functioning around the time of birth and at the time of the survey.

Child and Family Process Measures. Following these child assessment measures, the primary caregiver answered a set of interviewer-administered questions about each child, for up to two children. These questions were designed to obtain more information about the family and to assess parental functioning and parent-child and parent-parent relations. Measures included a self-esteem scale, a self-efficacy scale, a depression scale, and assessments of economic strain, social support, household tasks, food security, schooling and school progress, and parental engagement in school.

One unique aspect of this study was the collection of information from a second caregiver. While assessment of father involvement in the lives of their children is a key goal, we define the second caregiver quite broadly, since in many low-income households the second caregiver is a grandmother. Additionally, father involvement was obtained in 1997 whether or not the father lives with the child.

Parental, School, Community, and Governmental Resources. Through 1997, the PSID core survey collected annual information on the number of parents, number and ages of children, presence of other adults, income, employment, earnings, hours of work, and education of all

family members. Measures of parental financial resources are excellent; all major components of wealth as well as income are assessed. In 1997 a child support supplement was funded for the first time and included in the core to provide information on fathers' financial contributions to children. However, information about expenditures on children in the core is limited, as are questions about the quantity and quality of time spent with children. The PSID-CDS obtained information about parental expenditures on child care and school and about children's participation in nonparental child care and early childhood programs from birth until school entry, and at the time of the survey.

Another unique aspect of the 1997 CDS was the collection of a time diary of children's activities. Previous national data on children's time use were collected in 1981 by the University of Michigan on a small sample of several hundred middle class families. Many studies continued to utilize these numbers in the 1990s even though they were outdated (Task Force on Youth Development and Community Programs, 1992). Parental time with children is one area in which data reported in stylized (non-diary) form are considered unreliable because of a strong social desirability bias. A study using U.S. data from the 1920s to the 1980s reported that parental time caring for children rose rather than declined over the period, in spite of increased maternal employment (Bryant and Zick 1996). Until 1997 no data were available to document changes since 1981.

Resources from schools and preschool programs are important to children's lives. The PSID-CDS collected information from the teacher and administrator of the child's school or child care center/program, family day care home, or other day care provider. The teacher/caregiver provided information on the child, on activities in the classroom, and on his or her own characteristics. The administrator provided information on the characteristics and composition of the school and its student body. The teacher instrument for elementary school included a diary of child and teacher activities during the school day, teaching style, the resources available in the classroom, and the characteristics of students and teacher. Teachers provided information on child behavior using the same measures used by parents.

Finally, the PSID Child Development Supplement includes a rich set of measures of the economic, social, and policy characteristics of the community in which the child lives.

Questions asked directly of parents include the extent to which parents know their neighbors, participate in community activities, and view their neighborhood as “safe.”

What Have we Learned So Far?

In 1981 only about half of children lived in families with an employed mother, compared with 2/3 in 1997. One-quarter of the CDS children lived in traditional two-parent families in which the father worked and the mother was a homemaker. In contrast, 42 percent lived in families in which both parents worked. Four percent lived in two-parent families in which the father did not work. A second change was the increased proportion living with only one parent. Twenty-eight percent lived with a single parent, compared with only twenty percent in 1981. Parents were better educated in 1997. Twenty-four percent had completed some college, compared with 16 percent in 1981. They also were more likely to have one or two instead of 3 children. The median family income for families with children under age 13 was almost \$40,000 (Hofferth 1998).

As a result of such demographic changes since the early 1980s, we find that children’s activities have changed. The amount of free time has dropped slightly, leading to reduced time playing, watching television, eating, and just hanging out (Hofferth and Sandberg 2001b). Instead, children spend more time in structured activities such as school, day care, playing sports, and in art activities. Mothers have less time for preparing food and clothing at home, so children wind up spending more time accompanying their parents shopping and devoting less time to helping with traditional household tasks. Other changes appear to be linked to education-related changes in attitudes and values regarding appropriate activities for children, such as the increase in sports participation, art activities (which includes music lessons), reading, and personal care and the decline in time spent in church-related activities.

