W(h)ither the Middle Class?
A Dynamic View

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W(H)ITHER THE MIDDLE CLASS?
A DYNAMIC VIEW

I. Introduction

Research using cross-sectional survey 'snapshots' of household income taken over the past quarter century reveals a growing inequality in the distribution of annual money income of households in the United States (Thurow, 1987; Levy, 1987; Levy and Michel, 1991; Michel, 1991; Karoly, 1990; Center on Budget and Policy Priorities, 1990; Easterlin, MacDonald and Macunovich, 1990), prompting some to argue that the U.S. middle class is disappearing (Phillips, 1990; Bradbury, 1986). Aggregate data from the National Accounts and from wealth surveys (Wolff, 1989; Eargle, 1991) reinforce this conclusion by showing a growing share of income from capital, a falling share for earnings, and a slightly increasing concentration of wealth among upper-income groups. Also well-documented is greater inequality in the size distribution of earnings and wages in the late 1980s as compared to one or two decades before (Gottschalk and Danziger, 1989; Burtless, 1989; Blackburn et al., this volume).

Despite the consistency of these results, their almost universal reliance on data drawn from cross-sectional snapshots leaves unanswered many important questions regarding the nature of the changes taking place in the distribution of income and wealth. Most importantly, cross-sectional snapshots provide information only on net changes in economic position and thus reveal little about the extent and nature of movement into and out of the middle class. For example, net increases in the number of low- relative to middle-income households occur when unfavorable transitions -- families falling from

middle- to low-income status -- outnumber favorable transitions involving movement into the ranks of the middle-class by previously low-income households. Surely it is important to track these two flows separately. Are increasing numbers of families 'falling from grace', as Katherine Newman (1988) puts it? If so, who are they and what events are linked to their income losses? Or is mobility into the middle class declining? And, if so, does this affect in particular young families? What avenues for upward mobility are disappearing? These are the types of questions we seek to address for adults crossing either the lower or the upper boundary of the middle class.

A second set of issues we address involves linkages between changes in income and changes in wealth. A recent Census Bureau study (Eargle, 1991) comparing population snapshots in 1984 and 1988 found that the median net worth of the most affluent quintile of households ranked by net worth increased by 14 percent, while overall median net worth declined slightly. However, this kind of study cannot tell us whether the increase was due to gains made by those moving into this quintile or gains made by those already among the richest fifth. Nor can it tell us whether changes in household income are reinforced by changes in wealth. Although one would expect such linkages, it still may be that many households apparently falling out of the ranks of the affluent into the middle class at the same time enjoyed substantial inceases in, say, housing or stock-market wealth.

We address these issues by analyzing trends in the transitions of prime age (25-54 years old) adults into and out of the middle class using 22 years of data from the Panel Study of Income Dynamics. We begin by reviewing the methodology and measurement

procedures that we employ to define the middle class and transitions into and out of middle-class status. Next we present our basic findings which, in fact, show a persistent 'withering' of the middle class since about 1980. We then search for clues as to who moved into and out of the middle-income groups and the source of such changes. Because notions of 'class' are usually based on measures of wealth as well as income, we also investigate longitudinal changes in the wealth distribution in the 1980s for these same individuals. Our findings on wealth reinforce those based on income. The paper concludes with a brief discussion of the policy implications of our findings.

II. Methodological Approach

Since we needed longitudinal data on income transitions in different periods of the recent past, we used the Panel Study of Income Dynamics, a panel survey of U.S. households begun in 1968 by the Survey Research Center (Hill, 1991). By following all members of its original sample households, the PSID provides (except for immigration and differential nonresponse) continuous representation of the U.S. population through time.

Low-income families were initially oversampled, but weights have been developed to adjust both for the differential initial sampling probabilities and for the differential nonresponse that has occurred since the beginning of the study (Survey Research Center, 1984). Assuming that differential nonresponse bias is eliminated through weighting, the adults in our PSID sample provide continuous representation of adults in the U.S. population with the sole exception of immigrants to the United States since 1968.

Our interest in middle-class transitions led us to focus on the prime-age population -- men and women age 25-50 in the first year of the five-year period over which income transitions are observed (see below). The public discussion of the economic fate of the middle class generally concerns 'prime-age' adult Americans -- individuals too young to have reached the conventional age of early retirement (55) but old enough to be living independently from their parents (25), thus, excising many of the life cycle movements up and down the distribution which are related to age--e.g., leaving school or retirement.

Sociologists argue that the concept of middle class (and 'class' in general) is based on far more than just income (Jencks, 1991). While this is true, the many unanswered questions regarding household income justify focusing on this dimension. To avoid confusion, we hereafter refer to our divisions of economic well-being as low-, middle- and high-income.

We gather information from annual interviews conducted from 1968 to 1989, which cover income received in calendar years 1967 through 1988, as well as wealth reported in the 1984 and 1989 interviewing waves. Income transitions are defined over all possible periods of five consecutive years observed in the data.[1] Each sample adult's 'initial' household economic position is defined by the two-year average household income (with and without adjustments for family size) over the first two years of the five-year interval. A 'final' position is defined by household income averaged over the fourth and fifth years of the interval. Two-year averages are used in order to provide a more reliable picture of change in economic status.[2] A transition occurs if average

income in the fourth and fifth years was different enough from average income in the first two years to cross over one of the two thresholds that bound our middle-income category.

Aside from using two-year accounting periods, we departed from the conventional measurement of household income in two ways. First, since food-stamp income is arguably equivalent to cash income, we included the dollar value of food stamps as a component of household income. Second, since taxes reduce a household's disposable income, we subtracted estimates of federal income taxes and Social Security payroll taxes from each household's income.

Our search for upper and lower boundaries of 'middle income' began with a review of how several authors have defined the rich, affluent, well-to-do, upper class, etc., in recent studies and the issue of whether to adjust income for needs (e.g., family size) or not (see the appendix). Some adjust income for family size, others use income alone; some studies use after-tax income, most use Census (pre-tax, post-transfer) money income; some studies define affluence relative to a percentile point in the distribution, others have an absolute dollar figure that is subsequently adjusted for inflation using either the CPI-U or the revised CPI-UX1.

As detailed in the appendix, we developed two absolute measures of economic status, both of which are based on after-tax household income, and set the lower boundary of middle income at roughly the 20th percentile of the sample in the middle of our sample period and the upper boundary at the 90th percentile. The first measure is post-tax household income not adjusted for family size. The lower and upper boundaries are

$18 500 and $55 000, respectively, in 1987 dollars, and are applied to all years using the CPI-UX1 price index.

Our second measure of economic status adjusts income for family size by dividing income by the U.S. poverty thresholds based on family size. The resulting 'income-to-needs' ratio equals 1.0 for a household with income just equal to its poverty threshold (which, in 1990, equaled roughly $13 000 for a family of four), 2.0 for a family with an income of twice its poverty threshold, etc. The lower and upper boundaries of middle income-to-needs are 2.0 and 6.0, respectively.[3] Because the basic patterns of income transitions appear similar for both measures, we concentrate on transitions based on unadjusted income but note differences between the two measures when they occur.

Wealth

Because notions of economic position and class depend on both long-term wealth and income, we were also interested in questions surrounding the movement of income and wealth in relation to each other. Do adults who move between income groups experience like changes in wealth? Do families falling from middle-income status experience declines in net worth and/or increases in debt, or are the wealth changes countervailing? While PSID wealth information is not available in most years, we were able to compare income transitions between 1984-85 and 1987-88 with PSID measures of net worth (total nonpension assets minus debt) taken in 1984 and repeated in 1989. Tax adjustments are not yet possible for all years of the income data, so we base income transitions on Census pre-tax, post-transfer money income.

