

Wealth Dynamics of American Families: 1984-1994¹

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May 1998

Has the financial wealth of American families grown in the recent years, despite the low household savings rates? Has ownership of wealth become more concentrated in the upper part of the wealth distribution? Are there generational differences in long-term saving for the purposes of bequests and retirement? Are there differences between the levels of wealth and the accumulation of wealth between African American households and other households after controlling for income and other demographics? Is it possible that some regions of the country acquire wealth more rapidly than other regions? With the advent of a proliferation of saving vehicles, each having different, uncertain returns, household saving behavior is far more complex than it was two decades ago. Given the lack of panel data, changing patterns in household wealth accumulation, particularly since the 1970's, have received scant attention in scholarly research. Our analysis sets out to explain the foundations of the recent evolution of household wealth.

Since the 1990's, the United States has been experiencing substantial economic growth as measured by both per family income and wealth.² This rise in wealth has occurred despite the well documented decline in traditional savings and investment which has taken place since the mid 1980's.³ Human capital investment has been strong and the earnings distribution continues to favor the well-educated. Unlike the mid 1970's when there was an oversupply of college graduates, the earnings of educated workers have risen for the last 20 years despite the increase in the relative supply of skilled workers. Additionally, this shift toward more human capital has enhanced the labor market role of women.⁴

This rise in wages combined with the rising supply of educated workers appears to be explainable by a simple general equilibrium model where skilled and less skilled workers initially trade final or intermediate goods which are more specialized to each. Information technology effects a type of skill-biased technical change which allows the skilled workers to produce things

¹ This paper is joint with Frank Stafford and Ming-Ching Luoh. At time of dissertation submission, the paper had been published in *Brookings Papers on Economic Activity*, 1998(1).

² Respectively, Table 1.16 and Figure 1.1 illustrate this growth. This growth is understated to the extent that the CPI overstates inflation (Boskin and others, 1998; Shapiro and Wilcox, 1996).

³ See Juster, Smith and Stafford (1997).

⁴ See Gustafsson and Stafford (1997).

previously the domain of the less-skilled. This deteriorates the terms of trade of the less skilled workers, reducing their income even as overall GDP rises.⁵ The predicted result is swelling welfare rolls from rising numbers in poverty, or, as in Europe with institutionally rigid wages, rising unemployment, despite the booming economy. The policy question of cash payments or boosting the skill and work attachment of the less skilled arises. Can the low earner families move out of poverty by also acquiring job skills?

In conjunction with these shifts toward skill, we have seen continued rises in life expectancy, increasing the post and pre work segments of lives. With a longer life, greater investment in skill and health pays off. The longer pre and post work segments of life are expanding the roles of life cycle human capital investment, intrafamily transfers across generations, health maintenance, and wealth accumulation. The latter is often in the form of private or public pensions. As would be expected under these circumstances, the total wealth of the senior baby boomers (those born 1945-1954) and other preretirement groups seems at least as high as for prior cohorts at the same life cycle point, particularly if one considers the rapid growth of private pension reserves.^{6,7}

Life cycle savings and wealth accumulation is increasingly in equity based assets. The value of these equity based assets is often dependent on intangibles such as tacit knowledge.⁸ Traditional investment in plant and equipment played a smaller role in the growth of Microsoft than traditional investment did for the growth of General Motors. But now, General Motors produces and contracts out ever larger amounts of engineering services based on the application of information technology. Buying shares of General Motors is now more a gamble on how well they will navigate the world of virtual reality design and computerized management information infrastructure than on the return to traditional investments for production.

The rise of intangible wealth has created more volatility in equity markets and apprehension over irrational exuberance. We see potential indicators of the volatility in returns playing out at the household level. There has been a rise in wealth dispersion cross sectionally even excluding pension wealth, which, when included, suggests greater dispersion.⁹ Parallel to rising intertemporal family income variability as outlined in Gottschalk and Moffitt (1994), there is increased transitional wealth mobility of families between 1984-1989 and 1989-1994.

⁵ See Johnson and Stafford (1998).

⁶ See Juster, Smith and Stafford (1997).

⁷ The baby boom cohort is commonly defined as those born 1945-1964. For our discussion we wish to focus on those nearer to retirement, which means those born 1945-1954 rather than the junior boomers (those born 1955-1964).

⁸ Consider the value of Intel or Microsoft shares. See Eliasson (1990, 1991).

Regional wealth shocks may be another symptom of this intangible wealth: the per household wealth advantage of the New England and the North Atlantic regions relative to the Great Lakes as of 1989 was fully erased in the interim of the Gulf War recession, so that there was no measurable regional gap by 1994. If one believes that part of these regional wealth declines were related to a diffuse collateral erosion process (and not just reduced housing equity), the new growth regime raises questions of collateral and investor confidence in efforts to deal with any future recession.¹⁰

The rise in per family wealth has been disproportionately greater than the rates of active savings. Households wise or lucky enough to have initially held public or private business equities are shown to have benefited greatly, 1984-1994. It is also the case that African American families, at a given level of family income, family composition and age, have been less likely to have been equity holders initially or to have jumped onto the equity bandwagon, 1989-1994. This has meant that the closing of the black/white wealth gap has been only modest over the period 1984-1994. Quantile regression analysis of the black-white wealth gap provides another insight. Much of the *net* black-white wealth gap arises because proportionately fewer black families are big winners at the very upper end of the new wealth lottery.

Apart from systematic differences across income, life-cycle and demographic groups, there is great residual heterogeneity in wealth holdings. Among senior baby boomers, there is a large group with little in the way of household wealth accumulation by 1994. Whether this reflects their grasshopper approach toward household finances or whether they were just unlucky ants is not clear.¹¹ At the level of measurement, some of these observed low household wealth-high household income families may have excellent pensions and/or are still paying for college tuition of their children.

At a descriptive level, the data from the Panel Study of Income Dynamics (*PSID*) appear capable of first order reconciliation of the low saving - high wealth puzzle. The mean rate of active saving out of permanent pre-tax family labor income is between 0.06 and 0.07. Yet, the mean realized rate of saving, factoring in the high returns and unrealized capital gains by studying measured wealth changes across the families, is about double at 0.14, a rate which is somewhat higher than, but in line with, active savings rates of 0.11 in the early 1960's.¹² In fact, if one

⁹ See Juster, Smith and Stafford (1997).

¹⁰ For a discussion of the role of collateral in business cycle propogations, see Bernanke and Gertler (1989).

¹¹ Hurst and Stafford (1998) distinguish households as being either grasshoppers or ants, a reference to Aesop's Fable where the ants worked all summer to save for the potential hardships of winter while the grasshoppers sang all summer leaving them nothing to draw upon when current resources dwindled.

¹² See Holbrook and Stafford (1971).

allows for modest returns from that era, the realized savings rate was probably in the low teens. This paper provides a preliminary look at the important question of how capital gains affect saving. Future work needs to study the effect at different life cycle points and will require data on family pension holdings. Such data will allow more work on the implementation of structural models.

Rather than highlight the paper by some of its main findings in relation to a possible new growth paradigm, here we return to the fact that the paper is meant both to show such connections and to introduce the reader to features of the comprehensive measures of wealth, saving and income in the *PSID*. The organization of the paper is data biased. The reader is expected to keep the aforementioned (and other) issues in mind as we take a closer look at some of the major empirical features of and regularities in this major data set on household income and wealth dynamics.

The data based organization of the paper is as follows. First, we present basic descriptive levels of household wealth 1984, 1989, and 1994 and active savings 1989-1994. The cross sectional wealth distribution has a complex shape, is not readily parameterized, and the distribution of assets across age and family composition groups is highly diverse, both by subcomponent and for total household wealth. We note that with modern panel methods and computer interviewing, new data processing methods and high respondent rapport, household wealth from the *PSID* appears to be in line with aggregate data - once allowance is made for the fact that such surveys seem capable of providing good data for up to at least the 98th percentile of household wealth. Active saving rates are shown to differ greatly across age and demographic groups and the overall median active savings rate is very low.

We then portray the wealth transitions of American families. Some families are persistently in the bottom decile even over 10 year intervals. The bottom decile has an upper bound of 0, so there are numerous families with persistently negative net worth, year after year. We also study transitions across wealth deciles. As measured by Shorrocks' index, decile wealth mobility is on the same order of magnitude as in Sweden, and in the U.S. has risen modestly during the ten year period. An analysis of who falls into the bottom decile is set out. For those with low permanent income, the bottom decile is something of an absorbing state: low income predicts initial location in the bottom decile quite strongly, and it predicts who will fall in if they initially were not and who will stay in if they initially were. Conversely, for high permanent income families, the top quintile is something of an absorbing state: at high income you are more likely to *be there, stay there* if you were there initially, and *go there* if you were not there to begin

with. Yet, there are many persistently high income families who have persistently low accumulations of household wealth.

Next, we provide an analysis of which families were likely to participate in different aspects of financial markets. Who held transaction or bank accounts, who held stocks and who held non-collateralized debt? This section looks at the wealth accumulation of Senior Baby Boomers and portrays the major overall differences in wealth holdings of African-American and other families. We then provide an initial study of savings and the form of savings (equities, own business, real estate) on wealth accumulation. This section also provides evidence of the strong regional differences in wealth change, 1989-1994.

Do high realized returns dampen subsequent saving? If so, the persistently low savings rates in aggregate data appear subject to an initial explanation. Of course, any formal model of this would have to incorporate whether families consider the high returns to be a temporary window of opportunity or to prevail into the indefinite future. At a purely descriptive level, we find some mixed evidence to support the idea that large capital gains may reduce subsequent savings. This finding is limited by the inability to account simply for what we expect is saver heterogeneity: there are persistent savers and one needs a better approach for fixed effects than our initial investigation affords. Also, if some persistent savers elect to be in pension plans, one would observe them to be persistent non-savers in our data and their household (non-pension) savings could be rising or falling in response to positive shocks to pension wealth.

The Changing Distribution of Wealth

A description of U.S. Household Family Wealth, 1984, 1989, 1994, based on the supplements funded by the National Institute on Aging, is provided in Table 1.1.^{13,14} The data are based on three weighted, cross-sectional snapshots of the families in each of these years. Mean family wealth (including main home equity) grew over the period from \$148,364 to \$162,156 in 1989 and then essentially remained unchanged at \$159,217 in 1994. In reflecting on this very modest rise in mean wealth over ten years, one needs to bear in mind several issues of measurement.

¹³ All reported dollar amounts are in 1996 dollars unless noted otherwise.

¹⁴ The measure was defined as real estate (own (main) home, second home, rental real estate, land contract holdings), cars, trucks, motor homes, boats, farm or business, stocks, bonds, mutual funds, savings and checking accounts, money market funds, certificates of deposit, government savings bonds, Treasury bills, IRAs, bond funds, cash value of life insurance policies, valuable collections for investment purposes, rights in a trust or estate, less mortgage, credit card,

First, the wealth of very high wealth families is not readily measured in household surveys. There was a very strong rise in the ownership and price of equities in the 1989-1994 period. Some of this is reflected in the rising percent of families holding stocks (27.9 to 34.5 percent), and a rise in the value of stocks conditional on holding. Yet, families with very large holdings of stocks may be reluctant to disclose the value even though they have been interviewed on numerous previous occasions as part of the study. Other wealth components such as farm or business equity may be hard for respondents to report in a household survey if the component itself has a complex financial structure. Such complexity is more likely with an enterprise of high value.

Second, the wealth measured in the *PSID* should be referred to as household wealth, excluding pension wealth and Social Security wealth. Data from the Federal Reserve flow of funds show that over the period 1984 -1994, pension fund reserves more than doubled, rising from \$2.5 trillion (in 1996 dollars) in 1984 to \$4.3 trillion in 1989 and then to \$5.3 trillion or \$54,650 per household in 1994.¹⁵ If families respond to this rise in pension reserves by reducing their holdings of household wealth, then household wealth provides a more limited measure for analysis of overall wealth accumulation.¹⁶

The evolution of wealth holding patterns suggests responses to changing incentives and asset prices. There is an upward drift in net equity in cars and other vehicles (net real wheel wealth or wheels in Table 1.1). This rise is plausibly the result of more gross wealth in this form (partly because of more purchases and the greater durability of vehicles), but also represents a shift from vehicles to home equity (main home) as the preferred household collateral source. That is, despite a rise in the percent of households owning a home (63.5 percent in 1994) and a relatively stable median house price, there is a decline in home equity, 1989 -1994. These shifts from home equity to wheel wealth are consistent with tax incentives for borrowing against one's home given the continued deductibility of mortgage interest and the phasing out of the interest deductibility of consumer loans.¹⁷ Some of the attraction of borrowing on one's home has led to new financial products based on home equity, leading many home owners to refinance to high

and other debt on such assets. Wealth in the form of private pensions or expected future Social Security retirement benefits is not included. For notes on the wealth data and the imputation procedures, see Appendix A.

¹⁵ See Juster, Smith and Stafford (1997).

¹⁶ In the future, the *PSID* may be augmented with pension wealth via employer reports of their benefit plan description.

¹⁷ During the 1990s, tax laws changed to prohibit the deductibility of non-mortgage interest payments. This raises the more general question of tax incentives for asset holdings, saving and portfolio composition. Do such incentives increase total savings and wealth or merely alter the *form* of saving and portfolio composition? For a discussion of the effectiveness of saving incentives see Hubbard and Skinner (1996); Poterba, Venti and Wise (1996); or Engen, Gale, and Scholz (1996).

loan to house value (LTV) ratios in the mid 1990's. Recent research has focused on the rise in housing debt as one of the causes of the recent dramatic rise in household financial distress and bankruptcy.¹⁸ In this interpretation, tax incentives may have reduced savings in the form of home equity, but may have increased incentives to save in the form of auto equity with a corresponding reduction in associated default risk.

Other notable changes through time include the rise in non-collateralized debt (NCD) (debts) which includes unpaid balances on credit cards, charge cards, student loans and medical bills. Assuming that the majority of these components are credit and charge card balances, we can see a strong rise in such balances, since the mean of \$2,754 in 1984 rises to \$6,339 in 1994. An intriguing aspect of this is that there has been a shift to both more collateralized borrowing on own home (presumably for tax reasons and as a result of financial innovation) at the same time that non-deductible interest payments are rising with the rising balances of non-collateralized debt.

Table 1.1 shows a decline in bank account ownership (checking) and in the value of other assets after 1984.¹⁹ The decline in the ownership of transaction or checking accounts was from about 81 percent of families in 1984 to about 78 percent in 1994.²⁰ One possibility is that with deregulation of banks, it is no longer attractive to supply services for low volume accounts without substantial monthly fees, and that banks have simply lost out to non-bank competition in this market (e.g. to check cashing stores and money order providers, some of which offer money orders as a service to promote retail activity). The mean value of these transaction accounts is large (\$20,217 in 1994, for example) while at the same time some families have no holdings at all. The reason for the large mean is the broad definition of liquid/transaction accounts, which can include money market bonds, Treasury bills, non-stock IRAs as well as traditional checking and savings accounts. We will look closely at transaction account ownership in the below sections.

In the *PSID*, the individual components of the wealth data have surprisingly low levels of item non-response (see Table A1 of Appendix A). For example, 82.2 percent of households

¹⁸ See Hurst and Stafford (1998) and Fay, Hurst and White (1998).

¹⁹ A check of the data indicates that in 1984 two families reported \$9,000,000 of other assets. As far as can be ascertained these are legitimate values. However, they became donors for five additional cases via the hot deck procedure. Dropping these five cases reduces the weighted mean of other assets in 1984 to \$11,074. A brief description of the hot-deck imputation procedure is included in Appendix A.

²⁰ Based on Survey of Consumer Finance (*SCF*) data, the proportion of families with no transaction account fell from 14.9 percent in 1989 to 12.5 percent in 1992 (Kennickell and Starr-McCluer, 1994). Our results suggested the opposite: a rise in the share with no transaction account, beginning from a higher base percentage of families with no accounts.

report that they do not own real estate other than own or main home, 15.8 percent provide a dollar value, and 1.2 percent are routed through a series of what have been termed unfolding brackets or range values, innovated in the *PSID* in 1984.²¹ In the *PSID*, only 0.8 percent of such responses are missing (no dollar value or bracket range). For other components, the percent missing is not much more than 1 percent, except for checking accounts where 2.6 percent of the data are missing and other assets, where 1.9 percent of the data are item non-response.

The high item response rates, we believe, are indicative of respondent cooperation and help explain why the 1994 *PSID* wealth value is much more than double the \$64,630 mean of net (household) assets reported by the Consumer Expenditure Survey (*CES*) for 1993-1994 (U.S. Department of Labor, 1995). This stems partly from a difference in concept. The *CES* household wealth definition is restricted to the sum of financial and real estate assets (excluding business properties) less total liabilities. Yet, if we sum stocks, checking accounts, other assets, and main home, and subtract other debts, as given in Table 1.1, the 1994 value averages \$99,911 or still about 55 percent greater than the value reported in the *CES*. For 1988, the median net worth from the Survey of Income and Program Participation (*SIPP*) is reported as \$34,720, which in 1996 dollars is \$45,960.²² The wealth means for 1989 (in 1996 dollars) are more disparate between *PSID* and *SIPP*: *PSID*, \$162,156 and *SIPP*, \$134,700. Both these household surveys have limits as sources of wealth means for reasons more fully elaborated below.

The share of the wealth components and overall household wealth held by families in selected age, marital status and children present groups is presented in the upper panel of Table 1.2. We can first see that a great deal of household wealth, relative to the share of families is held by the preretired and retired families, as indexed by age 55-64 and 65 and older. Over three quarters of all wealth is held by households older than 45 years of age. Non-collateralized debt is mostly concentrated among younger families, and home equity is concentrated among older families. One rather unusual pattern is the ownership of nonincorporated businesses. Among the mid career (45-54) and preretired (55-64), business wealth is much more concentrated in the families where no children are present. Does this suggest one can mind the business, or mind the children, but not both? Almost all stock wealth is concentrated in households with heads older than 45 years of age. For those under 45, stock holdings are concentrated among the married.

²¹ See Heeringa, Hill and Howell (1995) and Hurd, et.al. (1997).

²² See Oliver and Shapiro (1995).

Rates of wealth accumulation and active saving relative to family pretax labor income are presented in Table 1.2.²³ The overall average rate of wealth accumulation is 13.8 percent, and the median rate is 5.2 percent. The average of household active saving rates (active saving measure A) is 6.9 percent, half the average household rate of wealth accumulation. We will explore this a bit further in later sections. For now, we can note the sharp divergence between median and average rates of active saving and wealth accumulation. Savings and wealth accumulation may be concentrated in certain high rate households, a result consistent with several saving behavior models, including those of Deaton (1991) and Carroll (1994). Our active saving rate measure (B), calculated as average active savings over average family pretax labor income, is 4.6 percent. This suggests the importance of a few families with high savings rates by virtue of low income as a denominator rather than by virtue of high savings as the numerator. Combined with a few negative rate households at high income, our savings measure (B) is less than (A).

Wealth Percentiles

Median household wealth grew modestly over the period 1984-1994. As reported in Table 1.3, median wealth (including main home equity) grew over the period from \$47,130 to \$47,742 in 1989 and then to \$51,030 in 1994. The fact that the median grew about as fast as our estimated mean suggests no substantial rise in wealth inequality. As we will indicate below, the basic shape of the wealth distribution is complex and changes occurred unevenly throughout the percentile distribution. Combined with the inability of household surveys to measure the very upper part of the wealth distribution, and evidence of more rapid wealth growth at the upper percentiles of the distribution, the overall changes suggests that a generalization is not easily made from the median and the mean calculated from a household survey. When one also considers changes at both the top and the bottom of the wealth distribution, the overall pattern is one of rising cross-sectional

²³ Our measures of saving rates will differ slightly from those found in the National Income and Product Accounts (*NIPA*). The income in our measure is the labor income of heads and wives from all sources (including overtime, bonuses and commissions) based on a five year average. We have not included interest and dividend income (this can be added from the survey data at a later time) and have not included employer benefits (not in the survey), so our income is understated relative to national accounts. On the other side of this, we have not taken out personal taxes. The other adjustments in the *NIPA* measure are for saving. Pension contributions by employers, net of withdrawals, are part savings under national account definitions (Bosworth, Burtless, and Sabelhaus, 1991, p.228-9), but are not in income or saving in the *PSID*. As a first approximation, the inclusions and exclusions may be of about equal importance. We calculate two measures of mean saving rates from *PSID* data: (A) the average saving rate across households and (B) the rate derived from an average of aggregate household savings over aggregate household income - a measure consistent with the *NIPA* construction. With a skew to savings rates, we would expect a lower value for (B) than (A). For 1989-1994 our measured savings rate (B) is 4.6 percent, the same as calculated for 1989. (See Bosworth, Burtless, and Sabelhaus, 1991 - p.229).

wealth inequality: wealth at the top rose and mean family wealth (including main home equity) for families in the bottom fifth fell over the period from -\$4,656 to -\$6,829. For the lowest decile, average real wealth declined from -\$7,777 in 1984 to -\$14,494 in 1994.