Even with these changes, children’s lives in 1997 differed only in degree from those of children in 1981. In 1997, children slept 74 hours a week, spent 25 hours in school and day care, 9 hours eating, and 9 hours in personal care (Hofferth and Sandberg 2001a). That left about 51 hours of discretionary time. Children spent about one-quarter of that time watching television and another one-quarter playing. Children spent very little time reading for pleasure (1.2 hours

per week) or studying (2 hours). In their remaining free time children participated in sports, visited, did household chores, and just “hung out.”

Do these changes in children’s time matter for children’s achievement and adjustment? Family characteristics are most important to children’s development. Living with parents who have more schooling, living with two parents, having a mother with higher test scores, having parents who expect their child to complete college, and being from a smaller family are associated with children having higher levels of achievement (Hofferth 1998). Even after adjusting for family differences, however, children’s activities are associated with achievement and adjustment. Participation in sports and reading are associated with children’s achievement, particularly problem solving and on verbal tests; Spending more time eating, sleeping, and time in sports participation is also associated with reduced behavior problems. Active leisure is more valuable than passive leisure such as watching television and just hanging out for achievement, and participation in family and social activities is associated with better social adjustment.

One of the big questions is whether, when they engage in paid work, mothers lower their investment in children, who may suffer consequent disadvantage in cognitive achievement and adjustment. Research using 1997 CDS diary estimates of maternal time spent with children found only small differences (2.4 hours per week) between the time children spent engaged in activities with mothers in two-parent dual earner households and two-parent single earner households (Hofferth 2001), though there was a larger difference (5.2 hours) in the time employed and nonemployed mothers were available to children. The largest difference in engagement lay between two-parent families and single parent families, a difference of 9 hours per week for dual-earner two-parent versus single employed-mother families and 6 hours per week for two vs. one-parent nonemployed-mother families.

A major question is whether time with parents has increased or decreased over the past several decades, as women moved into the workforce and single parents raise increasing numbers of children. Though there have been major demographic changes in the U.S. population, analyses indicated that changes in population structure between 1981 and 1997 would have decreased children’s time with mothers and fathers if they had not been offset by positive changes in parental behavior (Sandberg and Hofferth 2001). Over all types of families,

the most important demographic factor affecting children's time with parents between 1981 and 1997 was the increase in single parent families, not maternal labor force participation. The decline in paternal time due to increasing numbers of parents rearing children without partners shows up as a lack of increase in overall parental time in all families, in spite of an increase in mothers' time. In two parent families, however, decreased time with mothers because of increasing maternal work was offset by increasing time with mothers and fathers due to behavioral changes. The behavioral changes uncovered here over a period of rapid social change are encouraging sign-posts for children. They run counter to popular claims that increased maternal employment and paternal indifference have reduced parental time with children in two-parent families, though low parental time is still problematic for children living in single-mother families.

Long-term earnings structure changes

In addition to the study of family influences on schooling and development, earnings and adult outcomes, the PSID data can be used to test theories of the changing nature of work and the structure of wages. The availability of a long time series on labor income in the PSID allows the examination of major changes in the labor market. The mid 1970s to late 1980s were the era of skill-based technical change. Despite the rise in the share of the labor force with higher education, the earnings of these workers continued to rise both in absolute terms, and even more, relative to those with less education. Data from the PSID on the percentile distribution of annual labor earnings for adult men employed at least 1500 hours per year show that throughout much of the lower part of the earnings distribution, there was a downward slide from 1973 to 1985, which was continued into the Gulf War Recession (1991). Since 1990 (and in many cases since 1985), the CPI (Consumer Price Index) adjusted wages show increases throughout much of the lower part of the earnings distribution (5-30th percentiles), and the upper part of the earnings distribution (75th-95th percentiles). Only in the middle percentiles was there earnings stagnation,

1985-1995. When we allow for a 1% per year CPI bias, even the middle percentiles experienced a rising standard of living over the period of the mid-1980s to the mid-1990s.

A parallel analysis for adult women shows even better earnings growth between the mid-1980s and the mid-1990s. For women, even in the middle percentiles, earnings were rising at a rate above the CPI. At the 50th percentile, earnings rose 13 percent, from \$21,627 to \$24,280. Allowing for CPI bias, this is in the range of 25 percent per decade. At the upper part of the earnings distribution, the gains net of inflation were higher still. For the 90th percentile the 1985-1995 gains were 19.5 percent and for the 95th percentile the annual earnings of women working 1500 or more hours rose from \$47,887 to \$60,648, a gain of 26.6 percent above the CPI.