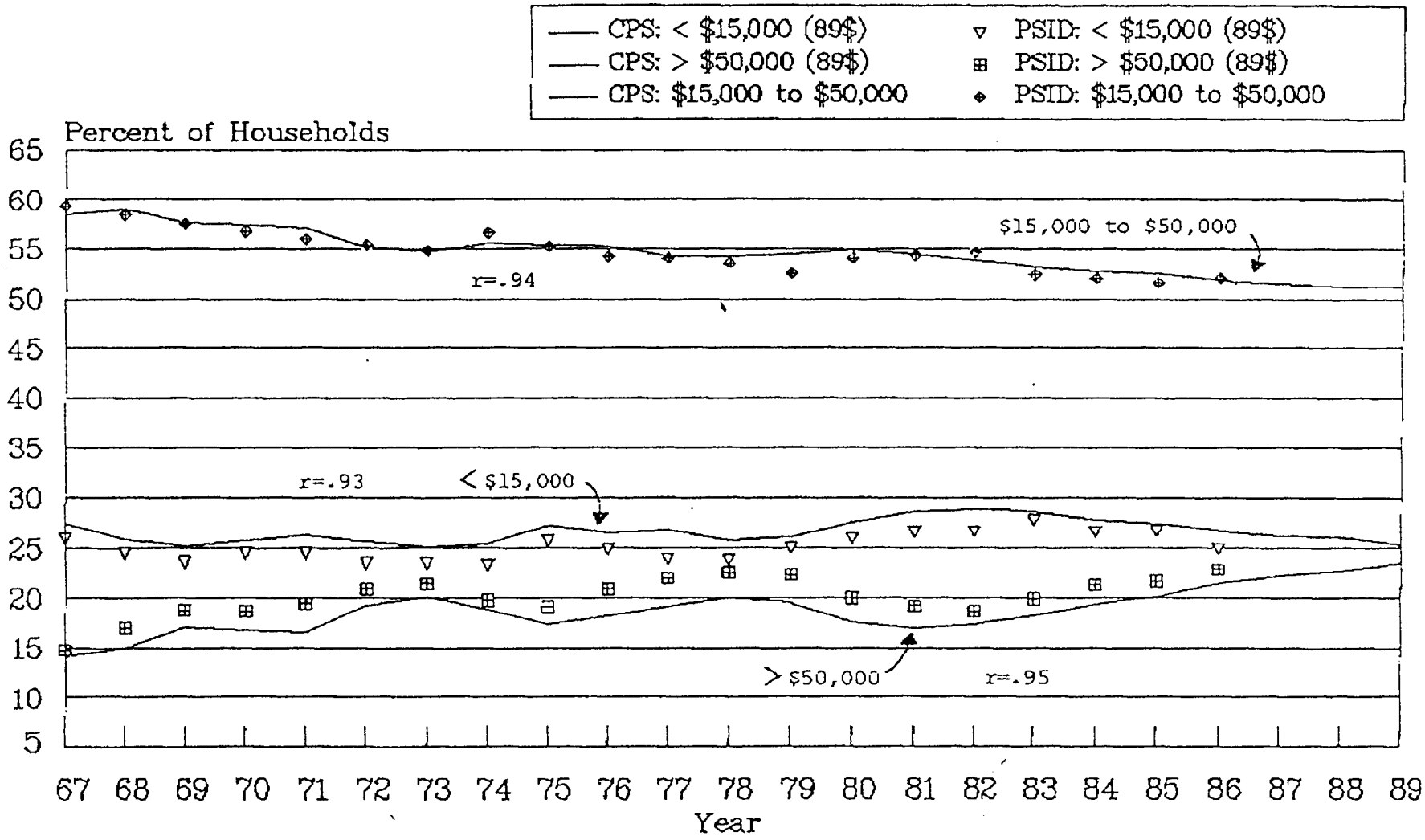
III. Snapshot Comparisons

We began by calibrating PSID data against the Census Bureau's Current Population Survey (CPS), the major data source of previous studies. To do this, we treated the PSID as if it were a series of cross-sections and compared pre-tax income from 1967-1986 of all PSID households against published CPS data on the distribution of households with pre-tax incomes near our low- and high-income boundaries -- $15 000 and $50 000 in 1989 dollars. (The CPS does not regularly record income or payroll taxes and has collected Food Stamp information regularly only after 1979.) The two data sources show very similar trends in the middle-income group -- both time series show a slow but steady decline in the fraction of middle-income households from nearly 60 percent in the late 1960s to about 51 percent in the late 1980s (Figure 1). The simple correlation coefficient (r) between the PSID and CPS time series on middle-income households is quite high -- .96.

Figure 1 here

Because the CPS consistently records less household income from its respondents than does the PSID, the CPS sample tends to produce higher estimates of households with incomes below $15 000 and lower proportions of households with incomes above $50 000. But here again the trends -- an uneven rise in the proportion of high-income households, an unstable but essentially trendless time series on the proportion of households with low incomes, resulting in a declining middle-income group -- are quite similar in the two data series. Correlations between the PSID and CPS time series are .93 for the

FIGURE 1: Distribution of Low, Middle and High Income Households in the Current Population Survey (1967–1989) and in the Panel Study of Income Dynamics (1967–1986)



Source for CPS Data: U.S. Bureau of the Census
Current Population Reports, Series P–60, No. 168
Money Income and Poverty Status 1989, Table 2

lower boundary and .95 for the upper boundary of middle income. Macroeconomic conditions account for much of the irregularity in the trends, with recessions around 1970, in the mid-1970s and again in the early 1980s temporarily increasing the proportion of low-income households and reducing that of high-income households. On balance, it appears that the PSID and CPS data tell very similar cross-sectional stories.[4]

Are there fewer middle-income households?

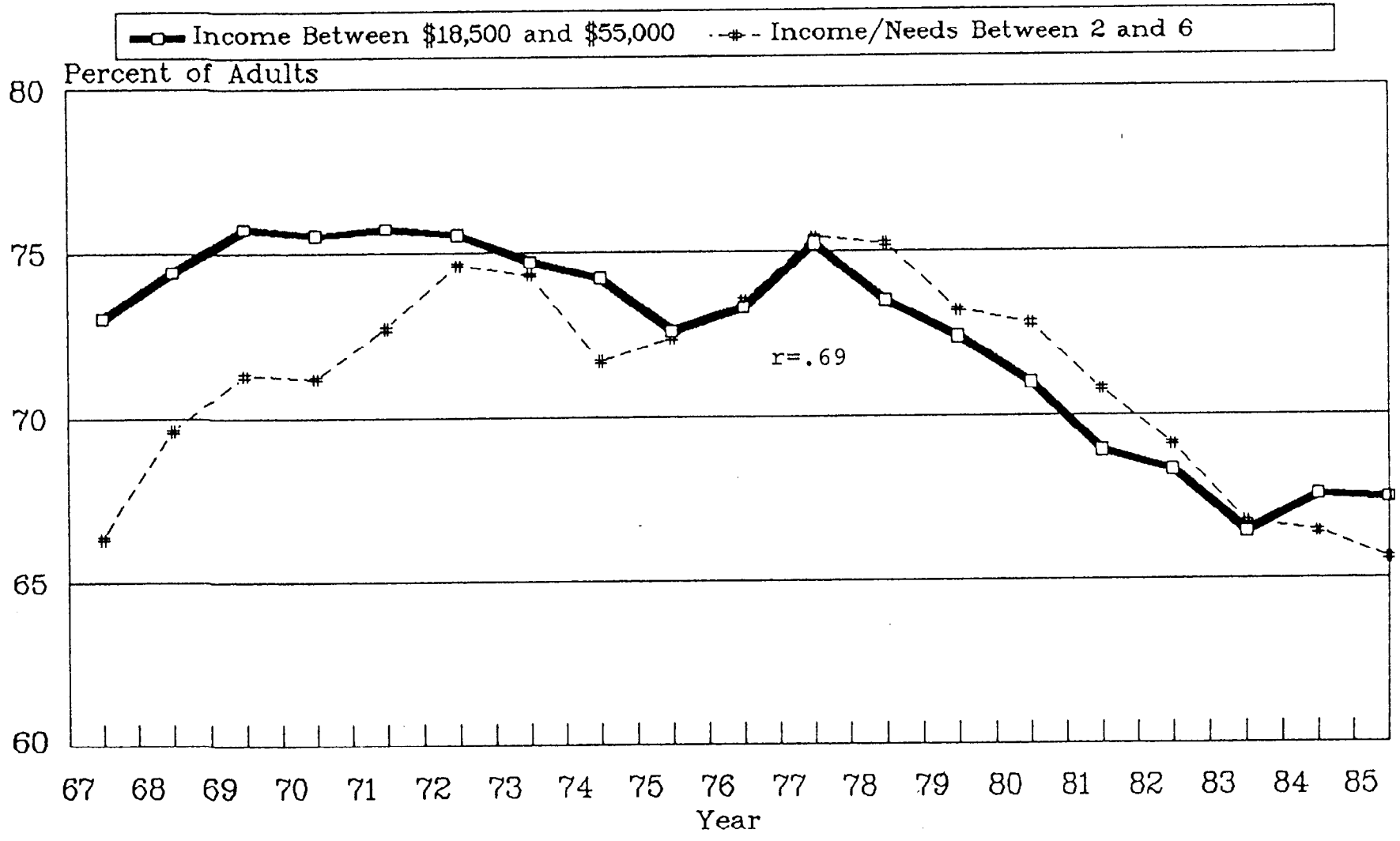
We next examined cross-sectional trends in the the size of PSID income groups, using the sample of 25- to 50-year-olds and our various adjustments to income. Figures 2 and 3 summarize the results.

Figures 2 and 3 here

As with CPS trends, there appears to be an irregular but clearly discernible decline in the proportion of prime-aged adults with household incomes in the middle (the solid line in Figure 2). Thus, our various adjustments to income and restriction of the sample to prime-age adults changes the basic CPS household-income story very little. However, unlike CPS trends, PSID proportions of adults with size-adjusted incomes in the middle follow a rather different pattern (the correlation between the PSID time series with and without family-size adjustments is only .69), with the proportion in the middle income-to-needs category increasing markedly during most of the 1970s and only then declining sharply.