From Table 3.1, it would be tempting to conclude that the share of household wealth held by the top 10% of families declined over the period, 1984-1994, from 62% in 1984 to 59% in 1994. The very rich, including those 149 families in the U.S. with a billion or more of assets,²⁴ hold a large share of aggregate wealth, but are hard to include in a household based approach for three basic reasons: the sample frame is hard to define, the response rate conditional on interviewing is likely to be very low, and the instrument for such households needs to accommodate far more complex asset structure than is sufficient for the typical family.^{25,26} As a result, any data grouping of such top few percent, which includes these mismeasured or nonresponse families, is suspect.

An alternative approach to characterizing wealth from household surveys is to restrict the discussion to the population less some few percent at the very top. These households and below are probably reasonably well-measured in a household survey. We feel that in the case of the *PSID*, this can certainly be taken as the population less no more than the top few percent, say, above \$1,000,000 of wealth in 1996 dollars.²⁷ Of course, the top two or three percent represent a large share of the wealth, and from the *Forbes* data, the growth of the wealth of the very rich has been strong over the 1989-1994 period. From the *PSID*, household wealth of the 94th percentile family rose from \$426,055 (1984) to \$517,727 (1989) and then to \$542,586 (1994) or 2.5 percent per year or by 27 percent overall, while the top families from *Forbes* had even more rapidly rising wealth.

In Figure 1.1, we have presented the wealth distribution by (weighted) percentiles over the range 2 - 98. Because the range of the net worth values is so wide (-\$16,273 for the 2nd percentile to \$1,069,291 for the 98th percentile in 1994), the distribution is broken into a 2-50 percentile range and a 52-98 percentile range, with a larger vertical scale for the 52-98 percentile ranges in the second panel of Figure 1.1. As we will see later, extending the chart or analyzing

²⁴ *Forbes*, July 15, 1996, p.188-190

²⁵ Upon learning of his impending bankruptcy and fielding questions from reporters, Donald Trump is said to have remarked that if you know what your assets are worth you cannot be worth very much.

²⁶ Another problem with the wealth data is that of topcoding of the *PSID* to amounts no more than \$10,000,000 per wealth component. A listing of all such cases indicates that this was a very minor problem. In future years, an upper limit of \$100,000,000 per large component will be allowed.

²⁷ Wealth data from the *PSID* lines up closely with the Survey of Consumer Finances (*SCF*), which oversamples high wealth households, reasonably well up through the 98th percentile (Juster, Smith and Stafford, 1998). Antoniewicz (1996) shows that the *SCF* data for 1989 lines up with Federal Reserve Aggregate Balance Sheet data.

the share held above the top few percent from household surveys is problematic, even though there do not seem to be obvious anomalies as would be suggested if there were irregular growth patterns for the 96th and 98th percentiles. This is because a rising share of wealth appears to be going to the upper percent or two. It appears that the majority of the measurement problems in the *PSID* are *beyond* the top 98 percentiles, possibly beyond the 99.5 percentile.²⁸

The small upward shift in midrange household wealth between 1984 and 1989 can be seen graphically from the upper bound of Figure 1.1. The 1984-1994 growth ratios (ratio of ending 1994 to beginning 1984 values) of wealth at a few illustrative percentiles is as follows: 2nd percentile, -3.6; 10th percentile zero throughout; 40th percentile, 1.11; 50th percentile, 1.08; 70th percentile, 1.10; 80th percentile, 1.21; 90th percentile, 1.21; 98th percentile, 1.27. The greater divergence at the bottom and top of the *PSID* wealth distribution combined with the rise in the Forbes wealth holders suggests a widening of the overall wealth distribution. The middle wealth holders appear to have lost ground to the near top, at least from 1989 to 1994. The overall characterization of the wealth distribution, 1984-1994, will depend in large part on what one believes top 2 percent missing from a household survey did compared to the next 5 percent. Data from the Forbes billionaire list indicate a growth of the top 99.9999985 percentile - the top 20 families²⁹ in 1994 and the top 19 in 1989 - of about 45 percent, net of inflation, between 1989-1994. This implies that across the full spectrum of the wealth distribution, from those with negative net worth to the top billionaires, there has been rising cross-sectional wealth inequality since the mid 1980s.

Aggregate Household Wealth

How many families in the United States have a household net worth of \$1,000,000 or more? This can be estimated for 1989 and 1994 from the percentile points corresponding to \$1,000,000 or more (in 1996 dollars). We do this to get a feel for the upper part of the wealth distribution, and thereby to check on the ability of household data, with external supplementation, to capture aggregate wealth holding. In this exercise, we must continue to be mindful of the measurement problems that arise from household surveys of rich families. Millionaire families are becoming common enough that it is now possible to study them with household surveys as

²⁸ *SCF* oversamples high income households. Juster, Smith and Stafford (1998) find that *PSID* wealth data for 1989 lines up closely with the 1989 *SCF* up through the 99.5 percentile.

²⁹ Using the Forbes definition, the DuPont family or the Ford family does not coincide with the *PSID* family definition. This is because the family name assets are held by numerous families under the *PSID* definition. In using the Forbes list one needs to adjust for such families.

long as one remembers that the detail of the wealth of some of the multimillionaires and certainly the billionaires should be gained from supplementary, non-survey sources.

In 1994, the level of \$1,000,000 (in 1996 dollars) represented the upper range of our 2 - 98 percentile figures. Specifically, this corresponded to the 97.70 percentile point in 1994, the 97.91 percentile point in 1989 and the 98.53 percentile point in 1984. The Census estimate of the numbers of households in 1994 was 97,107,000.³⁰ This total times the estimated 2.30 percent of families with net worth above \$1,000,000 provides an estimate of the number of U.S. wealth millionaires as of 1994: 2,233,461. By similar calculations the number of millionaires in 1989 (in 1996 dollars) was 2.09 percent of the approximately 92,500,000 households in 1989 or 1,935,100. The Internal Revenue Service (IRS, 1993) has estimated that as of 1989 (in 1989 dollars) there were 1,260,000 families worth \$1,000,000 or more. From our data, *in 1989 dollars*, there were an estimated 1,364,000 millionaires in 1989.

It is obvious from the shape of the wealth distribution in Figure 1.1 and the fact that it continues to have the same approximate shape all the way to the top, that much of the wealth is held by those families worth over \$1,000,000, the upper 2.30 percent of wealth holders in 1994. On the other side of this, what is the value of the total wealth holdings of those families worth less than \$1,000,000? Taking the integral of the wealth distribution portrayed in Figure 1.1 up to the 97.70 percentile point, normalizing by the number of families (households) in 1994, we estimate that household wealth held by families worth *less than or equal to* \$1,000,000 accounted for \$10.75 trillion 1996 dollars. While there are large wealth holdings per family at the very top, the very large number of families below \$1,000,000 still creates a large aggregate of net worth, well over half the total, something on the order of three-fifths.³¹

For 1989, the household wealth for those with net worth under \$1,000,000 was \$9.94 trillion (in 1996 dollars). The ensuing rise in household wealth to 10.75 trillion in 1994 represents an increase of 8.2 percent over the five year period. Combined with a rise in pension fund reserves between 1989 and 1994, there was an aggregate increase in net worth of \$1.79 trillion for the bottom 98 percent of the wealth distribution.³² This increase has clearly been

³⁰ The Census household corresponds approximately to the *PSID* family. As of 1995, the Bureau of Labor Statistics reports (U. S. Department of Labor, 1995) that there were 102,539,000 Consumer Units. The Consumer Unit and the *PSID* Family have similar definitions.

³¹ The flow of funds data aligned to *Survey of Consumer Finances (SCF)* definitions (which are not quite those of the *PSID*) provide an estimate of total household wealth of \$15.28 trillion 1992 dollars in 1992 (Antoniewics, 1996). For illustrative purposes, with inflation (1992-1996) and a 10 percent greater real value of household sector assets from 1992 to 1994, this would be \$18.71 in 1996 dollars (for 1994). The share of \$18.71 represented by the \$10.75 is 57.5 percent.

³² Board of Governors of the Federal Reserve, *Balance Sheets for the U.S. Economy - Flow of Funds*, C.9 (1996).

boosted further by financial market gains from 1994 to 1998 and has the potential to act as an expenditure stimulus for households via a wealth effect on consumption (not to mention tax revenue from capital gains). It is interesting to speculate on the idea that this expenditure stimulus could play out over some several years as people draw on this net worth to make consumption commitments during the period, 1996-2000.

Piecing together the 1989 *PSID* household wealth up to the 98.6 percentile and then using the IRS wealth data for the 98.6 to the 99.96th percentile and the Forbes data for the balance of families (the 32 most wealthy), we estimate household wealth holdings across the wealth distribution in Table 1.4. From household level data (*PSID*, IRS and Forbes data), the 1989 household wealth total (less pension wealth) is thus about \$12 trillion, a total which is in the same ballpark as can be constructed from Federal Reserve balance sheet data (using similar definitions).

Table 1.4
Shares of Household Wealth Held, 1989

<u>Wealth Group</u>	<u>Wealth Held</u>	<u>% of Household Wealth</u>
<i>Bottom 50%</i>	\$381 billion	3.2%
<i>Top 25%</i>	\$9,954	82.9%
<i>Top 10%</i>	\$7,354	61.2%
<i>Top 5%</i>	\$5,684	47.3%
<i>Top 1%</i>	\$3,079	25.6%

Source: PSID 1989 Wealth Supplement, 1993 IRS data, and 1989 Forbes data.

Wealth Dynamics and Transitions

A strength of the *PSID* wealth data is that they are in a long term or steady state panel with annual reinterview rates in the range of 97-98 percent, so that one can directly examine wealth mobility over a longer time frame.³³ Table 1.5 (and 1.6), entitled *Transition of Family Wealth between 1984 and 1989, (1989 and 1994)* is based on those families with the same head of family

³³ The *PSID* follows young adults as they leave and form their own families. In this way, the panel regenerates a new sample and, with weights, provides national estimates of income, wealth and savings. This design is outlined in Stafford, Hofferth and Brown (1995).

in both years. This and the following tables are critically dependent on the ability to obtain repeated measures of the wealth variables for the same families in the pairs of years. There are a few notable findings from these tables. Those in the lowest decile in 1994 had net worth which was negative up to 0 dollars. The second decile ranged from 0 to \$6,219, the third decile ranged from \$6,219 to \$15,668, and so on. The lower limit of the top decile was \$427,915, and the upper limit of the fifth decile is the median (the \$70,090). This somewhat higher median than for the cross-sectional snapshot discussed earlier (\$51,030), is a consequence of family stability as a factor facilitating the accumulation of financial wealth. The 1989 median from Table 1.5 of \$67,947 exceeds the 1989 median of \$54,292 from Table 1.6 because the 1989 families who were also in the sample in 1984 are on average older and have more life cycle wealth accumulation.

Those in the lowest decile in 1989 (Table 1.6) had net worth which was negative up to zero. The second decile ranged from zero to \$4,219, the third decile from \$4,219 to \$15,084, and so on. The lower limit of the top decile was \$378,912. The upper limit of the fifth decile is the median, which is \$54,292. Again, this somewhat higher median than for the cross-sectional snapshot presented in the Table 1.3 (\$47,742), and indicates a relation between family stability and accumulation of financial wealth. About half (48.8 percent) of those with low net worth in 1989 (0-10 percentile) persisted at low net worth (0 - 10 percentile) five years later in 1994. This pattern also holds (49.3 percent) from 1984 to 1989, and is shown in Table 1.5. Table 1.7, *Transition of Family Wealth between 1984 and 1994 (1996 dollars)* shows that about two fifths (39.9 percent) of those with low net worth in 1984 (0-10 percentile) persisted at low net worth (0-10 percentile) ten years later in 1994. This pattern of higher medians for this sample of still more stable and obviously, on average, older families can be seen from the higher medians (\$90,220 for 1994 and \$59,713 for 1984).

The extent of wealth transitions across deciles can be measured by Shorrocks' index.³⁴ This is a measure of the off-diagonal elements relative to the on-diagonal elements in Tables such as 1.5-1.7. The range is 0 (no mobility) to 1.11 (no decile stability in the upper limit for the case of deciles). For Sweden over the nine year period 1983/84 -1992/93, the Shorrocks' index for household wealth mobility has been estimated as 0.870 compared to the 0.804 for the Table 1.7 entries for the ten years 1984-1994.³⁵ While this suggests more wealth mobility in Sweden, it should be remembered that these are measures of mobility across deciles. If the deciles themselves are wider apart and widening through time in the U.S., one cannot conclude that there

³⁴ The Shorrocks' measure, S, is $S = (N - \text{tr}(P))/(N - 1)$, where N is the number of groups (deciles) and tr (P) in the trace of the N*N transition matrix P. $0 < S < N/(N - 1)$. (See Shorrocks, 1978).

³⁵ Bager-Sjogren and Klevmarken (1997).

is more wealth mobility in Sweden. For the U.S. between 1984 -1989 and then 1989 -1994, the Shorrocks' measure rises modestly from 0.733 to 0.754. Since the absolute spread on the U.S. wealth distribution appears to have been rising, it seems safe to conclude that there is rising wealth mobility in the U.S., a finding which parallels the rising income mobility found by Gottschalk and Moffitt, 1994.

Much of the decile wealth mobility is in the midrange deciles. The top and bottom deciles are characterized by substantial persistence. Of the families in the top wealth decile in 1984, over three-fifths (63.5 percent) are in the top decile in 1989, and a full decade later in 1994, over half (53.3 percent) are still in the top decile.³⁶ At the other end of the spectrum, of those families in the bottom decile in 1984 - which include numerous negative net worth families - about half are still in the bottom decile in 1989 and about two-fifths are in the bottom decile a decade later in 1994. This is more important when we remember that the 1994 bottom decile was in much greater negative territory than the 1984 bottom decile. There are families with persistently low and negative net worth, despite the overall drift toward greater wealth mobility.

The Persistence of Illiquidity

From Figure 1.1 and Tables 1.2, 1.3, and 1.5-1.7, we saw the extent to which families have either no household wealth or negative household wealth. At a point in time, about 10 percent of families have net worth of zero or less.³⁷ From Table 1.8, we offer a preliminary look at which families are in this bottom wealth decile in 1989 and then which families stay in or fall into the bottom decile in 1994. Four factors; permanent income, race, age, married/single head, number of children and sex of household head are important in determining the probability of being in the bottom decile as of 1989. Most of these same variables are strong determinants of staying in the bottom decile five years later (1994) and, consistent with the standard consumption function,³⁸ permanent income plays a major role in remaining outside the bottom decile. These same income variables also reduce the impact of race on persistence in the bottom decile.

One way to think of the impact of income from the probit models in Table 1.8 is to characterize the bottom decile as an absorbing state for those with very low permanent income.

³⁶ Remember that the families who are still intact over a 10 year span are over-representative of stable families. Further discussion of family stability and wealth is provided below.

³⁷ For 1954, the Survey of Consumer Finances data indicates that 15 percent of families had a net worth of zero or less (Katona and Lansing, 1964). The *extent* of substantially negative net worth was not reported. For descriptive statistics on the 1950 Federal Reserve Board-Michigan Survey of Consumer Finances, see Friend and Schor (1959).

³⁸ See Friedman (1957) and Holbrook and Stafford (1971).

With low permanent income, a family is more likely to be in, stay in or fall into the bottom decile. We have used these types of models to characterize other aspects of household behavior. For example, entering the state of financial distress is positively predicted by home ownership, but so is exit from financial distress.³⁹ An interpretation is that homeowners are given the opportunity to get into trouble because of their home as collateral and as an indicator of financial management. Some do get into trouble, but home owning as an index of long term management of assets also predicts subsequent *exit* from financial distress.⁴⁰

We extended our wealth decile mobility analysis to movement into and out of the 61-80 decile range from above and below. Upward mobility was more probable with higher permanent income and greater education and persistence in the top quintile was also positively related to education and income. This provides evidence (though unsurprising) of the link between the widening of income by education and the subsequent widening of wealth deciles.

The Trailing Edge - Wealth Holdings and Transitions of the Senior Baby Boomers

Which families build up wealth during the mid life cycle years and which do not? There has been a great deal of public discussion of the presumed lack of life cycle saving by the baby boomers, or those born 1945 to 1964. Are there generational differences in long-term saving for the purposes of bequests and retirement? Persistently throughout the early 1990's, the popular press has portrayed the baby boom generation as a low savings cohort, destined to have inadequate resources during retirement unless they promptly change their ways and save much more in the later labor force years. Despite the attention given this issue by the media, there has been relatively little scholarly work addressing the adequacy of saving and wealth of the soon-to-be retired.⁴¹

Although concern about low savings rates had remained widespread since the early 1980's, many analysts have taken the optimistic position that the maturing of the baby boom generation will restore aggregate savings to their earlier levels.⁴² Their arguments rest on two potential explanations: First, as baby boomers reach their peak earning and saving years, aggregate savings will increase with this large cohort's rising share of national income. Second,

³⁹ Questions on financial distress and bankruptcy were asked in a special supplement to the *PSID* in 1996. For other applications that use this data, see Fay, Hurst and White (1998) and Hurst and Stafford (1998).

⁴⁰ See Hurst and Stafford (1996).

⁴¹ Notable exceptions include the work of Bernheim (1991), Bernheim and Scholz (1993), Engen and Gale (1997) and Gale (1997).

⁴² See Cantor and Yuengert (1994).

baby boomers who spent freely and saved little in their early life cycle years will aggressively increase their savings rates as they find themselves unprepared for retirement.

Bernheim and Scholz (1993) and Bernheim (1993) attempt to provide an absolute measure of savings adequacy that takes into account the particular economic circumstances faced by the baby boom generation. Using a simulated model that generates target levels of wealth for a head of a household at every age, Bernheim concludes that in 1991 and 1992, baby boomers were saving at roughly 34% of the recommended rate of target (nonhousing) savings. Bernheim and Scholz obtain similar results by comparing saving rates from the 1986 Survey of Consumer Finances with their target rates, but they reveal that under saving is concentrated among individuals without college education, a result parallel to that observed using other household survey data.⁴³

Cantor and Yuengert (1994) examine the data from the 1989 Survey of Consumer Finances and reveal that the median ratio of accumulated wealth to the Bernheim-Scholz target level is 0.95 for 35 to 44 year old household heads. Nearly half of the sample report nonhousing assets greater than the Bernheim-Scholz targets. That is, compared with the Bernheim-Scholz targets, wealth accumulation appears on target while individual saving rates appear low (a finding which is further supported empirically in later sections). Using the 1983 and the 1989 Survey of Consumer Finances, Cantor and Yuengert show that baby boomers have managed to accumulate more wealth than their parents at the same ages. They conclude that policy makers concerned about low saving rates should not rely on the aging of the baby boom cohort to restore aggregate savings to earlier levels. Barring a major reduction in Social Security benefits, the evidence that baby boomers are not saving adequately for retirement is unconvincing.

The household wealth holdings of selected age cohorts are presented in Table 1.9. The senior baby boomers, those born in 1945-1954, were age 30-39 in 1984 and the junior baby boomers, those born 1955-1964, were age 20-29 in 1984. As the senior boomers aged through 1989 and 1994 their median wealth in 1994 was \$63,446 (mean \$155,278). By comparison those born 1935-1944 held a median of \$79,380 (mean \$188,466) at the same life cycle point (in 1984). If we believe that there has been a general upward drift in pension values through time,⁴⁴ then Senior Boomers seem to be, on average, at least as financially well prepared as the cohort ten years earlier. The patterns in Table 1.9 suggest that the younger baby boomers - those born 1955-1964 - or junior boomers do seem to have held modest amounts of wealth. As of 1994, this was

⁴³ See Juster, Smith and Stafford (1997).

⁴⁴ See Juster, Smith and Stafford (1997).

smaller than the amounts of household wealth held in 1984 by the older baby boomers - those born 1945 to 1954 - or senior boomers.