Rising wages and labor income of educated workers, combined with rising relative supply appears to be explainable by a simple general equilibrium model where skilled and less skilled workers initially trade final or intermediate goods which are more specialized to each. Information technology effects a type of 'skill-extensive technical change' which allows the skilled workers to produce things previously in the domain of the less-skilled. This technological competition (Gomery 1994) from the skilled workers erodes the economic role of the less skilled workers, reducing their income even as overall GDP rises (Johnson and Stafford 1998). The predicted result is economic growth in which skilled workers receiving more than 100 percent of the rising GDP growth occurs but with redistribution away from the less skilled. Did the low earner families move up the income scale by also acquiring job skills? Further analysis shows that much of the gain to college educated workers is among the younger cohorts and for those in what the Department of Commerce had identified as IT (Information Technology) industries (Kim, Johnson and Stafford 2001). Additional work shows that beyond these cross-sectional snapshots there has been increased wage mobility, both upward and downward, from the mid-1970s on. (Gottshalk and Moffitt 1994). However, much of the increase in intertemporal variability is within the upper decile of earnings.

The 1990s and Beyond

What Should PSID Ask? The New Core, Supplements, and the Original Core

With new technology enhancing the ability to collect, process and deliver data, what should be asked of whom? The “of whom” part is still heavily shaped by the genealogical structure set out in design discussed earlier and much of the “what” part is derived from the long continuity of measures on income and employment, housing and food consumption which are part of the core. In recent years PSID staff have worked closely with the PSID Board to redefine the core as part of a special effort to increase information about children living in PSID families. This has given rise to a new and broader set of measures which are considered to be core items – to be asked as part of every biennial PSID interview. Changes to the sample were made in 1997 to control costs (arising from the sample growth resulting from splitoffs) and to achieve better representation (e.g. of immigrants). Going to biennial interviewing to reduce costs has led to pressure to increase the interview length to what seems an effective upper limit of 75 minutes.

Areas for increased use of the PSID which have led to a redefinition of the research directions include:

- 1) Intergenerational transfers and intergenerational research;
- 2) Wealth, savings, and consumption;
- 3) Lifecourse health and economic status;
- 4) Child development;
- 5) New welfare sequences to capture changing welfare policy;
- 6) Immigration.

Measuring Wealth and Health

Representative of these areas, and one which interacts with many of the long-standing core topics, is wealth. Economic research in the study of wealth seems to have followed the stock market: high and rising to a peak in the mid to late 1960s and then a long period of stagnation until the last decade or so. Fortunately the idea of adding wealth to the PSID came in the early 1980s when it was decided that enough information on lifetime economic histories was available to make the study of the transitions into retirement a priority area. The first wealth data were collected in the PSID in 1984 with support from the National Institute on Aging. Then, as now, there was a research interest in household responses to capital gains, particularly those gains from rising equity values. By measuring wealth increases in excess of active savings flows one could, it was argued, measure and analyze capital gains. It was also decided to add information on prospective retirement plans (for those age 45-64), on global health and health care utilization, and on pensions of the head and wife. To complete the financial picture, a wealth and savings module was designed, which when combined with the long-standing series on housing and mortgages, would provide a measure of household wealth and active savings. Measuring active savings (money put into or taken out of the various items in a household wealth portfolio) required a sufficient time interval. A five-year interval was chosen and the companion active savings measures were added in 1989. The wealth and savings measures were asked of all families, not just those nearer to retirement.

The quality of the wealth data was enhanced by the pioneering use, starting with the PSID in 1984, of “unfolding bracket” questions (Juster and Suzman 1995; Juster and Smith 1997; Juster, Smith and Stafford 1999; Hurd and McFadden 1996). For details about the procedure, see Juster’s introduction to this Part of this volume. The number of families not reporting either a dollar amount or a bracket in the PSID wealth categories is surprisingly small, typically under 2 percent (Hurst, Luoh and Stafford 1998, Appendix Table A1).