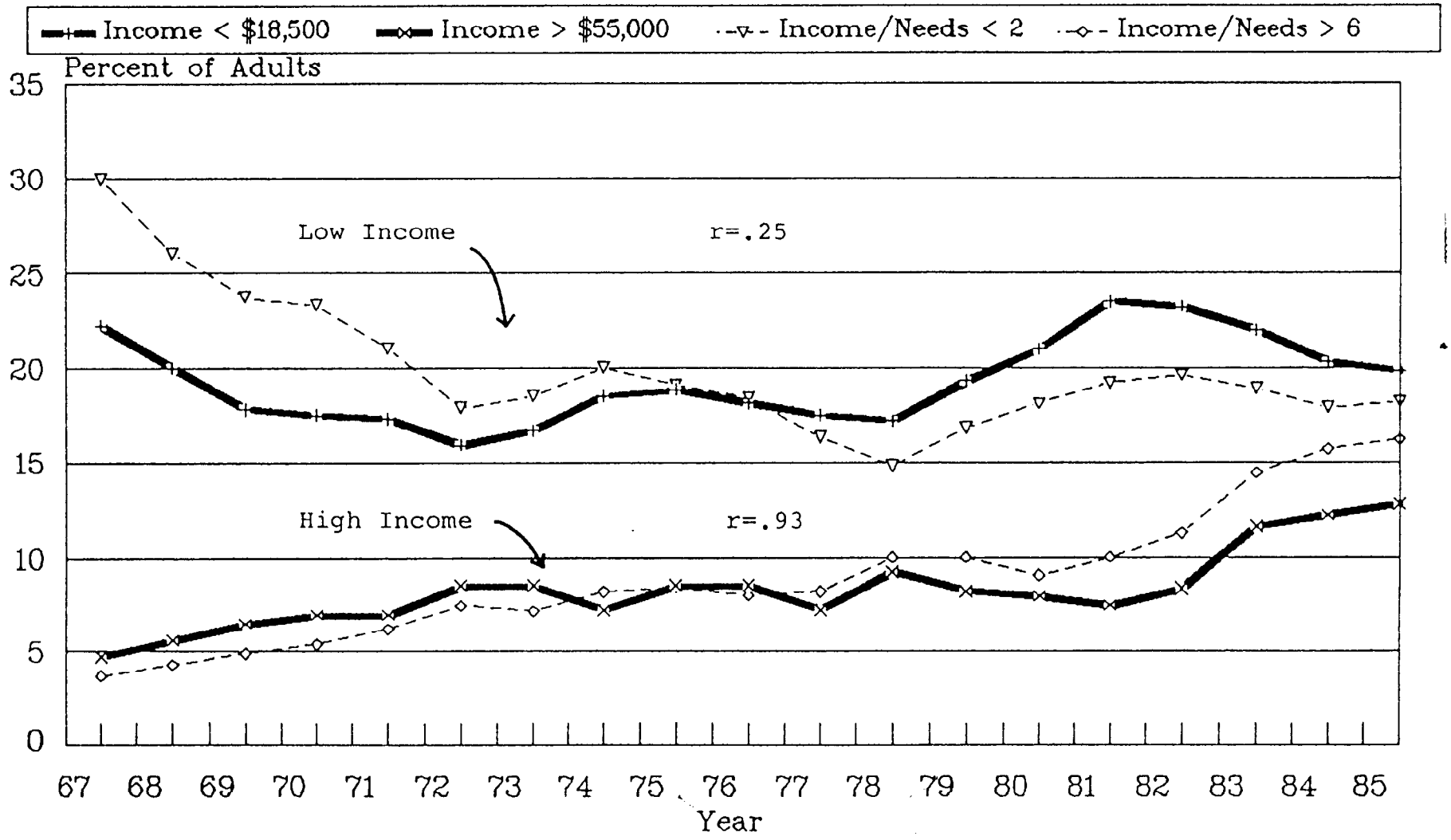
Underlying the different trends is a sharp decline in family size in the late 1960s and early 1970s, coupled with nearly flat real income change, which reduced the number of low income-to-needs adults (Figure 3) and increased the ranks of middle-income adults

FIGURE 2: Proportion of Adults Living in Households with "Middle" Income and Income/Needs in the Panel Study of Income Dynamics, 1967–1986



Note: Income data are post–tax 2 year averages.

FIGURE 3: Proportion of Adults Living in Households with "Low" and "High" Income and Income/Needs in the Panel Study of Income Dynamics, 1967–1986



Note: Income data are post–tax 2 year averages.

(Figure 2) between 1967 and 1973. However, in the late 1970s and throughout the 1980s, income changes became nearly as important as changes in family size, making more nearly parallel the trends for the two income measures.

The middle-income group shrank from a peak of about 75 percent of the population in the early 1970s and again in 1977-78 to a trough of 65 percent around 1983. Our most recent figures, for 1985-86 show just slightly more than two-thirds of the population -- 67 percent -- in the middle-income category. If anything, the recent decline in the size of the middle income-to-needs group is slightly steeper; only about 65 percent of the prime-age adult population can be termed 'middle-income' by this measure of well-being, down from a peak of 75 percent less than one decade before.

Whereas a family-size-driven decline in the low income-to-needs population accounted for most of the rise in the middle-income share during the early 1970s, the declining middle-income share in the late 1970s and, especially, during the 1980s resulted primarily from growth in the high-income and high income-to-needs population. Between 1979-80 and 1985-86, the proportion of high-income families grew by more than 50 percent -- from about 8 to over 13 points. *High income-to-needs grew by even more* -- from 10 percent in 1979-80 to over 16 percent in 1986. To paraphrase Michel (1991, p. 201), the rising tide of economic growth in the 1980s appears to have lifted the yachts, but neither the tugboats nor the rowboats.

IV. Transitions

It appears that the fraction of adults with middle income, middle income-to-needs, and perhaps a middle class standard of living has withered. This is more pronounced when income is adjusted for family size and is occasioned by a substantial increase in the number of adults living in high-income households and unsteady growth in the number of low-income adults. Many questions remain unanswered about even the basic trends. What kinds of people are actually crossing the middle-income boundaries? What events are linked to their income losses or gains? How do periods of economic growth or recession affect flows across the income boundaries? To address these questions, we investigate actual transitions across our income boundaries using longitudinal data on our sample of adults.

The composition of a population's share of low-, middle- and high-income households is the product of offsetting flows across the middle-income boundaries. For example, growth in the number of high- at the expense of middle-income adults could result from increasing numbers of people making the transition from middle- to high-income status, decreasing numbers falling from high- to middle-income status, or to varying degrees both types of charges.

The first column of Table 1 shows the prevalence of transitions involving the three income groups. When averaged across all of the five-year observation windows afforded by the PSID's sample period, some 6.7 percent of adults whose two-year average post-tax household income was between $18 500 and $55 000 are found to have succeeded in

garnering two-year average income above $55 000 two years later. A much larger fraction -- 29.7 percent -- of high-income individuals typically fell into the middle-income group. (The much smaller relative size of the high-income group translates these very unequal conditional transition probabilities into more nearly equal, overall numbers of people making the offsetting flows across the upper boundary line.)

Table 1 here

Consistent with abundant research on flows across the poverty line (Bane and Ellwood, 1986; Duncan et al., 1984), the third row of Table 1 shows that more than one third of low-income adults typically succeeded in making the transition over the $18 500 middle-income boundary, while 7.0 percent of middle-income adults typically fell below it.[5]

The importance of both calendar year and macroeconomic conditions is evident in Table 1. The second and third columns divide the transitions by whether the middle of the five-year observation window was before 1980, while the fourth and fifth columns divide the sample according to whether macroeconomic conditions (as measured by five-year trends in the U.S. Department of Commerce's series on per capita personal disposible income) were favorable or not.[6]

Relative to the late 1960s and 1970s, the 1980s were clearly a period in which all four of the transition probabilities tended to accelerate reductions in the size of the middle-income group. A higher percentage of individuals climbed into high-income status while a smaller percent fell out; a lower fraction of low-income individuals climbed into

Table 1. Percent of Adults Making Key Income Transitions

		Period Effects		Cyclical Effects	
	All Years	Before 1980	1980 and After	Nonrecession Years	Recession Years*
High-Income Transitions					
Percent of Middle-Income Individuals Climbing Out	6.7	6.3	7.5	6.9	6.2
Percent of High-Income Individuals Falling Out	29.7	31.1	27.1	28.5	31.8
Low-Income Transitions					
Percent of Low-Income Individuals Climbing Out	33.6	35.5	30.4	35.0	32.3
Percent of Middle-Income Individuals Falling Out	7.0	6.2	8.5	6.2	8.5

*Recession years are defined by 5-year growth in Per Capita Real Disposable Personal Income. They include 1974, 1975, 1979, 1980, and 1981.

the middle class while a larger fraction of middle-income adults fell into the low-income group.[7]

Cyclical factors performed as expected with favorable transitions less prevalent and unfavorable transitions more frequent in recession years. Cyclical and period effects had very similar impacts on unfavorable transitions; period effects found in the 1980s were somewhat more important than business-cycle effects for favorable transitions.

V. Explaining Transitions

The next step in our investigation of transitions into and out of middle-income status was to see what demographic characteristics correlated most strongly with the transitions and whether characteristics such as advanced schooling and older age that are known to have been more favored in the labor market in the 1980s were also powerful in explaining household-income-based transitions. We do this both with and without adjustments for the effects of business-cycle and other demographic factors. We also present data on what components of income -- earnings of adult males, females, or other family members -- figured most prominently in the transitions.

Who moved?

Table 2 helps to set the stage by showing the distribution of transitions according to the marital status of the adults undergoing the transitions and the calendar year in which they occurred.[8] Our five-year observation windows complicate the classification of marital status somewhat, since someone may have been married for only a portion of

the five-year period. We concentrate on just three groups of adults: husbands and wives living together throughout the five-year period; all other men; and all other women.

Table 2 about here

Married couples dominate high-income transitions, particularly prior to the 1980s, when they accounted for 90 percent of all transitions into high-income status and 79 percent of transitions from high- to middle-income status. Married couples were less likely to be involved in movements across the lower boundary of the middle-income category. Other men -- mainly single men living without children -- and other women -- both single women and women heading families -- were unlikely to experience high-income transitions, but more likely to experience low-income transitions. In fact, these 'other' women were the most likely group in the 1980s to move from low- to middle-income status.

The dominance of married couples among high-income transitions and the importance of unmarried women among low-income transitions is in large part a reflection of the fact that these groups are most at risk of making those transitions. Whether actual rates of transition differ for these and other demographic groups is the next question we address.

Demographic correlates

A look at differential transition rates by schooling, race, household composition and age produced few surprises. Favorable transitions -- both for middle- to high-income and from low- to middle-income status -- were more frequent among adults with college educations and less frequent among female-headed families and, especially, among blacks.