Overall, these findings are consistent with the work of Cantor and Yuengert and dispel the myth in the popular press that the preretirement or senior baby boomers are frivolous overspenders at the expense of wealth building for their retirement. Because the data do not include wealth held in private pensions and Social Security, there is reason to believe that this part of the baby boom generation, because of more favorable pension coverage, will turn out to have had as much or more overall wealth than the prior generation.⁴⁵

In Figure 1.2, we have the lower and upper percentiles of the senior baby boomers in the three years. About one third the way up the percentile distribution, senior baby boomer net worth doubled from \$12,081 in 1984 to \$26,468 in 1994 (at the 32nd percentile). Wealth at the 90th percentile also approximately doubled between 1984 and 1994, but this was from \$184,535 to \$368,535. Another way to judge the persistence of low wealth is to examine wealth transitions by decile through time for the same families as was done for the full sample in Tables 1.5-1.7. For the senior boomers in the bottom wealth decile in 1984 (age 30-39), there is, as for the full sample, non-existent life cycle wealth accumulation (Table 1.10) over the full ten years, substantial persistence in the bottom decile and the decile values themselves are not spreading out much in absolute value.⁴⁶

Although the baby boom cohort as a whole may be accumulating more wealth than other generations, it is evident that *within* the generation there are large disparities in wealth accumulation. Like Bernheim, we feel there are important policy implications from analyzing the adequacy of pre-retirement savings. With a policy shift toward extending the preretirement period for Social Security benefits, the adequacy of private savings, both in the form of financial wealth and private pensions, becomes more important. To what extent could a substantial share of a preretirement cohort become an old age poverty population were access to public pension benefits to be reduced? More generally, explanations of the differences in saving patterns within and across generations will help economists and policy makers better understand the nature of life-cycle saving.

⁴⁵ Another argument in the baby boom savings discussion is the issue of the return on the assets which they accumulate when they are retired. The large asset holdings, it is argued, will tend to drive down the return which they can expect.

⁴⁶ Recent work by Gale (1997), using 1992 *SCF* data, concludes: approximately one-third of baby boomers are doing well by any measure (in terms of adequacy of pre-retirement household wealth), one-third are doing poorly by any measure and the middle one-third are just hanging in there.

Wealth Holdings by Race, 1984-1994

The sharply differing wealth distributions between African-American and other families are presented in Figure 1.3. As with Figure 1.1, the even number percentiles, 2 - 98, are presented, with the first panel reporting the second decile to the median and the second panel covering the percentile range of 52 - 98. As in the overall distribution in Figure 1.1, there was modest growth in the median for white families between 1984 and 1989 (\$58,030 to \$59,129) and then stronger growth 1989 to 1994 (\$63,522). For African-American families, median wealth was \$3,608 (1984), then \$6,256 (1989) and \$8,470 (1994). Overall, from 1984-1994, median family wealth grew at 3.0 percent per year for white/other families and 8.9 percent per year for African-American families. This higher growth rate implies a decline in the gap in median wealth from 16.1 to 1 in 1984 to 9.5 to 1 in 1989 and then to 7.5 to 1 in 1994. This pattern of a very large but narrowing black/white wealth gap was also observed in the Survey of Consumer Finances data.⁴⁷ On the other hand, the absolute differences are so large that this percentage narrowing is not readily evident from Figure 1.3.

Another way to see the black/white wealth disparities is to examine the charts as cross-sectional snapshots. In Figure 1.3, the median black wealth of just over \$10,000 in 1994 lines up with the wealth at the 22 percentile of the white distribution for 1994. On Figure 1.3, the wealth at the 98th percentile of the black distribution (\$261,914) lines up with wealth at approximately the 80 percentile on the white distribution for 1994. A full listing of the 2 percentile increments of the wealth distribution is given in Table A2 of Appendix A. A selected set of percentile points in the wealth distribution for African-American and other families is set out in Table 1.11.

The wealth quantile mobility of African-American sample is higher than for the full sample. Table 1.12 provides the wealth transitions for the approximate nontiles for 1984 to 1994.⁴⁸ Table 1.12 shows that over 55 percent of all African-American households who had no wealth in 1984 also had zero wealth ten years later despite the aging of these households through the lifecycle. Relative wealth mobility, as measured by Shorrocks' index, is higher for African American households than for the full sample (0.849 compared to 0.804 as reported in Table 1.8).⁴⁹ Like the results of greater wealth mobility for Sweden, the higher Shorrocks' index could

⁴⁷ Wolff (1996) reports a rise in the ratio of medians of 0.09 in 1983 to 0.20 in 1992, using non-Hispanic whites and non-whites as the two groups. We have a ratio of medians of 0.062 in 1984 and 0.135 in 1994.

⁴⁸ Given the large concentration of zero and negative net worth and the small number of families with net worth greater than \$100,000, nine wealth groupings were constructed in both 1984 and 1994.

⁴⁹ The smaller number of wealth groupings would tend to depress Shorrocks' index, indicating even more wealth mobility in African American Households.

be because the wealth brackets are much more narrow for the African American distribution, producing greater relative mobility for a given dollar change in wealth.

Asset Ownership and Wealth Transition by Race

This section examines household participation in different aspects of financial markets, including transaction accounts, stock ownership, and non-collateralized debt. In doing so, we focus on differences between African American and other households.

Transaction Accounts

In above section, we noted that a substantial share of households have no transaction account. Table 1.13 describes the ownership patterns of transaction accounts for the population, African American households and other households. As of 1994, 20 percent of American families did not own a checking or saving account, up by 4 percentage points since 1989. We can see that for all families with the same head in 1984 and 1989, there are substantial transition rates, from 7.7 percent for entrance and 6 percent exits between 1984 and 1989, to about 6 percent entrance and 9 percent exits between 1989-1994. It is this excess of exits over enters which (by definition) explains the drop in the percent holding bank accounts in the 1989-1994 period from 83.6 to 79.8 percent. The exodus from account ownership was especially pronounced for African American families over the period, with exits exceeding entries and a net decline to only 45.4% of families with a transaction account, a result consistent with Oliver and Shapiro (1995).⁵⁰ Using a multivariate probit analysis, we find that educated, higher income, and older households are more likely to have a bank account, and African-American families are much less likely to have an account conditional on income and demographic variables.

We find the transition into ownership, as well as exits from ownership, are dependent on the same variables. There appear to be strong differences in account ownership and account transitions by race, even apart from income and age of head. This suggests that the similar large differences in account ownership observed in other studies are dependent on factors other than the most obvious economic variables. Such differences raise the question of how the lack of experience with account ownership may influence a family's longer term participation in

⁵⁰ Oliver and Shapiro (1995, p. 106) report that 42.8 percent of black households maintained an interest bearing bank account as of 1988.

financial services of other sorts, such as home mortgages, purchase of stocks for IRAs, and other portfolio components.

Research has suggested that families which have low income and which expect to become eligible for asset-tested benefit programs face a potential marginal tax rate on their savings of 100 percent.⁵¹ The strong effect of income on net worth is to be expected just from the traditional consumption function, but the benefit incentives could be acting to strengthen further the relationship between income and net worth at low levels of permanent income. With revisions of welfare being implemented in the near future, it is of interest to see whether changes in asset-testing and duration of benefits will influence net worth accumulation and other saving behaviors.

Stock Ownership

Starting with under one third of families owning stocks in 1984, 41 percent of families reported holding stocks by 1994. As we will see below, stock ownership was central to high wealth growth between 1984 to 1994, and it is therefore of interest to see the upward drift and transitions into and out of stock ownership during the interim periods. As seen in Table 1.14, only 8.5 of stable African American families held stocks as of 1984 and with entries and exit, by 1994 this was up modestly to 14.3 percent. The higher 1989 value of percent ownership of stocks in 1989 (of about 8 percent) in the *PSID* may be partly attributed to the broader definition in the *PSID* which included stocks in IRAs and partly attributed to our focus on stable families to estimate transitions. (See question text in note *a* of Table 1.14). The pattern is clear: there was lagged participation in the big return asset by African American families as the stock market boom unfolded in the period of the mid 1980's to the mid 1990's.

A probit analysis of ownership of who held stock and who got into stocks shows a substantial difference for African-Americans, net of income, age and other life cycle factors. Given the large initial disparity in ownership, one might expect an effect from there being more room to get in, but this is not the case as is evident from equation III in Table 1.15. For example, younger persons were more likely to get into stocks, 1989 -1994 as they became aware of the strong returns. Family effects are quite important, with married families more likely to own and to become owners, and children present presumably gives rise to claims other than wealth accumulation on income flows.

⁵¹ See Hubbard, Skinner and Zeldes (1995).

The Rise of Non-collateralized Debt

A sharp *rise* in non-collateralized debt (NCD) is often seen as a sign of deteriorating credit quality, where credit quality may be defined as the chance of default on not just the credit card balance, but also other elements in the household's portfolio, such as the home mortgage. For other reasons a *decline* in NCD is also seen as a sign of credit market problems. Specifically, with financial market turbulence, lenders may be reluctant to extend non-collateralized credit for reasons of asymmetric information and adverse selection, creating quantity rationing and a credit crunch.⁵² In this context, the strong rise in average NCD balances over the period 1984-1989 is of concern as is the stall out in the growth of the share of families with any NCD over the period 1989-1994. (See Table 1.1). We look at the use patterns and are able to identify that some of the longer term rise represents what can be termed prudent use of credit while another component of the rise in NCD seems to represent financial mismanagement or financial contingencies which *did* materialize.

We have used a multivariate probit to analyze the relationship between interim credit conditions on access to NCD. For families with the same household head, we found a declining percent ownership from 58 percent in 1989 to 52 percent in 1994, suggesting a potential credit crunch: the same families were less likely to hold NCD after the Gulf War recession. Our analysis shows a lower use by older households and a slightly lower use rate by African-American households. More educated and married households were more likely to hold some NCD. Net of basic ownership, families were divided into two groups, high permanent income (greater than \$30,000) and low permanent income (less than \$30,000). The high permanent income group is more likely to hold some NCD. However, within each of the two income groups, there is a substantial share of families with a ratio of NCD to permanent income of over 25 percent. This percent has risen slightly from 9.0 to 9.7 percent among families with under \$30,000 in permanent income and has risen from 5.0 to 6.9 percent for families with over \$30,000 in permanent income. If one considers the families in the over 20 percent debt to income range, the percent has risen over the period only for the \$30,000+ families, from 7.4 to 9.1 percent. It is of interest to note that the incidence of NCD was lower for both income groups in 1994 than in 1989, an additional indication of an interim credit crunch during 1990-1991.

We further studied the factors which led families to increase their NCD by more than \$1,000. Here, we found that the services of NCD can be regarded as a normal good in that higher

⁵² See Stiglitz and Weiss (1981) and Bernanke and Lown (1991).

permanent income leads to increases in NCD, particularly if the family has more human capital (as indexed by education of the head), suggesting both a convenience dimension and a consumption smoothing element to NCD. The newly married are more likely to add to NCD in comparison to the recently separated and older households, which reduced their NCD holdings.

We examined the predictions of NCD from the division of our sample into the high permanent income (greater than or equal to \$30,000) and low permanent income groups. Many of the main patterns continue to hold, with the addition of the substantial *negative* relationship between race and NCD for families with permanent income under \$30,000 and a substantial *positive* relationship between race and NCD for families with permanent income of over \$30,000. Another change is the reduced effect of permanent income in this latter group. This could indicate that the income effect attenuates at high levels, given the wide range of permanent income in this group.

Wealth Accumulation

This section analyzes the relationship between wealth and saving, focusing on the effects of portfolio, race, region, income and persistence.

Long Term Income Dispersion

Throughout the 1980's, permanent income and wage dispersion have characterized the U.S. economy.⁵³ There has been some controversy over whether and to what extent these trends have continued into the mid 1990's. General equilibrium models of the labor market with technical change facilitating the substitution of skilled for less skilled workers appear capable of explaining the persistently strong earnings of college graduates in spite of increased relative supply.⁵⁴ Here we offer some evidence to support the view that as of the mid 1990s, the long term dispersion of income, as distinct from rising income variability outlined in Gottschalk and Moffitt (1994), has continued.

Based on early release data for 1995 (1994 calendar income), Table 1.16 shows that income dispersion by education group has continued to rise. Another check on continued income

⁵³ See Bound and Johnson (1992).

⁵⁴ See Johnson and Stafford (1998). It seems common for people to forget that there was an oversupply of college graduates in the mid 1970's with sharply falling wages of various high skill occupational groups, such as college faculty (Laitner and Stafford, 1994). The mid 1990's have not seen a strong relative supply increase of educated workers, as in the 1980's. This has been communicated to us by Larry Katz.

dispersion is to examine annual wage income in a simple earnings equation (Table 1.17). In this standard cross-sectional (annual) earnings equation for men age 25-65 for 1992 (1993 data) and 1995 (1996 data), there is some additional support for the view that earnings dispersion continued into the mid 1990's.⁵⁵ All three college education coefficients - more than college, college, and some college - show rises above the excluded group of high school graduates, from 1992 to 1995, (0.56 to 0.59, 0.45 to 0.49, 0.13 to 0.17, respectively) while the coefficient on less than high school declined slightly (from -0.24 to -0.25). Given that that 1995 was well into a strong recovery above 1992, the continued widening of the gap between skilled and other workers is all the more dramatic. This evidence suggests that in the mid 1990's, the skill differential has continued to rise at its 1980's pace. Additional support for a continued rise in skill differentials in the 1990s is the rise in the return to initial experience from 0.037 in 1992 to 0.040 in 1995. There is only a modest narrowing of net differences between black and white households (the excluded group), and there are some regional shifts (not reported in Table 1.17). If income dispersion continues to grow and wealth is shaped by income, we would expect this to be a factor underlying the growth in wealth dispersion described above.

Table 1.16
Average Family Income Trends by Education of the Head of Family

<i>Ed of Head</i>	<i>1984</i>		<i>1989</i>		<i>1994^a</i>	
	<i>Median</i>	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>	<i>Mean</i>
<i><H.S. Degree</i>	\$20,291	\$28,078	\$19,479	\$26,978	\$17,918	\$25,094
<i>H.S. Degree</i>	34,569	39,865	33,264	39,771	31,648	38,869
<i>Some College</i>	41,794	48,932	41,945	51,352	42,160	53,246
<i>College and +</i>	56,798	71,525	61,866	80,643	64,294	82,646
<i>All</i>	35,529	44,890	36,477	47,458	35,204	49,255

Permanent Income and Wealth Levels

⁵⁵ For a discussion of such cross-sectional earnings equations, see Mincer (1974).

Wealth levels can be seen to depend on permanent income (a coefficient of 0.65), life cycle factors, race, and region (Table 1.18, Column I).⁵⁶ As of 1989, New England was the wealthiest region. African Americans had on average \$25,514 less wealth, net of the effects of permanent income (five year average labor income) and demographic factors. This is very close to the coefficient of \$28,635 reported using *SIPP* data for 1988.⁵⁷ What is also evident from a simple wealth equation is that portfolio choice matters: households with stock as a portfolio element have, on average, \$52,454 more wealth (Column III). This substantially alters the estimated African-American differential, and is consistent with the combined effect of the high returns to equity and differential participation in equities between African-American and other families set out in Table 1.14. This suggests that conditional on income and demographic factors, there is some *additional* barrier to African-American stock ownership, and a consequence is a larger wealth differential.

In Columns II and IV, we have median wealth holdings as estimated by quantile regressions. The sample is more inclusive, since the mean regressions were based on the truncation of extreme cases set out in the notes to Table 1.18. In these median regressions, the net difference between African-American and other families narrows considerably, (\$8,800 in Column II and \$3,723 in Column IV). The lower values in the quantile regressions suggest that a good part of the (net) black/white wealth differences are the result of a lower representation of African-American families at very high wealth levels, a pattern consistent with our descriptive wealth percentiles in Figure 3.3. From *Forbes* data as of the mid 1980's, only a single African-American was represented in the top 400 wealth holders. Since that time, Bill Cosby and Oprah Winfrey are on the *Forbes* roster, but the share of the top wealth holders who are African American remains very small. The patterns for 1994 (Table 1.19) show that stock ownership has a somewhat larger impact (\$66,237) and that conditional on income and stock ownership, the African-American wealth differential is of the same order of magnitude as in 1989 (with a large gap in the mean regression and a small gap in the median regressions).

The wealth holding tables for 1989 and 1994 (Tables 1.18 and 1.19) show a large initial regional wealth advantage for the Northeast (New England and North Atlantic). By 1994, this regional wealth advantage had disappeared (compared to the excluded region, the Great Lakes). This regional erosion raises questions about the nature of wealth. Our conjecture is that wealth is

⁵⁶ Means and standard deviations for all regressions are included in Table B1 of Appendix B. States included in each region along with how we computed active savings and capital gains are also included in Appendix B. Because of missing values, sample sizes differ slightly across regressions depending on which variables are included. Due to the use of early release *PSID* data, some missing values have yet to be imputed. The instance of such cases is few.

⁵⁷ See Oliver and Shapiro (1995, p.130).

now generally more volatile and is more related to intangible factors and new technology. Variable returns across and within asset categories are more common and some of this has a regional dimension, as the application of technologies to regional industries plays out unevenly over time. We will explore these and other aspects of transitory wealth in the next section.

Permanent Income and Transitory Wealth

The fledgling Postwar household consumer panels presented an opportunity to apply simplifying theories to place order on the rich variety of behavior and make sense of what, by the standards of the day, was regarded as a plethora of detailed microeconomic data. In the process, a fair number of interesting empirical patterns were swept into the background. Prior to the ascendance of the permanent income and life cycle models, Morgan summarized a pattern which has a contemporary ring, heterogeneity in savings behavior across families:

At high income levels, spending units with large amounts of liquid assets tend to save more than those with fewer assets. We have interpreted this as follows: given a certain degree of continuity of income and behavior through time, those with large amounts of liquid assets now are likely to have been saving more in the past than those with few liquid assets. Given continuity of behavior, they will save more in the future.⁵⁸

There appear to be spenders and savers for reasons beyond those readily observable to the researcher, a factor which will contribute to wealth dispersion beyond that derived from income dispersion. This heterogeneity was given little attention in the main dialogue over evidence supporting the Permanent Income Hypothesis and Life Cycle views. The variability of returns was also given little theoretical or empirical attention. In fact, most savings by households was in savings accounts and a very limited set of assets beyond own home. Even during the go-go stock market years of the early 1960s, less than 20 percent of families held any publicly or privately traded stocks or stock mutual funds.⁵⁹ In this setting, the prevailing model of wealth accumulation was essentially an orderly active saving flows function with returns from saving being rather predictable or at least from a stationary process with a risk return locus. The distinction between active savings and realized savings took a back seat to the average and marginal propensity to save (actively). The consensus estimate, supported by numerous empirical

⁵⁸ See Morgan (1954).

⁵⁹ 16 percent of families in 1962 and 19 percent in 1964 held stocks (Katona, Mandell and Schmeideskamp, 1970).

studies was an average propensity to save actively (APS_A) equal to the marginal propensity to save actively (MPS_A) of about 0.11.⁶⁰

A new view of savings is that liquidity restrictions can arise to shape behavior,⁶¹ that the old heterogeneity given scant attention is important, and that there are highly dispersed *ex post* returns to saving by asset component across the decades.⁶² In this new view, the realized savings, defined as changes in the market value of assets - arising from both active savings, returns on prior saving *and* interim returns on recent active savings - or changes in what we have referred to as household wealth, can differ sharply from active savings. *PSID* data, like *NIPA* data, show active saving rates falling between 1984 and 1989. Dividing mean household active saving by our measure of mean pre-tax labor income, we find active saving rates out of permanent income fell from 7.6 for the 1984 to 1989 period to 4.6 for the 1989 to 1994 period.

Despite the low rates of active savings by U.S. families, *realized* average savings rates (APS_R) out of permanent income remained fairly constant over this period and were in line with active saving rates found in studies from three decades ago. The realized savings rates can be seen in Table 1.20, Column I. We use 5 year (pre-tax) household labor income 1987-1991 (in 1996 dollars) to predict realized savings. The APS_R (realized average propensity to save) is about 14.4 percent per year, a rate somewhat above the old estimates of the APS_A (active average propensity to save) of 0.11 found in Holbrook and Stafford (1971). From a similar regression on the change in wealth between 1984 and 1989, the estimated APS_R out of permanent income is about 15 percent per year.⁶³ While active saving rates have fallen during the last 15 years, the average propensity to accumulate wealth (APS_R) appears to have remained roughly constant over this period. In the spirit of modified life cycle effects, we can see the impact of race (Column II) which becomes smaller with family and demographic controls. Since these demographic variables are also correlated with permanent income, the coefficient on permanent income falls to 13.6 percent per year, a modest decline. A simple way to highlight the role of variable returns is to revisit the regional aspects of the 1991 recession. The consensus is that New England and California were most affected. While personal income per capita fell for New England from \$26,283 to \$26,185 in constant dollars between 1990 and 1993,⁶⁴ from Tables 1.18 and 1.19 we saw that wealth in New England fell about \$36,000 per family between 1989 and 1994 (the

⁶⁰ See Holbrook and Stafford (1971).