The main shortcoming of the PSID data for analysis of wealth and saving behavior appears to be at the very upper end of the income and wealth distribution, where PSID coverage

is not only sparse, but is also based on a visibly unrepresentative sample of very wealthy households. However, for the part of the wealth distribution below the top *one* or *two percent*, the PSID data appear to be very comparable to the demonstrably high-quality SCF data (Juster, Smith and Stafford 1998). Even beyond the 98th percentile, the two surveys diverge greatly only beyond the 99.5 percentile where SCF has the advantage of a high wealth oversample.

Learning about wealth

Early work demonstrated the impacts of the level and stability of income on odds-ratios of mortality for individuals age 45-64 (1972-1989). General health status has also been shown to have a strong correlation with household wealth (Table 9, Smith, 1999). Among the population under age 55, the 1994 wealth ratio of those family heads reporting themselves to be in excellent health compared to those reporting poor health, is 8 to 1 for those 25-34, 6 to 1 for those age 35-44, and about 4 to 1 (on a much larger base) for those age 45-54. At this stage the interrelations among income from the labor market, lost income from injury or illness, health gains from greater resources available to purchase medical care or more nutritious foods, are likely elements in an empirical framework to understand the strong relation between wealth and health. Yet both theorizing and empirical work on this process are just beginning. What is the role of community influences? Do those who are healthier expect to live longer and thereby plan to acquire more wealth to support longer consumption streams? If so, do they look to start early in life? Are both health and wealth status driven by a common element such as future orientation, avoidance of unnecessary risk, or planning? How much of the wealth/health relation depends on medical and biological factors, how much on social factors and family relations? The timing of medical events as they relate to economic and family outcomes over the life course will become researchable once we accumulate histories, both retrospectively (1999) and prospectively from our recently designed health modules for the PSID.

Conclusion

The PSID began in 1968 as a project with a specific mission: to understand the changing fortunes of lower income families as part of the War on Poverty. To fulfill this mission several initial design features were implemented. First, a representative national sample was combined with an oversample of initially poor families. Second, to maintain a representative sample of young families, even over the initially planned five-year duration of the study, older children who left home to form their own families were added as new sample members. Third, by combining these three elements (the initial sample, the poverty oversample, and the newly formed families from each) through the use of weights, the resulting data portray the full U.S. population. With time this sample design has a weakness: the absence of new immigrants and the children of new immigrants born after the initial sample was drawn in 1968. By adding in this missing part of the evolving U.S. population in 1997 and 1999, the study continues to provide descriptive and analytic data on the full U.S. population some thirty years later.

The initial content domains of the PSID were quite circumscribed. Besides attitudes and beliefs, the main quantitative elements were the money incomes and other financial resources flowing into the family to each of the individual family members. Expenditures were measured, where practical. The categories were chosen to facilitate an understanding both of the resources needed to participate in labor markets or in other ways earn income (such as ownership of a functioning car) and to evaluate the real standard of living (housing, food expenditures and numbers of equivalent adults in the family). The PSID became recognized as a unique resource quite early in its history. The reasons are simple: The strength of the sample design and success in following splitoffs and continuing panel families was combined with a growing array of important panel measures of key economic and demographic variables with great analytic potential.

Through time, many of the initial attitudinal measures were curtailed and an expansion of the initial behavioral content occurred. By continuing to select content which fits together – in the sense of providing a comprehensive set of measures on family well-being its antecedents over the life course and across generations, and its correlates – the PSID has become perhaps the

most widely used research dataset in the social sciences. Research use of the PSID data, rather than declining as the ‘interesting questions’ in its focus have been studied, has, to the contrary, accelerated in the most recent decade. There is every reason to believe this will continue into the future.