Table 2. The Demographics of Moving Into and Out of Middle-Income Status: Percent of Each Type of Adult Making Transitions[a]

	Transitions into High-Income Status[b]			Transitions Out of Low-Income Status[c]		
	All	Before 1980	1980 and After	All	Before 1980	1980 and After
Married Individuals[d]	86	90	74	56	65	37
Other Men	8	5	13	14	12	20
Other Women	6	5	13	30	23	43
Total	100	100	100	100	100	100
(Unweighted number of transition)	(766)	(514)	(252)	(1704)	(1261)	(443)
	Transitions out of High-Income Status[a]			Transitions into Low-Income Status[c]		
Married Individuals[d]	77	79	74	49	50	48
Other Men	10	11	9	16	13	17
Other Women	13	10	17	35	37	31
Unweighted Number of Transitions	(289)	(193)	(96)	(1240)	(828)	(412)

[a]Transitions and events are defined over five-year periods. The data covered 16 five-year periods, 1967-71 through 1982-86. The adult must be in the age range 25-50 in the first year of the given period. Five of those periods, starting with that for 1978-82 are defined as '1980 and after' period, while the other eleven are defined as 'Before 1980'.

[b]Transitions into (out of) high-income status are defined as occurring when the person's post-tax and -transfer family income is less (more) than $55,000 (in 1987 dollars, using the CPI-UX1) in both the first and second years of the five-year period and greater than or equal to $55,000 in both the fourth and fifth years.

[c]Transitions out of (into) low-income status are defined as occurring when the person's post-tax and -transfer family income is less than or equal to (greater than) $18,500 (in 1987 dollars) in both the first and second years of the five-year period and greater than $18,500 in both the fourth and fifth years.

[d]The percent of transitions occurring to married couples is the sum of transitions experienced by husbands in the 25-50 age range and wives in the 25-50 age range. The within-group distribution of events shown in the table is that for married couples where the husband was required to be age 25-50. Results for couples where the wife was required to be age 25-50 were very similar.

The incidence of unfavorable transitions was a mirror image: less frequent among the college-educated and more frequent among female-headed families and blacks. Transitions into high-income status were somewhat more prevalent among older adults while transitions from low- to middle-income status were more prevalent among younger adults. Aside from the drift toward middle-income-reducing transitions in the 1980s, these demographic patterns were quite similar both before and after 1980.

We performed a series of logistic regressions using each of our four transitions as a dependent variable in order to isolate the net contribution of business-cycle, period and demographic factors. Independent variables included schooling, race, household composition and age, macroeconomic conditions as measured by trend in per capita disposible personal income and a set of dummy variables measuring each person's distance between his or her own initial household income and the middle-income transition boundary line.[9] The four basic sets of regressions are presented in Appendix Tables A2-A5.

We first combined all sample years and addressed the issue of whether the middle-income-withering differences in transition rates after versus before 1980 could be explained by differences in demographic characteristics, macroeconomic conditions or distance to the transition boundaries.[10] The answer (compare columns (1) and (6) in Tables A2-A5) was clearly negative, with the differences in all four regression-adjusted transition rates before and after 1980 generally as large as the simple differences displayed in Table 1.

We next ran regressions separately for the two periods before and after 1980 to gauge the changing importance of demographic factors. As before, we controlled for

macroeconomic conditions as well as the gap between each person's household income and the income associated with the transition line. Results for the most interesting demographic variables are summarized in Figures 4 and 5.[11]

Figures 4 and 5 here

For making the transition into high-income status, a college education was a significant help, while being young (head of household under age 35) or black hurt (Figure 4). Blacks were only half as likely as the sample average to move into high-income status in both periods, even after adjusting for differences in schooling, family composition and the fact that the starting point for the typical black is further away from the high-income boundary. Interestingly, the regression-adjusted probability of female heads moving into the high-income group was significantly higher in the 1980s than before. (The unadjusted transition probabilities remained at a low 2 percent in both periods.) A closer look at transitions involving these women after 1980 showed that most were highly educated, young and childless. Their transitions were generally due to the much higher real earnings growth that such women experienced in the 1980s (U.S. Bureau of the Census, 1990).

As already mentioned, transitions out of low-income status (shown in the right half of Figure 4) were less likely in the 1980s for all groups. Only the college-educated had higher-than-average probabilities of moving out of low-income status. Being young lost its advantage in the 1980s, while blacks and female heads continued to be less likely to move into the middle class.

FIGURE 4

Adjusted Fractions of Various Groups Making Favorable Income Transitions

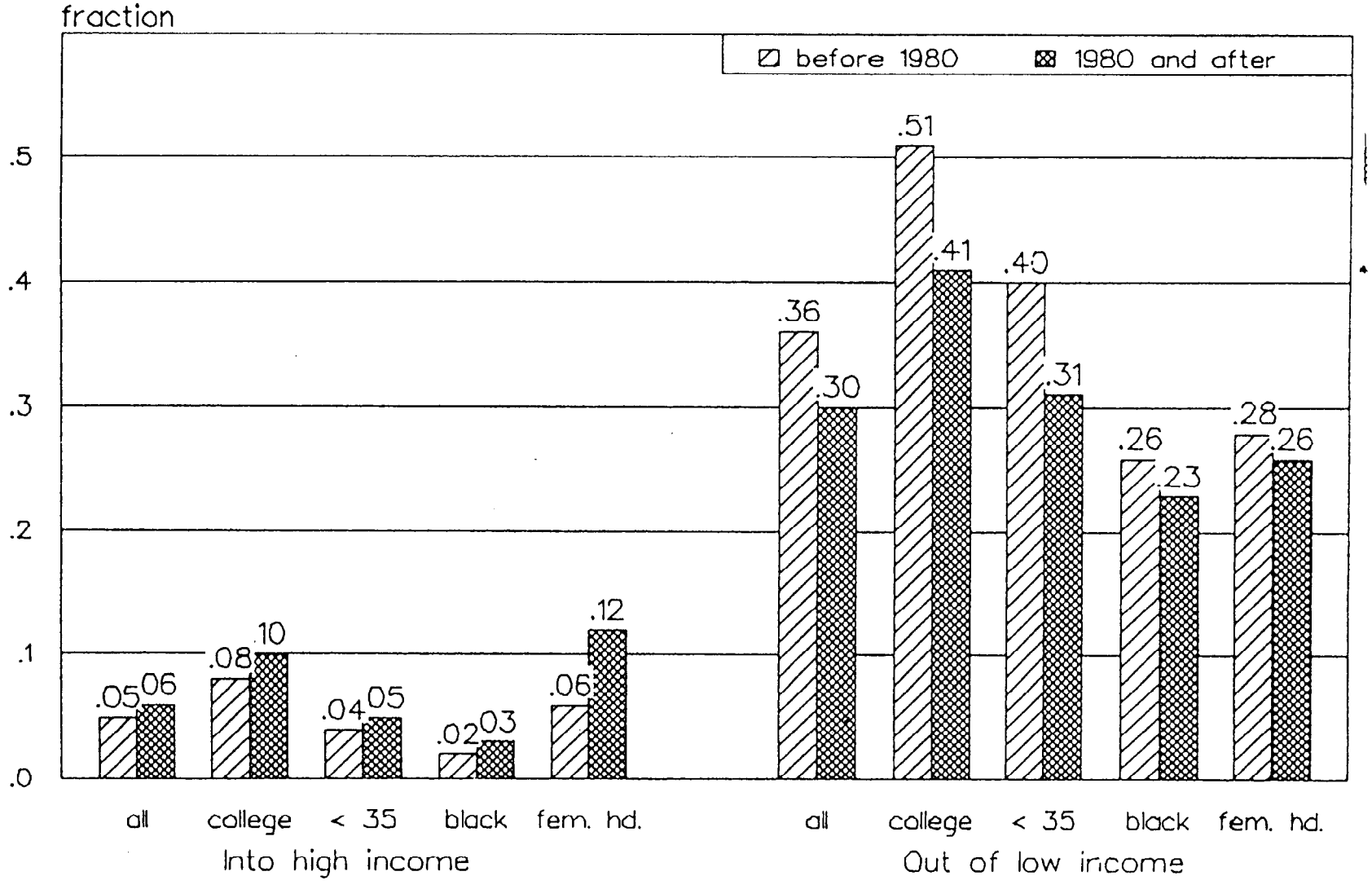
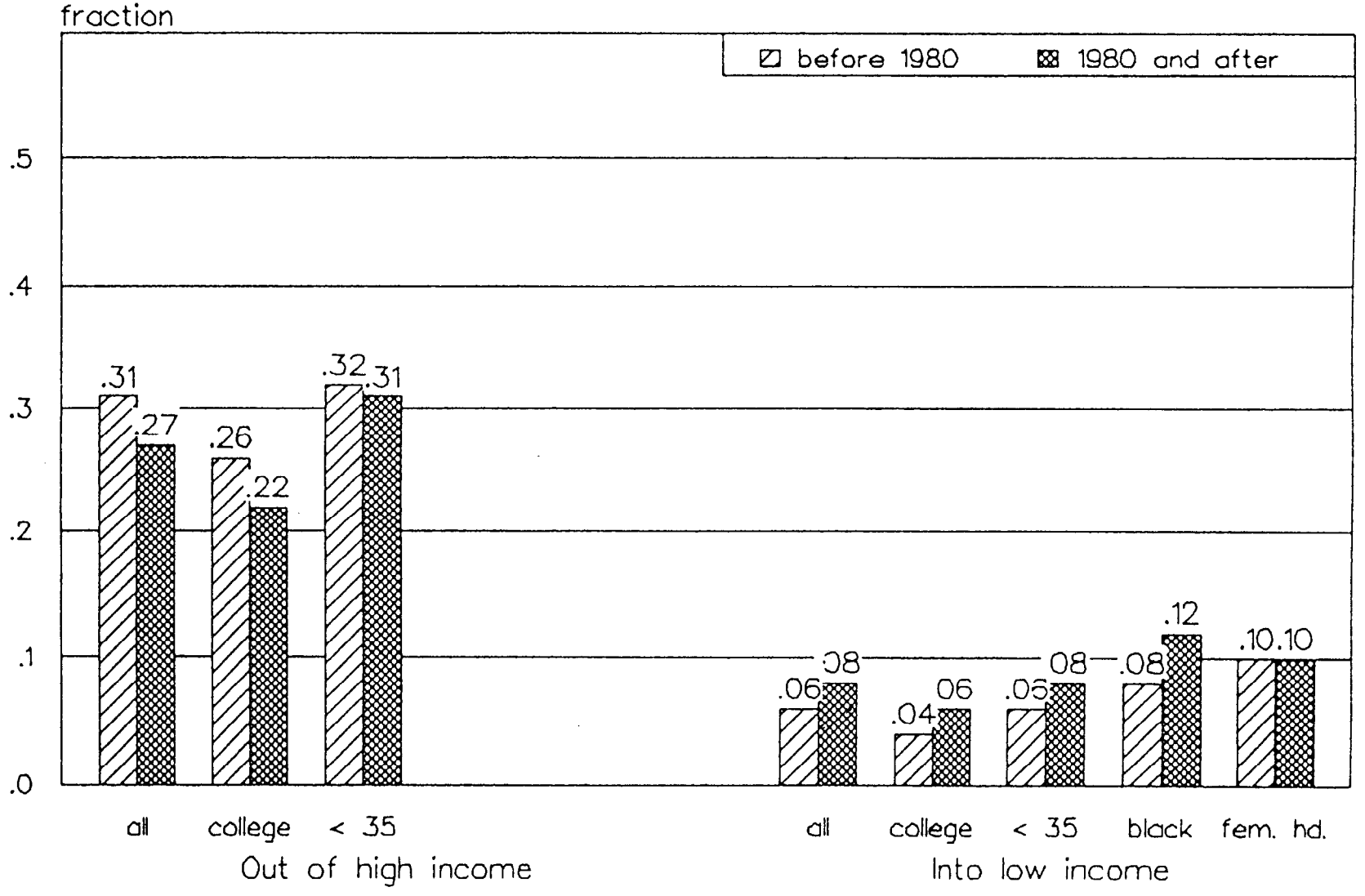