⁶¹ See Flavin (1981), Zeldes (1989), Deaton (1991) and Carroll (1994).

⁶² See Juster, Smith and Stafford (1997).

⁶³ This regression was not reported.

difference in New England coefficients predicting wealth in 1989 and 1994 - Column I of Tables 18 and 19). These cross sectional differences for New England in Tables 1.18 and 1.19 are in line with the wealth *change* coefficients in Columns III and IV of Table 1.20. Other regions fared better, in the sense that they experienced a smaller loss relative to the Great Lakes, but the main point is that there was wide dispersion in wealth change relative to the excluded group (Great Lakes Region).⁶⁵

To this point, we have presented evidence in support of variable returns by region and rising cross sectional wealth dispersion and rising wealth mobility. In this section, we initiate a more structural approach to understanding wealth dynamics: to what extent does wealth dispersion depend on behavioral persistence along the lines suggested by Morgan, to what extent does informed or fortuitous selection of portfolio composition (either in terms of initial composition or component inflows) play a role, and to what extent is there mean reversion, with families who realized large transitory wealth gains at one point, on average, moving downward in the next period?

The effect of prior wealth (1989) on wealth accumulation (1989-1994) is essentially zero - less than 1 percent per year (Column I of Table 1.21). The positive effect is in part the consequence of scale (those with a larger initial net worth will accumulate more even with small capital losses) and could also embody the persistence highlighted in the Morgan quote. In short, this may be the result of a persistence effect across the decades combined with more volatility in returns and mean reversion in wealth holdings, both statistically and behaviorally. We can note that initial asset holding and active savings in stocks and business equity were strong contributors to wealth accumulation, as were active savings into real estate other than own home and proceeds from inheritances (Columns II and III of Table 1.21). The results in Columns II and III indicate the obviously higher return to equities during this period. Since we have other elements that capture much of the income flows, the coefficients (such as the 0.643 on stock inflow) can be thought of as indexing the returns relative to money going into other portfolio elements. Net intrafamily inflows arising from family member departures and arrivals (a family member leaving/entering with assets/debts) lead to more household wealth (0.124 per dollar of net inflow in Column III).

⁶⁴ Per capita income for New England was reported by U.S. Bureau of Economic Analysis in Survey of Current Business (May, 1996).

⁶⁵ Restricting our analysis to changes in non-housing wealth, we find that the entire decline in New England wealth relative to the Great Lakes Region resulted from a decline in housing wealth. For the North Atlantic and Oil states, we found that only about half of their relative wealth decline was from changes in housing wealth.

Do strong returns in one period lead people to more saving in the next or are there target wealth effects (potentially derivable from a formal life cycle model)? Wealth accumulation in 1989-1994 was a *negative* function of prior wealth (Table 1.22, Column I), indicating mean reversion. Is this reversion the net result of persistence which is positive and wealth effects which are negative? In Columns II and III we decomposed the 1989-1994 wealth gain into an active savings component and a capital gain component. In both the mean regression and the quantile regression, both prior inflows and capital gains have a substantial negative impacts.

The realized savings in Table 1.20, Column I were at a rate of about 14 percent per year out of permanent income. If returns have been higher per dollar invested could we expect the active savings rate to be below the realized savings rate out of permanent income? The earlier era active savings rate was on the order of 11 percent. Table 1.23 presents the active savings rate, 1989-1994 as a function of the five year labor income. The marginal propensity to save actively is 7.3 percent per year, a rate of about half the marginal propensity to accumulate wealth of 14 percent per year. This 7 percent per year for an active savings rate is not far off the approximate values of the 'personal savings' rates for 1989-1994 in the flow of funds data (Juster, Smith and Stafford, 1998). What is interesting is how low the median savings rate is: only 3.3 percent or less than half the average. Consistent with Table 1.2, only a few households have high savings rates and many have low rates, even over a full five year period.

Do capital gains reduce subsequent savings? As Morgan argued, are savers persistent? To provide an initial exploration of these questions we considered savings and assets in the form of stocks or farm and family owned business. The results are presented in Columns III and IV, respectively. There is some suggestive evidence of prior capital gains from stocks (1984-1989) reducing additional total active saving via all assets in 1989 through 1994. Those who were active savers in stocks 1984-1989 were more likely to actively save, 1989-1994. Here too the statistical results are only suggestive. Those with large contemporaneous stock gains were also saving more actively, but this is to be expected, just on the basis of the 'scale' of active savings and wealth. Those with more dollars into the stock market should realize more dollar capital gains, given the strong rise in equity prices.

Business (and farm) equity provides an interesting contrast to stocks. One would expect the buildup (or decline?) of a business to be based on an investment path. Even if this path were proving out, unlike publicly traded stocks, partial conversion on the equity rise in the business may be difficult. External observation of collateral value may be difficult and may be based on person-specific intangibles or what has been referred to as tacit knowledge (Eliasson, 1990). This creates a type of indivisibility of investment through time. Here we see that prior inflows to the

business weakly predict additional active savings (persistence) and that capital gains, especially prior capital gains, strongly predict subsequent active savings.

From this initial exploration, the role of high realized returns, even for publicly traded equities, in depressing savings is not clear. To study this question a more systematic modeling effort will be required and some additional data elements are probably critical. Many persistent savers may be attracted to a pension plan. This would commit them to regular savings, regardless of short term exigencies.⁶⁶ To test this possibility, data on pension plan holdings are necessary. Also, the definition of capital gains as the change in wealth less active saving has problems from an errors-in-variables perspective. Not only are wealth and active savings subject to the usual problem of measurement error, but the identity for capital gains creates an automatic error covariance. In future work with these data, exploration of the sensitivity of parameter estimates to measurement error should be incorporated.

Conclusion

In this paper, we have offered a descriptive overview of the main patterns of changing wealth among American families, 1984-1989-1994. We have also attempted to highlight a few of the areas which can be analyzed using *PSID* wealth data. The main findings include a tendency for rising dispersion of wealth while at the same time median wealth grew substantially, boosted by the rising stock market and the rising share of households owning stock over the period 1989-1994. Combined with rising pension fund reserves, the increase in net worth over the period 1989-1994, \$1.8 trillion, was large enough to potentially initiate a sizable wealth effect on aggregate consumption which could extend over the period 1995-2000.

Our analysis shows that there is a large share of families with negative net worth and that even five years later about 40 percent of such households still have negative net worth. Nonetheless, as measured by the Shorrocks' index, there was a modest rise in wealth decile mobility across the two five year segments, 1984-1989 and 1989-1994. There were strong compositional effects on wealth holdings, with a shift toward the use of the household's main home as a collateral source and a rise in non-collateralized debt (NCD), particularly for households with low equity positions in their home. This suggests that a sharp decline in house

⁶⁶ The theory of savings commitments is broadened by recent research applying hyperbolic discounting models as reported in this volume (Laibson, Repetto, and Tobacman, 1998).

prices could now have a more adverse effect on consumer liquidity than was the case 10 years ago.

There was a rise in exits over enters in ownership of bank or transaction accounts (checking, saving, other) so that by 1994 over 20 percent of American families did not have any transaction account at all. This net exit was more pronounced for African-American families. There was a persistence of illiquidity for those households at the bottom decile of the wealth distribution. There remains a persistently large gap between the financial wealth of African-American and other households, a gap which did narrow in proportionate terms over the period, 1989-1994. This result was also found in analysis of data from the *Survey of Consumer Finances*.⁶⁷ In multivariate analysis of the black/white wealth, we showed that much of the wealth gap appears to be the result of differences in permanent income and asset composition. Quantile analysis indicates that a large share of the average wealth gap is attributable to a disparity in the share of African American households with very high wealth holdings.

There was a substantial and persistent rise in the financial wealth of those born 1945-1954 (the senior boomer cohort) over the period of 1984-1994, while those born 1955-1964 (the junior boomer cohort) do seem to be behind in their accumulation of wealth at that point the life cycle. Within the senior boomer cohort, there is a large subset of families with continuing low levels of household wealth. Unless these families have private pensions, they will be very ill-prepared for retirement.

The last sections of the paper offer an initial exploration focused on the factors shaping asset holdings. This is important since the returns to the different assets are so variable and the function of different portfolio components is so diverse, ranging from non-collateralized debt as a consumer convenience and buffer stock, to equity in own business. This diverse set of assets is shaped by income flows, and our analysis confirms the continued widening of income by education groups. The findings are that despite low rates of savings flows, the returns have been sufficiently high that effectively, realized savings rates are higher than the flow savings rates in the 1960s, but that there has been substantial volatility across regions. Even though the average propensity to save actively (APS_A) out of household income has been falling during the past 15 years, the average propensity to accumulate wealth (APS_R) has remained roughly constant during this period. Household wealth growth was shown to differ across the regions, with the 1989 wealth lead of New England disappearing almost entirely by 1994.⁶⁸

⁶⁷ Wolff (1996).

⁶⁸ Most of this is due to the deterioration of house prices in this region, but for other regions, assets besides own home played a role.

This study of dispersion in returns represents an initial look at a subject which deserves a longer term assessment. One of the current limitations of the *PSID* and most other data on household asset holding is the absence of private pension information. As a result, future work would benefit from inclusion of such measures and knowledge of the underlying components in the pension plans. It is possible that some of those who appear to have persistently low savings and household wealth accumulation in fact have substantial pension accruals and feel no need to save out of current income flows - they may just be persistent savers interested in deferring income taxes. Finally, we offer some suggestions that wealth processes over time may be mean reverting. Households with large wealth gains between 1984 and 1989 were less likely to accumulate wealth between 1989 and 1994. The literature would benefit from a thorough theoretical and empirical study of the existence of transitory wealth.

References

- Antoniewics, Rochelle L. 1996. "A Comparison of the Household Sector from the Flow of Funds Accounts and the Survey of Consumer Finances," Federal Reserve Board Working Paper.
- Bager-Sjoren, Lars and Anders Klevmarcken. 1995. "Inequality and Mobility of Wealth in Sweden 1983/84 - 1992/93," Tax Reform Evaluation, 21, November.
- Bernanke, Ben and Mark Gertler. (1998). "Agency Costs, Net Worth and Business Fluctuations," American Economic Review, 79(1), 14-31.
- Bernanke, Ben and Cara Lown, "The Credit Crunch," Brookings Papers on Economic Activity, 1991(2), 204-39.
- Bernheim, Douglas. 1991. "How strong are Bequest Motives? Evidence Based on Estimates of the Demand for Life Insurance and Annuities," Journal of Political Economy; 99(5): 899 - 927.
- Bernheim, Douglas and John Scholz. 1993. "Private Saving and Public Policy." Tax Policy and the Economy - Volume 7, edited by James Poterba. Cambridge and London: MIT Press, 73-110.
- Board of Governors of the Federal Reserve. 1996. Balance Sheets for the U.S. Economy - Flow of Funds, C.9.
- Boskin, Michael and others. 1998. "Consumer Prices, the Consumer Price Index, and the Cost of Living," Journal of Economic Perspectives, 12(1), 3-26.
- Bosworth, Barry, Gary Burtless, and John Sabelhaus. 1991. "The Decline in Saving: Evidence from Household Surveys," Brooking Papers on Economic Activity, 1991(1), 183-255.
- Bound, John and George E. Johnson. 1992. "Changes in the Structure of Wages During the 1980's: An Evaluation of Alternative Explanations," American Economic Review, (82): 371-92.
- Cantor, Richard and Andrew Yuengert. 1994. "The Baby Boom Generation and Aggregate Savings." Federal Reserve Bank of New York Quarterly Review; Summer-Fall: 76-91.
- Carroll, Christopher. 1994. "How Does Future Income Affect Current Consumption?," Quarterly Journal of Economics, 109(1): 111-47.
- Deaton, Angus. 1991. "Saving and Liquidity Constraints." Econometrica, 59(2), 1221-48.
- Elaisson, Gunnar. 1990. "The Firm as a Competent Team," Journal of Economic Behavior and Organization, 13: 275-298.
- _____. 1991. "Modeling the Experientially Organized Firm," Journal of Economic Behavior and Organization, 16: 153-182.

- Engen, Eric and William Gale. 1997. "Debt, Taxes, and the Effects of 401(k) Plans on Household Wealth Accumulation," working paper, Federal Reserve Board, May.
- Engen, Eric, William Gale, and John Scholz. 1996. "The Illusory Effects of Saving Incentives on Saving," The Journal of Economic Perspectives, 10(4): 113-138.
- Fay, Scott, Erik Hurst and Michelle White. 1998. "The Bankruptcy Decision: Does Stigma Matter?" working paper, Department of Economics, University of Michigan, February.
- Ferber, Robert. 1959. Collecting Financial Data by Consumer Panel Techniques, Urbana, Bureau of Economic and Business Research, University of Illinois.
- Flavin, Marjorie. 1981. "The Adjustment of Consumption to Changing Expectations about Future Income," Journal of Political Economy, 89(5): 974-1009.
- Friedman, Milton. 1957. A Theory of the Consumption Function. Chicago: University of Chicago Press.
- Friend, Irwin, and Stanley Schor. 1959. "Who Saves?," Review of Economic and Statistics, 41(2) 213-48.
- Gale, William. 1997. "Will the Baby Boom be Ready for Retirement?" The Brookings Review. Summer.
- Gottschalk, Peter and Robert Moffitt. 1994. "The Growth of Earnings Instability in the U.S. Labor Market", Brookings Papers on Economic Activity, 1994(2), 217-72.
- Gustafsson, Siv and Frank P. Stafford. 1997. "Childcare, Human Capital and Economic Efficiency," Economics of the Family and Family Policies, edited by Inga Persson and Christina Jonung, London and New York: Routledge, 139-58.
- Heeringa, Steven G., Daniel H. Hill, and David A. Howell. 1995. "Unfolding Brackets for Reducing Item Non-response in Economic Surveys", Health and Retirement Study Working Paper Series, Paper No. 94-027, Survey Research Center, University of Michigan.
- Holbrook, Robert S. and Frank P. Stafford. 1971. "The Propensity to Consume Separate Types of Income: A Generalized Permanent Income Hypothesis," Econometrica, 39(1): 1-21.
- Hubbard, Glenn and Jonathan Skinner. 1996. "Assessing the Effectiveness of Saving Incentives," The Journal of Economic Perspectives, 10(4): 73-90.
- Hubbard, Glenn R., Jonathan Skinner, and Stephen P. Zeldes. 1995. "Precautionary Saving and Social Insurance," Journal of Political Economy, 103(2): 360-399.
- Hurd, Michael, and others. 1997. "Consumption and Savings Balances of the Elderly: Experimental Evidence on Survey Response Bias," Working paper, RAND and Department of Economics, University of California at Berkeley, April.
- Hurst, Erik, and Frank P. Stafford. 1996. "Limits to Fed Policy: Ex Ante and Ex Post." Paper prepared for Forty-Fourth Annual Conference on the Economic Outlook, Research Seminar in Quantitative Economics, Ann Arbor, Michigan. (November).

- _____. 1998. "Grasshoppers and Ants: Mortgage Refinancing and Bankruptcy," working paper, Department of Economics, University of Michigan, February. Internal Revenue Service, Statistics of Income Bulletin, Spring, 1993.
- Johnson, George E. and Frank P. Stafford. 1998. "Technology Regimes and the Distribution of Real Wages," Microfoundations of Economic Growth: A Schumpeterian Perspective, Joseph A. Schumpeter Society, University of Michigan Press. (forthcoming).
- Juster, F. Thomas, James P. Smith and Frank P. Stafford. 1997. "Savings, Wealth and Income, Then and Now". Paper prepared for Conference on Health and Retirement, Amerstand, The Netherland (August).
- Juster, F. Thomas, James P. Smith and Frank P. Stafford. 1998. "The Measurement and Structure of Household Wealth," Labour Economics. (forthcoming).
- Katona, George and John B. Lansing. 1964. "The Wealth of the Wealthy," Review of Economics and Statistics, 46(1), 1-13.
- Kennickell Arthur B. and Martha Starr-McCluer, "Changes in Family Finances from 1989 to 1992: Evidence From the Survey of Consumer Finances," Federal Reserve Bulletin, October: 861-81.
- Laibson, David I. Andrea Repetto and Jeremy Tobacman, "Self Control and Retirement Savings: Do 401(k)'s Help?", Brookings Papers on Economic Activity, 1998(1), 91-196.
- Laitner John and Frank P. Stafford. 1995. "The Academic Labor Market: Has Compensation Diverged From Other Professions?" paper presented at the Econometric Society, Washington, D.C..
- Mincer, Jacob. 1974. Schooling Experience and Earnings, National Bureau of Economic Research, Columbia University Press.
- Morgan, James N. 1954. "Analysis of Residuals from 'Normal' Regressions," in Contributions of Survey Methods to Economics, edited by George Katona, Lawrence Klein, John B. Lansing and James N. Morgan, Columbia University Press.
- Oliver, Melvin L. and Thomas M. Shapiro. 1995. Black Wealth/White Wealth, London: Routledge.
- Poterba, James, Steven Venti and David Wise. 1996. "How Retirement Saving Programs Increase Saving," The Journal of Economic Perspectives, 10(4): 91-112.
- Shapiro, Matthew and David Wilcox. 1996. "Mismeasurement in the Consumer Price Index: An Evaluation," NBER Macroeconomics Annual.
- Shorrocks, Anthony. 1978. "The Measurement of Mobility," Econometrica, 46(5): 103-24.

- Stafford, Frank P., Sandra Hofferth, and Charles Brown. 1995. "The Panel Study of Income Dynamics - Waves 30, 31 and 32," Proposal to the National Science Foundation, Institute for Social Research.
- Stiglitz, Joseph and Andrew Weiss. 1981. "Credit Rationing in Markets with Imperfect Information" American Economic Review, 71(3): 393-410.
- Wolff, Edward N. 1995. Top Heavy: A Study of Increasing Wealth Inequality in America, New York: Twentieth Century Fund Press.
- _____. 1996. "Trends in Household Wealth, 1983-1992," Report submitted to the U.S. Department of Labor, July.
- Zeldes, Stephen. 1989. "Consumption and Liquidity Constraints: An Empirical Investigation," Journal of Political Economy, 97(2): 305-4.

Table 1.1
Wealth Holdings By Asset: 1984, 1989, 1994

	<i>1984 (96 dollars)</i>			<i>1989 (96 dollars)</i>			<i>1994 (96 dollars)</i>		
	<i>percent holding</i>	<i>mean</i>	<i>conditional mean</i>	<i>percent holding</i>	<i>mean</i>	<i>conditional mean</i>	<i>percent holding</i>	<i>mean</i>	<i>conditional mean</i>
<i>Real Estate</i>	20.1	20,639	102,913	19.6	29,202	149,062	17.7	25,087	141,788
<i>Wheels</i>	83.2	8,334	10,010	83.1	9,829	11,827	85.4	11,251	13,167
<i>Farm/Business</i>	12.2	24,915	204,234	13.4	28,962	216,391	13.2	22,967	173,405
<i>Stocks</i>	24.8	10,697	43,119	27.9	16,350	58,538	34.5	29,768	86,347
<i>Checking</i>	80.8	18,330	22,693	81.2	22,395	27,582	77.8	20,217	25,997
<i>Other Assets</i>	23.4	24,793	105,813	26.3	7,435	28,225	24.5	9,898	40,428
<i>Debts</i>	46.3	2,754	5,962	50.2	3,653	7,279	50.6	6,339	12,525
<i>Main Home</i>	60.1	43,408	72,269	60.9	51,633	84,832	63.5	46,367	72,961
<i>Net Worth</i>		148,364			162,156			159,217	
<i>Sample Size</i>		6,918			7,114			7,416	

Source: PSID Wealth Supplements (1984, 1989, 1994). All data was weighted using corresponding PSID weights.

