Review of Income and Wealth
Series 50, Number 4, December 2004

ASSET POVERTY IN THE UNITED STATES, 1984–99: EVIDENCE FROM THE PANEL STUDY OF INCOME DYNAMICS

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Using PSID data for the years 1984–99, we estimate the level and severity of asset poverty. We find that despite a sharp decline in the official poverty rate, the asset poverty rate barely budged over this period. Moreover, the severity of asset poverty increased during this period. The likelihood of being asset-poor decreased for those who are college graduates or married with children, whereas it increased for those who are white, for the unmarried elderly, and for those without a college degree. Lifetime events such as changes in job market, marital and homeownership status are correlated with transitions into and out of asset poverty.

1. Introduction

The poverty measure in the United States is an important indicator that influences public awareness of well-being as well as public policies and programs. Until now, the main focus of poverty measurement has been on income. Public policies designed to alleviate poverty have income maintenance as their primary goal. This approach to poverty ignores the importance of wealth.

However, wealth is central to the economic security of households for various reasons. The availability of assets can provide liquidity in times of economic hardship, such as the periods of sickness or unemployment. Assets can also be used to pay for post-secondary education, to make a down payment on a home or to maintain a decent standard of living in retirement. Furthermore, owner-occupied housing, which is an important part of household wealth, provides services to the owner and frees up resources that would otherwise be spent on rent. Without accumulated assets, people are forced to live from one paycheck to the next. They lack the sense of self-sufficiency, since they need assistance from the government, relatives or friends every time their income flow stops. Furthermore, the lack of sufficient assets can discourage people from taking actions for a better life, such as moving to a better neighborhood or quitting a job to look for a more desirable one.

Note: We are thankful to two anonymous referees, Giorgio Topa, Dalton Conley, Vincenzo Quadrini, Amy Schwartz, Mark Lindeman and participants of Bard quantitative seminar and Eastern Economic Association 2003 Conference for helpful suggestions and comments. All errors are our own. We gratefully acknowledge financial support provided by the Ford Foundation.

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In this paper, we look at the share and characteristics of households who lack enough savings to sustain them during a period of economic hardship.[1] For this purpose, we define a measure of asset poverty based on Haveman and Wolff (2001). According to this measure, a household is asset-poor if it does not have enough wealth-type resources to enable it to meet its basic needs for a limited period of time. We extend the mentioned study by: (1) using data from the Panel Study of Income Dynamics (PSID), which is a better data source for the low-income population;[2] (2) performing regression analyses to identify the determinants of and the trends in asset poverty; and (3) looking at the persistence of asset poverty and transitions into and out of asset poverty. Our main finding is that despite a sharp decline in official income-based poverty, the asset poverty rate hardly changed over the 1984–99 period. Indeed, the severity of asset poverty increased during this period, despite the growth in the economy and the booming stock market.

The rest of the paper is organized as follows. Section 2 has the literature review. Section 3 defines asset poverty. The estimates of asset poverty are reported in Section 4. Section 5 analyzes the effects of compositional changes on the overall asset poverty rates. Section 6 compares asset poverty rates to official poverty rates. Sections 7 and 8 discuss the results of regression analyses that identify the determinants of and the trends in asset poverty. We talk about the persistence of poverty in Section 9. The role of major lifetime events on the transitions into and out of asset poverty is also discussed here. Section 10 concludes the paper.

2. Background

Three branches of the literature form the background of this paper. The first one studies the distribution of wealth and emphasizes the role of wealth in determining well-being and status. The second one focuses on the role of assets in eliminating poverty and the role of public policy in creating saving incentives for the low-income population. Finally, the third branch of the literature examines how the incorporation of assets along with income in poverty measurement changes the poverty rate and duration.

A number of economists and other social scientists have called attention to the importance of wealth as an indicator of well-being and status. It has been stated that wealth gives its owner an advantage in life, "independent of the direct financial income it provides" (Wolff, 2001). It is also a source of consumption,

[1]By economic hardship we mean mainly the one caused by income loss, although for some groups of the population, such as the elderly, this may not be a source of concern since their incomes are mostly secure. Yet, for those groups there are other causes of economic hardship such as loss of health or the breakdown of the family. Another issue is that, besides using assets to maintain consumption, people can turn to family help or can receive public assistance. However, getting help from such sources on a continual basis is usually not desirable.

[2]The PSID consists of a cross-sectional national sample and a national sample of low-income families. The data source for Haveman and Wolff (2001) is the Survey of Consumer Finances (SCF) conducted by the Federal Reserve Board. Since the SCF oversamples high-income households and collects information on pension wealth, the SCF estimates of asset poverty rates are in general lower than the PSID estimates. The SCF sample is weighted toward high-income households, whereas the PSID tends to over-sample the poor. As a result, the PSID sample may give a more accurate assessment of the wealth holdings of low-income households.

since it can be converted into cash in times of economic stress caused by unemployment, disability, sickness or family breakup (Wolff, 2001). Comparing income to wealth, Oliver and Shapiro (1990) wrote, "income is a transitory measure . . . as it may have been spent as fast as it was received and the goods purchased quickly consumed. Wealth, on the other hand, is a more stable indicator of status or position in society and represents stored-up purchasing power. . . . It reflects savings and investments that can be drawn on in times of need." Furthermore, families normally enjoy consumption services from assets such as owner-occupied housing.

It is well known that wealth is distributed far more unevenly than income and that wealth inequality is increasing. Oliver and Shapiro (1990) reported that one-third of households in the U.S. have zero or negative net financial assets; therefore "redistributive and social welfare policies based on income analyses and levels seriously underestimate the severity of the problems they are meant to address" (Oliver and Shapiro, 1990, p. 130). Wolff (2001) found that wealth inequality continued to rise in the 1990s and that the greatest gains in wealth were enjoyed by the upper 20 percent and particularly the top 1 percent. He deduced that "it is not surprising that the fraying of the private safety net . . . has lead to a growing sense of economic insecurity in the country" (Wolff, 2001, p. 70). These findings are striking, since the economic growth and the stock market run-up in the 1990s gave the false impression that everyone was accumulating wealth.

The racial wealth gap has been another area of research. Oliver and Shapiro (1997) focused on how differentials in black and white wealth holdings reveal the "dynamics of racial inequality otherwise concealed by income, occupational attainment, or education." Similarly, Conley (1999) found that racial disparities in education, welfare receipt or out-of-wedlock childbirth that persist, even after controlling for income, are explained when parental wealth and parental socioeconomic status are taken into account. Gittleman and Wolff (2004) reported that raising African American incomes and saving rates to the levels of white families would narrow the racial wealth gap only slightly. They concluded in the light of the evidence that the effectiveness of policy proposals to narrow the racial wealth gap is dubious.

Sherraden (1991, 2001) proposed the idea of "welfare based on assets." He observed that in the U.S. "asset accumulations are primarily the result of institutionalized mechanisms involving explicit connections, rules, incentives and subsidies" (Sherraden, 1991, p. 116). According to this view, a great extent of saving is done through policies such as the home mortgage interest deduction, 401(k)s, individual retirement accounts, and educational savings accounts, which tend to benefit high-income people. The poor usually do not participate in these policies; furthermore, such policies operate mainly via tax benefits, which benefit the poor little if at all. Furthermore, some welfare programs, such as Supplemental Security Income, are limited to those with little wealth. Therefore, to integrate the poor into this system, there is a need for new asset-based programs that are designed with the poor in mind. One recent example of such programs is the individual development accounts (IDAs), which are savings accounts containing low-income workers' deposits that are matched by private or public sources. So far, "twenty five states in the U.S. have included IDAs in their welfare plans" (Sherraden, 2001, p. 308). Initial findings on the impact of IDAs are mixed: accumulated savings in

these accounts are low on average, but some low-income working people respond well to the program. It is also not possible to tell whether the savings are new or just shifted assets. More research is needed to determine which features of the program are most successful and how the program should be designed to ensure success if it were offered on a larger scale.

In the area of poverty measurement, researchers have suggested adding wealth to income to assess the adequacy of resources. Weisbrod and Hansen (1968) first attempted to explicitly account for wealth as well as income in measuring poverty and found a lower incidence of poverty and a younger age distribution of poor households under the income-net worth approach. Moon (1977), Crystal and Shea (1990) and Rendall and Speare (1993) focused on the economic circumstances of the elderly and demonstrated how using raw income to estimate the well-being of the elderly could distort the picture of poverty. Ignoring assets of the elderly is turning out to be increasingly problematic, as defined contribution retirement plans have become more popular. Ruggles and Williams (1989) and Ruggles (1990) analyzed the effects of asset holdings on the poverty entries and spell durations, assuming that assets could be used to bring the consumption levels of those with below-poverty incomes to the poverty line for as long as possible. They found that over 60 percent of poverty entries remained even after asset holdings were accounted for. By contrast, half of the observed poverty spell entries for the elderly were eliminated. The average spell duration increased after adding assets to resources, since those who remained in poverty were the ones who were more likely to experience very long spells.