References

- Abraham, Katherine G. and John C. Haltiwanger. 1995. Real wages and the business cycle. *Journal of Economic Literature* 33:1215-1264.
- Augustyniak, Sue, Greg J. Duncan and Jeffrey Liker. 1985. Panel data and models of change: a comparison of first difference and conventional two-wave models. *Social Science Research* 14:80-101.
- Bane, M. J. and David T. Ellwood. 1986. Slipping in and out of poverty: the dynamics of spells. *Journal of Human Resources* 21:1-23.
- Bane, M. J. and David T. Ellwood. 1994. *Welfare realities*. Cambridge, MA: Harvard University Press.
- Barsky, Robert B., F. Thomas Juster, Miles S. Kimball and Matthew D. Shapiro. 1997. Preference parameters and behavioral heterogeneity: an experimental approach in the health and retirement study. *The Quarterly Journal of Economics* 112:S537-S579.
- Belli, Robert F., William Shay and Frank P. Stafford. 2001. Event history calendar and question list survey interviewing methods: a direct comparison. *Public Opinion Quarterly* 65:45-74.
- Boisjoly, Johanne, Sandra L. Hofferth, and Greg Duncan. 1995. Access to social capital. *Journal of Family Issues* 16:609-631 .
- Brooks-Gunn, Jeanne and Greg J. Duncan. 1997. The effects of poverty on children. *The Future of Children* 7(2): 55-71.
- Brooks-Gunn, Jeanne, Greg J. Duncan, Pamela Klebanov and Naomi Sealand. 1993. Do neighborhoods influence child and adolescent development? *American Journal of Sociology* 99:353-395.
- Bryant, W.K. and C. Zick. 1996. An examination of parent-child shared time. *Journal of Marriage and the Family* 58:227-237.
- Burkhauser, R. and Greg J. Duncan. 1994. Sharing prosperity across the age distribution: a comparison of the United States and Germany in the 1980s. *The Gerontologist* 34:150-160.

- Carroll, Christopher D. 1994. How does future income affect current consumption?" *The Quarterly Journal of Economics* 109:111-47.
- Children's Defense Fund. 1994. *Wasting America's future*. Boston: Beacon Press.
- Deaton, Angus. 1992. *Understanding consumption*. Oxford: Clarendon Press.
- Duncan, Greg J. 1988. The volatility of family income over the life course. In *Life-span development and behavior*, edited by P. Baltes, D. Featherman, and Richard M. Lerner. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Duncan, Greg J., and Jeanne Brooks-Gunn (eds.) 1997. *The consequences of growing up poor*. New York: Russell Sage.
- Duncan, Greg J., Jeanne Brooks-Gunn and Pamela K. Klebanov. 1994. Economic deprivation and early childhood development. *Child Development* 65:296-318.
- Duncan, Greg J., Bjorn Gustafsson, Richard Hauser, Guenther Schmaus, Stephen Jenkins, Hans Messinger, Ruud Muffels, Brian Nolan, Jean-Claude Ray, and Wolfgang Voges. 1995. Poverty and social-assistance dynamics in the United States, Canada and Western Europe in *Poverty, Inequality and the Future of Social Policy: Western States in the New World Order*, edited by Katherine McFate, Roger Lawson and William J. Wilson. New York: Russell Sage.
- Duncan, Greg J., Richard Coe, Mary Corcoran, Martha Hill, Saul Hoffman, and James N. Morgan. 1984. *Years of poverty, years of plenty: the changing economic fortunes of American workers and families*. Ann Arbor: Institute for Social Research.
- Duncan, Greg J. and James N. Morgan. 1981. Sense of efficacy and changes in economic status--a replication. *Journal of Human Resources* 16:649-657.
- Duncan, Greg J., Wei-Jun Yeung, Jeanne Brooks-Gunn and Judith Smith. 1998. How much does childhood poverty affect the life chances of children? *American Sociological Review* 63:406-423.
- Elder, G. H. 1974. *Children of the great depression*. Chicago: University of Chicago Press.