FIGURE 5

Adjusted Fractions of Various Groups Making Unfavorable Income Transitions



Downward mobility from high- to middle-income became less frequent in the 1980s than before. While all subgroups within the high-income class shared in this favorable development, younger families continued to have a higher-than-average risk of falling into the middle (Figure 5).

The probability of falling from middle-income status -- falling from grace -- increased significantly in the 1980s. Female heads and blacks maintained their already higher-than-average probability of falling from the middle, while people with schooling beyond high school had lower-than-average risks.

Whose income changed the most?

As with poverty transitions (Bane and Ellwood, 1986), it is also useful to isolate in our set of income transitions the income component that changed the most. We did this by calculating for each of our transitions the dollar changes in the earnings of adult men and women and in the income of other family members (principally older children). The component changing the most was designated 'most important', provided it accounted for at least half of the net change in total income. If the most important income component failed to account for half of the net change, then the given transition was assigned to an 'other income' category.

The results, shown in Table 3, clearly point to the importance of men's earnings; it was the most important income component in all four of the transitions, both before and after 1980. Women's earnings figured more prominently in high-income transitions during the 1980s, while the importance of the income of other adult family members declined for all four of the transitions.

Table 3 here

The lessening importance of other earners held in particular for transitions between middle- and high-income status. Prior to the 1980s, increases in other family members' earnings were more important than women's earnings in explaining transitions into high-income status; after 1980 the relative importance of these two components reversed. Decreases in other family members'earnings, often due to the nest-leaving departure of a young adult from the family home, became less important in transitions from high- to middle-income status in the 1980s.

A more detailed look at the favorable transitions involving men's earnings (data not shown in Table 3) showed that they were more often associated with higher rates of pay rather than overtime hours or second jobs. Upward mobility linked to women's earnings was more evenly split between increases in wage rates and in hours. Downward transitions for men were more likely to result from changes in hours -- job loss and unemployment -- than declining rates of pay. For women, decreases in both wages and hours are important in explaining why earned income declined.

In general, our findings support those of Blackburn et al. (this volume), Blank (this volume), and Danziger and Gottschalk (this volume). The widening of the income distribution and the withering of the middle class are mainly associated with growing inequality in men's earnings -- in particular wage changes. Women's earnings are of increasing importance in explaining movements from middle to high income. However, men's earnings still figures most prominently in at least twice as many transitions as do women's earnings.

Table 3. Relative Importance of Men's and Women's Earnings in Favorable and Unfavorable Income Transitions

	Favorable Transitions (in percents)				Unfavorable Transitions (in percents)			
	Into High-Income		Out of Low-Income		Out of High-Income		Into Low-Income	
Most Important Income Component[a]	Before 1980	1980 and After	Before 1980	1980 and After	Before 1980	1980 and After	Before 1980	1980 and After
Men's Earnings	51	50	50	53	50	57	60	63
Women's Earnings	14	23	26	28	10	14	16	14
Income of Other Family Members	26	15	11	6	30	22	15	13
Other Income/Mixed	9	12	13	13	10	7	9	10
Total	100	100	100	100	100	100	100	100

[a]Income of other family members consists of earnings plus any asset income of these other members. 'Other Income Mixed' is the residual category from the family's total money income.

VI. The Role of Wealth

Our discussion thus far has focused almost entirely on income, taking wealth into account only insofar as household incomes typically include very small amounts of income from wealth in the form of interest, rent and dividends. Our belief that accumulated wealth or, more precisely, net worth constitutes a major difference between the lower, middle and upper classes leads us to investigate how taking wealth into account changes the income-based view chosen thus far. We examine recent changes in the distribution of net worth, joint distribution of income and net worth, and distribution of net worth among people making the kinds of income-based transitions analyzed in the first part of the chapter. Our measure of net worth includes the value of housing equity, other real estate, vehicles, farms and businesses, stocks, savings and investments and other assets, less other outstanding debt. Information on pension wealth was not available, and even if it were, its illiquidity would lead us to treat it separately in our analyses.

The PSID contains only two waves with comprehensive wealth data -- 1984 and 1989. Hence, we are limited to changes in net worth between the mid- and late 1980s -- the period just beyond the final income transition year (1986) used thus far in this paper. We drew a sample of 25- to 50-year-olds in 1984 for this analysis, but were able only to use data on pre- rather than post-tax household income for our income measure. Income transitions are measured by averaging income over 1984 and 1985 to set initial position and 1987 and 1988 to set the final income position.

Changes in the size distribution of wealth and income

We begin with comparative snapshots showing changes in the size distribution of net worth between 1984 and 1989 (Table 4). In these two years the adults in our sample were ranked by net worth to determine the points separating the 20th, 50th, 80th and 90th percentiles of the wealth distribution.[12] Net worth at the 90th percentile was almost 40 times the net worth of the 20th wealth percentile in each year. In contrast, the ratio of the 90th percentile of two-year average incomes in 1984-85 to the 20th percentile was only 3.6. Thus, as has been shown with numerous sets of data, net worth in the PSID in the late 1980s is much less equally distributed than income.

Table 4 here

The relative 90th to 20th percentile gap in net worth in 1989 was about the same as in 1984, suggesting that the 1984-1989 period was marked by roughly equal percentage gains at the 20th and 90th percentiles. Similar results have been recorded for the 1983-1986 period using the Federal Reserve Board's *Survey of Consumer Finances* by Avery and Kennichell (1991). Percentage gains in the middle were somewhat smaller. Of course, the dollar changes in wealth at different points in the wealth distribution varied enormously, with the top decile gaining nearly $114 000 between 1984 and 1989 and the bottom two deciles gaining less than $3000.

As a second comparative cross-sectional tabulation, we ranked our prime-age adults according to income rather than wealth and calculated average income and wealth at the 20th, 50th and 90th percentiles of income (Table 5).[13] Not surprisingly, this ranking produces less extreme inequality in the distribution of wealth, but even here

Table 4. Wealth Inequality, 1984 and 1989

Net Worth* Distribution	1984 Net Worth	1989 Net Worth	Percent Change in Net Worth	Change in Net Worth
20th Percentile	$ 5 281	$ 8 162	55	$ 2 881
Median	38 083	50 894	34	12 811
80th Percentile	117 478	175 537	49	58 059
90th Percentile	207 582	321 555	55	113 973
Difference 90th-20th	202 301	313 393		
Ratio 90th/20th	39.3	39.4		

*Net Worth is defined as the sum of the value of housing equity, real estate, vehicles, farm/business,stocks, savings/investment, and other assets, less other debt, inflated to 1987 dollars using the CPI-UX1.

wealth inequality reinforced income inequality; the distribution of wealth is still significantly less equal than is the distribution of income.