3. The Definition of Asset Poverty

In this paper, we adopt the definition of asset poverty in Haveman and Wolff (2001). According to this definition, "a household is considered to be 'asset-poor' if its access to 'wealth-type resources' is insufficient to enable the household to meet its 'basic needs' for some limited 'period of time'." We specify "basic needs," the "period of time" and the content of "wealth-type resources," in the spirit of the study cited above, as follows:

(1) We use three alternative wealth measures: net worth (NW) includes the current value of all marketable assets less the current value of all debts. Net worth minus home equity (NW-HE) includes all items in NW except for home equity. The third is liquid wealth (LIQ), which measures the value of cash and other kinds of easily monetizable assets. (See the Appendix for the description of the wealth data in the Panel Study of Income Dynamics (PSID).)

(2) We set the "period of time" somewhat arbitrarily, but reasonably, as three months.[3] This is the time period that we require the households to survive on their own by spending down their wealth.

[3]The choice of three months as the time period is reasonable. A key source of economic hardship is job loss and the expected duration of unemployment ranged from 10 to 19 weeks (or 2.2 to 4.2 months) during 1967–2002 (see for example, Federal Reserve Bank of San Francisco, 2002). To check the sensitivity of our poverty rates to the choice of time period, we estimated rates for 2 and 4 months. They vary from the reported rates by 1 to 2 percentage points.

(3) We use the family-size conditioned poverty thresholds recently proposed by a National Academy of Sciences panel. The thresholds are set for a reference family made up of two adults and two children using Consumer Expenditure Survey data and then corrected for family size and structure by using a three-parameter equivalence scale.[4] The threshold for the reference family was $15,998 in 1997 dollars. We also adjust the thresholds for inflation using CPI-U.

As an illustration of the level of these thresholds, for the reference family, the asset poverty threshold is $2,589 in 1984, $3,089 in 1989, $3,693 in 1994 and $4,151 in 1999 (all in current dollars). These asset poverty thresholds are one-fourth of the relevant income poverty thresholds.

We estimate asset poverty using the headcount index (P_0) and the poverty gap ratio (P_1), which belong to the P_α class of poverty measures introduced by Foster *et al*. (1984). These measures are defined as:

$$P_0 \equiv \frac{1}{\sum_{i=1}^{n} w_i} \sum_{i=1}^{n} w_i \{V_i < PL_i\}, \quad \text{and} \quad P_1 \equiv \frac{1}{\sum_{i=1}^{n} w_i} \sum_{i=1}^{n} \frac{w_i \{V_i < PL_i\}(PL_i - V_i)}{PL_i},$$

where PL_i and V_i are the asset poverty line and the level of wealth for household i respectively, n is the sample size and w_i is the sample weight of household i. The expression $\{V_i < PL_i\}$ takes the value of one if V_i is less than PL_i, i.e. household i is asset-poor, and zero otherwise.

In words, the headcount index gives us an estimate of the share of households that would live at poverty standards for three months if forced to liquidate all wealth and consume the proceeds. The poverty gap ratio measures the per-household amount of wealth that would be needed to bring all asset-poor households to the asset poverty line, measured as a share of the asset poverty line.

4. Estimates of Asset Poverty in the U.S. from 1984 to 1999

4.1. *The Evolution of Wealth in Years 1984–99*

We first look at the changes in the distribution of wealth between 1984 and 1999. Table 1 presents the values of mean and some percentiles of NW, NW-HE and LIQ. Although all of these statistics increased over the 1984–99 period, the lower percentiles of these distributions did not increase as fast as the upper ones. The faster progress in the upper percentiles relative to their medians amplified the skewness of these distributions. The 10th percentiles of NW and NW-HE became more negative—that is, the indebtedness of the poorest 10 percent of the Americans increased between 1984 and 1999.

[4]Specifically, this scale fixes the ratio of the scale for two adults and one adult to 1.41. For single parents the scale is $(A + 0.8 + 0.5*(C - 1))^{0.7}$, where A is the number of adults and C is the number of children. All other families use the formula $(A + 0.5*C)^{0.7}$. See Short (2001) or Citro and Michael (1995) for more information.

TABLE 1

MEAN AND PERCENTILE VALUES OF NW, NW-HE AND LIQ, IN 1999 THOUSAND DOLLARS, AND PERCENTAGE CHANGES OVER 1984–99

		Mean				% change
		1984	1989	1994	1999	1984–99
NW		127.94	162.59	168.70	217.06	70
NW-HW		81.89	107.50	116.04	158.75	94
LIQ		36.34	49.30	68.76	72.53	100
		Percentiles				% change
NW	10	−0.44	−1.07	−1.69	−1.80	–
	25	1.60	1.34	2.03	2.00	25
	50	42.97	41.65	50.66	56.50	31
	75	132.29	152.46	167.73	195.00	47
	95	483.12	584.98	664.15	779.00	61
NW-HE	10	−1.60	−3.22	−5.07	−5.00	–
	25	0.00	0.00	0.00	0.00	0
	50	7.22	8.46	11.26	12.00	66
	75	57.72	67.18	84.43	100.00	73
	95	352.76	399.03	495.30	621.00	76
LIQ	10	0.00	0.00	0.00	0.00	0
	25	0.48	0.54	0.56	0.50	4
	50	5.61	6.72	9.01	6.00	7
	75	28.86	38.96	56.28	40.50	40
	95	163.55	201.53	298.30	289.00	77

Source: Authors' calculations from the 1984, 1989, 1994 and 1999 surveys of the PSID.

Notes: The data are based on four weighted, cross-sectional snapshots of the households surveyed in each of these years. See the Appendix for the description of these cross-sectional samples.

TABLE 2

OVERALL ASSET POVERTY RATES AND ASSET POVERTY GAP RATIOS

	Asset Poverty Rates			
	1984	1989	1994	1999
NW	26.35	27.08	26.08	25.88
NW-HE	41.65	41.32	40.49	40.13
Liquid	41.83	38.85	37.83	41.65
	Asset Poverty Gap Ratios			
NW	61.51	75.66	89.35	82.30
NW-HE	84.99	93.72	112.82	108.74
Liquid	33.28	30.72	30.75	32.30

Source: Authors' calculations based on the 1984, 1989,1994 and 1999 PSID data.

4.2. *Changes in Asset Poverty, 1984–99*

Table 2 shows estimates of asset poverty (the headcount index and poverty gap ratio) for the entire population of households in the United States. In 1999, almost 26 percent of households were asset-poor according to the NW measure, while 40 percent fell into this category according to the NW-HE measure and 42 percent according to the LIQ measure. Indeed, in 1999, over 46 percent of households lacked even a $5,000 worth of liquid asset cushion to protect them against adverse shocks (results not shown).

As expected, NW yields the lowest estimates (25–27 percent), as it is the most inclusive measure of wealth. Excluding home equity increases poverty rates by almost 15 percentage points. This is consistent with the fact that home equity is the most widely held asset category and also an important part of household wealth in the U.S. It is interesting that the NW-HE and liquid asset estimates are fairly close. This happens because only a small percentage of households own illiquid assets other than primary residence, such as real estate (other than home) or business assets. As a result, we shall show additional results for only the NW and NW-HE poverty measures in the subsequent sections of the paper.

We also notice that there seems to be almost no change in overall asset poverty rates in this 15-year period. Net worth poverty increased only a bit from 1984 to 1989 and then declined slightly from 1989 to 1999. Both NW-HE and LIQ poverty rates varied within a small range.

Table 2 also presents the poverty gap ratios estimated for years 1984 to 1999 for the entire population. As mentioned before, this index measures the mean shortfall of wealth below the poverty line as a proportion of the poverty line. For instance, in 1984 the per-household amount of net worth that would be needed to move all asset-poor households up to the poverty threshold is on average $1,592 (61.51 percent of $2,589, which is the asset poverty threshold in 1984 for the reference family).

It is interesting how the stability of the headcount index gives one the false impression that the recession in the beginning of the 1990s did not have any adverse effects on the asset-poor. Although the share of the asset-poor stayed constant over time, the large increase in the P_1 index between 1989 and 1994 suggests that the economic downturn in the beginning of the 1990s was harsh on some parts of the population. It seems that the average asset-poor household experienced a decline in wealth during the recession. In 1989, the NW-poor households were on average 75 percent below the poverty line, while in 1994 they were 89 percent below the poverty line, as shown in Table 2.