- Ellwood, David. 1988. *Poor support: poverty and the American family*. New York: Basic Books.
- Fitzgerald, John, Peter Gottschalk, and Robert Moffitt. 1998. An analysis of sample attrition in panel data: the Michigan panel study of income dynamics." *Journal of Human Resources* 33:251-299.
- Gomery, Ralph E. 1994. A Ricardo model with economies of scale. *Journal of Economic Theory* 62:394-419.
- Gottshalk, Peter and Robert Moffitt. 1994. The growth of earning instability in the U.S. labor market." *Brookings Papers on Economic Activity*, 2:217-272..
- Haveman, Robert and Barbara Wolfe. 1994. *Succeeding generations: on the effects of investments in children*. New York: Russell Sage.
- Hill, Martha. 1992. *The panel study of income dynamics*. Beverly Hills: Sage Publications.
- Hofferth, Sandra. 1998. *Healthy environments, healthy children: children in families*. Ann Arbor, MI: Institute for Social Research.
- Hofferth, Sandra. 2001. Women's employment and care of children in the United States. *Women's Employment in a Comparative Perspective*. T. Van der Lippe and L. Van Dijk (Eds). New York: Aldine de Gruyter.
- Hofferth, Sandra L. 2002. Did welfare reform work? Implications for 2002 and beyond. *Contexts: A Journal of the American Sociological Association* 1:45-51.
- Hofferth, Sandra L., Johanne Boisjoly, and Greg Duncan. 1998. Parental extrafamilial resources and children's school attainment. *Sociology of Education* 71(July):246-268.
- Hofferth, Sandra L., Johanne Boisjoly, and Greg Duncan. 1999. The development of social capital. *Rationality and Society* 11:79-110.
- Hofferth, Sandra, Pamela Davis-Kean, Jean Davis, and Jonathan Finkelstein. 1999. *The child development supplement of the panel study of income dynamics: 1997 user guide*. Ann Arbor, Institute for Social Research, University of Michigan, February.

- Hofferth, Sandra L. and John Iceland. 1998. Social capital in rural and urban communities. *Rural Sociology* 63:574-598.
- Hofferth, Sandra L. and John F. Sandberg. 2001. How American children spend their time. *Journal of Marriage and the Family* 63(May):295-308.
- Hofferth, Sandra L. and John F. Sandberg. 2001. Changes in American children's time, 1981-1997. Pp. 193-229 in *Children at the millennium: where have we come from, where are we going?* Oxford: Elsevier Science Ltd.
- Hofferth, Sandra L., Julia Smith, Vonnie C. McLoyd, and Jonathan Finkelstein. 2000. Achievement and behavior among children of welfare recipients, welfare leavers, and low-income single mothers. *Journal of Social Issues* 56:747-774.
- Hubbard, R. Glenn, Jonathan S. Skinner and Stephen P. Zeldes. 1995. Precautionary saving and social insurance. *Journal of Political Economy* 103:360-399.
- Hurd, Michael and Daniel McFadden. 1996. The effects of anchoring on the distribution of consumption and saving. Paper presented at the NBER Summer Institute on Aging.
- Hurst, Erik, Ming Ching Luoh and Frank P. Stafford. 1998. The wealth dynamics of American families. *Brookings Papers on Economic Activity* 1:267-337.
- Johnson, George E. and Frank P. Stafford. 1998. Technology regimes and the distribution of real wages. In *Microfoundations of economic growth: a Schumpeterian perspective*, Gumcar, Eliasson and Green, eds. Ann Arbor: University of Michigan Press.
- Juster, F. Thomas and James P. Smith. 1997. Improving the quality of economic data: lessons from the HRS and AHEAD. *Journal of the American Statistical Association* 92:1268-1278.
- Juster, F. Thomas, James P. Smith and Frank P. Stafford. 1999. The measurement and structure of household wealth. *Labour Economics* 6:253-75.
- Juster, F. Thomas and Richard Suzman. 1995. An overview of the health and retirement study. *Journal of Human Resources* 30(Supplement):S7-S56.