Table 1.2 (cont)
Wealth and Active Saving by Life Cycle Group

Average Wealth Accumulation Rates and Active Saving Rates Between 1989 and 1994 by Life Cycle Group

<i>Demographic Group</i>	<i>Wealth Accumulation Rate</i>		<i>Active Savings Rate</i>	
	<i>Mean</i>	<i>Median</i>	<i>Mean</i>	<i>Median</i>
<i>Under 35, unmarried</i>	19.1	5.4	3.5	1.6
<i>Under 35, married</i>	19.7	7.7	2.9	0.6
<i>35-44, not married</i>	9.0	1.6	3.2	0.0
<i>35-44, married</i>	31.1	7.3	4.6	0.8
<i>45-54, no children</i>	9.7	6.3	1.8	0.7
<i>45-54, has children</i>	6.1	3.0	7.0	1.2
<i>55-64, no children</i>	-9.7	4.0	17.8	1.0
<i>55-64, has children</i>	25.0	-2.5	2.2	-0.9
<i>65 and over</i>	19.8	4.3	15.6	0.0
<i>Total (N=3831)</i>	13.8	5.2	6.9 ^a	0.7

Source: PSID Wealth Supplements and Core Survey (1989,1994). All data was weighted using corresponding PSID weights.

Note: Both Table 2a and 2b only include households with the same head in both 1989 and 1994. Table 2b also is restricted to households with Permanent Income greater than \$5,000 and who had a change in wealth between 1989 and 1994 of greater than -\$100,000 but less than \$500,000. Active saving (wealth accumulation) rates are defined as active saving (wealth accumulation) divided by permanent income. For definition of our active saving computation, see Appendix IIIb.

^a This active saving rate is defined by averaging individual saving rates over the sample. To be compatible with NIPA data, we compute the active saving rate by dividing average active saving by average permanent income for a saving rate of 4.6 percent for 1994 (See endnote 22).

Table 1.3
Wealth Distribution: 1984, 1989, 1994

	<i>Size</i>	<i>Median</i>	<i>Mean</i>	<i>Bottom fifth</i>	<i>2nd fifth</i>	<i>3rd fifth</i>	<i>4th fifth</i>	<i>Top fifth</i>	<i>Bottom B%</i>	<i>Bottom 10%</i>	<i>Top 10%</i>	<i>Top 5%</i>
1984	6,918	15,033	104,956	-4,656	4,376	15,719	50,477	458,879	-18,698	-9,604	787,130	1,314,044
				-0.89%	0.83%	3.00%	9.62%	87.44%	-0.89%	-0.92%	75.00%	62.60%
1984 (w/main home)	6,918	47,130	148,364	-3,282	12,151	47,760	114,881	570,050	-15,384	-7,777	918,633	1,467,635
				-0.44%	1.64%	6.44%	15.49%	76.84%	-0.52%	-0.52%	61.92%	49.46%
1989	7,114	17,326	110,523	-5,052	4,532	18,169	59,927	475,156	-18,702	-10,250	796,480	1,292,118
				-0.91%	0.82%	3.29%	10.84%	85.98%	-0.85%	-0.93%	72.06%	58.45%
1989 (w/main home)	7,114	47,742	162,156	-4,744	12,094	48,217	128,151	627,140	-20,216	-10,405	991,376	1,524,303
				-0.59%	1.49%	5.95%	15.81%	77.35%	-0.62%	-0.64%	61.14%	47.00%
1994	7,416	20,115	112,850	-7,192	4,905	21,046	67,480	477,998	-25,227	-14,430	778,607	1,218,553
				-1.27%	0.87%	3.73%	11.96%	84.71%	-1.12%	-1.28%	68.99%	53.99%
1994 (w/main home)	7,416	51,030	159,217	-6,829	13,381	52,528	131,229	605,830	-27,334	-14,494	940,409	1,416,023
				-0.86%	1.68%	6.60%	16.48%	76.10%	-0.86%	-0.91%	59.06%	44.47%

Source: PSID Wealth Supplements (1984, 1989, 1994). All data weighted using corresponding PSID weights.

Note: All dollar amounts are reported in 1996 dollars.

Table 1.5 - Transition of Family Wealth Between 1984 and 1989

	<i>89 wealth</i>	<i>neg. to 123</i>	<i>to 7828</i>	<i>to 23177</i>	<i>to 44593</i>	<i>to 67947</i>	<i>to 106190</i>	<i>to 159096</i>	<i>to 239590</i>	<i>to 424510</i>	<i>424510+</i>	<i>Falling</i>	<i>Moving</i>
<i>84 wealth</i>		<i>0-10%</i>	<i>10%-20%</i>	<i>20%-30%</i>	<i>30%-40%</i>	<i>40%-50%</i>	<i>50%-60%</i>	<i>60%-70%</i>	<i>70%-80%</i>	<i>80%-90%</i>	<i>90%-100%</i>	<i>Down</i>	<i>Up</i>
<i>negative to 12</i>	<i>0-10%</i>	49.32%	24.73%	9.72%	7.26%	2.51%	2.66%	1.40%	1.50%	0.48%	0.42%	0.00%	50.68%
<i>to 4652</i>	<i>10%-20%</i>	24.70%	32.97%	21.14%	9.66%	6.51%	1.44%	1.52%	2.06%	0.00%	0.00%	24.70%	42.33%
<i>to 15033</i>	<i>20%-30%</i>	10.80%	21.25%	28.10%	16.73%	9.68%	7.50%	2.35%	1.80%	0.95%	0.83%	32.05%	39.84%
<i>to 31721</i>	<i>30%-40%</i>	6.53%	12.45%	22.00%	24.03%	15.74%	8.86%	5.06%	3.11%	0.77%	1.44%	40.98%	34.98%
<i>to 54722</i>	<i>40%-50%</i>	3.07%	3.94%	10.31%	23.51%	25.58%	16.77%	10.33%	3.29%	0.84%	2.38%	40.83%	33.61%
<i>to 84188</i>	<i>50%-60%</i>	1.99%	3.45%	4.98%	10.39%	23.84%	21.62%	18.46%	6.85%	5.55%	2.87%	44.65%	33.73%
<i>to 123276</i>	<i>60%-70%</i>	1.16%	0.81%	3.30%	3.27%	7.64%	24.30%	28.10%	17.92%	9.96%	3.55%	40.48%	31.43%
<i>to 183711</i>	<i>70%-80%</i>	0.22%	0.60%	0.80%	2.85%	3.23%	11.16%	21.21%	30.69%	22.19%	7.04%	40.07%	29.23%
<i>to 315707</i>	<i>80%-90%</i>	0.95%	0.36%	0.28%	1.12%	2.75%	3.57%	9.33%	26.49%	36.31%	18.84%	44.85%	18.84%
<i>315707+</i>	<i>90%-100%</i>	0.01%	0.32%	0.01%	0.65%	1.76%	2.54%	2.58%	6.26%	22.36%	63.52%	36.49%	0.00%

Source: PSID Wealth Supplements (1984, 1989). All data was weighted using 1984 PSID weights.

Sample includes all families with the same head in both 1984 and 1989.

All dollar values are reported in 1996 dollars.

Shorrocks' index: 0.733.

Table 1.6 - Transition of Family Wealth Between 1989 and 1994

	<i>94 wealth</i>	<i>neg. to 0</i>	<i>to 6219</i>	<i>to 15668</i>	<i>to 43212</i>	<i>to 70090</i>	<i>to 105396</i>	<i>to 155989</i>	<i>to 239125</i>	<i>to 427915</i>	<i>to 427915</i>	<i>Falling</i>	<i>Moving</i>
<i>89 wealth</i>		<i>0-10%</i>	<i>10%-20%</i>	<i>20%-30%</i>	<i>30%-40%</i>	<i>40%-50%</i>	<i>50%-60%</i>	<i>60%-70%</i>	<i>70%-80%</i>	<i>80%-90%</i>	<i>90%-100%</i>	<i>Down</i>	<i>Up</i>
<i>negative to 0</i>	<i>0-10%</i>	48.81%	19.27%	11.06%	10.45%	4.23%	1.54%	2.00%	0.64%	1.27%	0.74%	0.00%	51.20%
<i>to 4219</i>	<i>10%-20%</i>	26.59%	25.28%	15.28%	17.03%	6.54%	4.00%	3.22%	0.18%	0.30%	0.59%	26.59%	47.14%
<i>to 15084</i>	<i>20%-30%</i>	16.91%	18.72%	19.58%	24.22%	8.27%	4.04%	3.75%	2.88%	1.17%	0.46%	35.63%	44.79%
<i>to 32462</i>	<i>30%-40%</i>	9.95%	7.73%	14.18%	31.24%	12.63%	9.15%	6.47%	4.25%	2.32%	2.07%	31.86%	36.89%
<i>to 54292</i>	<i>40%-50%</i>	3.78%	4.67%	5.80%	22.68%	23.15%	19.03%	11.02%	5.74%	3.13%	1.01%	36.93%	39.93%
<i>to 88177</i>	<i>50%-60%</i>	2.47%	4.19%	3.10%	11.56%	26.30%	19.49%	15.33%	9.15%	5.77%	2.65%	47.62%	32.90%
<i>to 136675</i>	<i>60%-70%</i>	2.32%	2.38%	3.03%	3.70%	12.59%	25.28%	26.62%	13.20%	8.28%	2.59%	49.30%	24.07%
<i>to 214145</i>	<i>70%-80%</i>	0.73%	1.71%	0.42%	2.00%	5.42%	9.28%	20.43%	28.46%	22.13%	9.44%	39.99%	31.57%
<i>to 378912</i>	<i>80%-90%</i>	0.03%	0.34%	0.70%	3.72%	1.94%	3.84%	11.88%	25.42%	35.39%	16.73%	47.87%	16.73%
<i>378912+</i>	<i>90%-100%</i>	0.70%	0.00%	0.70%	0.54%	1.02%	2.27%	1.79%	9.40%	19.96%	63.61%	36.38%	0.00%

Source: PSID Wealth Supplement (1989, 1994). All data was weighted using 1989 PSID weights.

Sample includes all families with same head in both 1989 and 1994.

All dollar values are reported in 1996 dollars.

Shorrocks' index: 0.754.

Table 1.7 - Transition of Family Wealth Between 1984 and 1994

	<i>94 wealth</i>	<i>neg. to 111</i>	<i>to 11303</i>	<i>to 32988</i>	<i>to 57968</i>	<i>to 90220</i>	<i>to 127532</i>	<i>to 187818</i>	<i>to 284574</i>	<i>to 495370</i>	<i>495370+</i>	<i>Falling</i>	<i>Moving</i>
<i>84 wealth</i>		<i>0-10%</i>	<i>10%-20%</i>	<i>20%-30%</i>	<i>30%-40%</i>	<i>40%-50%</i>	<i>50%-60%</i>	<i>60%-70%</i>	<i>70%-80%</i>	<i>80%-90%</i>	<i>90%-100%</i>	<i>Down</i>	<i>Up</i>
<i>neg. to 300</i>	<i>0-10%</i>	39.90%	26.02%	11.03%	6.82%	4.26%	4.56%	2.82%	1.70%	1.47%	1.42%	0.00%	60.10%
<i>to 6765</i>	<i>10%-20%</i>	24.30%	27.58%	19.35%	10.39%	6.75%	5.54%	2.48%	2.12%	1.36%	0.12%	24.30%	48.11%
<i>to 18040</i>	<i>20%-30%</i>	14.65%	15.99%	24.40%	12.90%	11.83%	7.15%	5.28%	3.28%	1.89%	2.64%	30.64%	44.97%
<i>to 36231</i>	<i>30%-40%</i>	9.80%	9.17%	18.97%	21.34%	13.39%	12.33%	5.49%	4.28%	2.46%	2.77%	37.94%	40.72%
<i>to 59713</i>	<i>40%-50%</i>	2.75%	8.97%	8.30%	23.66%	17.19%	14.55%	9.17%	5.33%	6.19%	3.91%	43.68%	39.15%
<i>to 90803</i>	<i>50%-60%</i>	0.97%	5.08%	8.71%	12.94%	18.75%	16.84%	18.40%	8.53%	6.71%	3.06%	46.45%	36.70%
<i>to 128538</i>	<i>60%-70%</i>	2.81%	4.31%	3.19%	6.12%	16.99%	17.42%	16.74%	16.69%	10.45%	5.27%	50.84%	32.41%
<i>to 189274</i>	<i>70%-80%</i>	2.09%	1.25%	4.07%	1.12%	5.18%	12.94%	17.22%	27.42%	19.58%	9.14%	43.87%	28.72%
<i>to 324727</i>	<i>80%-90%</i>	1.16%	0.75%	1.03%	1.92%	5.02%	6.41%	15.20%	17.49%	31.88%	19.15%	48.98%	19.15%
<i>324727+</i>	<i>90%-100%</i>	0.65%	0.81%	1.38%	1.16%	2.14%	3.22%	6.39%	12.50%	18.40%	53.34%	46.65%	0.00%

Source: PSID Wealth Supplements (1984, 1994). All data was weighted using 1984 PSID weights.

Sample includes all families with the same head in 1984, 1989 and 1994.

All dollar values are reported in 1996 dollars.

Shorrocks' index: 0.804.

Table 1.8
Transitions into the Bottom Wealth Decile: 1989 - 1994

<i>Variable</i>	<i>I</i> ^a		<i>II</i> ^b		<i>III</i> ^c	
	<i>Marginal Effect</i> ^d	<i>T-statistic</i>	<i>Marginal Effect</i>	<i>T-statistic</i>	<i>Marginal Effect</i>	<i>T-statistic</i>
<i>Permanent Income</i> ^e	-0.003	-7.2	-0.001	-3.7	-0.020	-6.1
<i>Dummy: Is Head African American? (Yes=1)</i>	0.004	0.5	0.023	2.5	-0.049	-0.8
<i>Age of Household Head</i>	-0.003	-1.3	0.002	1.1	2.3 E -4	0.1
<i>Age Squared</i>	-7.1 E -6	-0.3	-4.8 E -5	-1.9	-7.4 E -5	-0.3
<i>Education of Household Head</i>	0.002	1.6	-4.4 E -5	-0.3	0.048	4.1
<i>Dummy: Is Household Head Married? (Yes = 1)</i>	-0.027	-2.9	-0.015	-1.8	0.151	1.9
<i>Average Number of Children in the Household</i>	-4.1 E -4	-0.1	-0.005	-1.6	-0.030	-1.2
<i>Dummy: Is Household Head Male? (Yes = 1)</i>	-0.008	-0.9	0.001	0.2	-0.058	-0.9
<i>Pseudo R-square</i>	0.074		0.058		0.111	
<i>Mean of Dependent Variable</i>	0.122		0.047		0.325	

Source: PSID Wealth Supplements (1989, 1994) and PSID Core Survey (1987-1994).

^a Regression I: Probit Regression: Who was in the bottom wealth decile in 1989. (Sample: All Households with same 'head' in both 1989 and 1994 and who were between the ages of 25 and 65 in 1989: 4497 obs).

^b Regression II: Probit Regression: Who fell into the bottom wealth decile between 1989 and 1994. (Sample: All Households with same 'head' in both 1989 and 1994, who were between the ages of 25 and 65 in 1989 and who were not in the bottom wealth decile in 1989: 4101 obs).

^c Regression III: Probit Regression: Who stayed in the bottom wealth decile between 1989 and 1994. (Sample: All Households with same 'head' in both 1989 and 1994, who were between the ages of 25 and 65 in 1989 and who were in the bottom wealth decile in 1989: 396 obs).

^d Marginal Effects refers to a change in the probability of the event from a one unit change in the regressor.

^e Permanent Income is 5 year (pre-tax) total labor income of the household between 1987 and 1991 in \$10,000 denominations.

A constant was included in all regressions.

All regressions were weighted using 1994 PSID weights.

Table 1.9
Wealth Holdings of Age Cohorts: 1984, 1989, 1994

<i>Age Cohort in 1984</i>	<i>Median Wealth</i>	<i>Mean Wealth</i>	<i>Mean Income</i>	<i>Median Income</i>	<i>Number of Obs</i>
<i>20 - 29 years old</i>	5,423	23,034	34,638	30,202	1,966
<i>30 - 39 years old</i>	36,150	103,701	51,336	45,356	1,935
<i>40 - 49 years old</i>	79,380	188,466	64,339	54,213	870
<i>50 - 59 years old</i>	112,969	319,853	61,942	49,012	869

<i>Age Cohort in 1989</i>	<i>Median Wealth</i>	<i>Mean Wealth</i>	<i>Mean Income</i>	<i>Median Income</i>	<i>Number of Obs</i>
<i>25 - 34 years old</i>	12,747	44,540	42,853	40,572	2,229
<i>35 - 44 years old</i>	52,008	140,027	61,108	48,030	1,749
<i>45 - 54 years old</i>	92,512	316,718	71,252	43,261	804

<i>Age Cohort in 1994</i>	<i>Median Wealth</i>	<i>Mean Wealth</i>	<i>Mean Income</i>	<i>Median Income</i>	<i>Number of Obs</i>
<i>20 - 29 years old</i>	6,873	48,269	33,992	27,526	1,213
<i>30 - 39 years old</i>	24,321	84,032	48,911	40,328	2,202
<i>40 - 49 years old</i>	63,446	155,278	61,128	47,767	1,673
<i>50 - 59 years old</i>	129,007	321,428	59,619	45,312	764

Source: PSID Wealth Supplements and PSID Core Survey (1984, 1989, 1994).

All dollar amounts are represented in 1996 dollars.

All means and medians are computed using corresponding PSID weights.

Total family income is used for income measure. Wealth includes home equity.

Table 1.10 - Wealth Transition of the Senior Baby Boomers between 1984 and 1994

	<i>94 wealth</i>	<i>neg. to 105</i>	<i>to 9528</i>	<i>to 27738</i>	<i>to 48700</i>	<i>to 79402</i>	<i>to 115398</i>	<i>to 164099</i>	<i>to 249324</i>	<i>to 407601</i>	<i>407601+</i>	<i>Falling</i>	<i>Moving</i>
<i>84 wealth</i>	<i>0-10%</i>	<i>0-10%</i>	<i>10%-20%</i>	<i>20%-30%</i>	<i>30%-40%</i>	<i>40%-50%</i>	<i>50%-60%</i>	<i>60%-70%</i>	<i>70%-80%</i>	<i>80%-90%</i>	<i>90%-100%</i>	<i>Down</i>	<i>Up</i>
<i>neg. to 0</i>	<i>0-10%</i>	33.41%	30.58%	11.15%	5.53%	4.89%	6.51%	3.13%	0.20%	0.93%	3.67%	0.00%	66.59%
<i>to 7173</i>	<i>10%-20%</i>	25.97%	26.66%	11.38%	13.60%	9.12%	3.06%	2.02%	1.77%	4.98%	1.43%	25.97%	47.36%
<i>to 15554</i>	<i>20%-30%</i>	8.94%	17.78%	28.53%	17.59%	8.45%	6.30%	6.89%	3.57%	0.00%	1.95%	26.72%	44.75%
<i>to 27559</i>	<i>30%-40%</i>	13.41%	4.75%	20.94%	17.03%	14.29%	10.86%	10.32%	3.57%	2.45%	2.40%	39.10%	43.89%
<i>to 43793</i>	<i>40%-50%</i>	6.77%	5.25%	6.08%	15.41%	20.46%	23.55%	8.64%	7.36%	2.85%	3.63%	33.51%	46.03%
<i>to 63046</i>	<i>50%-60%</i>	2.20%	5.43%	7.48%	13.73%	21.65%	10.90%	12.56%	8.90%	13.69%	3.47%	50.49%	38.62%
<i>to 86982</i>	<i>60%-70%</i>	1.03%	7.49%	5.97%	4.79%	12.43%	8.56%	28.28%	20.69%	6.26%	4.50%	40.27%	31.45%
<i>to 123828</i>	<i>70%-80%</i>	3.34%	0.10%	1.77%	3.39%	5.46%	12.89%	15.84%	24.59%	19.77%	12.84%	42.79%	32.61%
<i>to 191783</i>	<i>80%-90%</i>	2.46%	0.25%	4.97%	4.87%	3.20%	10.13%	7.77%	18.79%	22.58%	24.99%	52.44%	24.99%
<i>191783+</i>	<i>90%-100%</i>	0.91%	0.77%	3.49%	3.06%	1.44%	6.89%	5.22%	10.53%	25.41%	42.30%	57.72%	0.00%

Source: PSID Wealth Supplements (1984, 1989, 1994). All data was weighted using 1984 PSID weights.

Sample included all households with the same head in 1984, 1989 and 1994.