Moreover, contrary to popular belief, asset poverty rates did not go down during the expansion in the late 1990s. Both NW and NW-HE poverty stayed the same; liquid asset poverty increased from 37.8 percent to 41.6 percent. During this expansionary period, both the NW and NW-HE poverty gap ratios fell, although the NW-HE gap ratio stayed above 100 percent in 1999. According to our calculations, in 1999, the NW-HE-poor had negative wealth on average, with an average non-mortgage debt of $6,999, compared to the average value of businesses at $177, real estate at $82, and checking and saving accounts at $1,099. The NW poverty gap ratio fell from 89 to 82 percent between 1994 and 1999; however it was still higher in 1999 in comparison to the 1980s.

Over the 1984–99 period, the liquid asset poverty gap ratio (P_1 index) varied very little, between 30 percent to 33 percent, as shown in Table 2. By contrast, the NW and NW-HE P_1 indices were volatile and the latter sometimes exceeded 100 percent over the time of analysis. Our calculations show that there has been a noticeable increase in the indebtedness of the average asset-poor household from the 1980s to 1990s. During this period, both the mortgage and non-mortgage debt of the NW and NW-HE poor jumped substantially and exceeded their asset holdings.

4.3. *Structure of Asset Poverty in 1999*

Tables 3 and 4 present descriptive statistics on asset poverty for various demographic and labor market groups. Households are classified according to the age, race and education level of the head of the household, their housing tenure and family type (marital status and presence of children).

Several points are worth noting. First, there are striking differences in asset poverty rates among the racial groups, regardless of the wealth measure used. Non-whites are more than twice as likely to be asset-poor than non-Hispanic whites. Poverty gap ratios for racial groups display the same ordering as poverty rates.

Second, the following life-cycle pattern is evident: both asset poverty indices usually decrease as the age of the household head increases. NW and NW-HE poverty gaps for the youngest (head younger than 35) are much greater than the 100 percent level, i.e., the young poor households have negative wealth on average.

Third, asset poverty rates (P_0 indices) decrease with the education level of the household head and this is true for both wealth measures. There is a striking difference in asset poverty rates of households headed by a high school dropout and a high school graduate. Households whose heads dropped out of college are twice as likely to be asset-poor as those with college graduate heads.

Fourth, homeowners are much wealthier than renters. Even after excluding home equity, we observe more than twice as much asset poverty among renters as among homeowners (27 percent versus 67 percent). Furthermore, the severity of asset poverty among the poor renters is much worse than it is among poor homeowners. The average NW or NW-HE-poor renter has negative wealth.

Fifth, with regard to family structure, we see that the group with the highest rate of asset poverty is female-headed families with children. The asset poverty rate among families with children is also pretty high. However, families with children are half as likely to be asset-poor when both parents are present as when the father is absent. This is exactly as we would expect to see, considering the high unemployment rate and dependency on government assistance among single mothers and the high living expenses families with children have to bear. The lowest asset poverty rate among family types occurs among elderly married couples. Even among the elderly, being married seems to be an important factor that determines wealth holdings. Comparing the P_1 indices, we see that female-headed families with children have the highest P_1 index among all groups, whereas the married elderly have the lowest.

4.4. *Changes in Asset Poverty in Years 1984 to 1999 by Groups*

Table 3 (panel B) and Table 4 present evidence on how the racial groups have fared in terms of asset poverty between 1984 and 1999. By the net worth measure, non-Hispanic whites experienced a small decline in their asset poverty rate, from 21 percent to 19 percent; while for non-whites the poverty rate declined from 52 percent to 48 percent between 1984 and 1994 and bounced up to 50 percent in 1999. A similar pattern is evident for the NW-HE measure of poverty. P_1 indices in Table 4 show that asset poverty is more severe among non-whites. The P_1 index for non-white NW-HE poverty exceeds 100 percent in all years.

Looking at age groups (Panel C), we find that although there is no apparent common trend for all the age groups during 1984–89 and 1989–94, the 1994–99 period was characterized by an increase in asset poverty rates for all age groups (except for the oldest) regardless of the wealth measure used. By and large, the younger groups experienced bigger percentage point increases, and, in fact, the youngest age group (under 25) had by far the largest increase over the 1984–99 period. There was an almost continuous rise in the NW and NW-HE poverty gap ratios for all age groups (except for the oldest) during these 15 years. The estimates of this index remained above 100 percent for those younger than 35 in all four years of the analysis. Moreover, the increase in the poverty gap was the steepest for the youngest group.

Panel D of Table 3 shows asset poverty rates by educational groups. The 1984–89 period was the time during which all groups saw declines in asset poverty rates. For the other two five-year periods, the results are mixed. Over the entire 15-year period all but those with less than a high school degree enjoyed a reduction in asset poverty. Among college graduates, asset poverty rates were reduced by almost half during this period. The NW and NW-HE poverty gap almost doubled for the least educated group (Table 4). Although there was an increase in the poverty gap for the other three groups, the rate of increase was not as high. College graduates saw a decline in the P_1 index between 1984 and 1999 with a peak in 1994, although the index based on NW-HE measure stayed above 100 percent in all years.

The most striking observation from Panel E of Table 3 is the huge and persistent gap in poverty rates between homeowners and renters. Renters are more than twice as likely to be asset-poor as homeowners in all years of the analysis. However, the descriptive statistics show no clear difference between the two groups in terms of changes in asset poverty rates. The big difference in poverty rates between homeowners and renters mirror the difference in poverty gap ratios. NW and NW-HE poverty gaps among homeowners are about 25 percent and 60 percent respectively (with the exception of year 1994), while those for renters are greater than 100 percent at all times and close to 200 percent in 1999.

Changes in asset poverty rates for some selected family types from 1984 to 1999 are shown in Panel F of Table 3. The most surprising result is for non-elderly female-headed families with children. Although they have the highest rate of asset poverty by both measures of wealth, they seem to have experienced a continuous decline in poverty over the 15-year period that we are analyzing. However, Table 4 shows another side of the story. While the number of asset-poor in this group declined, the poverty gap of the asset-poor increased. In 1984, the NW poor in this group held almost zero wealth, but from 1989 onward their wealth holdings became negative. The NW-HE poverty gap was always greater than 100 percent for this group and it increased from 120 percent in 1984 to 176 percent in 1999.

Changes in asset poverty among the elderly show that this group is not homogenous. Marriage is apparently an important factor that determines not only the level of but also the trend in asset poverty. Between 1984 and 1999, asset poverty rates decreased among the married elderly while they increased among the unmarried elderly. We see a similar picture when we look at poverty gap ratios. The P_1 index went down among the married elderly, but it went up among the

TABLE 3

ASSET POVERTY RATES, 1984–99

	Years				Percentage Point Change			
	1984	1989	1994	1999	1984–89	1989–94	1994–99	1984–99
A. Total								
NW	26.35	27.08	26.08	25.88	0.73	–1.00	–0.20	–0.47
NW-HE	41.65	41.32	40.49	40.13	–0.33	–0.83	–0.36	–1.52
B. Race/ethnicity								
White								
NW	21.36	22.11	21.87	18.99	0.75	–0.24	–2.88	–2.37
NW-HE	35.49	35.29	35.39	31.80	–0.20	0.10	–3.59	–3.69
Non-white								
NW	52.33	48.83	47.72	49.98	–3.50	–1.11	2.26	–2.35
NW-HE	73.68	67.68	66.76	69.27	–6.00	–0.92	2.51	–4.41
C. Age groups								
Ages < 25								
NW	72.23	77.15	70.87	79.55	4.92	–6.28	8.68	7.32
NW-HE	79.00	84.90	86.72	87.65	5.90	1.82	0.93	8.65
Ages 25–34								
NW	43.14	42.52	38.67	44.01	–0.62	–3.85	5.34	0.87
NW-HE	59.44	59.68	54.31	65.05	0.24	–5.37	10.74	5.61
Ages 35–49								
NW	16.93	16.62	17.05	22.64	–0.31	0.43	5.59	5.71
NW-HE	36.66	37.74	35.21	40.17	1.08	–2.53	4.96	3.51
Ages 50–61								
NW	11.74	8.66	10.20	9.49	–3.08	1.54	–0.71	–2.25
NW-HE	27.39	23.84	23.81	24.91	–3.55	–0.03	1.10	–2.48
Ages 62–69								
NW	11.39	9.32	9.13	11.14	–2.07	–0.19	2.01	–0.25
NW-HE	21.86	22.28	22.52	23.20	0.42	0.24	0.68	1.34
Ages 70+								
NW	11.87	12.47	16.61	11.19	0.60	4.14	–5.42	–0.68
NW-HE	25.40	24.95	31.82	22.72	–0.45	6.87	–9.10	–2.68
D. Education								
<High school								
NW	33.58	29.97	30.78	34.31	–3.61	0.81	3.53	0.73
NW-HE	54.66	50.48	54.97	58.10	–4.18	4.49	3.13	3.44
High school								
NW	27.05	22.37	23.85	18.22	–4.68	1.48	–5.63	–8.83
NW-HE	42.76	39.10	42.52	35.37	–3.66	3.42	–7.15	–7.39
Some college								
NW	24.56	16.62	18.55	18.80	–7.94	1.93	0.25	–5.76
NW-HE	37.71	32.02	31.00	31.28	–5.69	–1.02	0.28	–6.43
College graduate								
NW	15.18	8.86	9.22	8.76	–6.32	0.36	–0.46	–6.42
NW-HE	22.48	19.22	17.46	16.64	–3.26	–1.76	–0.82	–5.84
E. Housing tenure								
Homeowner								
NW	2.35	3.50	5.58	5.85	1.15	2.08	0.27	3.50
NW-HE	27.84	26.35	26.88	26.07	–1.49	0.53	–0.81	–1.77
Renter								
NW	62.39	64.03	66.02	66.29	1.64	1.99	0.27	3.90
NW-HE	62.39	64.03	66.02	66.29	1.64	1.99	0.27	3.90