- Kim, Young-Seong, George E. Johnson and Frank P. Stafford. 2001. Information technology and income dynamics of American families. Working Paper, University of Michigan, Ann Arbor.
- Luwig, Jens, Greg J. Duncan, and Paul Hirschfeld. 1998. Urban poverty and juvenile crime: evidence from a randomized housing-mobility experiment. Northwestern University/University of Chicago Joint Center for Poverty Research Working Paper, November 1998, #2.
- Mayer, Susan. 1997. *What money can't buy*. Cambridge, MA: Harvard University Press.
- McDonough, Peggy, Greg J. Duncan, David Williams, and James House. 1997. Income dynamics and adult mortality in the U.S., 1972-1989." *American Journal of Public Health* 87(9):1476-1483.
- McLanahan, Sara and Gary D. Sandefur. 1994. *Growing up with a single parent: what hurts, what helps*. Cambridge, MA: Harvard University Press.
- Morgan, James N. et al., 1974. *Five thousand American families -- patterns of economic progress*, Vol. I. Ann Arbor: Institute for Social Research.
- Murray, Charles. 1986. According to age: longitudinal profiles of AFDC recipients and the poor by age group. Prepared for the Working Seminar on the Family and American Welfare Policy.
- Newman, Katherine. 1988. *Falling from grace: the experience of downward mobility in the American middle class*. New York: Free Press.
- Sandberg, John F. and Sandra L. Hofferth. 2001. Changes in children's time with parents: United States, 1981-1997. *Demography* 38:423-436.
- Smith, James P. 1999. Healthy bodies and thick wallets: the dual relation between health and economic status. *Journal of Economic Perspectives* 13:145-166.

- Task Force on Youth Development and Community Programs. 1992. *A matter of time: risk and opportunity in the nonschool hours*. New York: Carnegie Corporation.
- Tuma, N.B. and L.D. Groeneveld. 1979. Dynamic analysis of event histories. *American Journal of Sociology* 84:820-854.
- United States Department of Health and Human Services. 1997. *The green book: overview of entitlement programs, 1997*.
- Weitzman, Lenore. 1985. *The divorce revolution*. New York: Free Press.
- Yeung, Wei-Jun J., Greg J. Duncan, and Martha S. Hill. 2000. Putting fathers back in the picture: parental activities and children's adult attainments. *Marriage and Family Review* 29:97-113.

Yeung, W. Jean and Sandra L. Hofferth. 1998. Family adaptations to income and job loss in the U.S. *Journal of Family and Economic Issues* 19:255–283. Table 1: Level and stability of income, 1969-79 by age and sex

Age in 1969/Sex	Mean income level, in thousands of 1985 \$	Percent with income rising rapidly	Percent with income falling rapidly	% with big (>50%) drops in income at least once	Of those with drops, % expecting income loss	Percent poor at least once	Percent poor 6 or more years
25-54 yrs							
Men	\$43.1	35%	6%	18%	9%	13%	2%
Women	40.0	32	10	24	6	20	5
46-55 yrs							
Men	38.7	22	13	26	12	14	3
Women	32.3	21	20	33	24	21	6
56-65 yrs							
Men	29.5	7	38	38	34	17	4
Women	22.1	6	35	39	25	27	9

Note: Taken from Duncan (1988). “Rapid rise” in size-adjusted income is an increase greater than 5% per year. “Rapid fall” in size-adjusted income is a decrease greater than 5% per year. Over an eleven-year period, an annual real growth rate of 5 percent will increase a family's real income by over 70 percent; a negative 5 percent rate will nearly cut it in half.

Table 2: Odd-ratios of mortality for individuals aged 45-64 years, by income level and stability, 1972 through 1989

Five-year mean income level and stability	Odds ratio	95% confidence interval
Income <\$20,000 and 1+ income drops	3.7*	2.4-5.7
Income <\$20,000 and no income drops	3.4*	2.2-5.1
Income \$20-\$70,000 and 1+ drops	3.2*	1.9-5.5
Income \$20-\$70,000 and no drops	1.5*	1.0-2.0
Income >\$70,000 and 1+ drops	1.4	0.7-2.6
Income >\$70,000 and no drops	1.00 (reference group)	-

Note: Taken from McDonough et al. (1997), Table 3. “Income drop” is defined as a situation in which size-adjusted family income fell by 50% or more in consecutive years.

“*” indicates that the coefficient is at least twice its standard error. Odds ratios are adjusted for age, sex, race, family size and period.