Table 5 here

The ratio of the 90th to the 20th percentile of income rose from 3.6 to 3.8 over the 1984-85 to 1987-88 period, while the wealth ratios for these same people rose from 10.10 to 10.73. These increases imply that relative change at the upper end of the distribution (90th percentile) exceeded change at the lower end (20th percentile) in both absolute and percentage terms, producing a widening in the joint distribution. In other words, the group experiencing the largest gains in income is also enjoying the most substantial gains in net worth.[14]

Wealth change accompanying income transitions

Our final analysis combines income transitions with their concomitant wealth changes (Table 6). Individuals were first classified according to the income transition they experienced between 1984-85 and 1987-88. We then calculated median net worth, house equity as a fraction of net worth and debt as a fraction of income in both 1984 and 1989 for each subgroup defined by income change.[15]

Table 6 here

The results clearly show that changes in net worth and debt closely mirror changes in income. Upwardly mobile individuals climbing into either the high- or middle-income class tended to enjoy more favorable changes in wealth than did those with downward income-based transitions. The change in net worth for adults who persisted in the middle-

Table 5. Trends in Income and Wealth Inequality

	Year					
			1984-85		1987-88	
Position in Income Distribution	1967-68 Income	1977-78 Income	Income[a]	Net Worth[b]	Income[a]	Net Worth[b]
20th Percentile	$17 819	$19 683	$20 399	$12 546	$21 871	$18 533
Median	26 888	30 371	36 125	36 954	39 879	48 974
90th Percentile	46 066	51 601	73 628	126 716	81 933	198 872
Difference 90th-20th	28 247	31 918	53 229	114 170	60 062	180 339
Ratio 90th/20th	2.6	2.6	3.6	10.1	3.8	10.7

[a]Income is defined as post-tax, post-transfer family income in 1967-68 and 1977-78, and pre-tax, post-transfer income in 1984-85 and 1987-88, inflated to 1987 dollars using the CPI-UX1.

[b]Net Worth is defined as the sum of the value of housing equity, real estate, vehicles, farm/business, stocks, savings/investment, and other assets, less other debt. Median values of net worth between the 10th and 30th percentile of income are given for the 20th percentile of income, 40th and 60th percentile for the median, and 80th and 100th percentile for the 90th percentile.

Table 6. Wealth and Savings, 1984 to 1989, by 2-Year Average Income Class, for Men and Women in Thousands of 1987 Dollars

		1984			1989					
			Mean Ratio of			Mean Ratio of				
	2-yr Average Income Class in 1984-85 and 1987-88	Median Net Worth	House Equity/ Net Worth	Debt/ 2-Yr Avg Income	Median Net Worth	House Equity/ Net Worth	Debt/ 2-Yr Avg Income	Change in Median Net Worth	Percent Change in Median Net Worth	Percent of Sample (Unweighted n)
High-Income:	Remained High-Income	167.7	0.46	0.06	305.4	0.43	0.05	137.7	82	4.7 (139)
	Climbed Into High-Income	79.8	0.55	0.09	152.4	0.49	0.04	72.6	91	5.1 (148)
	Fell From High-Income	115.2	0.33*	0.05*	164.7	0.41*	0.10*	49.5	43	1.7 (49)
Middle-Income:	Remained Middle-Income									
	All	39.9	0.57	0.07	54.3	0.56	0.07	14.4	36	52.3 (1535)
	Black	15.5	0.53	0.08	26.1	0.54	0.07	10.6	68	10.9 (319)
	Nonblack	41.5	0.57	0.07	55.7	0.56	0.07	14.2	34	40.9 (1216)
Low-Income:	Remained Low-Income									
	All	3.7	0.17	0.05	3.1	0.25	0.08	-0.6	-16	23.1 (677)
	Black	0.4	0.14	0.03	0.5	0.27	0.10	0.1	25	15.2 (444)
	Nonblack	7.3	0.18	0.06	6.3	0.24	0.07	-1.0	-14	7.4 (233)
	Climbed Out of Low-Income	7.6	0.19	0.10	18.1	0.37	0.08	10.5	138	7.4 (217)
	Fell Into Low-Income	22.6	0.41	0.07	12.6	0.43	0.08	-10.0	-44	5.6 (162)
	All	35.4	0.46	0.07	46.7	0.48	0.07	11.3	32	100 (2929)

Note: Data cover 5-year periods and compare mean pre-tax income in 1984 and 1985 to mean pre-tax income in 1987 and 1988. The "high" income cutoff is $70,263. The "low" income cutoff is $21,316. Incomes are inflated to 1987 dollars using the CPI-UX1. Net Worth is defined as the sum of the value of housing equity, real estate, vehicles, farm/business, stocks, savings/investment, and other assets, less other debt.

*Mean ratios of house equity to net worth and debt to 2-yr average income were calculated for all individuals between the 25th and 75th percentile of net worth in each group except "Fell From High Income." Mean ratios in this group were calculated for all individuals.

income group (+$14 400) was close to that of the entire sample (+$11 300, the row labelled 'All' at the bottom of table).

High-income groups experienced large increases in net worth in both absolute and relative terms. Moreover, the debt burden (relative to income) of those remaining in or climbing into the high-income category fell slightly as did their ratio of housing equity to net worth. Hence, the wealth gains for high-income, prime-age adults were largely in fungible nonhousing wealth, not in home equity. Debt as a fraction of income remained constant for the middle-income group but grew for people with low incomes. People climbing from low- to middle-income status (labelled 'climbed out of low' in the table) did relatively well, reducing their debt burden and enjoying the largest percentage gain in net worth. (However, the dollar amount associated with this change amounted to only $10 500.)

Sample sizes of people remaining in the middle- and low-income categories were sufficiently large to make possible separate estimates by race. Blacks had significantly lower net worth in both periods. Middle-income blacks enjoyed larger percentage (but smaller absolute) gains than did whites. People remaining in or falling into the low-income group did the worst, posting declines in net worth of 16 and 44 percent, respectively. Among the low-income group, only blacks experienced an increase in net worth -- and then it was only $100. Median net worth for those who continued to have low income fell by $600 ($3700 to $3100) over this period. In contrast, it grew by $137 700 ($167 700 to $305 400) for individuals remaining in the high-income group.

All in all, the addition of wealth dramatically reinforces our picture of increasing income-based inequality.

VII. Conclusions and Policy Implications

The middle of the income distribution among prime age adults in the United States has indeed withered over the past decade. If the seven percentage point decline in prime-aged adults from 1978-79 to 1985-86 continued until 1990, the middle-income group would constitute less than 65 percent of the population. We find that cyclical and demographic factors explain little of the accelerated decline in the number of middle-income adults in the 1980s; all avenues of transition out of the middle-income group were more heavily travelled during the past decade. The withering of middle-income adult groups was marked by two major sets of forces: (1) the upward movement of prime-age men and women who first experienced and then maintained large real gains in their earnings during that period, and (2) the stagnation of real earnings among households in the low-income category. Wealth change in the latter 1980s clearly reinforced income change, particularly among individuals remaining in the high-income group and among those moving from middle- to high-income status.

Other analyses based on cross-sectional data and microsimulation models (e.g., Michel, 1991; U.S. House of Representatives, 1991, Appendices I, J, K; and U.S. Congressional Budget Office, 1991), confirm that the trends in our data continued through the late 1980s and are projected to persist into the early 1990s. If anything, the federal tax reform of 1986 solidified the gains in after-tax income reached by the well-to-do

(Pechman, 1990), while the analyses in this paper indicate that the recession of 1990-1991 should reduce upward mobility from the bottom while causing many of those most seriously affected to fall from middle-class status.

It appears, then, that the 1980s and, according to some prognosticators (e.g., Reich, 1991), the 1990s as well, will constitute an epoch in American life that was quite different from the from post-war decades preceding it. Ours is a time marked by a significant increase in real income and wealth for those with already high incomes and substantial wealth. Of course, this change alone is one which policymakers should be most pleased with--if the trend was for upward mobility throughout the distribution. But again, large sustained income gains are apparent only for the yachts--not for the tugboats or the rowboats. When this upward mobility among the few is coupled with the persistently high and stagnant poverty rates of American families with children and the growing lack of upward mobility among our lower but still working class, a different policy picture emerges. As Federal and state governments struggle to find funds to meet growing needs for human and physical capital, for health, education and related program areas -- funds to extend the chance for upward mobility to all income classes -- we believe that we have found a primary tax base to meet these revenue needs--the growing affluence of high-income middle-age Americans.

The policy discussions underlying the 1990 Deficit Reduction Act increasingly brought up the question of 'fairness' in the distributional effects of public tax and transfer policies at the Federal government level. These discussions brought policy changes which extended modest tax relief and additional health care benefits to low-income families.

Because this coming decade will continue to be different from those that preceded it, we consider it vital to continue to re-examine the Federal income tax and to reconsider wealth taxation -- in particular capital gains taxation of wealth at time of death or transfer -- as a source of funding to meet America's human resource needs. Because the fruits of American economic growth are increasingly being concentrated among the privileged 10 to 15 percent of the population at the top of the middle-age income and wealth distribution, serious consideration should be given to modest sharing of this wealth, such as those suggested by Downey and Gore (1991) and by the National Commission on Children (see Steuerle and Jaffras, 1991) and their proposals to substitute a refundable child tax credit for the children's personal exemption, to expand basic health and human capital programs to cover all needy youth, and above all, to fund these expenditures via a modest increase in the top federal income tax bracket (from 34 to 37 percent). The significant secular changes in the size distribution of permanent income found in this paper make a strong case for the increased taxation of high income Americans as an answer to the oft heard question in Washington and in the state capitals.....'but where will we raise the money?'