TABLE 3 (*continued*)

	Years				Percentage Point Change			
	1984	1989	1994	1999	1984–89	1989–94	1994–99	1984–99
F. Family type								
<65 yrs, married, children								
NW	19.56	20.18	21.32	19.88	0.62	1.14	–1.44	0.32
NW-HE	44.68	42.11	40.00	40.65	–2.57	–2.11	0.65	–4.03
<65 yrs, married, no children								
NW	10.72	10.47	13.07	14.68	–0.25	2.60	1.61	3.96
NW-HE	23.14	23.36	26.77	27.39	0.22	3.41	0.62	4.25
<65 yrs, female head, children								
NW	67.39	62.69	60.86	58.52	–4.70	–1.83	–2.34	–8.87
NW-HE	82.75	79.07	77.03	73.73	–3.68	–2.04	–3.30	–9.02
65+ yrs, married								
NW	6.43	4.64	4.71	3.13	–1.79	0.07	–1.58	–3.30
NW-HE	18.63	17.08	17.56	13.16	–1.55	0.48	–4.40	–5.47
65+ yrs, female head								
NW	15.94	17.69	23.85	18.33	1.75	6.16	–5.52	2.39
NW-HE	29.30	31.97	40.79	32.90	2.67	8.82	–7.89	3.60
65+ yrs, male head								
NW	15.76	16.74	20.64	21.58	0.98	3.90	0.94	5.82
NW-HE	23.41	22.54	33.76	28.91	–0.87	11.22	–4.85	5.50

Source: Authors' calculations from 1984, 1989, 1994 and 1999 surveys of the PSID.

unmarried elderly. The rise in both P_0 and P_1 indices was the highest during the 1989–94 period, which includes a recession.

5. Effects of Changes in Population Composition on the Overall Asset Poverty Rate

The population in the United States experienced some striking compositional changes set off by events such as immigration and aging during the 15 years that we analyze. Even if the asset poverty rates for various groups remained the same, changes in the shares of these groups in the population by themselves could create changes in the overall asset poverty rates. Since we do not observe any substantial changes in total asset poverty rates in our dataset, it is interesting to see how these two sets of factors have been interacting to keep these rates more or less the same.

We decompose the change in the poverty measure using a shift-share analysis. This technique breaks down the total change in the statistic into changes in the values that the statistic takes for various groups and changes in the population shares of these groups. Formally, a decomposable index Y can be written as,

$$Y_t = \sum_{i=1}^{n} Y_{it} s_{it},$$

where Y_{it} is the value of Y for group i at time t, s_{it} is the share of group i in the population at time t and n is the number of groups. Then, the change in Y between t and $t-1$ can be approximated as

TABLE 4

Poverty Gap Ratios in Percentages, by Group and Year

	NW				NW-HE			
	1984	1989	1994	1999	1984	1989	1994	1999
Total	61.51	75.66	89.35	82.30	84.99	93.72	112.82	108.74
Race/ethnicity								
White	54.78	72.78	85.80	80.19	76.52	87.44	108.77	104.29
Non-white	96.49	88.25	107.56	89.69	128.97	121.18	133.63	124.29
Age								
<25	136.02	174.99	139.35	375.84	142.85	185.11	161.99	387.08
25–34	106.04	137.80	150.08	175.26	129.80	148.73	181.19	207.51
35–49	64.24	74.51	89.20	78.85	102.97	102.36	120.22	107.25
50–61	17.97	24.31	49.00	51.90	43.70	56.45	81.02	86.21
62–69	16.59	16.48	20.66	28.93	28.19	31.47	41.61	51.30
70+	11.92	25.40	63.26	14.64	23.03	26.06	40.93	26.14
Education								
<High school	42.89	62.04	68.39	87.47	68.75	88.38	100.81	114.46
High school	52.77	55.90	75.85	68.19	72.21	74.94	101.87	89.59
Some college	72.68	106.89	104.40	107.96	101.83	121.73	135.89	132.31
College graduate	97.46	93.26	111.67	74.26	119.59	102.38	117.59	107.53
Tenure								
Homeowner	17.75	25.85	37.03	26.49	56.87	55.53	72.83	65.74
Renter	127.19	153.08	188.97	197.40	127.19	153.08	188.97	197.40
Family type								
<65 yrs, married, children	59.99	78.49	74.03	58.76	100.63	103.93	103.92	90.97
<65 yrs, married, no children	40.15	38.19	76.69	63.15	63.98	66.21	114.77	90.01
<65 yrs, female head, children	98.14	104.59	109.74	145.40	120.19	129.02	133.56	176.54
65+ yrs, married	8.76	27.39	67.80	6.66	21.99	19.48	29.24	19.88
65+ yrs, female head	14.08	19.21	27.79	27.65	27.54	34.59	48.38	42.67
65+ yrs, male head	21.96	15.35	35.17	52.36	22.07	20.15	52.32	64.95

Source: Authors' calculations from 1984, 1989, 1994 and 1999 surveys of PSID.

$$\Delta Y_t \approx \sum_{i=1}^{n} \Delta Y_{it} \Delta s_{it},$$

where $\Delta x_t \equiv x_t - x_{t-1}$ for a variable x.

Researchers who use this technique to analyze changes in poverty or income distribution usually find that compositional factors have only a modest impact. For instance, Gottschalk and Danziger (1995) show that the decline in poverty from 1949 to 1969 was due entirely to economic changes, with demographic factors working in the opposite direction. They attribute the rise in poverty from 1973 to 1991 to the weakened effect of economic changes on poverty rather than to any massive change in the demographic composition of the population. Freeman (2001) carries the time frame of the same analysis forward to investigate whether the economic boom of the 1990s–early 2000s improved the well-being of people in the bottom of the income distribution. He reports that the timing of demographic changes does not coincide with the timing of changes in unemployment, poverty and growth, and argues that the demographic story does not explain the data.

TABLE 5

EFFECTS OF CHANGES IN POPULATION COMPOSITION ON ASSET POVERTY RATES: COUNTERFACTUAL AND ACTUAL NW POVERTY RATES

Counterfactual NW Poverty Rates				
Categories	1984	1989	1994	1999
Race/ethnicity of the head	26.35	26.95	26.16	26.34
Age of the head	26.35	24.74	23.20	20.34
Education of the head	26.35	25.80	24.91	24.94
Housing tenure	26.35	25.86	23.02	21.96
Family type	26.35	26.94	24.95	25.50
Actual NW poverty rates	26.35	27.08	26.08	25.88

Source: Authors' calculations based on the 1984, 1989, 1994 and 1999 PSID data.

To investigate whether the compositional changes would have had any considerable influence on overall asset poverty rates, we apply the same technique to our case. We perform the decomposition of net worth poverty for each grouping category separately; that is, we have a total of five decompositions. This enables us to analyze the impact of changes in the shares of racial/ethnic, age, education, homeownership and family type groups separately. To estimate the counterfactual asset poverty rates for the later years, we keep the poverty rates within groups constant at their 1984 levels and adjust for the changes in the composition only. We report our estimates of counterfactual NW poverty rates in Table 5, together with the actual NW poverty rates for comparison.

The figures in Table 5 suggest that changes in the shares of groups in race/ethnicity and family type categories had a negligible effect on the total NW poverty rate. Changes in age, education and homeownership composition, however, had some effect. The aging of the population would have pulled the overall NW poverty rate down to 20.34 percent in 1999, but the increases in the poverty rates within the younger groups and the decreases within the older groups kept the actual rate at 25.88 percent. Similarly, the increase in the homeownership rate would have brought about a decline in the poverty rate to 21.96 percent. However this did not actually happen, since the net worth poverty rate within both renters and homeowners increased. The effect of increases in the education of the heads is smaller. Taking the educational improvements into account and keeping the group poverty rates constant would have lowered the overall poverty rate to 24.94 percent, which is quite close to the actual NW poverty rate.