All dollar values are reported in 1996 dollars

Shorrocks' index: 0.828.

Table 1.11
Wealth Holdings By Race: 1984, 1989, 1994 (in 1996 dollars)

<i>Year</i>	<i>Race</i>	<i>Mean Wealth</i>	<i>Median Wealth</i>	<i>20th Percentile</i>	<i>40th Percentile</i>	<i>60th Percentile</i>	<i>80th Percentile</i>	<i>Number of Observations</i>
1984	African American	28,720	3,608	0	950	12,493	45,714	2,576
	White/Other	165,892	58,030	5,938	34,487	88,454	188,673	4,342
1989	African American	35,577	6,256	0	1,826	13,109	46,104	2,609
	White/Other	172,567	59,129	5,542	36,026	94,853	224,852	4,505
1994	African American	37,457	8,470	0	2,234	17,469	57,170	2,268
	White/Other	177,952	63,522	5,611	36,208	96,342	230,374	4,181

Source: PSID Wealth Supplements and PSID Core Survey (1984, 1989, 1994).

All Wealth data include main home.

All values are weighed using corresponding PSID weights.

Table 1.12 - Wealth Transitions of African American Households between 1984 and 1994

	<i>94 wealth</i>	<i>negative</i>	<i>0</i>	<i>1-2644</i>	<i>to 10786</i>	<i>to 23898</i>	<i>to 42297</i>	<i>to 68204</i>	<i>to 121605</i>	<i>121605+</i>	<i>Falling</i>	<i>Moving</i>
<i>84 wealth</i>		<i>0-9.9%</i>	<i>9.9%-31%</i>	<i>31%-40%</i>	<i>40%-50%</i>	<i>50%-60%</i>	<i>60%-70%</i>	<i>70%-80%</i>	<i>80%-90%</i>	<i>90%-100%</i>	<i>Down</i>	<i>Up</i>
<i>negative</i>	<i>0-13%</i>	12.67%	27.94%	11.37%	17.22%	9.99%	6.66%	2.84%	7.64%	3.66%	0.00%	87.32%
<i>0</i>	<i>13%-32%</i>	13.87%	55.31%	13.70%	3.13%	6.21%	1.79%	0.89%	0.17%	4.92%	13.87%	30.81%
<i>1 to 1356</i>	<i>32%-40%</i>	6.98%	25.96%	13.70%	16.86%	8.56%	10.14%	3.82%	13.57%	0.40%	32.94%	53.35%
<i>to 4519</i>	<i>40%-50%</i>	19.31%	13.73%	19.85%	16.42%	4.40%	10.62%	3.22%	10.94%	1.50%	52.89%	30.68%
<i>to 13406</i>	<i>50%-60%</i>	3.86%	8.65%	9.28%	13.76%	22.31%	11.68%	11.37%	4.48%	14.60%	35.55%	42.13%
<i>to 27113</i>	<i>60%-70%</i>	16.24%	1.58%	2.11%	12.97%	21.10%	14.77%	16.77%	9.60%	4.85%	54.00%	31.22%
<i>to 51213</i>	<i>70%-80%</i>	1.28%	12.42%	2.36%	2.68%	7.71%	28.69%	22.81%	17.02%	5.03%	55.14%	22.05%
<i>to 78325</i>	<i>80%-90%</i>	2.17%	2.07%	0.41%	10.25%	7.56%	7.14%	28.78%	18.94%	22.67%	58.38%	22.67%
<i>78325+</i>	<i>90%-100%</i>	5.35%	4.72%	0.63%	1.05%	1.57%	2.31%	16.46%	24.11%	43.82%	56.20%	0.00%

Source: PSID Wealth Supplements (1984, 1994). All data was weighted using 1984 PSID weights.

Sample includes all African American Households with the same head in 1984, 1989 and 1994

All Dollar amounts are in 1996 dollars

Shorrocks' index: 0.849.

Table 1.13
Bank Account Transitions For Stable Households ^a

Bank Account Transitions For Households with the Same Head in Both 1984 and 1989 ^b

	<i>Number of Obs.</i>	<i>Have Bank Account Balances in 1984</i>	<i>Enter</i>	<i>Exit</i>	<i>Have Bank Account Balances in 1989</i>
All Households	4215	82.3%	7.7%	5.8%	84.2%
African-American Households	1532	46.1%	13.3%	10.0%	49.4%
Other Households	2683	87.7%	6.8%	5.2%	89.3%

Bank Account Transitions For Households with the Same Head in Both 1989 and 1994 ^c

	<i>Number of Obs.</i>	<i>Have Bank Account Balances in 1989</i>	<i>Enter</i>	<i>Exit</i>	<i>Have Bank Account Balances in 1994</i>
All Households	4562	83.6%	5.9%	9.1%	79.8%
African-American Households	1597	52.4%	9.2%	16.3%	45.4%
Other Households	2965	88.5%	5.4%	8.6%	85.3%

Source: PSID Wealth Supplements and PSID Core Survey (1984, 1989, 1994).

^a The Wealth Supplements in 1984, 1989, and 1994 asked respondents the following question: "Do you (or anyone in your family living there) have any money in checking or savings accounts, money market funds, certificates of deposits, government savings bonds, or Treasury bills, including IRA's?" If the household responded 'yes' to this question in 1984 and 'no' to this question in 1989, the household was deemed to have entered the bank account status during 1984 and 1989. If the household responded 'no' to the question in 1984 and 'yes' in 1989, the household was deemed to have exited checking bank account status during 1984 and 1989.

^b Sample is restricted to households 25-65 years of age in 1984.

^c Sample is restricted to households 25-65 years of age in 1989. Percentage holdings were weighted using 1989 PSID weights.

Table 1.14
Stock Ownership Transitions For Stable Households ^a

Stock Ownership For Households with the Same Head in Both 1984 and 1989 ^b

	<i>Number of Obs.</i>	<i>Own Stocks in 1984</i>	<i>Enter</i>	<i>Exit</i>	<i>Own Stocks in 1989</i>
<i>All Households</i>	4215	29.2%	13.9%	8.8%	34.3%
<i>African-American Households</i>	1532	8.5%	4.3%	4.9%	8.0%
<i>Other Households</i>	2683	32.3%	15.4%	9.4%	38.3%

Stock Ownership For Households with the Same Head in Both 1989 and 1994 ^c

	<i>Number of Obs.</i>	<i>Own Stocks in 1989</i>	<i>Enter</i>	<i>Exit</i>	<i>Own Stocks in 1994</i>
<i>All Households</i>	4562	32.2%	16.3%	7.8%	40.6%
<i>African-American Households</i>	1597	8.3%	14.3%	8.3%	14.3%
<i>Other Households</i>	2965	36.0%	17.4%	8.6%	44.8%

Source: PSID Wealth Supplements and PSID Core Survey (1984, 1989, 1994).

^a Stock ownership, by PSID definition, refers to any household “owning shares of stock in publically held corporations, mutual funds, or investment trusts, including stocks in IRA’s”. A household was deemed to have ‘entered’ the stock ownership status during 1984 and 1989 if they owned some stocks in 1989 and did not own any stocks in 1984. A household was deemed to have ‘exited’ the stock ownership status during 1984 and 1989 if they owned some stocks in 1984 and did not own any stocks in 1989.

^b Sample is restricted to households 25-65 years of age in 1984.

^c Sample is restricted to households 25-65 years of age in 1989.

Percentage holdings were weighted using 1989 PSID weights.

Table 1.15
Stock Ownership Patterns: 1989 - 1994

<i>Variable</i>	<i>I^a</i>		<i>II^b</i>		<i>III^c</i>	
	<i>Marginal Effect^d</i>	<i>T-statistic</i>	<i>Marginal Effect</i>	<i>T-statistic</i>	<i>Marginal Effect</i>	<i>T-statistic</i>
<i>Permanent Income^e</i>	0.007	12.4	0.009	14.2	0.007	10.0
<i>Dummy: Race of Household Head (African American = 1)</i>	-0.186	-7.6	-0.193	-7.4	-0.104	-4.4
<i>Age of Household Head</i>	-0.001	-0.1	-0.015	-2.2	-5.3 E -4	0.3
<i>Age Squared</i>	8.2 E -5	1.4	2.1 E -4	3.1	2.6 E -5	-0.1
<i>Education of Household Head</i>	0.042	12.6	0.053	14.6	0.030	10.4
<i>Dummy: Is Household Head Married? (Yes = 1)</i>	0.069	3.1	0.081	3.3	0.027	2.4
<i>Average Number of Children in the Household</i>	-0.023	-2.9	-0.012	-1.3	-0.013	-2.0
<i>Dummy: Is Household Head Male? (Yes = 1)</i>	0.010	0.4	-0.050	-1.8	-0.021	-0.4
<i>Pseudo R-square</i>	0.172		0.181		0.129	
<i>Mean of Dependent Variable</i>	0.323		0.405		0.237	

Source: PSID Wealth Supplements (1989, 1994) and PSID Core Survey (1987-1994).

^a Regression I: Probit Regression: Who owned Stocks in 1989. (Sample: All Households with same 'head' in both 1989 and 1994 and who were between the ages of 25 and 65 in 1989; 4497 obs).

^b Regression II: Probit Regression: Who owned Stocks in 1994. (Sample: All Households with same 'head' in both 1989 and 1994 and who were between the ages of 25 and 65 in 1989; 4465 obs).

^c Regression III: Probit Regression: Who owned stocks in 1994 but not in 1989. (Sample: All Households with same 'head' in both 1989 and 1994, who were between the ages of 25 and 65 in 1989 and who did not own stock in 1989: 3376 obs).

^d Marginal Effects refer to the change in the probability of an event from a one unit change in the dependent variable.

^e Permanent Income is the 5 year (pre-tax) total labor income between 1987 and 1991 and is measured in \$10,000 denominations.

Constants were included in all regressions. Regression I used 1989 weights; regressions II and III used 1994 weights.

Table 1.17
OLS Regression of Log Income: 1992 and 1995

<i>Variable</i>	<i>1992^a</i>		<i>1995^b</i>	
	<i>Coefficient</i>	<i>T-statistic</i>	<i>Coefficient</i>	<i>T-statistic</i>
<i>Intercept</i>	9.80	117.3	9.72	118.4
<i>Dummy for African American Household</i>	-0.22	-5.6	-0.21	-5.6
<i>Dummy for non-White, non-African American Household</i>	-0.05	-0.7	0.06	0.9
<i>Dummy: Education of 'head' greater than 16 years</i>	0.56	16.1	0.59	17.5
<i>Dummy: Education of 'head' equal to 16 years</i>	0.45	14.6	0.49	16.3
<i>Dummy: Education of 'head' between 12 and 16 years</i>	0.13	4.6	0.17	6.0
<i>Dummy: Education of 'head' less than 12 years</i>	-0.24	-6.8	-0.25	-7.2
<i>Years of Experience (Defined as Age - Education)</i>	0.037	6.3	0.040	7.0
<i>Years of Experience squared</i>	-4.9 E -4	-4.8	-5.0 E -4	-4.9
<i>Adjusted R-square</i>	0.195		0.237	
<i>Mean of Dependent Variable</i>	10.5		10.5	

Source: PSID Core Survey (1992, 1993, 1995, 1996).

Regression also included region dummies and used corresponding *PSID* weights.

^a Sample included all male household heads in 1992 between the age of 25 and 65 and who had labor income between \$6,000 and \$300,000: (2910 obs).

^b Sample included all male household heads in 1995 between the age of 25 and 65 and who had labor income between \$6,000 and \$300,000: (2963 obs).

Table 1.18
Wealth Holdings for Stable Families: 1989 ^a

<i>Variables</i>	<i>I^b</i>		<i>II^c</i>		<i>III^b</i>		<i>IV^c</i>	
	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>
<i>Intercept</i>	-198,369	-8.6	-68,335	-2.8	-185,682	-8.3	-67,089	-3.0
<i>Permanent Income</i>	0.13	11.1	0.29	35.9	0.09	7.7	0.22	28.6
<i>Is Head African American? (Yes=1)</i>	-25,514	-6.0	-8,800	-2.0	-19,901	-4.8	-3,723	-0.9
<i>Age of Head</i>	3,329	3.1	-3,668	-3.3	3,443	3.4	-2,096	-2.1
<i>Age Squared</i>	4.34	0.4	88.2	6.9	0.07	0.1	63.9	5.5
<i>Education of Head</i>	6,384	10.3	4,566	7.3	4,830	8.0	2,667	4.5
<i>Is Head Married? (Yes = 1)</i>	40,710	9.7	13,685	3.1	38,683	9.5	16,140	4.0
<i>Number of Children</i>	-2,010	-1.5	2,415	1.8	-1,156	-0.8	947	0.8
<i>Is Head Male? (Yes = 1)</i>	9,722	2.2	1,574	0.3	10,265	2.4	1,652	0.4
<i>Region Dummies:</i>								
<i>New England States</i>	37,057	5.5	40,401	5.7	40,519	6.2	32,561	5.0
<i>North Atlantic States</i>	16,509	3.7	15,026	3.1	19,904	4.6	14,204	3.2
<i>South Eastern States</i>	-1,000	-0.2	5,680	1.3	3,207	0.7	8,152	2.0
<i>East South Central States</i>	-6,999	-1.3	-4,699	-0.8	-5,259	1.0	-3,803	-0.7
<i>Oil States</i>	-10,777	-2.0	-3,892	-0.7	-4,652	-0.9	-2,191	-0.4
<i>Plains States</i>	-2,212	-0.4	5,883	1.1	1,220	0.2	7,931	1.6
<i>Mountain States</i>	-11,209	-1.6	-921	-0.1	-10,393	-1.5	2,474	-0.4
<i>Western States</i>	12,761	2.7	22,237	4.6	16,951	3.7	25,101	5.6
<i>Whether Household Owns Stocks</i>					52,454	16.4	55,114	17.5
<i>Adjusted R – Squared</i>		0.329		0.141		0.368		0.153

Source: PSID Wealth Supplement (1989) and PSID Core Survey (1987-1994).

^a All regressions were weighted using 1989 PSID weights. Permanent income is 5 year total (pre-tax) labor income for the household between 1987 and 1991. Stable families refer to any household with the same head in both 1989 and 1994. All data reported in 1996 dollars.

^b Regressions (I) and (III): OLS regression of wealth holdings in 1989. (Sample: All households with same head in 1989 and 1994 who were between the ages of 25 and 65 and who had 1989 wealth between -\$50,000 and \$500,000; 4314 obs).

^c Regressions (II) and (IV): Quantile (median) regression of wealth holdings in 1989. (Sample: All households with same head in 1989 and 1994 who were between the ages of 25 and 65; 4534 obs).

Table 1.19
Wealth Holdings for Stable Families: 1994 ^a

<i>Variables</i>	<i>I^b</i>		<i>II^c</i>		<i>III^b</i>		<i>IV^c</i>	
	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>
<i>Intercept</i>	-193,711	-6.3	-75,130	-1.8	-182,895	-6.2	-59,731	-2.2
<i>Permanent Income</i>	0.22	16.9	0.43	37.1	0.16	12.8	0.34	45.3
<i>Is Head African American? (Yes=1)</i>	-27,408	-6.0	-2,815	-0.4	-19,449	-4.5	885	0.2
<i>Age of Head</i>	2,960	2.4	-3,434	-2.0	3,586	3.0	-3,267	-2.9
<i>Age Squared</i>	5.06	0.4	75.06	4.3	-4.00	-0.3	70.94	6.2
<i>Education of Head</i>	6,787	10.1	5,145	5.7	4,012	6.1	3,110	5.2
<i>Is Head Married? (Yes = 1)</i>	38,013	8.4	18,041	2.9	33,575	7.8	12,723	3.0
<i>Number of Children</i>	-1,376	-0.8	-1,744	-0.9	-938	-0.7	184	0.1
<i>Is Head Male? (Yes = 1)</i>	-1,139	-0.2	-2,038	-0.3	2,862	0.6	4,034	0.8
<i>Region Dummies:</i>								
<i>New England States</i>	867	0.1	9,399	0.9	-1,009	-0.2	1,747	0.3
<i>North Atlantic States</i>	-1,330	-0.2	-11,322	-1.6	261	0.0	-5,901	-1.3
<i>South Eastern States</i>	-2,510	-0.5	1,413	0.2	145	0.0	6,875	1.6
<i>East South Central States</i>	-4,317	-0.7	-4,205	-0.5	-1,086	-0.2	-357	-0.1
<i>Oil States</i>	-28,590	-4.8	-20,845	-2.6	-22,133	-3.9	-12,338	-2.4
<i>Plains States</i>	211	0.1	3,093	0.4	1,987	0.4	8,486	1.6
<i>Mountain States</i>	-7,147	-0.9	5,525	0.5	-4,459	-0.6	-400	-0.1
<i>Western States</i>	3,694	0.7	5,478	0.8	5,440	1.1	11,945	2.6
<i>Whether Household Owns Stocks</i>					66,237	20.4	65,776	21.3
<i>Adjusted R - Squared</i>		0.306		0.155		0.368		0.172

Source: PSID Wealth Supplement (1994) and PSID Core Survey (1987-1994).

^a All regressions were weighted using 1994 PSID weights.

^b Regressions (I) and (III): OLS regression of wealth holdings in 1994. (Sample: All households with same head in 1989 and 1994 who were between the ages of 25 and 65 and who had 1994 wealth between -\$50,000 and \$500,000; 4203 obs).

^c Regressions (II) and (IV): Quantile (median) regression of wealth holdings in 1994. (Sample: All households with same head in 1989 and 1994 who were between the ages of 25 and 65; 4502 obs).

Table 1.20
Wealth Accumulation for Stable Families: 1989 - 1994 ^a

<i>Variables</i>	<i>I^b</i>		<i>II^b</i>		<i>III^b</i>		<i>IV^c</i>	
	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>
<i>Intercept</i>	3,838	1.9	5,872	2.7	-25,230	-1.3	10,751	1.3
<i>Permanent Income</i>	0.144	17.1	0.136	16.1	0.121	11.2	0.111	40.0
<i>Is Head African American? (Yes=1)</i>			-7,549	-2.2	-4,081	-1.1	1,163	0.8
<i>Age of Head</i>					-238	-0.3	-643	-1.6
<i>Age Squared</i>					6.2	0.6	6.1	1.4
<i>Education of Head</i>					2,899	5.3	416	1.9
<i>Is Head Married? (Yes = 1)</i>					5,334	1.3	-3,681	-2.2
<i>Number of Children</i>					-2,279	-1.9	-1,672	-3.5
<i>Is Head Male? (Yes = 1)</i>					-1,064	-0.3	-2,933	-1.6
<i>Region Dummies:</i>								
<i>New England States</i>					-30,467	-4.9	-34,479	-13.8
<i>North Atlantic States</i>					-18,742	-4.9	-12,699	-7.4
<i>South Eastern States</i>					-1,002	-0.3	-3,482	-2.2
<i>East South Central States</i>					-1,671	-0.4	1,866	0.9
<i>Oil States</i>					-17,408	-3.7	-5,663	-2.8
<i>Plains States</i>					3,662	0.8	4,569	2.3
<i>Mountain States</i>					6,546	1.1	2,245	0.9
<i>Western States</i>					-6,414	-1.6	-5,353	-3.1
<i>Adjusted R – Squared</i>		0.067		0.068		0.088		0.019

Source: PSID Wealth Supplements (1989, 1994) and PSID Core Survey (1987-1994).

^a All regressions were weighted using 1994 PSID weights.

^b Regression (I) - (III): OLS Regression of wealth increases between 1989 and 1994. (Sample: All households with the same head in both 1989 and 1994, who were between the ages of 25 and 65 in 1989, who had initial 1989 wealth between -\$50,000 and \$500,000 and who had a change in wealth from 1989 to 1994 of between \$100,000 and \$500,000; 4,030 obs). Mean Wealth Change for the sample: \$30,847.

^c Regression (IV): Quantile (median) regression of wealth increases between 1989 and 1994. (Sample: All households with same head in both 1989 and 1994 and who were between the age of 25 and 65 in 1989; 4,502 obs). Median Wealth Change for the sample: \$5,959.