Table 3: Distribution of lengths of spells of poverty and AFDC, for individuals first beginning spells of poverty and AFDC

	Poverty, for nonelderly persons beginning a poverty spell	Aid to Families With Dependent Children, for women first beginning an AFDC spell
1-2 years	60%	36%
3-7	26	35
8+	14	29
TOTAL	100%	100%

Source: Poverty data taken from Bane and Ellwood (1986, Table 2); AFDC data taken from Bane and Ellwood (1994, Table 2.3)

Table 4: Poverty rates, poverty transitions and income changes of low-income families in mid-1980s

Country	% of families with incomes below 50% of median	% of “near poor” climbing out of poverty	Typical % income change for families in bottom decile
Canada	17%	23	21%
Finland	3	47	28
France-Lorraine	4	32	10
Germany (West)	8	24	18
Ireland	11	22	22
Luxembourg	4	29	10
Netherlands	3	23	8
Sweden	3	45	9
United States	20	22	15
German foreign residents	18	23	12
U.S. Blacks	49	15	8

Note: Taken from Duncan et al., 1997, Table 11.2. “Poverty” is defined by income less than 50% of median income in given country. “Near poor” are families with incomes 40-50% of median in base year. “Climbing out” is defined as year 1 to year 2 income change from <50% of the median to >60% of the median.

Table 5: Effects of stage-specific parental income on completed schooling and high-school graduation rates

Income averaged over:	Additional years of completed schooling
AGE 0-5	
Below \$15,000	.00 (reference group)
\$15,000-\$24,999	.66*
\$25,000-\$34,999	.73*
\$35,000-\$49,999	.78*
\$50,000 and above	1.41*
AGE 6-10	
Below \$15,000	.00 (reference group)
\$15,000-\$24,999	.16
\$25,000-\$34,999	.24
\$35,000-\$49,999	.44
\$50,000 and above	.33
AGE 11-15	
Below \$15,000	.00 (reference group)
\$15,000-\$24,999	.34
\$25,000-\$34,999	.41
\$35,000-\$49,999	.36
\$50,000 and above	1.08*

Note: Based on Duncan et al., (1998), Table 3. “*” indicates that the coefficient is at least twice its standard error. All regressions include controls for mother’s schooling, family structure, race, gender, and the age of the mother at the birth of the child, total number of siblings, whether ever lived in South, number of geographic moves and number of years mother worked for 1000+ hours. Parental income is inflated to 1993 price levels.

ⁱ At the website (www.umich.edu/~psid/) is a feature, PSID Data Quality, which reports on the studies conducted to assess the quality of measures such as wealth, income, health, demographic histories, and new measurement methodologies (Belli, Shay and Stafford 2001).

ⁱⁱ These publication data come from the 2000 PSID bibliography on the website.

ⁱⁱⁱ Mary Corcoran, Martha Hill and Karen Mason spearheaded the effort to establish comparability between the labor market information collected from men and women.

^{iv} An extension of this analysis by Burkhauser and Duncan (1994) shows that the basic patterns changed little between the 1970s and late 1980s.

^v Over an eleven-year period, an annual real growth rate of 5 percent will increase a family's real income by over 70 percent; a negative 5 percent rate will nearly cut it in half.

^{vi} Consistent with Table 1, an income drop is defined as a situation in which size-adjusted family income fell by 50% or more in consecutive years.

^{vii} Control variables include age of individual, calendar year, race, and the average size of the given person's household over the first five years of the window.

^{viii} In contrast to the poverty data, which are based on single spells of poverty, the welfare-receipt data allow for multiple spells of receipt. Since transitions out of poverty or off welfare are often followed in a year or two by another spell, it is important to attempt to capture multiple spells in these calculations.

^{ix} 60% rather than 50% was used to avoid classifying instances of small income changes as transitions out of poverty.

^x The instability measure used here is the median absolute percentage change in income among families in the bottom decile of the income distribution. Note that since data from the Scandinavian countries are based on administrative records, not subject to interview response errors, and do not show consistently different patterns, measurement error is not likely to be an overwhelming factor in these relative rankings.

^{xi} The regression models also control for mother's schooling, family structure, race, gender, and the age of the mother at the birth of the child, total number of siblings, whether ever lived in South, number of geographic moves and number of years mother worked for 1000+ hours. Parental income is inflated to 1993 price levels.

^{xii} As shown in Table 5, Duncan et al. (1998) did find that high parental income during adolescence had a strong positive effect on completed schooling. Additional analyses produced the unsurprising result that having affluent parents as a teenager increases your chances of attending college.