6. COMPARISON OF ASSET POVERTY RATES TO OFFICIAL POVERTY RATES

It is worth taking a look at how the asset poverty rates we have calculated using PSID data compare to the official poverty rates published by the U.S. Bureau of the Census (U.S. Census Bureau, 2000a). As we mentioned before, the unit of analysis for our asset poverty measure is the household. The official poverty rates are published both for families and for people (individuals). However, a Census

TABLE 6

Comparison of Asset Poverty Rates with the Official Poverty Rates, by Age, Race and Gender; Numbers Shown are the Percentage of Individuals in Poverty

			Years			
			1984	1989	1994	1999
All individuals	Official		14.4	12.8	14.5	11.8
	Asset-based	NW	24.4	25.4	24.8	27.9
		NW-HE	43.8	42.9	41.3	42.5
White	Official		10.0	8.3	9.4	7.7
(Non-Hispanic)	Asset-based	NW	19.3	20.2	20.2	19.7
		NW-HE	37.3	36.5	35.9	32.4
Black	Official		33.8	30.7	30.6	23.6
	Asset-based	NW	52.2	51.1	51.4	57.6
		NW-HE	78.4	75.2	74.0	75.6
Hispanic	Official		28.4	26.2	30.7	22.8
	Asset-based	NW	37.7	35.4	30.5	52.3
		NW-HE	62.4	53.7	44.3	77.2
Under 18	Official		21.5	19.6	21.8	16.9
	Asset-based	NW	31.4	33.6	30.8	36.1
		NW-HE	56.2	54.6	49.5	52.9
18–64 years old	Official		11.7	10.2	11.9	10.0
	Asset-based	NW	23.8	24.8	24.3	28.1
		NW-HE	41.8	41.7	40.2	42.2
65 and older	Official		12.4	11.4	11.7	9.7
	Asset-based	NW	10.2	10.0	12.2	9.7
		NW-HE	23.2	22.5	26.2	21.4
Male	Official		12.8	11.2	12.8	10.3
	Asset-based	NW	23.6	24.6	24.5	27.8
		NW-HE	42.9	42.1	41.1	42.3
Female	Official		15.9	14.4	16.3	13.2
	Asset-based	NW	25.2	26.2	25.2	28.1
		NW-HE	44.7	43.7	41.6	42.6

Source: (1) Official poverty rates: U.S. Bureau of the Census, Current Population Survey; Historical Poverty Tables by People. (2) Asset poverty rates: Authors' calculations using the PSID data and the experimental poverty thresholds.

Bureau family is not an equivalent to a PSID household.[5] Therefore, we choose to base the comparison of asset poverty rates on individuals.

Table 6 presents both income-based and asset-based poverty rates. We follow the convention of the Census Bureau when grouping people by race/ethnicity, age and gender. The asset poverty rate for individuals is defined as the ratio of the number of individuals in asset-poor households to the total number of individuals in the population. The race of a household member is determined by the race

[5]The U.S. Census Bureau defines a family as a group of two people or more (one of whom is the householder) related by birth, marriage, or adoption and residing together (U.S. Census Bureau, 2000b). The PSID definition of a family unit (FU) is a group of people living together. They are usually related by blood, marriage or adoption, but unrelated persons can be part of a FU if they are permanently living together and share both income and expenses. Obviously, the two definitions are not equivalent. The Census Bureau definition excludes one-person units and the PSID definition includes all persons living together if they share income and expenses, although they may not be related.

of the household head. As before, we calculate poverty rates for the two different measures of wealth.

The figures in Table 6 show us that the official poverty rates for almost all of these groups are much less than asset-based poverty rates. On average, asset poverty rates are two to four times as high as income poverty rates. Among racial groups, non-Hispanic whites have the lowest rates and blacks having the highest. Among age groups, income poverty is slightly higher among the elderly than among the 18–64 year old group in 1984 and 1989 (the opposite is true for 1994 and 1999), while the elderly are the least asset-poor group. Classifying individuals according to gender, we observe that both asset and income poverty rates for females are greater than the corresponding rates for males. However, the disparity in income poverty rates seems to be greater than the disparity of asset poverty rates.

As expected, the official poverty rate follows the business cycle in the U.S., decreasing in booms as incomes go up and increasing in recessions. However, there is no such trend for asset poverty. In fact, net worth poverty seems to be moving in the opposite direction, going up in the expansionary periods of 1984–89 and 1994–99, and going down during the recession in the beginning of 1990s. This might suggest that saving rates go down during booms and that the decline in saving rates is big enough to offset the effects of an increase in the prices of the assets already owned.

Over the 1984–99 period NW poverty rates measured for households stayed more or less the same, whereas the rates measured for individuals rose. According to our calculations, this reflects changes over time in NW poverty within households of different sizes. We estimate that, during the 1984–99 period, the NW poverty rate among one-person households went down from 36.8 percent to 33 percent and the rates for households with two to four persons remained almost the same, while the NW poverty rate among the households with five or more members went up from 26 percent to 31 percent. Since the average household size in our sample stayed almost the same (varying between 2.76 and 2.9) during this period, we reason that the increase in NW poverty among large households and the decrease among one-person households accounts for why NW poverty rate for households stayed the same while the rates for individuals went up.

7. Determining the Characteristics of the Asset-Poor

We now turn our attention to determining the characteristics of asset-poor households. To trace the independent effect of each factor on asset poverty, we estimate a probit model for each survey year. In these models, all independent variables are dummy variables that represent household characteristics. To prevent multicollinearity, the dummy variables for nonwhites, the 50–61 age group, the lowest education group and the unmarried non-elderly are excluded. The dependent variable is a binary variable that takes the value of one if the household is asset-poor and zero otherwise. The model is estimated for the NW and NW-HE measures of asset poverty separately.

Tables 7 and 8 present the estimates of β coefficients along with the adjustment factor that is used to compute the approximate marginal effects, the Wald statistics of model significance and the maximized values of the log-likelihood function. The estimates indicate that, relative to the excluded 50–61 age group,

TABLE 7

PROBIT β-ESTIMATES AND STANDARD ERRORS (in PARENTHESES); DEPENDENT VARIABLE: NET WORTH (NW) POVERTY STATUS

	Probit Estimates		Trends
	1984	1999	1984–99
Intercept	0.4655***	0.5966***	
	(0.098)	(0.099)	
Age <25	1.1758***	0.9643***	d
	(0.100)	(0.157)	
Age 25–34	0.7292***	0.6885***	d
	(0.087)	(0.089)	
Age 35–49	0.2315**	0.2859***	U
	(0.092)	(0.082)	
Age 62–70	–0.1447**	–0.3242*	d
	(0.161)	(0.195)	
Age 71+	–0.5308**	–0.8696***	d
	(0.216)	(0.263)	
High school	–0.4787***	–0.357***	U
	(0.062)	(0.070)	
Some college	–0.1251*	0.028	U*
	(0.067)	(0.067)	
College degree	–0.1387*	–0.4099***	d***
	(0.080)	(0.071)	
White	–0.5384***	–0.3518***	U**
	(0.059)	(0.063)	
Not working	0.4781***	0.3443***	d
	(0.068)	(0.087)	
Non-elderly, married with children	0.3182***	0.1065	d**
	(0.067)	(0.075)	
Non-elderly, married, no children	–0.1596**	–0.1066	U
	(0.081)	(0.087)	
Non-elderly, female head with children	0.5093***	0.3355***	d
	(0.084)	(0.101)	
Elderly married	–0.1092	–0.2025	d
	(0.205)	(0.260)	
Elderly female head	–0.1172	0.2573	U
	(0.200)	(0.246)	
Elderly male head	–0.1633	0.4758*	U*
	(0.256)	(0.279)	
Homeowner	–2.1722***	–1.7869***	U***
	(0.060)	(0.060)	
Adjustment factor	0.1931	0.2327	
N	6,910	4,413	
Log likelihood	–1,896.1	–1,382.4	
Chi square	2,068.2	1,513.8	

Notes:

***significant at 1% level, **significant at 5% level, *significant at 10% level.

"d" denotes a downward change in the slope from one survey year to the next. "U" denotes an upward change.

households with heads that are older than 61 are less likely to belong to the asset-poor group, whereas those with heads that are younger than 50 are more likely to belong to this group. For instance, in 1984, the 25–34 age group was 14 percent more likely and the oldest group was 10 percent less likely to be NW-poor than the 50–61 year old group.[6]

[6]These marginal effects are the product of the coefficient estimate and the adjustment factor.