Table 1.21
Wealth Accumulation, Initial Holdings and Active Savings: 1989 - 1994 ^a

<i>Variables</i>	<i>I</i>		<i>II</i>		<i>III</i>	
	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>
<i>Permanent Income</i>	0.114	10.3	0.127	11.5	0.110	10.2
<i>Is Head African American? (Yes=1)</i>	-3,110	-0.9	-3,125	-0.9	-1,136	-0.3
<i>Age of Head</i>	-351.6	-0.4	-351.6	-0.4	-360.2	-0.4
<i>Age Squared</i>	5.7	0.5	8.4	0.8	8.5	0.8
<i>Education of Head</i>	2,666	4.9	2,599	4.8	2,278	4.3
<i>Is Head Married? (Yes = 1)</i>	3,817	1.0	6,101	1.5	5,623	1.5
<i>Number of Children</i>	-2,191	-1.8	-1,746	-1.5	-1,796	-1.6
<i>Is Head Male? (Yes = 1)</i>	-1,278	-0.3	-2,144	-0.5	-2,553	-0.7
<i>Initial Wealth Holdings in 1989</i>	0.045	3.0				
<i>Asset Components in 1989:</i>						
<i>Value of Stock Holdings in 1989</i>			0.357	7.0	0.305	6.2
<i>Value of Business Equity in 1989</i>			0.331	6.9	0.256	5.5
<i>Value of Liquid Assets in 1989</i>			-0.024	-0.5	-0.065	-1.3
<i>Value of Main Home Equity in 1989</i>			-0.115	-4.5	-0.130	-5.2
<i>Active Saving between 1989 and 1994:</i>						
<i>Net Inflows to Stock Market</i>					0.643	10.4
<i>Net Inflows into Annuities</i>					-0.176	-2.7
<i>Net Inflows into Business</i>					0.218	4.5
<i>Net Inflows into Non-Home Real Estate</i>					0.699	7.8
<i>Other Net Inflows into Household</i>					0.124	1.1
<i>Proceeds from Inheritances</i>					0.620	8.9
<i>Adjusted R – Squared</i>		0.090		0.112		0.177

^a Source: PSID Wealth Supplements (1989, 1994) and PSID Core Survey (1987-1994). All regressions were weighted using 1994 PSID weights. Permanent income is 5 year total (pre-tax) for household between 1987 and 1991. Regressions included region dummies and intercept. (Sample: All households with the same head in both 1989 and 1994, who were between the ages of 25 and 65 in 1989, who had initial 1989 wealth between -\$50,000 and \$500,000 and who had a change in wealth from 1989 to 1994 of between -\$100,000 and \$500,000; 4030 obs). Mean Wealth Change for the sample: \$30,847.

Table 1.22
Wealth Accumulation and Transitory Wealth ^a

<i>Variables</i>	<i>I^b</i>		<i>II^b</i>		<i>III^c</i>	
	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>
<i>Intercept</i>	-30,206	-1.5	-29,096	-1.4	-16,151	-1.4
<i>Permanent Income</i>	0.130	11.5	0.130	11.5	0.152	11.5
<i>Is Head African American? (Yes=1)</i>	-2,025	-0.6	-1,963	-0.6	2,909	-0.6
<i>Age of Head</i>	29.2	0.1	5.2	0.1	95.7	0.1
<i>Age Squared</i>	3.5	0.3	3.7	0.3	2.0	0.3
<i>Education of Head</i>	2,430	4.4	2,390	4.3	432	4.3
<i>Is Head Married? (Yes = 1)</i>	3,180	0.8	3,141	0.8	1,519	0.8
<i>Number of Children</i>	-642	-0.6	-662	-0.6	-1,797	-0.6
<i>Is Head Male? (Yes = 1)</i>	-1,023	0.3	-1,066	0.3	-4,012	0.3
<i>Asset Components in 1989:</i>						
<i>Value of Stock Holdings in 1989</i>	0.403	7.6	0.407	7.7	0.455	136.2
<i>Value of Business Equity in 1989</i>	0.413	8.0	0.411	7.9	-0.818	-412.4
<i>Value of Liquid Assets in 1989</i>	0.044	0.8	0.021	0.3	0.034	2.4
<i>Value of Main Home Equity in 1989</i>	-0.051	-1.8	-0.045	-1.6	-0.258	-32.0
<i>Wealth Gains 1984 - 1989:</i>						
<i>Change in total Wealth 84-89</i>	-0.102	-4.0				
<i>Active Savings 84-89</i>			-0.071	-2.0	-0.019	-4.4
<i>Capital Gains 84-89</i>			-0.113	-4.1	-0.032	-33.0
<i>Adjusted R - Squared</i>		0.120		0.120		0.113

^a Source: PSID Wealth Supplements (1984, 1989, 1994) and PSID Core Survey (1987-1994).

All regression results weighted using 1994 PSID weights. Regression included region dummies.

^b Regression (I) - (II): OLS Regression of wealth increases between 1989 and 1994. (Sample: All households with the same head in both 1989 and 1994, who were between the ages of 25 and 65 in 1989, who had initial 1989 wealth between -\$50,000 and \$500,000 and who had a change in wealth from 1984 to 1989 and from 1989 to 1994 of between \$100,000 and \$500,000; 3,751 obs). Mean Wealth Change for the sample: \$29,080

^c Regression (III): Quantile (median) regression of wealth increases between 1989 and 1994. (Sample: All households with same head in both 1989 and 1994 and who were between the age of 25 and 65 in 1989; 4,502 obs). Median Wealth Change for the sample: \$5,959.

Table 1.23
Total Active Savings: 1989 - 1994 ^a

<i>Variables</i>	<i>I^b</i>		<i>II^c</i>		<i>III^d</i>		<i>IV^d</i>	
	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>	<i>Coefficient</i>	<i>T-Statistic</i>
<i>Constant</i>	10.3	0.1	-900	-2.3	1,850	1.4	-135	-0.1
<i>Permanent Income</i>	0.073	12.4	0.033	25.7	0.068	12.4	0.079	14.9
<i>Active Saving (by type)</i> <i>Between 1984 and 1989</i>					0.108	1.0	0.148	1.2
<i>Capital Gains (by type)</i> <i>Between 1984 and 1989</i>					-0.063	-0.9	0.281	5.0
<i>Capital Gains (by type)</i> <i>Between 1989 and 1994</i>					0.083	3.9	0.081	2.4
<i>Initial Wealth: 1984</i>					-9.1 E-5	-0.1	3.6 E-4	0.2
<i>Adjusted R - Squared</i>		0.036		0.018		0.066		0.053

Source: PSID Wealth Supplements (1984, 1989, 1994) and PSID Core Survey (187-1994). Regressions weighted using 1994 PSID weights.

^a All regressions weighted using 1994 PSID weights. Dependent variable for all regressions: Total Active Savings between 1989 and 1994.

^b Regression I: OLS Regression of active saving flows between 1989 and 1994. (Sample: All households with the same head in both 1989 and 1994, who were between the ages of 25 and 65 in 1989, who had initial 1989 wealth between -\$50,000 and \$500,000 and who had a change in wealth from 1989 to 1994 of between -\$100,000 and \$500,000; 4030 obs). Mean Active Savings for the sample: \$13,426.

^c Regression II: Quantile (Median) Regression of active saving flows between 1989 and 1994. (Sample: All households with the same head in both 1989 and 1994 and who were between the ages of 25 and 65 in 1989; 4543 obs). Median Active Savings for the sample: \$3,486.

^d Regression III and IV: OLS Regression of the effect of active savings and capital gains in 1984 and 1989 on active saving flows between 1989 and 1994. (Sample: All households with the same head in 1984, 1989 and 1994, who were between the ages of 25 and 65 in 1989, who had initial 1989 wealth between -\$50,000 and \$500,000, who had a change in wealth from 1984 and 1989 and from 1989 to 1994 of between -\$100,000 and \$500,000, and who had active savings between 1984 and 1989 and from 1989 to 1994 between -\$50,000 and \$100,000).

Regression III uses active saving in stocks and capital gains from stocks between 1984 and 1989 and active saving in stocks 1989 to 1994 as regressors. (3168 obs).

Regression IV uses active saving in business and capital gains from business between 1984 and 1989 and active saving in business 1989 to 1994 as regressors. (3066 obs).