Appendix

Measures of Economic Status and Middle-Income Boundaries

Two important methodological issues arose in the transition analysis: (1) Should our measure of household income adjust for differences in family size? and (2) What income levels should define the boundaries of low-, middle- and high-income groups across time?

Adjust income for family size?

It is common practice in poverty research to adjust income for family size to produce an income measure called 'income-to-needs', usually obtained by dividing a household's income by the U.S. Government poverty threshold for the household's size. Well-being, it is argued, depends both on resources (usually income) and on the number and characteristics of individuals who must share those resources.

But what happens when we move beyond poverty to a study of middle- and high-income status? On the one hand, it can be argued that middle-income status also depends on both income and how that income is shared by the household. A household with two adults and an annual income of $35 000 has more income per person than does a household receiving the same income but consisting of two parents and two children. By this logic, a birth reduces well-being if it is not associated with an increase in income and the movement of a child from this house-hold to a separate dwelling improves the well-being of the household left behind, so long as the departing child has 'eaten' more than he has earned.

However, others (e.g., Lambert, 1990; Fisher, 1987; Pollak and Wales, 1979) have argued that at some point in the income distribution, households may choose to add voluntarily to their 'needs' via the birth (or adoption) of children. In such cases, where children can clearly be identified as what economists call 'consumption goods,' the addition of a child does not necessarily decrease economic well-being. Particularly in a study of transitions from middle- to high-income, such adjustments to well-being can become arbitrary and misleading. Since we feel that both arguments have merit, we use two kinds of income boundaries: adjusting and not adjusting for family size. Size adjustments are accomplished by dividing income by the U.S. poverty line and its implicit equivalence scale.

Defining middle (income) class

Our search for upper and lower boundaries of 'middle income' began with a review of how several authors have defined the rich, affluent, well-to-do, upper class, etc., in recent studies (Appendix Table 1). Our choice of the boundary of 'high income-to-needs' was 6.0 (i.e., six times the poverty line). The 'high income' boundary was set at $55 000 (in 1987 dollars). These cutoffs came from examining the distribution of two-year average income and income-to-needs, expressed in 1987 dollars using the CPI-UX1, and the sample of adults (25-50) defined earlier. Income trends produce changing numbers of adults above and below these boundaries, but in the middle of the sample period (1977-1978) each of these measures left roughly 10 percent (in fact 9 percent) of adults with high incomes.

Appendix Table A-1 here

Table A-1. Definitions of High-Income Status in Other Studies

Measure of "Richness"	Source
150 to 200 percent median; above 200 percent median	Kosters and Ross (1987)
top one-third of distribution (affluent)	Rainwater (1974)
disposable income to needs above 1.5 (well to do)	Coder, Smeeding, Rainwater (1989)
pre-tax income to needs above 9.0 (rich)	Danziger, Gottschalk, Smolensky (1989)
unadjusted money income $75 000 to $100 000 (moderately affluent); above $100 000 (very affluent)	U.S. Bureau of the Census (1990)
160 to 225 percent median (upper middle class); over 225 percent median (upper class)	Blackburn and Bloom (1986, 1987)
above $50 000 in 1984 dollars (high income)	Bradbury (1986)
variety of measures, adjusted and unadjusted especially 75th and 90th percentiles of income indexed relative to the median	Horrigan and Haugen (1988); Karoly (1990)

Following a similar procedure, we chose the 2.0 income-to-needs level and $18 500 (in 1987 dollars) as boundaries of the 'low income' groups. Each of these separated roughly the bottom quintile (actually the 18th percentile) of the distributions in 1977-1978. The 2.0 level also appeals to us because of the recent work of Holden and Smeeding (1990) and Scholz and Maritato (1990), which used 2.0 as an income-to-needs level separating the economically 'insecure' and 'secure'. In addition we felt that cyclicity of income and earnings movements around the $20 000 threshold (e.g., Center on Budget and Policy Priorities, 1989; Levy, 1987) was an important phenomenon to capture in our analyses. Thus we arrived at our distributions of high- (6.0 and above; $55 000 and above), low- (below 2.0; below $18 500), and middle-income (2.00-5.99; $18 500 - $55 000) groups.

Table A-2: Logit Regressions for Transitions Into High Income Group

Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(5)	(6)	(7)	(8)
Persons in sample:	All persons								Married couples			
Years in sample:	All years						pre-1980	1980 and after	All years		pre-1980	1980 and after
Independent variable:	Coefficient (standard error)											
middle year 1980 and after	0.14* (0.04)		0.18* (0.04)	0.19* (0.04)	0.28* (0.05)	0.28* (0.05)			0.27* (0.08)	0.29* (0.08)		
trend in per capita real disposable income		6.04* (2.21)	8.47* (2.25)		15.82* (2.33)	14.52* (2.36)	-3.77 (3.58)	26.51* (3.32)	10.27* (3.86)	8.23* (3.91)	-12.96* (5.82)	24.48* (5.64)
controls for ratio of average family income years 1 & 2 to transition line	no	no	no	yes	yes	yes	yes	yes	yes	yes	yes	yes
black head						-0.85* (0.15)	-0.92* (0.19)	-0.78* (0.23)		-0.64* (0.24)	-0.70* (0.32)	-0.59 (0.37)
female head						0.46* (0.12)	0.13 (0.16)	0.89* (0.19)				
average # < age 18 years 1 & 2						0.08* (0.02)	0.10* (0.02)	0.03 (0.03)		0.11* (0.02)	0.12* (0.03)	0.11 (0.06)
head in year 1 a high school grad						0.23* (0.08)	0.05 (0.08)	1.00* (0.21)		0.16 (0.13)	0.01 (0.14)	0.80* (0.36)
head in year 1 has at least some college						0.95* (0.07)	0.75* (0.08)	1.72* (0.20)		0.90* (0.12)	0.81* (0.13)	1.44* (0.34)
head in year 1 < age 35						-0.40* (0.05)	-0.41* (0.06)	-0.43* (0.08)		-0.51* (0.08)	-0.49* (0.10)	-0.57* (0.14)
constant	-2.91* (0.03)	-2.97* (0.05)	-3.08* (0.05)	-5.39* (0.17)	-5.72* (0.18)	-6.00* (0.20)	-5.02* (0.21)	-7.59* (0.46)	-5.53* (0.39)	-5.67* (0.40)	-4.69* (0.40)	-14.69 (28.62)

For all persons, all years, unweighted n=45,942; for pre-1980, n=32,032; for 1980 and after, n=13,910. For married couples, all years, n=15,460; for pre-1980, n=11,214; for 1980 and after, n=4,246.

* indicates absolute value of (coefficient/standard error) > 2.

Table A-3: Logit Regressions for Transitions Out of High Income Group

Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(5)	(6)	(7)	(8)
Persons in sample:	All persons								Married couples			
Years in sample:	All years						pre-1980	1980 and after	All years		pre-1980	1980 and after
Independent variable:	Coefficient (standard error)											
middle year 1980 and after	-0.19* (0.09)		-0.24* (0.09)	-0.21* (0.09)	-0.25* (0.10)	-0.21* (0.10)			-0.22 (0.16)	-0.21 (0.17)		
trend in per capita real disposable income		-4.75 (4.40)	-8.20 (4.65)		-7.06 (4.78)	-3.17 (4.92)	-1.46 (7.69)	-2.62 (6.65)	-6.30 (7.91)	-2.60 (8.17)	1.36 (12.51)	-3.18 (11.27)
controls for ratio of average family income years 1 & 2 to transition line	no	no	no	yes	yes	yes	yes	yes	yes	yes	yes	yes
black head						0.45 (0.37)	0.59 (0.39)	-0.65 (1.16)		0.91 (0.59)	0.76 (0.59)	3.63 (5.93)
female head						-0.03 (0.62)	0.14 (0.73)	-0.44 (1.36)				
average # < age 18 years 1 & 2						-0.07* (0.03)	-0.10* (0.04)	0.02 (0.07)		-0.06 (0.05)	-0.08 (0.06)	0.03 (0.12)
head in year 1 a high school grad						-0.36* (0.16)	-0.35 (0.19)	-0.47 (0.32)		-0.38 (0.29)	-0.32 (0.34)	-0.49 (0.58)
head in year 1 has at least some college						-1.23* (0.15)	-1.13* (0.17)	-1.50* (0.29)		-1.33* (0.26)	-1.26* (0.29)	-1.56* (0.55)
head in year 1 < age 35						0.11 (0.12)	0.07 (0.15)	0.22 (0.20)		0.26 (0.20)	0.03 (0.25)	0.56 (0.33)
constant	-0.79* (0.05)	-0.78* (0.09)	-0.64* (0.10)	-0.12 (0.09)	0.01 (0.13)	0.91* (0.18)	0.80* (0.23)	0.88* (0.31)	-0.10 (0.21)	0.89* (0.32)	0.70 (0.39)	0.90 (0.59)

For all persons, all years, unweighted n=2,630; for pre-1980, n=1,723; for 1980 and after, n=907. For married couples, all years, n=1,054; for pre-1980, n=712; for 1980 and after, n=342.

* indicates absolute value of (coefficient/standard error) > 2.