TABLE 8

PROBIT β-ESTIMATES AND STANDARD ERRORS (IN PARENTHESES); DEPENDENT VARIABLE: NET WORTH MINUS HOME EQUITY (NW-HE) POVERTY STATUS

	Probit Estimates		Trends
	1984	1999	1984–99
Intercept	0.7107***	0.8874***	
	(0.075)	(0.084)	
Age <25	1.1928***	1.0073***	d
	(0.081)	(0.152)	
Age 25–34	0.7749***	0.7466***	d
	(0.061)	(0.074)	
Age 35–49	0.2581***	0.2671***	U
	(0.060)	(0.063)	
Age 62–70	–0.2895***	–0.2832**	U
	(0.105)	(0.135)	
Age 71+	–0.3045**	–0.5906***	d
	(0.144)	(0.181)	
High school	–0.5624***	–0.5141***	U
	(0.046)	(0.058)	
Some college	–0.1944***	–0.0823	U
	(0.050)	(0.054)	
College degree	–0.2854***	–0.532***	d***
	(0.060)	(0.055)	
White	–0.6735***	–0.4981***	U**
	(0.050)	(0.055)	
Not working	0.4272***	0.2878***	d
	(0.054)	(0.072)	
Non-elderly, married with children	0.2322***	0.0386	d**
	(0.050)	(0.062)	
Non-elderly, married, no children	–0.3173***	–0.3022***	U
	(0.058)	(0.069)	
Non-elderly, female head with children	0.573***	0.3886***	d
	(0.078)	(0.094)	
Elderly married	–0.4348***	–0.3535**	U
	(0.135)	(0.168)	
Elderly female head	–0.2444*	0.1213	U*
	(0.137)	(0.172)	
Elderly male head	–0.5334***	–0.0251	U*
	(0.183)	(0.209)	
Homeowner	–0.4924***	–0.6276***	d**
	(0.041)	(0.051)	
Adjustment factor	0.3871	0.3804	
N	6,910	4,413	
Log likelihood	–3,498.5	–2,236.9	
Chi square	1,760.8	1,150.3	

Notes:
***significant at 1% level, **significant at 5% level, *significant at 10% level.
"d" denotes a downward change in the slope from one survey year to the next. "U" denotes an upward change.

The estimates also confirm that having more schooling reduces the chances of being asset-poor. For example, in 1984, households with high school graduate heads were 9 percent less likely than high school dropouts to be NW-poor. Having some college experience reduced the probability of being NW-HE-poor by another

2 percent and a college degree reduced it further by 3 percent.[7] Race is another important factor that affects asset poverty. All else remaining the same, being white lowers the chances for the household of being NW-poor by 8–10 percent. The effects of education and race are stronger for NW-HE poverty. A college degree lowers the probability of being NW-HE-poor by 11–20 percent, while being white reduces the same probability by 19–26 percent.

Comparing the estimates for different family types, we observe that non-elderly couples with children and female-headed families with children are more likely to be asset-poor relative to the excluded group, which is the group of non-elderly singles. Childless couples and the married elderly are less likely to be asset-poor, while for the unmarried elderly the results are mixed. Homeownership is a very important factor. Homeowners are 42 percent less likely to be NW-poor and about 20 percent less likely to be NW-HE poor than renters.

8. Identifying Trends in Asset Poverty

We next consider whether any of the demographic and labor market groups have become more or less likely to be asset-poor in time. To test for the existence of such a trend, we test the hypothesis that the β-coefficients remain the same from one survey year to the next. To do this, we use asymptotic normality of the β vector. The hypothesis that we test is $H_0: \beta_{t2} - \beta_{t1} = 0$. The test statistic is in a standard form:

$$\text{Test statistic} \equiv (\beta_{t2} - \beta_{t1})(\sigma_{s2-s1})^{-1},$$

where $\sigma_{s2-s1} = (\sigma_{s2}^2 + \sigma_{s1}^2)^{1/2}$, assuming that $\text{cov}(\sigma_{s1}, \sigma_{s2}) = 0$. Tables 7 and 8 show the trends for NW and NW-HE poverty, which are determined by the signs of the computed test statistics. We indicate an upward trend by "U" and a downward trend by "d". We also show the significance of the trend.

We find, first of all, that over the 1984–99 period, households whose heads have a high school degree or some college experience displayed an upward trend while those with a college degree displayed a downward trend. Therefore, the incremental effect of having a college degree on reducing asset poverty increased during this period.

Second, although the level of asset poverty among whites remained low, the contribution to asset poverty of being white relative to being non-white surprisingly went up. Third, looking at the age effects, we observe that the 35–49 year-old group experienced an upward trend in its contribution to asset poverty, relative to the excluded 50–61 year-old group. We find an upward trend also for the 62–70 year-old group, but only with the NW-HE definition of wealth. All other age groups experienced a downward trend relative to the excluded group.

Fourth, we observe some unexpected trends for some family groups. Being married with children became less important as a determinant of asset poverty.

[7]The education dummies take the value of one if the household head has at least the specified degree and zero if not. For example, the "high school" dummy is equal to one if the head has 12 or more years of formal education and zero otherwise. For a college graduate, all three of the education dummies are equal to one. Thus, the estimate of the coefficient on an education dummy is an estimate of the additional value of obtaining the degree, relative to the lower degree.

On the other hand, childless married couples became more likely to be asset-poor. Surprisingly, the contribution of being a (non-elderly) female head with children to asset poverty went down. For households with an elderly head, we observe a downward trend in NW-poverty. However, this is true for married elderly only. In fact, having a single or widowed elderly head (of either sex) became a more important factor in making a household asset-poor.[8]

Fifth, not working (i.e., being unemployed, retired, in school, etc.) contributed less to asset poverty in 1999 than in 1984. Sixth, the propensity to be asset-poor went up among homeowners, but only when asset poverty is defined as on the basis of net worth.

To summarize, in years 1984 to 1999, heads with one or more of the following characteristics became worse off in terms of asset poverty: working, 35–49 years old, married without children, white, low education, single or widowed elderly. The contribution of having a college degree to reducing asset poverty increased. To our surprise, the importance of being non-white, being married with children or being a female head with children diminished as a determinant of asset poverty.

9. Persistence of Poverty

How likely is it for a household to be observed in asset poverty in two consecutive survey years? And, has the probability of remaining poor increased or decreased between 1984 and 1999? How does asset poverty persistence compare to income poverty persistence?

To answer these, we look at the probability of being asset-poor conditional on being asset-poor in the previous survey year. Table 9 presents for both the overall population and for groups the probability of a household being asset-poor in a survey year, given that the same household was asset-poor in the previous survey year.[9] These estimates are based on the longitudinal sample that is restricted to households for which the head remains the same over the five-year period. Three different longitudinal samples are used.

The figures in the table are revealing. Our previous estimates showed that in a given year about 26 percent of the households are NW-poor. Table 9 shows that about 60 percent of those who are NW-poor in one survey year are still NW-poor five years later. Persistence is higher (about 70 percent) for the NW-HE measure. This reminds us once again of the importance of home equity. Many households escape NW-poverty by buying a residence but they either do not accumulate other types of assets or cannot get out of debt and therefore stay NW-HE poor. Another point worth noting is the changing persistence of asset poverty in time. We observe that NW-poverty was hardest to move out of during the 1989–94 period. However, for NW-HE poverty, the 1994–99 period seems to be the worst.

Table 9 also shows that whites have lower conditional poverty rates. Among age groups, the lowest rates are observed for households with heads between ages 35 and 60. The rates for the youngest and oldest groups are higher, showing a

[8]For instance, for a male head who is 71 or older, β-coefficients in the NW-poverty regression for the age effect and the family type effect sum to –0.641 in 1984 and the sum declined to –0.3938 in 1999.

[9]For example, the conditional probability of being LIQ-poor in the second survey year (t2) can be expressed as: $P(LIQpoor_{t2} \mid LIQpoor_{t1}) \equiv P(LIQpoor_{t2} \cap LIQpoor_{t1})/P(LIQpoor_{t1})$.