Figure 1.1
Wealth Distribution 1984-1994

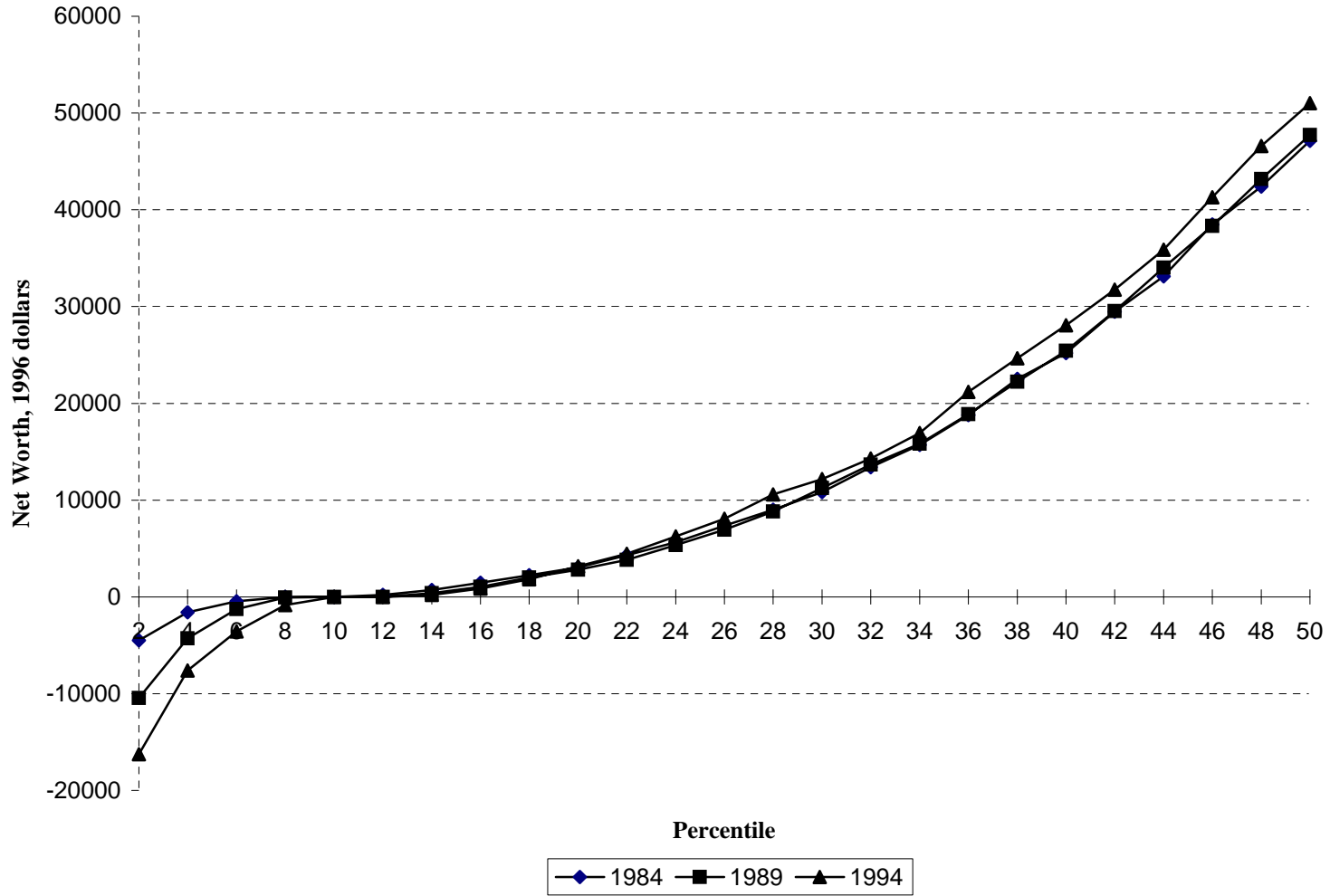


Figure 1.1 (cont.)
Wealth Distribution 1984-1994

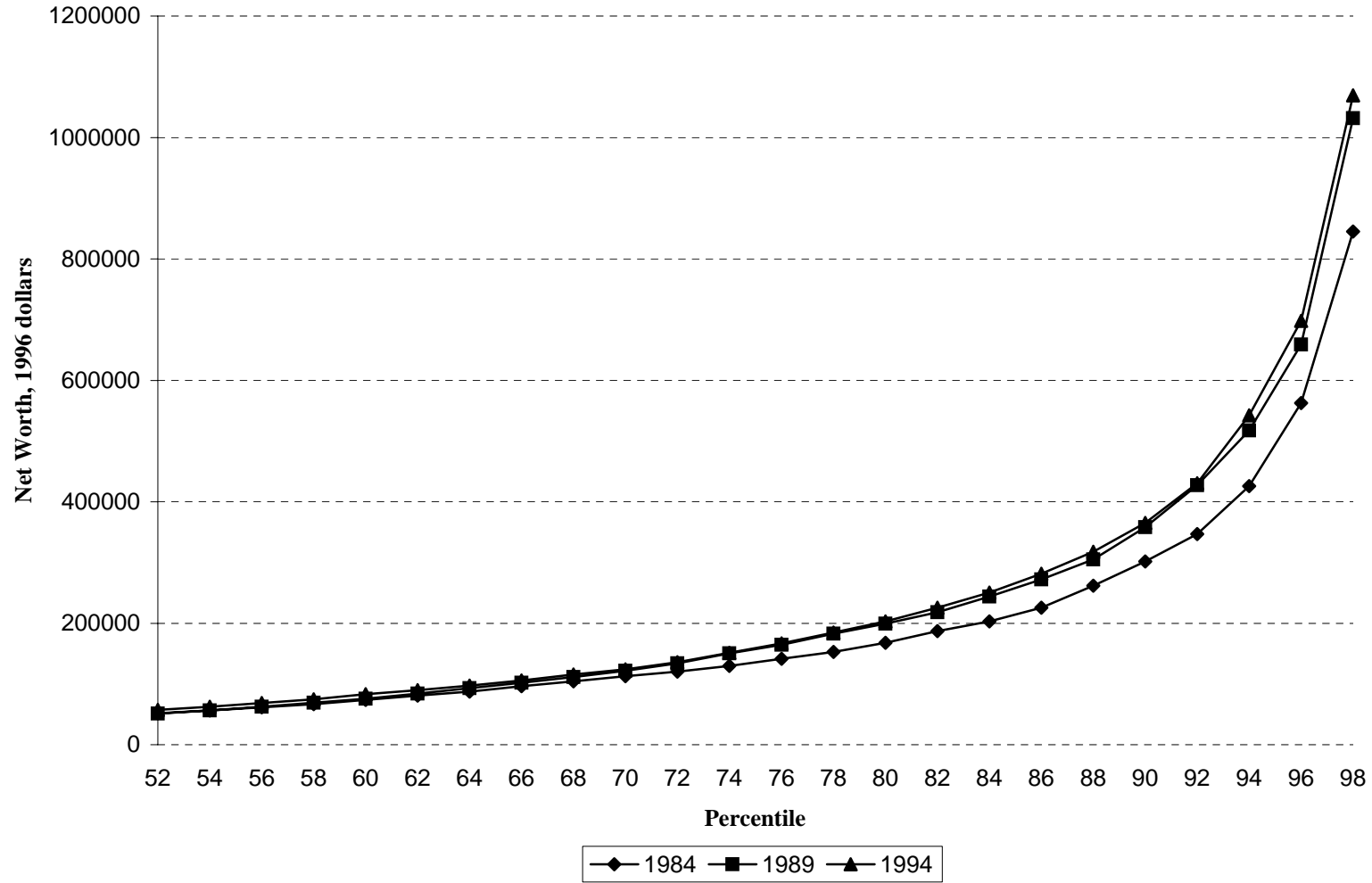


Figure 1.2
Wealth Distribution of the Senior Baby Boomers

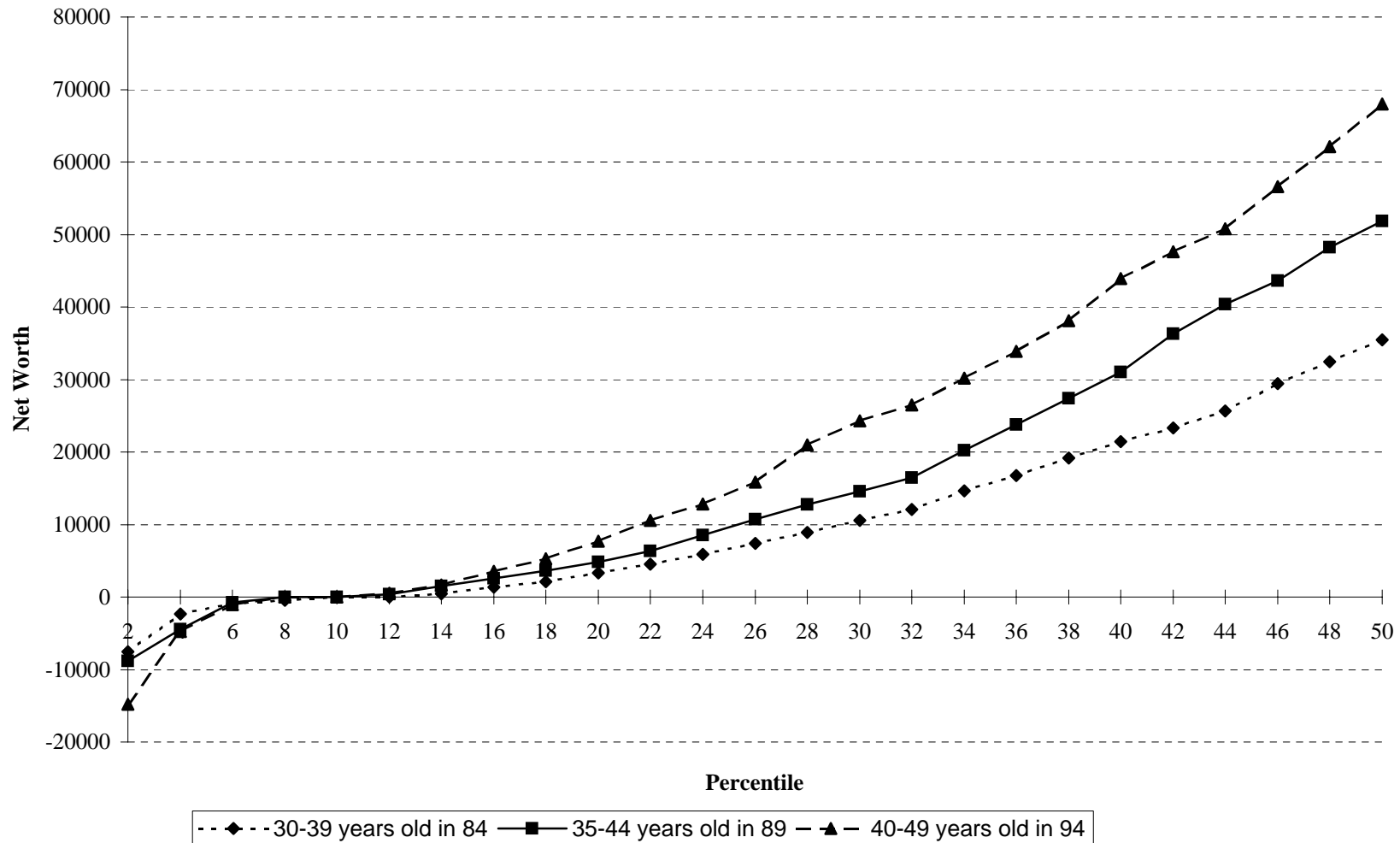


Figure 1.2 (cont.)
Wealth Distribution of the Senior Baby Boomers

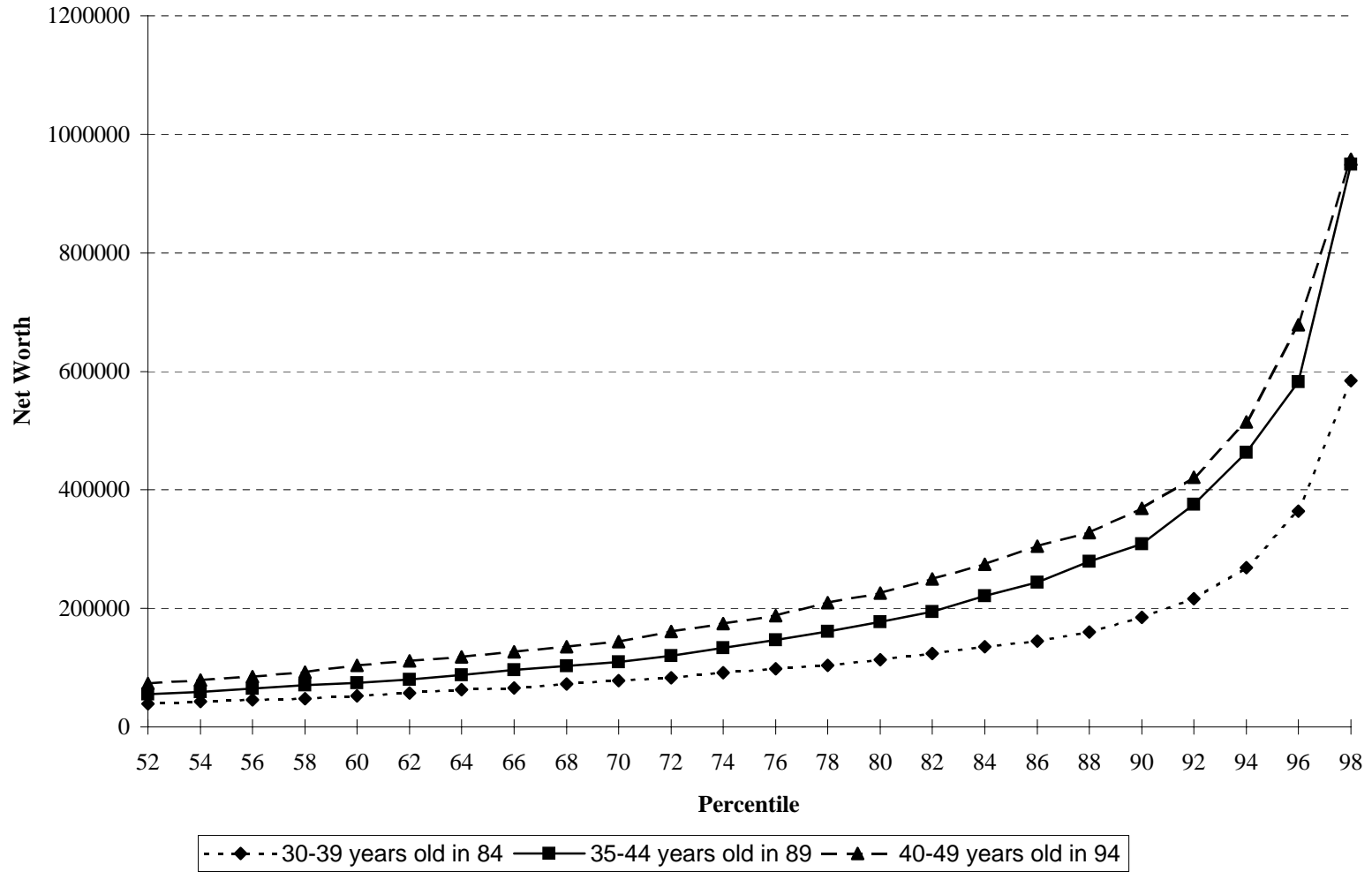


Figure 1.3
Wealth Distribution 1984-1994, black and white

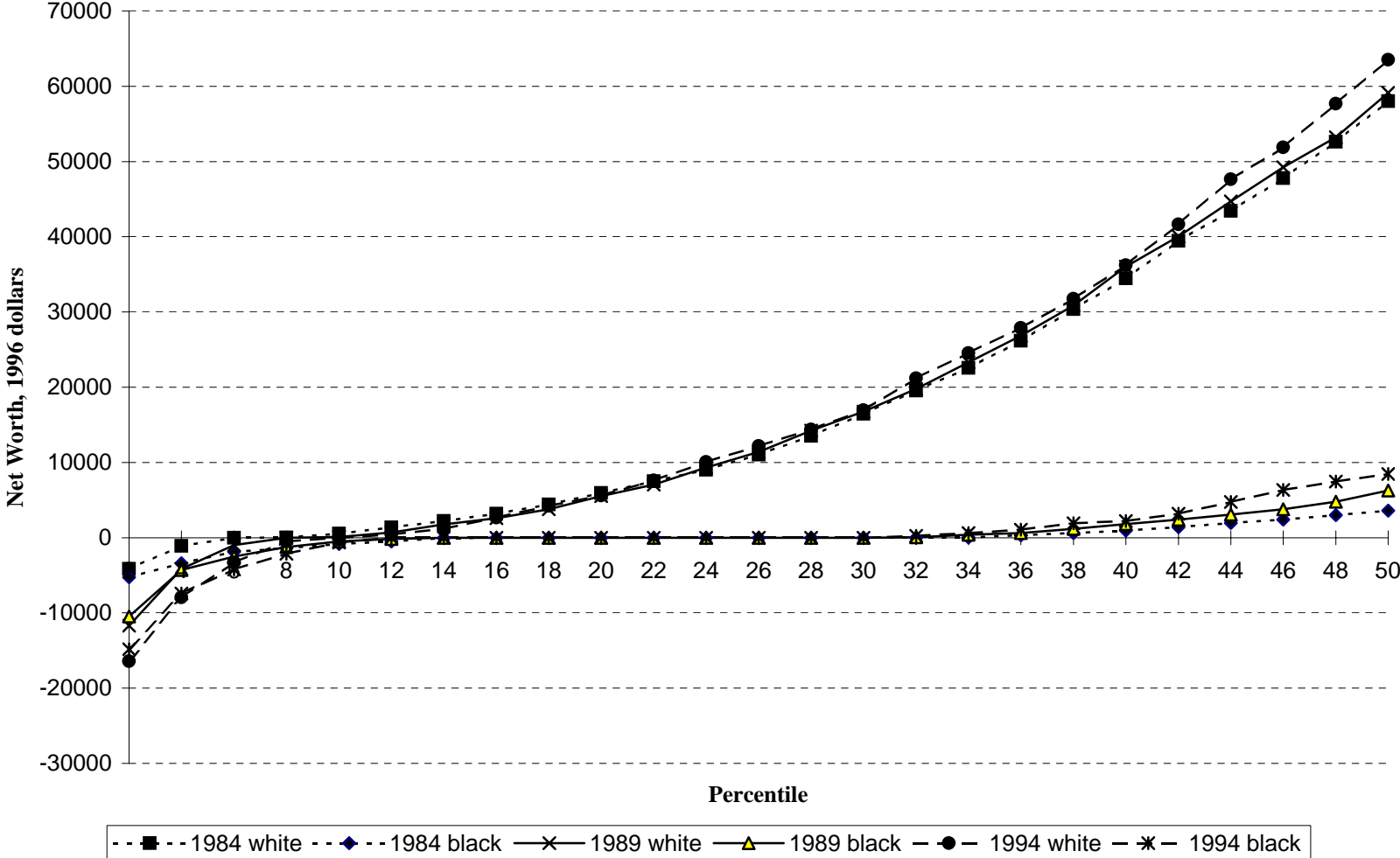


Figure 1.3 (cont.)
Wealth Distribution 1984-1994, black and white

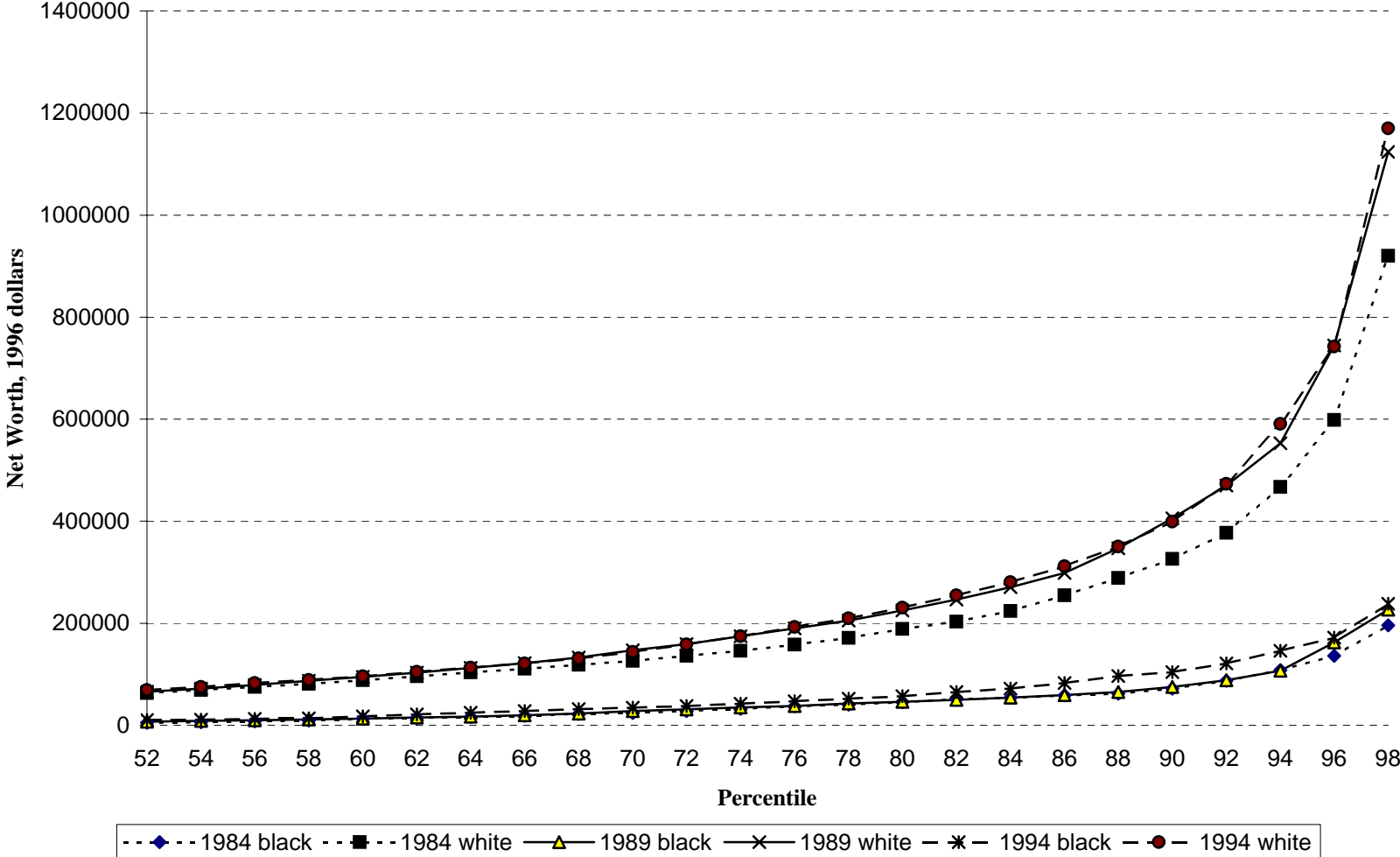


Table A1
Item Response by PSID Interviewees for 1994 Wealth Components

<i>Does not own</i>		<i>Own</i>				<i>Missing</i>
<u>Portfolio Component</u>	<u>Total Percent</u>	<u>Total Percent</u>	<u>Provided Exact Amount</u>	<u>Routed Through Brackets</u>	<u>Missing</u>	
<i>Real Estate</i>	82.18	17.65	15.80	1.20	0.65	0.17
<i>Wheels</i>	14.55	85.45	81.55	3.04	0.86	0.00
<i>Farm or Business</i>	86.71	13.24	10.39	1.99	0.86	0.05
<i>Stocks</i>	65.26	34.43	30.51	2.86	1.06	0.31
<i>Checking</i>	22.08	77.33	71.55	3.76	2.02	0.59
<i>Other Assets</i>	75.04	24.31	19.84	3.22	1.25	0.65
<i>Debts</i>	49.25	50.47	49.28	0.72	0.47	0.28

Source: PSID Wealth Supplement (1994).

Table A2 - Wealth Distribution 1984-1994, 1996 dollars

<i>%-tile</i>	<i>1984</i>	<i>1984 black</i>	<i>1984 white</i>	<i>1989</i>	<i>1989 black</i>	<i>1989 white</i>	<i>1994</i>	<i>1994 black</i>	<i>1994 white</i>
2	-4,510	-5,261	-4,134	-10,455	-10,455	-11,707	-16,273	-14,822	-16,410
4	-1,594	-3,383	-1,112	-4,282	-4,282	-4,156	-7,623	-7,411	-7,940
6	-443	-1,890	0	-1,259	-2,500	-982	-3,568	-4,235	-3,282
8	0	-1,398	8	-61	-1,247	0	-847	-2,117	-508
10	0	-826	529	0	-503	100	0	-635	0
12	192	-511	1,353	0	-148	680	0	0	423
14	705	-60	2,225	377	0	1,763	212	0	1,165
16	1,451	0	3,195	1,039	0	2,582	847	0	2,647
18	2,248	0	4,420	2,000	0	3,779	1,810	0	4,235
20	3,036	0	5,938	2,815	0	5,542	3,176	0	5,611
22	4,290	0	7,517	3,816	0	7,054	4,447	0	7,623
24	5,649	0	9,020	5,358	0	9,321	6,246	0	10,058
26	7,355	0	11,050	6,928	0	11,400	8,067	0	12,175
28	9,016	0	13,530	8,817	0	14,234	10,587	0	14,372
30	10,824	0	16,462	11,236	0	16,753	12,175	0	16,939
32	13,400	0	19,544	13,667	62	19,776	14,293	244	21,174
34	15,700	38	22,551	15,834	377	23,304	16,939	635	24,521
36	18,800	308	26,159	18,876	629	26,831	21,174	1,059	27,897
38	22,520	601	30,368	22,233	1,158	30,862	24,668	1,906	31,761
40	25,181	950	34,487	25,445	1,826	36,026	28,056	2,234	36,208
42	29,481	1,413	39,472	29,539	2,393	40,057	31,761	3,176	41,660
44	33,111	1,966	43,447	34,011	3,073	44,718	35,890	4,764	47,642
46	38,471	2,405	47,807	38,319	3,779	49,253	41,289	6,352	51,877
48	42,395	3,000	52,618	43,181	4,786	53,221	46,583	7,464	57,699
50	47,130	3,608	58,030	47,742	6,256	59,129	51,030	8,470	63,522
52	51,790	4,961	63,141	51,422	6,928	65,906	57,170	10,375	69,345
54	56,526	6,113	69,155	56,559	8,565	71,801	62,464	11,116	75,168
56	61,638	7,690	75,168	62,480	9,675	78,855	68,816	12,492	83,108
58	66,899	9,171	81,182	68,904	11,337	87,547	74,639	13,763	88,931
60	73,740	12,493	88,454	75,746	13,109	94,853	83,002	17,469	96,342
62	80,732	14,131	96,077	84,272	15,141	103,293	89,852	21,174	104,812
64	87,616	16,461	103,732	93,090	17,257	112,421	97,401	24,880	113,281
66	96,215	18,792	110,948	102,033	19,915	122,062	105,870	27,950	121,433
68	104,183	22,520	118,622	111,429	22,926	132,770	115,399	31,761	131,301
70	112,752	24,309	126,283	121,936	27,964	147,382	123,868	34,514	143,984
72	120,419	27,963	136,055	134,155	31,433	159,349	136,044	38,113	158,806
74	129,891	32,322	145,827	150,405	35,270	174,591	151,395	42,348	174,686
76	141,317	37,133	157,854	164,324	37,916	189,770	166,746	47,339	192,684
78	152,802	40,872	171,534	182,905	43,080	205,516	184,744	52,088	209,571
80	167,625	45,714	188,673	199,376	46,104	224,852	203,271	57,170	230,374
82	187,169	50,814	203,107	217,924	49,748	246,644	225,504	65,435	254,936
84	202,954	53,983	224,002	243,747	54,166	270,830	250,701	71,780	280,557
86	225,505	58,631	254,821	272,090	59,204	298,795	281,404	82,706	311,788
88	261,586	61,939	288,647	304,841	65,251	346,789	317,611	96,448	350,431
90	301,575	72,162	326,231	358,378	75,343	405,931	365,253	104,494	399,132
92	346,827	87,195	377,346	427,030	88,429	469,859	430,363	121,327	473,241
94	426,055	107,942	467,097	517,727	107,072	552,998	542,586	146,101	590,492
96	562,711	136,055	598,341	658,811	162,498	744,469	698,110	172,039	742,152
98	844,893	196,190	920,062	1,031,675	226,741	1,124,010	1,069,291	238,209	1,169,868

Table B1
Means of Data by Sample.

<i>Variable</i>	<i>I</i>		<i>II</i>		<i>III</i>	
	<i>Mean</i>	<i>Std Dev</i>	<i>Mean</i>	<i>Std Dev</i>	<i>Mean</i>	<i>Std Dev</i>
<i>Change of Wealth Between 89 and 94</i>	21,318	482,514	39,575	235,537	30,847	77,032
<i>Permanent Income (Average Income 1987-1991)</i>	43,378	45,385	39,540	29,803	38,457	28,397
<i>Percent African American in 1989</i>	0.138	0.345	0.148	0.350	0.156	0.356
<i>Education Level of Household Head in 1989</i>	13.2	2.6	13.1	2.5	13.0	2.5
<i>Percent of Households Married in 1989</i>	0.629	0.465	0.610	0.463	0.598	0.464
<i>Average Number of Children in Household in 1989</i>	0.879	1.141	0.894	1.130	0.896	1.134
<i>Percent of Male Head Households in 1989</i>	0.779	0.415	0.767	0.417	0.757	0.421
<i>Age of Household Head in 1989</i>	42.5	11.5	41.9	11.3	41.7	11.2
<i>Percent Living in New England Region</i>	0.050	0.219	0.047	0.209	0.044	0.200
<i>Percent Living in North Atlantic Region</i>	0.168	0.374	0.165	0.366	0.161	0.361
<i>Percent Living in South East Region</i>	0.172	0.378	0.172	0.372	0.174	0.372
<i>Percent Living in East South Central Region</i>	0.074	0.263	0.078	0.265	0.081	0.268
<i>Percent Living in Oil States</i>	0.081	0.273	0.083	0.273	0.086	0.275
<i>Percent Living in Plains States</i>	0.098	0.298	0.100	0.296	0.099	0.293
<i>Percent Living in Mountain Region</i>	0.045	0.207	0.045	0.204	0.046	0.205
<i>Percent Living in West Region</i>	0.128	0.334	0.120	0.320	0.118	0.317
<i>Net Amount into Annuity Between (1989-1994)</i>	842	18,402	730	17,268	638	17,092
<i>Net Amount into Non-Home Real Estate (1989-1994)</i>	1,981	30,133	1,307	20,223	986	12,470
<i>Net Amount into Business (1989-1994)</i>	4,074	114,072	2,987	114,229	1,085	23,057
<i>Net Flow of Assets into the Household (1989-1994)</i>	-786	18,144	-638	11,877	-320	9,726
<i>Net Value of Inheritances into Household (1989-1994)</i>	3,736	28,523	3,204	25,607	2,509	16,289
<i>Net Flow into the Stock Market (1989-1994)</i>	13,362	272,072	3,869	23,631	3,773	18,958
<i>Active Savings (1989-1994)</i>	24,488	298,610	15,436	135,363	14,042	54,363
<i>Active Savings (1984-1989)</i>	23,155	179,532	10,599	70,121	7,609	51,225
<i>Sample Size</i>	4,534		4,314		4,030	

Source: PSID Wealth Supplements (1984, 1989, 1994) and PSID Core Survey (1984-1995). All means were weighted using PSID weights.

Sample I: All households with same head in both 1989 and 1994 and who were between the ages of 25 and 65 in 1989.

Sample II: All households with same head in both 1989 and 1994, who were between the ages of 25 and 65 in 1989 and who had 1989 wealth between -\$50,000 and \$500,000.

Sample III: Sample II households with the restriction that change in wealth between 1989 and 1994 was between -\$100,000 and \$500,000.

Appendix III

Regional analyses are based on the following groupings of states:

<i>New England:</i>	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.
<i>North Atlantic:</i>	New Jersey, New York, Pennsylvania.
<i>South East:</i>	Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia.
<i>East South Central:</i>	Alabama, Kentucky, Mississippi, Tennessee.
<i>Great Lakes Region:</i>	Illinois, Indiana, Michigan, Ohio, Wisconsin (omitted region)
<i>Oil States:</i>	Arkansas, Louisiana, Oklahoma, Texas.
<i>Plains States:</i>	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota.
<i>Mountain States:</i>	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming.
<i>West:</i>	Alaska, California, Hawaii, Oregon, Washington.

Table B1 presents characteristics of the samples used in these regressions.

2. Active Savings Computation:

Active Savings = net inflows into the stock market + net change in transaction account balances + net inflows into business + net inflows into annuities + home improvements + net inflows into non-main home real estate - increases in non-collateralized debt.

Capital Gains = Change in Wealth less Active Savings.