Table A-4: Logit Regressions for Transitions Into Low Income Group

Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(5)	(6)	(7)	(8)
Persons in sample:	All persons								Married couples			
Years in sample:	All years						pre-1980	1980 and after	All years		pre-1980	1980 and after
Independent variable:	Coefficient (standard error)											
middle year 1980 and after	0.31* (0.05)		0.21* (0.05)	0.34* (0.05)	0.19* (0.05)	0.25* (0.05)			0.12 (0.10)	0.23* (0.11)		
trend in per capita real disposable income		-19.81* (2.25)	-16.21* (2.36)		-22.97* (2.46)	-23.28* (2.49)	-30.69* (3.95)	-17.69* (3.31)	-25.72* (4.99)	-26.30* (5.04)	-34.70* (7.70)	-19.46* (6.84)
controls for ratio of average family income years 1 & 2 to transition line	no	no	no	yes	yes	yes	yes	yes	yes	yes	yes	yes
black head						0.42* (0.07)	0.38* (0.09)	0.49* (0.12)		0.08 (0.17)	-0.21 (0.23)	0.50 (0.26)
female head						0.52* (0.08)	0.66* (0.10)	0.33* (0.13)				
average # < age 18 years 1 & 2						-0.10* (0.02)	-0.10* (0.02)	-0.07* (0.03)		-0.10* (0.03)	-0.12* (0.04)	-0.03 (0.07)
head in year 1 a high school grad						-0.52* (0.05)	-0.46* (0.07)	-0.67* (0.10)		-0.67* (0.11)	-0.64* (0.13)	-0.78* (0.19)
head in year 1 has at least some college						-0.96* (0.07)	-0.90* (0.08)	-1.07* (0.11)		-0.95* (0.13)	-0.87* (0.16)	-1.09* (0.22)
head in year 1 < age 35						-0.05 (0.05)	-0.05 (0.06)	-0.08 (0.08)		-0.10 (0.10)	-0.04 (0.12)	-0.25 (0.17)
constant	-2.79* (0.03)	-2.33* (0.04)	-2.47* (0.05)	-1.68* (0.04)	-1.22* (0.06)	-0.72* (0.08)	-0.59* (0.11)	-0.48* (0.11)	-1.58* (0.12)	-0.88* (0.16)	-0.68* (0.20)	-0.83* (0.24)

For all persons, all years, unweighted n=34,211; for pre-1980, n=23,753; for 1980 and after, n=10,458. For married couples, all years, n=13,607; for pre-1980, n=9,732; for 1980 and after, n=3,875.

* indicates absolute value of (coefficient/standard error) > 2.

Table A-5: Logit Regressions for Transitions Out of Low Income Group

Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(5)	(6)	(7)	(8)
Persons in sample:	All persons								Married couples			
Years in sample:	All years						pre-1980	1980 and after	All years		pre-1980	1980 and after
Independent variable:	Coefficient (standard error)											
middle year 1980 and after	-0.23* (0.04)		-0.17* (0.04)	-0.16* (0.04)	-0.09* (0.04)	-0.21* (0.04)			-0.24* (0.09)	-0.35* (0.09)		
trend in per capita real disposable income		14.76* (1.91)	12.75* (1.97)		14.10* (2.10)	13.77* (2.17)	8.73* (3.27)	16.77* (3.11)	26.12* (4.58)	26.30* (4.74)	16.94* (6.61)	33.14* (7.49)
controls for ratio of average family income years 1 & 2 to transition line	no	no	no	yes	yes	yes	yes	yes	yes	yes	yes	yes
black head						-0.54* (0.05)	-0.57* (0.07)	-0.46* (0.10)		-0.21 (0.13)	-0.23 (0.15)	-0.20 (0.25)
female head						-0.41* (0.04)	-0.48* (0.06)	-0.33* (0.08)				
average # < age 18 years 1 & 2						0.15* (0.01)	0.21* (0.01)	-0.04 (0.03)		0.17* (0.03)	0.22* (0.03)	0.02 (0.07)
head in year 1 a high school grad						0.53* (0.05)	0.51* (0.06)	0.61* (0.09)		0.51* (0.09)	0.55* (0.11)	0.48* (0.20)
head in year 1 has at least some college						0.98* (0.06)	0.94* (0.07)	0.99* (0.10)		1.31* (0.12)	1.07* (0.15)	1.64* (0.24)
head in year 1 < age 35						0.27* (0.04)	0.38* (0.05)	0.03 (0.08)		0.08 (0.08)	0.08 (0.10)	0.22 (0.18)
constant	-0.60* (0.02)	-0.96* (0.04)	-0.86* (0.05)	-1.87* (0.06)	-2.17* (0.07)	-2.48* (0.09)	-2.51* (0.11)	-2.41* (0.14)	-1.45* (0.18)	-2.20* (0.20)	-2.12* (0.25)	-2.63* (0.35)

For all persons, all years, unweighted n=14,361; for pre-1980, n=10,002; for 1980 and after, n=4,359. For married couples, all years, n=2,907; for pre-1980, n=2,194; for 1980 and after, n=713.

* indicates absolute value of (coefficient/standard error) > 2.

Endnotes

1. As explained below, as of late 1990, a consistent time series on post-tax household income is possible in the PSID only for calendar years 1967 through 1986. Incomes for 1987 and 1988 are used only in the wealth section of the chapter.

2. We also experimented with a transition measure that required household income to be in the low-, middle- and high-income categories for both the first and second or both fourth and fifth years. This restriction yielded presumably more reliable but fewer transitions, and did not fundamentally alter the conclusions of our analysis.

3. An alternative approach to the definition of boundaries, suggested by Peter Gottschalk, was to define the upper and lower bounds of the middle class at the same percentile points of the income distribution each year. We implemented this completely relative definition by setting the "high income" line in each year at the 90th percentile and the lower bound of the middle class at the 20th percentile. With one minor exception (noted below) the results using this approach were very similiar to those using the absolute approach.

4. As documented by the Center on Budget and Policy Priorities (1990), the 1989 CPS data show an all time high share of aggregate income for the top quintile and vertile and all time lows for the bottom two quintiles. The middle three-fifths of the family income distribution in 1989 received the lowest income share recorded

by the Census since 1947, only 50.8 percent of total CPS money income, while the top fifth of families shared 44.6 percent of the total--their largest share ever recorded.

5. The comparable fractions of adults making the four transitions involving income-to-needs are 7.7, 27.5, 31.8 and 6.8 percent, respectively.

6. In calculating trends in disposable personal income per capita over each five-year period, we regressed the natural logarithm of the per capita personal income measure on calendar year. The slope of the regression line has the interpretation as the average annual percentage growth. This produced a set of "middle years" -- 1974, 1975, 1979, 1980 and 1981 -- with economic growth that was much below average.

7. Transitions based on income-to-needs showed very similar calendar-year patterns, as did transitions based on the completely relative definition of economic status. The single exception was that transitions into the high-income group (top 9 percent) were no more prevalent in the 1980s than before. We suspect that these differences are due to the fact that the top 9 percent had incomes that were growing so fast that they succeeded in pulling the lower boundary of the top income group up as fast as the incomes of those who would otherwise have joined the group. Hence, the extent of movement "up" the distribution was no greater in the 1980s than before. A look at the inflation-adjusted dollar changes in income among adults grouped near the high-income cutoff point (e.g., $50 000 - $55 000,

$55 000 - $60 000, etc.), showed all of the medians to be larger in the 1980s than before.

8. In contrast to the other transition based tables, the transitions in Table 2 are based on the 'both year' definition of income that required family income to be in a given income status in boty years 1 and 2 or 4 and 5.

9. For example, in the analysis of transitions from middle- into high-income status, a person with an initial two year average household income of $27 500 would have an income that was 50 percent of the $55 000 transition line. In each set of regressions we expressed the distances to the transition lines as a set of dummy variables based on quintiles of the sample at risk of making the given transition.

10. If the entire income distribution were moving closer to the upper boundary of the middle-income group, then the typical person 'at risk' of making a transition into the upper-income group would be closer to the boundary after 1980 than before. Our dummy variables measuring a person's distance to the transition boundary adjust for this differential risk.

11. We calculated the effect of each demographic characteristic by estimating a regression-adjusted difference between the given demographic group and overall sample average. We then converted the logistic difference into an adjusted probability using the formula: $P_s = P_b\, e^{\beta\Delta x} / [(1-P_b) + P_b\, e^{\beta\Delta x}]$ where P_s is the adjusted transition probability, P_b is the overall sample probability, β is the logistic regression coefficient of interest and Δx is the change in the independent variable of interest.

12. Recall that we used roughly the 20th and 90th percentiles of the income distribution to define the boundaries of our middle-income group.

13. To determine pre-tax income cutoffs for the 1984-88 period we inflated the $18 500 and $55 000 amounts to 1984-1988 levels using the CPI-UX1 and further increased these amounts by the average gap between pre- and post-tax income for households in 1984 with post-tax income around $18 500 and $55 000.

14. Another way to integrate wealth into our income-based analysis of inequality is to substitute for reported property income (i.e., rent, dividends and interest) an imputed return on net wealth and to recalculate changes in the size of the low-, middle- and high-income groups based on this expanded definition of wealth. We also compared income transitions based on the two alternative treatments of income from wealth. Virtually never were favorable transitions based on one income definition accompanied by unfavorable transitions based on the other definition.

Using pre-tax income levels of $70 263 and $21 316 in 1987 dollars as boundaries of the middle-income group we applied the rate of return on U.S. government long-term bonds to net worth to obtain our alternative measure of income from wealth. With these boundaries, the group of middle-income adults shrank in size between 1984-85 and 1987-88 from 67.8 to 64.3 percent, but so did the lower-income group, from 18.9 to 16.4 percent. The big gainer was the high-income group, which grew from 13.2 to 19.1 percent.

15. In calculating house equity as a fraction of net worth and debt as a fraction of income, we took all individuals between the 25th and 75th percentiles and then found the mean of these ratios across these sets of individuals. Sample sizes for the "fell from high income" group were sufficiently small that we took all such individuals in making the mean ratio calculations.

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