TABLE 9

PROBABILITY OF BEING POOR IN THE SECOND SURVEY YEAR, GIVEN THAT THE HOUSEHOLD WAS POOR IN THE FIRST SURVEY YEAR (IN PERCENTAGES); COLUMNS (I), (II) AND (III) SHOW THE PERSISTENCE IN ASSET POVERTY, WHILE COLUMN (IV) SHOWS THE PERSISTENCE IN INCOME POVERTY

	(I)		(II)		(III)		(IV)
	1984–89		1989–94		1994–99		1984–89
	NW	NW-HE	NW	NW-HE	NW	NW-HE	Income
Total	61.95	68.68	62.57	68.58	59.75	72.09	41.59
Race/ethnicity							
White	54.94	63.37	59.62	64.87	52.04	67.15	32.62
Non-white	75.58	81.90	68.58	77.70	77.30	85.98	54.83
Age group							
<25	61.84	70.81	64.53	78.89	70.64	79.41	34.89
25–34	60.94	66.64	57.39	65.64	56.55	73.00	37.03
35–49	56.95	67.13	62.13	63.85	61.72	73.35	38.86
50–61	65.96	69.65	62.33	68.21	48.63	64.59	42.71
62–69	75.44	68.79	87.62	82.72	62.08	62.13	44.53
70+	71.08	79.01	82.18	77.52	61.58	71.32	53.56
Education							
<High school	73.38	79.37	74.91	82.83	74.98	84.85	54.21
High school	67.02	72.16	64.00	68.42	55.41	69.62	27.67
Some college	50.48	57.02	47.82	57.62	58.35	68.47	16.33
College graduate	31.69	41.80	51.44	50.68	47.45	61.97	7.92
Housing tenure							
Homeowner	26.26	60.76	30.67	58.53	24.04	63.38	35.94
Renter	63.70	73.62	65.42	74.92	65.87	78.70	44.27
Family type							
<65 yrs, married, children	53.05	65.06	54.12	63.57	53.64	72.63	29.19
<65 yrs, married, no children	43.09	54.41	46.26	56.78	42.78	61.84	25.19
<65 yrs, female head, children	84.78	90.69	82.22	86.85	80.48	86.82	60.53
65+ yrs, married	64.33	73.13	98.51	82.36	47.23	55.74	30.40
65+ yrs, female head	77.52	80.41	84.95	75.49	64.32	76.10	57.59
65+ yrs, male head	73.42	91.37	93.25	100.00	70.65	67.92	37.92

Source: Authors' calculations using the PSID; 1984, 1989, 1994 and 1999 surveys. For income poverty, data from 1985 and 1990 surveys were used.

Note: Longitudinal samples are used; see the Appendix. Grouping is based on the characteristics of the household head as of the first survey year. Sample is weighted by weights in the first survey year.

smaller degree of wealth mobility for these groups. College graduates have the smallest conditional probabilities. Homeowners are half as likely to stay in NW-poverty as renters, however these two groups are not very different in terms of NW-HE poverty. Examining the persistence of asset poverty for different types of families, we notice that families headed by the elderly and female-headed families with children have the highest chance of staying in asset poverty. The latter group stays in poverty with about 85 percent probability.

We also compare our estimates to conditional probabilities of being income poor. As Column IV of Table 9 demonstrates, these probabilities are much smaller than the conditional asset poverty rates. Overall, an income poor household in 1984 has a 41 percent probability of being income poor again in 1989. The lowest conditional probability estimate is for college graduates. The younger households have more income mobility than the older ones. As expected, blacks, single mothers and the elderly are more likely to stay in income poverty.

Next, we investigate the correlation between movements into and out of asset poverty and some major lifetime events. One can imagine that changes in the family composition or a change in the job market or health status of the head may have an impact on the wealth of that family.[10] Or, starting a new business can make the family asset-rich if the business becomes successful. As far as we know, no research has been done on the impact of lifetime events on asset poverty transitions.

Our analysis is based on estimating probit models that explain the movements into and out of NW poverty. For the three five-yearly longitudinal samples (1984–89, 1989–94 and 1994–99), we run two separate probit regressions on the probability of changing NW poverty status—the first for the NW-poor and the second for the NW non-poor sub-samples. For each longitudinal sample, the first regression explains the movement out of NW poverty while the second one explains the movement into poverty. We control for the race, age and education of the household head, and also for being a female head with children in the beginning of the period. The β-coefficient estimates and their standard errors are reported in Table 10.

All independent variables shown in this table are dummy variables. The "ended marriage" dummy takes the value of one if the household head is married in the beginning of the period and the marriage ends (via divorce or death) during the period, and vice versa for "got married." The "lost job" dummy is one if the head is working in the beginning and becomes unemployed sometime during the period and vice versa for "found job." The dummies "got retired" and "became disabled" are one if the head is working in the beginning and retired and disabled in the end, respectively. The dummy variables "bought home," "lost home," "started business" and "closed business" are defined with respect to the ownership status of the head in the beginning and the end of the period. "Inheritance" is one if the head receives an inheritance during the period.[11] The household has a "new child" if the number of children in the beginning is less than the number of children at the end of the period and vice versa for the "child left home" dummy. The β-coefficient estimates presented in the table reveal some interesting findings.

Controlling for all other factors, we find that getting married has been a way out of NW poverty for some and the upward trend in the β-coefficient estimates suggests that the contribution of getting married to escaping asset poverty has increased in time. The ending of the head's marriage, on the other hand, increases his chances of becoming asset-poor. Surprisingly, in the 1994–99 sample, getting married increased the chances of a NW non-poor household falling into poverty, although the effect is not significant. Could this be because the new spouses brought in more debt than assets to these households? Or is it because the newly

[10]The analysis of family composition changes is somewhat limited in this paper, since the longitudinal samples are restricted to households for which the head remains the same. The only change allowed is the movement of family members other than the head, such as the marriage of the head or the arrival of a new child.

[11]For the samples 1984–89 and 1989–94, the PSID tracks only the inheritances that exceed $10,000 in amount, resulting in a censored distribution. For the 1994–99 sample, however, the actual amounts are reported and the inheritance dummy takes the value of one whenever the amount is positive. Redefining the dummy variable so that it is one when the amount exceeds $10,000 does not change the results much.

TABLE 10

PROBIT REGRESSIONS EXPLAINING THE TRANSITION OUT OF POVERTY FOR THE ASSET-POOR AND THE TRANSITION INTO POVERTY FOR THE ASSET NON-POOR FOR THE PERIODS 1984–89, 1989–94 AND 1994–99; β-COEFFICIENTS AND STANDARD ERRORS (IN PARENTHESES) ARE REPORTED

	1984–89		1989–94		1994–99	
	Poor	Non-poor	Poor	Non-poor	Poor	Non-poor
Ended marriage	–0.218	0.180	–0.168	0.123	0.028	0.431**
	(0.195)	*(0.172)*	*(0.211)*	*(0.179)*	*(0.225)*	*(0.189)*
Got married	0.250**	0.028	0.548***	0.025	0.628***	0.731***
	(0.119)	*(0.182)*	*(0.137)*	*(0.181)*	*(0.185)*	*(0.198)*
Not married all years	0.083	–0.029	0.276***	–0.102	0.240**	0.064
	(0.101)	*(0.118)*	*(0.106)*	*(0.106)*	*(0.119)*	*(0.126)*
Lost job	0.029	0.017	–0.097	0.346**	–0.406**	0.725***
	(0.139)	*(0.188)*	*(0.103)*	*(0.138)*	*(0.187)*	*(0.190)*
Found job	0.430***	0.528**	–0.226	0.383	–0.300	0.675***
	(0.150)	*(0.253)*	*(0.177)*	*(0.269)*	*(0.235)*	*(0.250)*
Employed all years	0.354***	–0.218	0.240*	0.101	0.352**	–0.364*
	(0.099)	*(0.135)*	*(0.141)*	*(0.151)*	*(0.177)*	*(0.201)*
Got retired	0.358	–0.361*	–0.072	0.043	–0.427	–0.114
	(0.253)	*(0.216)*	*(0.298)*	*(0.184)*	*(0.442)*	*(0.294)*
Became disabled	–0.279	–0.218	–0.561*	0.243	0.420	0.219
	(0.509)	*(0.687)*	*(0.322)*	*(0.386)*	*(0.385)*	*(0.466)*
Sold/lost home	–1.474***	1.727***	–0.907***	1.899***	–1.244***	1.809***
	(0.342)	*(0.125)*	*(0.283)*	*(0.120)*	*(0.273)*	*(0.148)*
Bought home	0.304*	0.074	0.297**	0.281	–0.049	0.156
	(0.177)	*(0.203)*	*(0.144)*	*(0.176)*	*(0.152)*	*(0.200)*
Renter all years	–1.327***	1.454***	–1.435***	1.630***	–1.548***	1.618***
	(0.167)	*(0.114)*	*(0.136)*	*(0.105)*	*(0.144)*	*(0.130)*
Inheritance	0.658***	–0.852*	0.707***	–0.387*	–0.051	–1.037
	(0.217)	*(0.446)*	*(0.209)*	*(0.228)*	*(0.464)*	*(0.739)*
Closed business	–0.171	0.242	0.086	–0.054	–0.219	0.200
	(0.413)	*(0.160)*	*(0.386)*	*(0.172)*	*(0.317)*	*(0.182)*
Started business	1.108***	–1.128***	0.838***	–0.828***	0.938***	–0.550*
	(0.184)	*(0.359)*	*(0.188)*	*(0.251)*	*(0.285)*	*(0.312)*
Business all years	2.461	–0.700***	–0.164	–0.593***	0.723*	–0.227
	(8.752)	*(0.250)*	*(0.498)*	*(0.214)*	*(0.429)*	*(0.196)*
New child	0.110	0.150	0.126	0.306**	0.174	0.287*
	(0.101)	*(0.141)*	*(0.101)*	*(0.132)*	*(0.140)*	*(0.154)*
Child left home	0.194	0.127	0.069	0.048	–0.047	0.233*
	(0.126)	*(0.136)*	*(0.127)*	*(0.126)*	*(0.138)*	*(0.134)*
N	1,802	3,371	1,706	3,410	1,077	2,618
Log likelihood	–801.4	–538.2	–775.4	–646.6	–502.0	–434.1
Chi-square	577.8	410.4	541.1	507.6	336.8	415.7

Source: Authors' calculations using the PSID, surveys from years 1984 to 1999.

Notes: Longitudinal samples of poor and non-poor households are used. Samples are restricted to households for which the head remains the same during the analyzed 5-year period. All regressions include race, age and education dummies, and a dummy variable for female head with children.

***significant at 1% level, **significant at 5% level, *significant at 10% level.

married couples made bad investments and lost money, or refinanced the mortgage on their homes—perhaps, to pay for the wedding?

The job market experiences of the head appear to have some effect on the wealth of the household. However, the signs of the estimates are not always what we would expect to see. Specifically, coefficient estimates for the "found job" dummy are puzzling. For the poor, there is a strong positive effect in the 1984–89

sample but in the other samples the effect is weak. For the non-poor, finding a job makes it more likely for the household head to fall below the NW-poverty threshold. We could speculate that those who have found a job during the period were unemployed but non-poor in the beginning, and were relying on their non-labor income or their assets to survive. The fact that the household head has found a job might mean that he has run down the assets and is desperate enough to take any job offered to him.

Retiring and becoming disabled have mixed effects on the probabilities of moving both into and out of NW-poverty. Therefore, the results do not suggest a specific direction of correlation. As expected, compared to homeowners, those who have become a renter have a higher chance of transition. Buying a home seems to help a household escape asset poverty, however, interestingly, its effect diminished over time. Also, renters have higher transition probabilities than homeowners.

Inheritances have highly significant effects on the transition probabilities. This is very intuitive since inheritances usually come in considerable amounts. They increase the likelihood of escaping poverty for the poor and decrease the likelihood of falling into poverty for the non-poor, with the exception of the "1994–99 poor" sample. The coefficient estimates for starting a businesses have the expected signs and are statistically significant. Those who are business owners in all years are less likely to fall into asset poverty. The direction and the degree of correlation between a change in the number of children in the household and the transition probabilities are, however, uncertain.

Overall, we show that many lifetime events such as changes in the job market, marital, homeownership and business ownership status are correlated with the transition probabilities of moving into or out of asset poverty.

10. Conclusion

In this paper, we emphasize that household wealth is important to understand the distribution of well-being. Wealth provides people with economic protection during hard times and enables them to invest in their future. During the last two decades, inequality in wealth increased. While mean net worth increased substantially, the share of the population that is vulnerable to economic shocks due to a lack of sufficient assets remained the same. It is clear that economic and financial developments benefited only a relatively small part of the population in the United States in the years 1984–99. Even in the long expansionary period in the late 1990s asset poverty rates did not go down. Given the high persistence of asset poverty, there is a good reason to suspect that the same households stayed in asset poverty in these fifteen years.

Poverty reduction policy in the United States has so far focused mainly on income maintenance. While government programs created under this policy benefited many families, they did not do a very good job of making the poor self-sufficient. The short-term focus and especially the asset limits of these programs even made some families dependent on government assistance. These programs should be redesigned and supplemented by new ones to ensure that they provide incentives for the poor to accumulate assets.

Appendix

Data Source and the Definition of Wealth

The data that we use in this paper come from the Panel Study of Income Dynamics (PSID). Information about homes, income and demographics are reported at a yearly frequency, whereas wealth information other than homes is reported at five-year intervals starting from 1984.[12] The following components of household wealth are available in the PSID data:

(1) Main home: The net value of home, which is house value minus the remaining mortgage principal.
(2) Other real estate: The net value of any real estate other than main home, such as a second home, land, rental real estate, or money owed to you on a land contract.
(3) Farm and business: The net value of farm or business assets.
(4) Stocks: Value of shares of stock of publicly held corporations, mutual funds or investment trusts, including stocks in IRAs (IRAs asked separately in 1999).
(5) Checking and saving accounts: Value of checking or saving accounts, money market funds or investment trusts, savings bonds, Treasury bills, including IRAs (IRAs asked separately in 1999).
(6) Other savings: Any other savings or assets, such as bond funds, cash value in a life insurance policy, a valuable collection for investment purposes, or rights in a trust or estate.
(7) Other debts: Any other debt besides mortgage; such as credit card debt, student loans, medical or legal bills, loans from relatives.

The four measures of wealth are defined as follows:

- "Net worth" (or marketable wealth) is the sum of the items from (1) to (6) minus (7).
- "Net worth minus home equity" is the sum of the items from (2) to (6) minus (7).
- "Liquid wealth" is the sum of (4), (5) and (6).

Poverty thresholds are adjusted for inflation using the CPI-U series (all urban consumers, city average, all items, yearly average) published by the U.S. Department of Labor, Bureau of Labor Statistics.

Notes on Deleted Observations

Since 1994 and 1999 files are still in "preliminary release" format, they suffer from missing information on some variables, which are essential to our analysis:

[12]For missing values on home equity and mortgage values an imputation procedure was developed. If a homeowner did not report home or mortgage amount, the inflation-adjusted value from a previous year was used. If the amount did not exist in the previous years, it was set to the mean value after categorizing by family income and age of head. In 1989, about 98 percent of the households reported the value of their home equity, while for 0.7 percent an assignment was made with a less than 10% possible error and for another 0.7 percent with more than 10% possible error. For the other wealth components, if the respondent declined to reveal the value, he/she was directed to a series of bracket questions. Then, dollar values were imputed based on the probability derived from the distribution of amounts from respondents who reported exact values and which fell within the range of the same bracket. Item non-response was surprisingly rare in the PSID, which helps provide an extra measure of quality.

(1) Housing related variables: For a considerable number of cases, either the house value or the remaining mortgage principal is missing. There are 285 cases (out of 10,769) in the 1994 family file and 290 cases (out of 6,997) in the 1999 family file, which are excluded from the analysis for this reason.
(2) Education of the head: Since this is considered a background variable, it is asked every year only if the head has changed from the previous year. If the head is the same, then the information is "brought forward" from the previous year. 1994 and 1999 files have not gone through this bringing forward process yet. We have carried forward the missing information using the guidelines in the PSID website.
(3) Weights: Since 1999 family weights are not available yet, we use 1997 weights. We delete a number of observations in 1994 and 1999 merged family, wealth and individual files, due to missing household weight. There are as many as 414 (out of 6,913) such observations in 1994 and 603 (out of 5,016) in 1999.
(4) The PSID website reports a few minor errors in the 1994 family file: It contains two virtually identical records for family 16,329 and no record for family 16,529. Therefore, we exclude these families from the sample.
(5) Seven observations in 1984 wealth file are deleted due to very large values of "other savings" ($9 million).

Sample Selection

(1) Cross-sectional samples (households):
Sample sizes: 6,910 in 1984; 7,112 in 1989; 6,497 in 1994; 4,413 in 1999.
All samples use PSID family weights for the corresponding year, except for 1994 and 1999 (see note 3 above).
(2) Cross-sectional samples (individuals): These are exactly the same as the samples for households, except that they have been expanded to include all individuals in all of the households that have already been selected for the household samples.
Sample sizes: 19,804 in 1984; 19,856 in 1989; 17,950 in 1994; 12,916 in 1999.
(3) Longitudinal samples (1984–89, 1989–94, 1994–99): These samples are restricted to households for which the head remains the same, although the wife may change, following the approaches of Hurst *et al*. (1998) and Gittleman and Wolff (2004). The motivation for this restriction is that the PSID treats the male as the head of the household (if one is present). If a male respondent changes his marital status, the wealth of his family is tracked both before and after the change. However, the wealth of a woman facing similar changes is not tracked. This approach is also helpful for handling such cases as a child leaving his parents to establish his own household. Without this restriction, the longitudinal sample could match the new household with the parents' household and it would be misleading to include the wealth difference between two such households to an estimate of the wealth accumulation pattern in the population.
Longitudinal sample sizes: 1984–89: 5,173; 1989–94: 5,115; 1994–99: 3,694.

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